

since 1995



Integrated Device Manufacturer (IDM) of
Semiconductor Devices

MOSFET Handbook 2022 v1.0b



LET THE WORLD TRUST
CHINA POWER SEMICONDUCTOR

Stock Code 300623

Jiangsu JieJie Microelectronics Co., Ltd.



ABOUT US

In year 1995, Jiangsu JieJie Microelectronics Co., Ltd. (a.k.a. JJM) was founded as a semiconductor IDM (integrated device manufacturer) headquartered in Jiangsu province. Its operation include research & development of silicon dies, wafer manufacturing, package assemblies, and testing (manufacturing, verification, long-term qualification) of packaged devices. On March 14, 2017, JJM was listed (stock code: 300623) on the ChiNext board of Shenzhen Stock Exchange. JJM was awarded the Top 10 Enterprises for Power Semiconductor Devices in China ever since.

Currently, the main product portfolio of JJM comprises of the following semiconductor devices: uni- & bi-directional thyristors, MOSFETs of split-gate type (SGT) and of trench type and of planar type and of super-junction type, protection devices including electro-static devices (ESDs) with low input capacitance and transient voltage suppressors (TVS) and varistors with low junction capacitance, high-voltage diodes and rectifiers, power transistors etc. Based on the revenue achieved in year 2021, JJM was ranked #1 for thyristor devices in China (replaced ~50% of the non-domestic competition) as well as #1 for thyristor devices worldwide.

Many of the JSFET® SGT-type MOSFET devices with $V_{BR(DSS)_{Min}}$

below 200V offer performance similar to those from the tier-1 vendors across the world. Within JJM, there exist special teams comprising of experts with multi-year global working experience to take care of auto-grade products and related tasks covering: die R&D, assembly, product definition, testing, manufacturing, quality and application support. The four Product R&D Centers at Qidong, Nantong, Wuxi and Shanghai continue to bring in talents with experience on power semiconductors from all over the world. Production facilities are located at Qidong & Nantong cities of Jiangsu province, while their mission are to achieve manufacturing excellence, localization and full autonomy on all matters concerning power semiconductor devices.

At JJM, leading processes and systems are in place to govern all key disciplines: a) ISO 9001:2008 and IATF 16949 certification for quality management; b) ISO 14001:2004 certification for environmental management; c) ISO 45001 certification for occupational health and safety management; d) QC 080000 certification for hazardous substance management. To facilitate the global reach of customers' products in which JJM's products are embedded, the relevant products from JJM are UL certified (e.g. high-voltage rectifiers and TVS), RoHS and REACH complaint, whichever applicable.



Created In

1995™



Registered Capital

179,742,660 RMB



Patent Honor

160*

■ At JJM, there are three major business units, four wafer fabrication facilities, and three assembly & test facilities.

Thyristors Business Unit

Key products are: bi-directional three-terminal AC switch called Triacs (0.6 ~ 1.6kV / 0.6 ~ 110A), uni-directional three-terminal DC switches called SCR (0.6 ~ 2.2kV / 0.8 ~ 250A). These products are typically assembled & tested with dies sorted from 4-inch wafers, all manufactured at in-house facilities located at Qidong city.

Power Diodes & Protection Devices Business Unit

Key products are: Bridge Rectifiers, Switching Diodes, Schottky Diodes/Rectifiers, Fast/Super-fast/Ultra-fast/Hyper-fast Recovery Rectifiers with & without Epitaxy, Small Signals BJT, SiC Rectifier, Protection Devices (Zener Diode/Rectifier, TVS, ESD, SiDAC, Electrostatic/Gas Discharge Tube, Varistor, Thyristor Surge Suppressor), Thyristor/Rectifier Power Modules.

Advanced Power Devices & Automotive Products Business Unit

Key products are: silicon-based industrial/automotive-grade MOSFETs based on various technology platforms (planar, trench, SGT, super-junction) and covering breakdown voltages from -100V to 700V, IGBT & Modules, SiC MOSFETs, Load/Power Switch for various applications (computing, industrial, automotive). Destined facilities are and shall be IATF 16949-certified hence they are qualified to produce automotive-grade components.

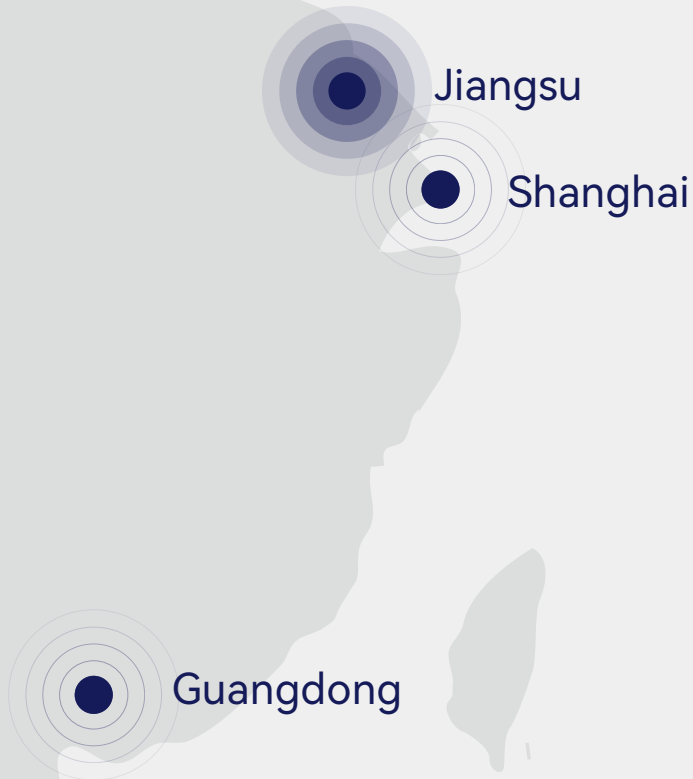
Wafer Fabrication Facilities

Four advanced fabrication sites manufacture wafers needed to realize the innovative power discrete semiconductor products from the three business units. Wafers manufactured are of the following diameters: 4-inch, 5-inch, 6-inch, 8-inch (with future expansion planned for 12-inch). Process nodes can reach 0.18μm and beyond. In addition, JJM has set up long-term strategic relationship with OSWF (out-sourced wafer foundries) to complement our in-house manufacturing capacity. Our goal is to meet customer demands and expectation with minimal lead time.

Assembly & Test Facilities

Three A/T facilities are established in-house to offer both through-hole and surface-mounted packages. These packages include while not limited to the followings: SMA, SMB, SMC, SOD-series, SOT-series, SOP-series, TO-series, sawing & punch DFN-series, CSP-series. Destined facilities are and shall be IATF 16949-certified hence they can produce AEC-Q101 qualified automotive-grade components. In addition, JJM has set up long-term strategic relationship with OSAT (out-sourced assembly & test vendors) to complement our in-house manufacturing capacity. Our goal is to meet customer demands and expectation with minimal lead time.

ORGANIZATION AND PRODUCTS



Equipped with provincial-level laboratories certified by CNAS (China National Accreditation Service), Jiangsu JieJie Semiconductor Technology Research Institute Co., Ltd. (a subsidiary company of JJM) is responsible for research and development of new product types, advanced wafer process nodes, and assembly technology with superior long-term reliability. Over the past many years, it has been elaborating with universities and national research centers throughout China to advance basic research, to expedite the evolution of JJM's products, to create innovation with patented technologies, and to bridge the gap between academics and semiconductor industry. Till today, JJM has been granted 160 patents in China, with more than 10% of them being of invention type. To better serve the diverse needs of customers in domestic China and the rest of the world, eight subsidiary companies were established, each with specific roles & responsibilities on products and technologies.

8 SUBSIDIARIES FOCUS ON 10 CATEGORIES OF PRODUCTS

Jiangsu JieJie Microelectronics Co., Ltd. (Headquarter)



Thyristors



MOSFETs



WBG Devices



JieJie Semiconductor Co., Ltd. (Nantong)



TVS



Diodes



Small Signals



P. Devices



S.S. Relays



JieJie Microelectronics Technology Co., Ltd. (Wuxi, Jiangsu & Shanghai)



MOSFETs



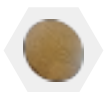
JieJie Microelectronics Technology Co., Ltd. (Shenzhen, Guangdong)



Opto-Couplers

AC-DC, OpAmp
Comparators

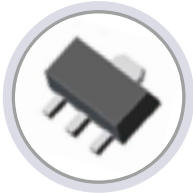
JieJie Microelectronics Technology Co., Ltd. (Nantong, Jiangsu)



Wafers

Jiangsu JieJie New Semi. Materials Co., Ltd.
(Qidong, Jiangsu)Jiangsu JieJie Semi. Tech. Research Institute Co., Ltd.
(Nantong, Jiangsu)Jiangsu Yixi Tech. Co., Ltd.
(Wuxi, Jiangsu)

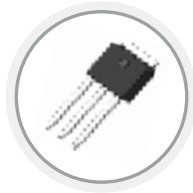
THROUGH-HOLE PACKAGES



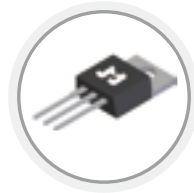
SOT-89-3L



TO-251-3L



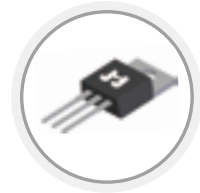
TO-251L-3L



TO-220-3L



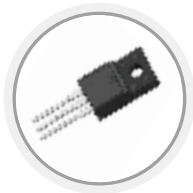
TO-220AS-3L



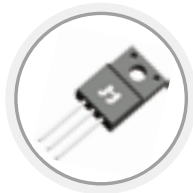
TO-220C-3L



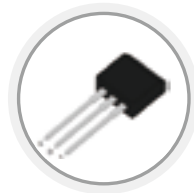
TO-220FA-3L



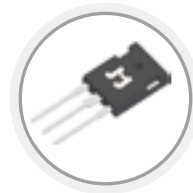
TO-220FP-3L



TO-220FP-NL



TO-262-3L



TO-247-3L

SURFACE-MOUNT PACKAGES



DFN1006-3L



DFN2020-6L



DFN3333-8L



W-DFN3030-8L



DFN5060-8L



DFN8080-4L



PDFN3x3-8L



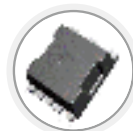
PDFN3x3-8L-D



PDFN5x6-8L



PDFN5x6-8L-D

PowerJE*7x8
sTOLL-comp.PowerJE*10x12
TOLL-comp.

SOT-23



SOT-23-3L



SOT-23-6L



SOT-223-3L



SOT-323-3L



SOT-363-3L



SOT-523-3L



SOT-563-6L



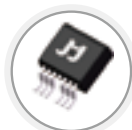
SOT-723-3L



TO-252-3L



TO-263-3L



TO-263-7L



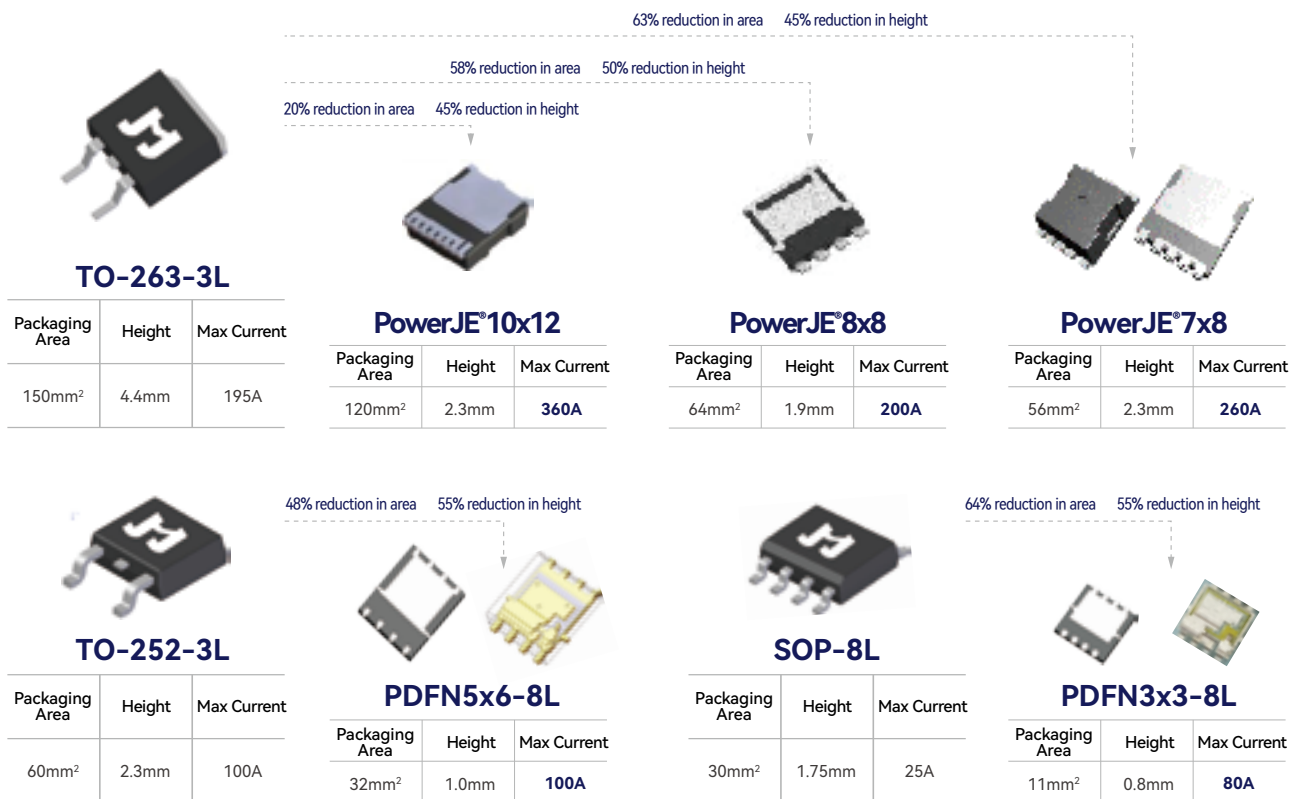
SOP-8



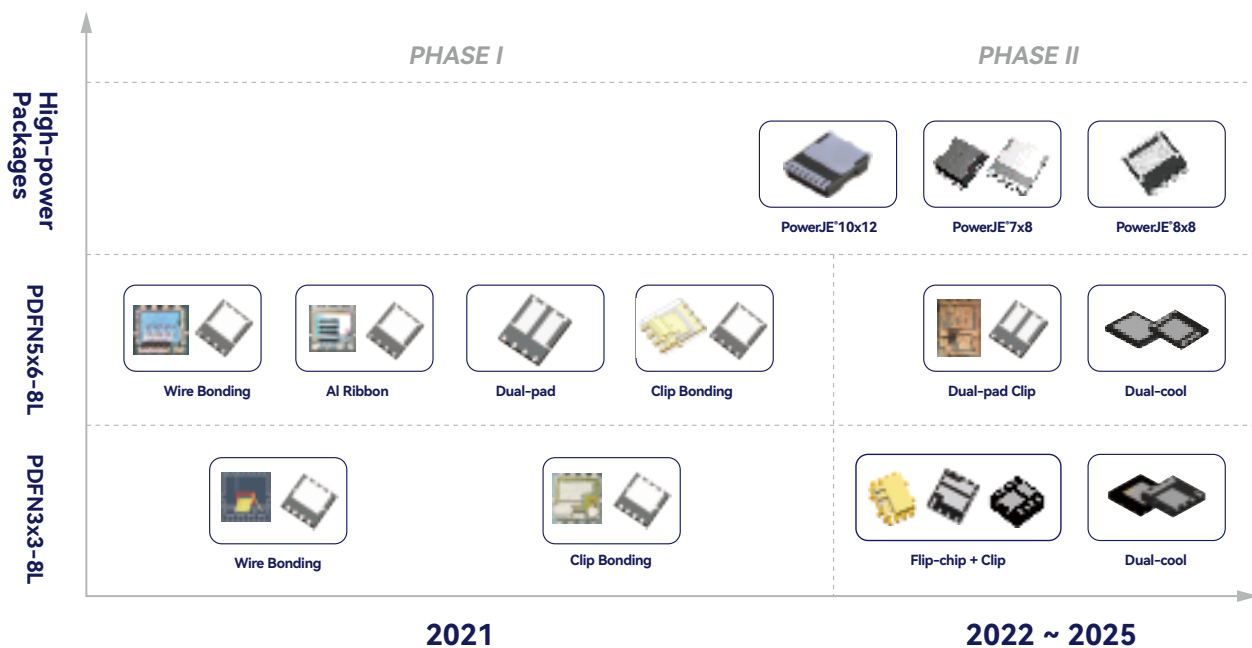
TSSOP-8

PACKAGING ADVANTAGES

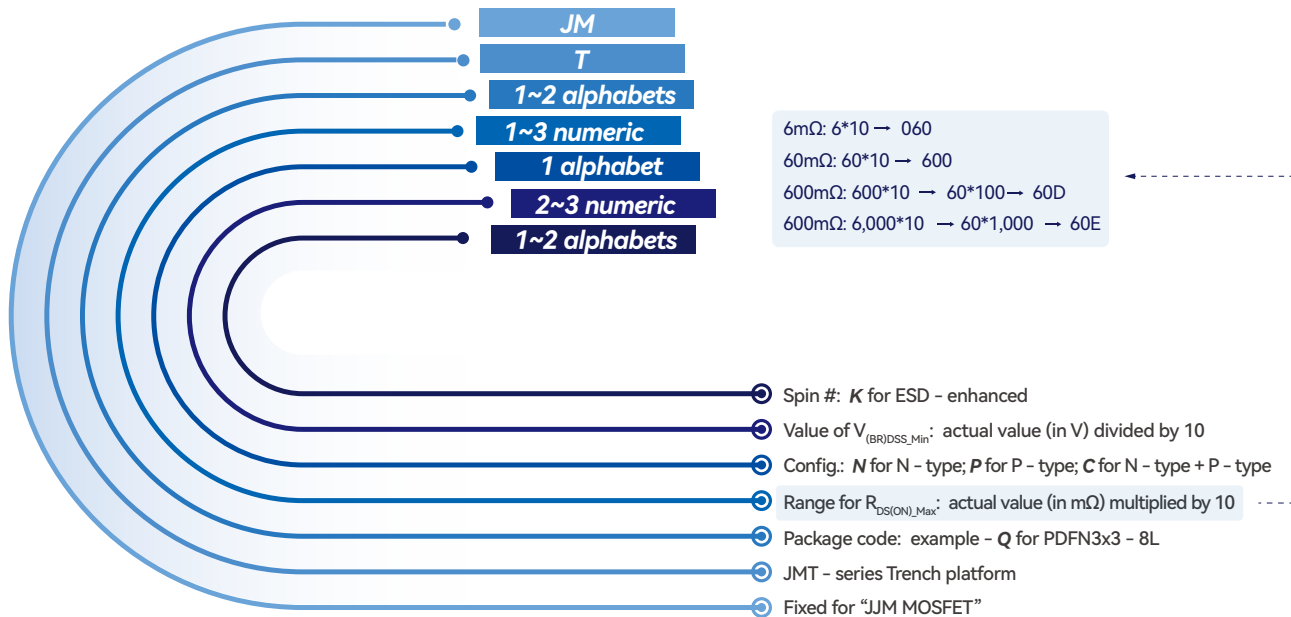
Advanced Packaging



Roadmap for Power & Auto Packages

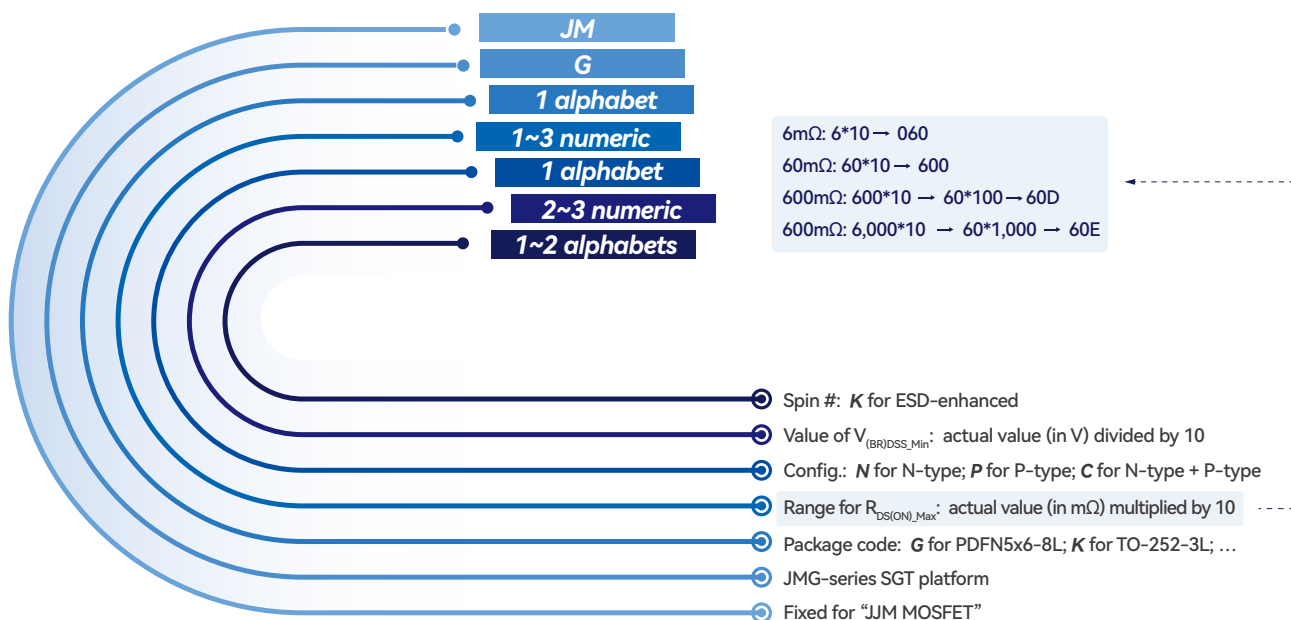


Nomenclature of JMT-series N-ch and P-ch Trench LV/MV MOSFETs



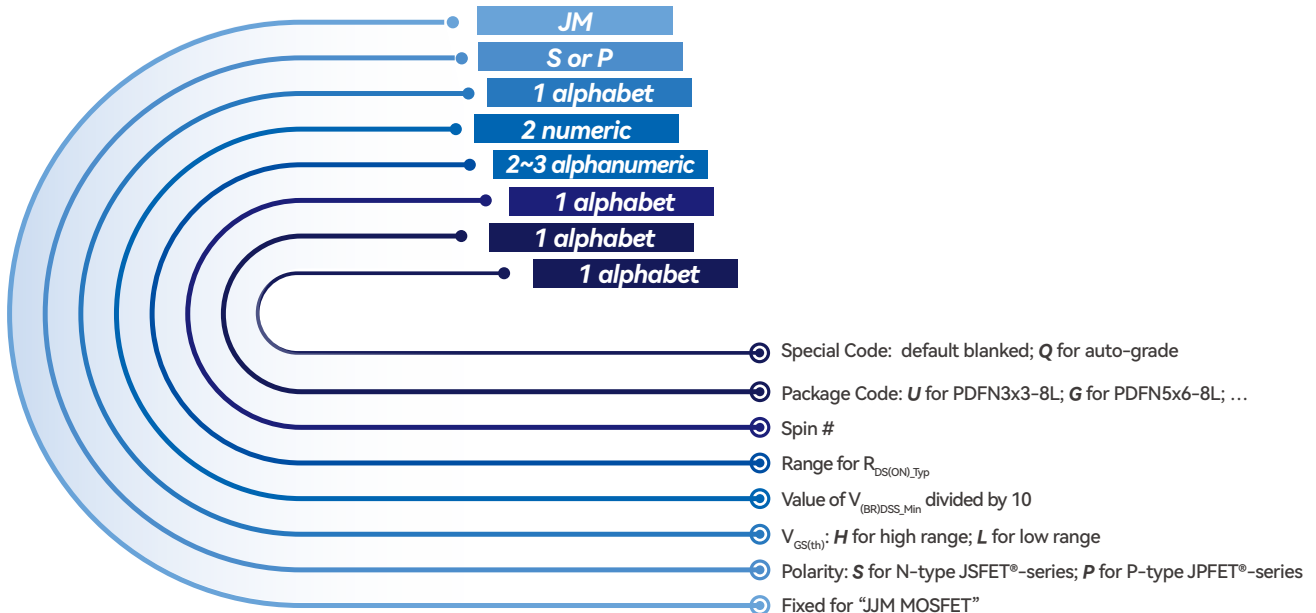
Technology: Trench ($V_{DS_Max} \leq -40 \sim 100V$); JMT Series

Nomenclature of JMG-series N-ch and P-ch SGT LV/MV MOSFETs



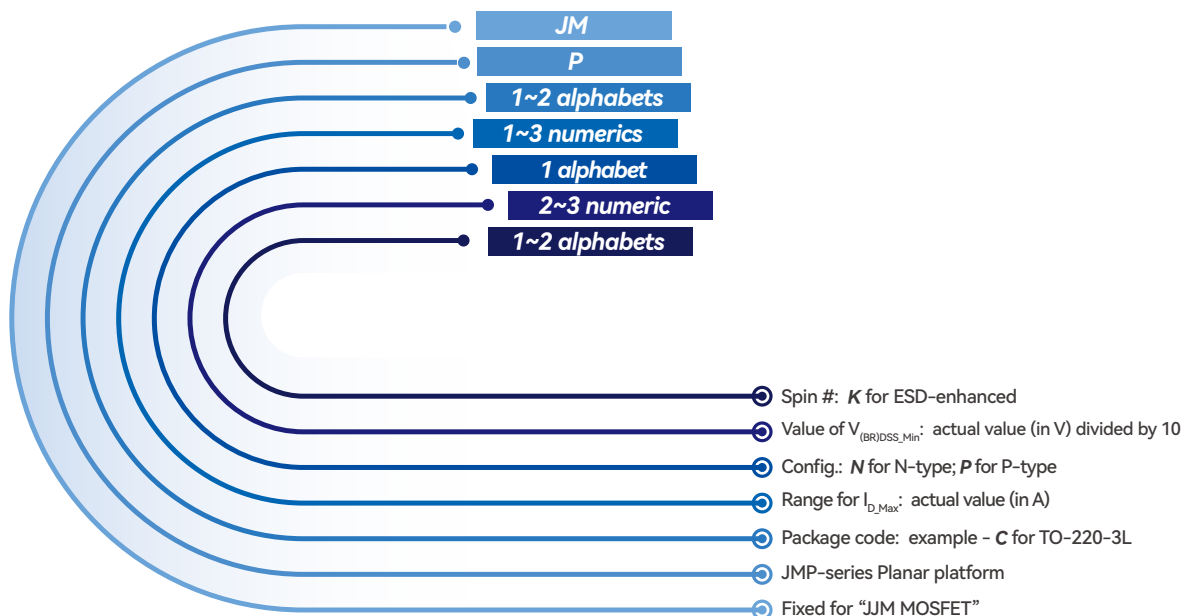
Technology: Shielded Gate ($V_{DS_Max} = -100 \sim 120V$); JMG Series

Nomenclature of JSFET® N-ch & JPFET® P-ch SGT LV/MV MOSFETs



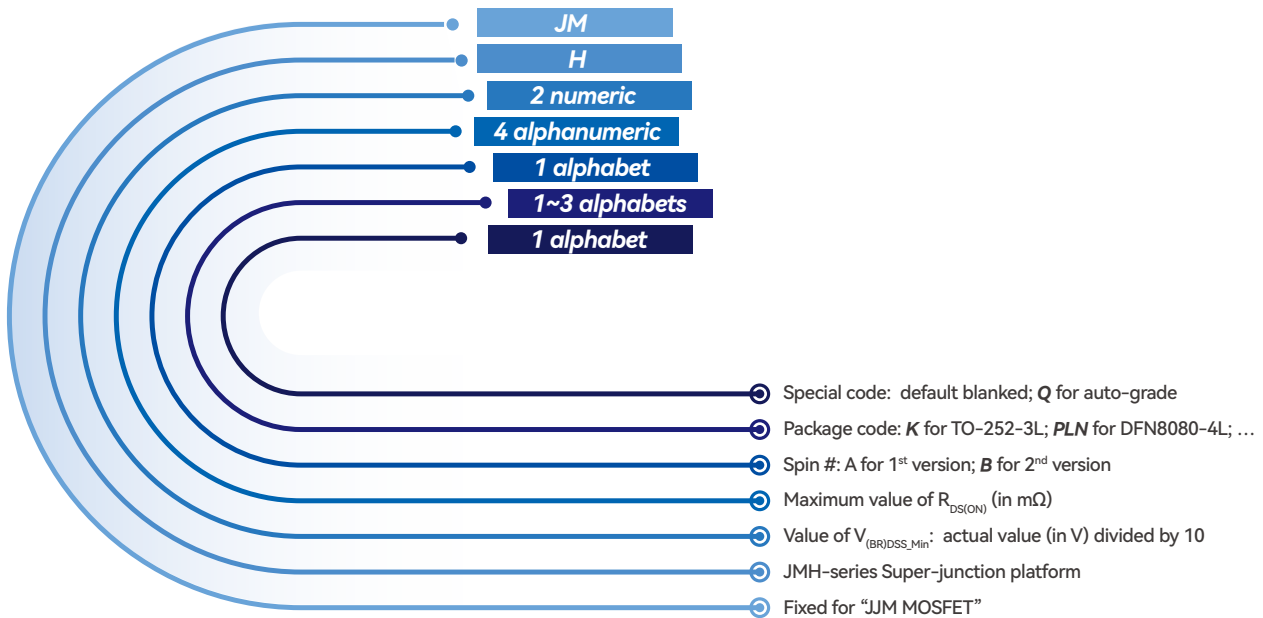
Technology: Shielded Gate ($V_{DS,Max} = -100 \sim 150V$); JPFET®/ JSFET® Series

Nomenclature of JMP-series N-ch Planar HV MOSFET



Technology: Planar ($V_{DS,Max} \geq 500V$); JMP Series

Nomenclature of JHFET® Super-junction HV MOSFETs



Technology: Super-junction ($V_{DS_Max} \geq 650V$); JHFET® Series

Automotive-grade MOSFETs with $V_{DS_Max} = -100 \sim 650V$

Automotive-grade MOSFETs from Jiangsu JieJie Microelectronics (a.k.a. JJM) offer breakdown voltage V_{DS_Max} from -100V to 650V. The gate-source threshold voltage $V_{GS(th)}$ is at either high-level (2.7 ~ 3.5V) or low-level (1.5 ~ 1.9V, -1.0 ~ -3.0V). Source-Drain turn-ON resistance $R_{DS(ON)}$ is as low as 0.56m Ω (@ $V_{GS} = 10V$). FOM is low as 55. These MOSFETs were typically assembled in the highly efficient power packages of either the low-profile surface-mounted type or the legacy through-hole type. These include while not limited to the following packages with excellent thermal characteristics: PDFN3x3-8L, PDFN5x6-8L/-D, PowerJE®10x12 (TOLL-compatible), PowerJE®7x8 (sTOLL-compatible), TO-247-3/7L, etc. All devices were tested for long-term reliability and quality in accordance to the relevant standards defined by AEC Council and JEDEC.

These automotive-grade MOSFETs are widely applied in various pre-installed & after-market sub-systems in automobiles shipped worldwide. These systems and related applications include, but not exclusively, ADAS, infotainment systems, secondary-side (i.e. synchronous DC-DC rectification) of OBC (on-board charger), motor driving in BCM (body control module) and EPS (electronic power steering), electronic relay, load switch, power switch, wireless charging etc.

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V_{DS_Max} (V)	I_{D_Max} (A)	$V_{GS(th)_Typ}$ (V)	$R_{DS(ON)_Typ}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON)_Max}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON)_Typ}$ @ $V_{GS}=4.5V$ (m Ω)	$R_{DS(ON)_MAX}$ @ $V_{GS}=4.5V$ (m Ω)	$R_{DS(ON)_Typ}$ @ $V_{GS}=2.5V$ (m Ω)	$R_{DS(ON)_MAX}$ @ $V_{GS}=2.5V$ (m Ω)	V_{GS_Max} (V)	E_{AS_Max} (mJ)	C_{iss_Typ} (pF)	C_{oss_Typ} (pF)	C_{rfs_Typ} (pF)	Q_g_Typ (nC)	FOM
JMPL0622AKQ	TO-252-3L	DPAK	P	-60	-46.0	-2.0	19.8	25.0	34.0	44.0	-	-	±20	182.0	1,713	302.0	13.5	26.0	515
JMPL0648AGQ	PDFN5x6-8L	SuperSO8	P	-60	-24.0	-2.0	40.0	50.0	55.0	72.0	-	-	±20	75.0	855	189.0	9.5	13.5	540
JMPL1050AGQ	PDFN5x6-8L	SuperSO8	P	-100	-29.0	-2.0	36.0	50.0	48.0	65.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	720
JMPL1050AKQ	TO-252-3L	DPAK	P	-100	-36.0	-2.0	37.0	50.0	50.0	66.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	740
JMPL1050AUQ	PDFN3x3-8L	PQFN 3x3	P	-100	-28.0	-2.0	38.0	50.0	51.0	66.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	760
JMSL0403AGQ	PDFN5x6-8L	SuperSO8	N	40	128.0	1.5	2.5	3.1	3.3	4.5	-	-	±20	79.0	1,424	927.0	48.0	22.0	55
JMSH0403AKQ	TO-252-3L	DPAK	N	40	108.0	2.8	3.3	3.9	-	-	-	-	±20	216.0	1,632	1047.0	49.0	22.1	73
JMSL0402AKQ	TO-252-3L	DPAK	N	40	211.0	1.5	1.9	2.4	2.6	3.4	-	-	±20	338.0	3,252	1888.0	55.0	50.0	95
JMSL040SAGQ	PDFN5x6-8L	SuperSO8	N	40	387.0	1.5	0.58	0.75	0.80	0.99	-	-	±20	506.0	7,654	3738.0	44.0	114.0	66
JMSH040SAGQ	PDFN5x6-8L	SuperSO8	N	40	400.0	2.8	0.56	0.68	-	-	-	-	±20	864.0	7,445	5755.0	282.0	107.0	60
JMSL0401BGQ	PDFN5x6-8L	SuperSO8	N	40	299.0	1.5	0.83	0.98	1.2	1.6	-	-	±20	726.0	5,495	3347.0	44.0	80.0	66
JMSL0406AGQ	PDFN5x6-8L	SuperSO8	N	40	90.0	1.6	4.2	5.2	5.8	7.6	-	-	±20	36.0	1,204	536.0	51.0	17.9	75

-100 ~ 650V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(th)} Typ (V)	R _{DS(on)} Typ @V _{GS} =10V (mΩ)	R _{DS(on)} Max @V _{GS} =10V (mΩ)	R _{DS(on)} Typ @V _{GS} =4.5V (mΩ)	R _{DS(on)} Max @V _{GS} =4.5V (mΩ)	R _{DS(on)} Typ @V _{GS} =2.5V (mΩ)	R _{DS(on)} Max @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss} Typ (pF)	C _{oss} Typ (pF)	C _{rss} Typ (pF)	Q _s Typ (nC)	FOM
JMSL0406AUQ	PDFN3x3-8L	PQFN 3x3	N	40	57.0	1.6	4.5	5.6	5.9	7.8	-	-	±20	36.0	1,204	536.0	51.0	17.9	81
JMSL0406AKQ	TO-252-3L	DPAK	N	40	78.0	1.6	4.7	5.6	6.0	7.8	-	-	±20	36.0	1,204	536.0	51.0	17.9	84
JMSL0406AGDQ	PDFN5x6-8L-D	-	N+N	40	49.0	1.6	5.5	6.9	7.0	9.5	-	-	±20	36.0	1,227	526.0	55.0	17.9	98
JMSL0402BGQ	PDFN5x6-8L	SuperSO8	N	40	158.0	1.6	1.9	2.5	2.5	3.4	-	-	±20	126.0	2,131	1538.0	95.0	36.0	68
JMSL0402AGQ	PDFN5x6-8L	SuperSO8	N	40	183.0	1.6	1.6	2.0	2.2	3.0	-	-	±20	163.0	3,133	1993.0	75.0	46.0	74
JMSL0401AGQ	PDFN5x6-8L	SuperSO8	N	40	198.0	1.6	1.3	1.7	1.7	2.3	-	-	±20	194.0	3,125	1607.0	18.0	47.0	61
JMSH0406AKQ	TO-252-3L	DPAK	N	40	73.0	2.8	5.0	6.2	-	-	-	-	±20	96.0	1,027	662.0	105.0	15.2	76
JMSH0406AGQ	PDFN5x6-8L	SuperSO8	N	40	90.0	2.8	4.1	5.1	-	-	-	-	±20	96.0	1,027	662.0	105.0	14.9	61
JMSH0406AGDQ	PDFN5x6-8L-D	-	N+N	40	50.0	2.8	5.2	6.5	-	-	-	-	±20	96.0	1,027	662.0	105.0	14.9	77
JMSH0401AGQ	PDFN5x6-8L	SuperSO8	N	40	197.0	2.8	1.3	1.7	-	-	-	-	±20	194.0	3,015	2000.0	18.0	42.0	55
JMSH0402AGQ	PDFN5x6-8L	SuperSO8	N	40	182.0	2.8	1.6	2.0	-	-	-	-	±20	194.0	3,020	2013.0	25.0	41.0	66
JMSH0402AKQ	TO-252-3L	DPAK	N	40	170.0	2.8	2.0	2.5	-	-	-	-	±20	194.0	3,020	2013.0	25.0	41.0	82
JMSH0403AGQ	PDFN5x6-8L	SuperSO8	N	40	121.0	2.8	2.7	3.4	-	-	-	-	±20	216.0	1,542	1020.0	43.0	22.0	59
JMSH0403BGQ	PDFN5x6-8L	SuperSO8	N	40	145.0	2.8	2.2	2.8	-	-	-	-	±20	216.0	2,086	1150.0	60.0	28.0	62
JMSH0401ATLQ	PowerJE*10x12	TOLL	N	40	337.0	2.8	1.0	1.25	-	-	-	-	±20	317.0	5,280	3405.0	71.0	68.0	68
JMSH0401ATSQ	PowerJE*7x8	sTOLL	N	40	337.0	2.8	0.90	1.20	-	-	-	-	±20	441.0	5,214	3396.0	46.0	66.0	59
JMSH0401BGQ	PDFN5x6-8L	SuperSO8	N	40	276.0	2.8	0.90	1.1	-	-	-	-	±20	441.0	5,280	3405.0	71.0	68.0	61
JMSH0401CGQ	PDFN5x6-8L	SuperSO8	N	40	252.0	2.8	1.10	1.40	-	-	-	-	±20	600.0	5,304	3832.0	78.0	71.0	78
JMSL0601AGQ	PDFN5x6-8L	SuperSO8	N	60	315.0	1.5	0.90	1.2	1.3	1.7	-	-	±20	1,176.0	7,325	1,821.0	45.0	114.0	103
JMSH0602AGQ	PDFN5x6-8L	SuperSO8	N	60	168.0	2.8	1.9	2.4	-	-	-	-	±20	240.0	3,562	896.0	43.0	50.0	95
JMSH0602AEQ	TO-263-3L	-	N	60	224.0	2.8	2.0	2.5	-	-	-	-	±20	338.0	5,783	1695.0	39.0	81.0	162
JMSH0603BGQ	PDFN5x6-8L	SuperSO8	N	60	157.0	2.8	2.4	3.0	-	-	-	-	±20	338.0	3,549	959.0	38.0	51.0	122
JMSH0601AGQ	PDFN5x6-8L	SuperSO8	N	60	225.0	2.8	1.3	1.7	-	-	-	-	±20	375.0	5,874	1375.0	45.0	81.0	105
JMSH0601ATLQ	PowerJE*10x12	TOLL	N	60	348.0	2.8	1.2	1.6	-	-	-	-	±20	480.0	7,312	2239.0	53.0	102.0	122
JMSH0601BGQ	PDFN5x6-8L	SuperSO8	N	60	314.0	2.8	1.0	1.3	-	-	-	-	±20	1,014.0	7,219	1841.0	47.0	102.0	102
JMSH0602AKQ	TO-252-3L	DPAK	N	60	206.0	3.0	2.2	2.8	-	-	-	-	±20	600.0	6,240	3779.0	247.0	81.0	178
JMSH0603AKQ	TO-252-3L	DPAK	N	60	151.0	2.8	2.6	3.3	-	-	-	-	±20	338.0	2,312	1654.0	180.0	51.0	133
JMSL0612AGQ	PDFN5x6-8L	SuperSO8	N	60	52.0	1.6	9.5	12.0	12.0	16.0	-	-	±20	20.0	731	224.0	7.4	13.9	132
JMSL0612AUQ	PDFN3x3-8L	PQFN 3x3	N	60	36.0	1.6	10.0	12.5	12.3	16.0	-	-	±20	20.0	731	224.0	7.4	13.9	139
JMSL0615AGDQ	PDFN5x6-8L-D	-	N+N	60	33.0	1.6	10.5	13.5	13.5	17.5	-	-	±20	20.0	731	224.0	7.4	13.9	146
JMSL0609AGQ	PDFN5x6-8L	SuperSO8	N	60	67.0	1.6	7.2	9.4	9.0	12.0	-	-	±20	34.0	1,087	309.0	8.5	16.6	120
JMSL0609AGWQ	PDFN5x6-8L-W	SuperSO8	N	60	67.0	1.6	7.2	9.4	9.0	12.0	-	-	±20	34.0	1,087	309.0	8.5	16.6	120
JMSL0609AKQ	TO-252-3L	DPAK	N	60	59.0	1.6	7.4	9.4	9.5	12.4	-	-	±20	74.0	1,110	352.0	12.0	18.3	135
JMSL0609AUQ	PDFN3x3-8L	PQFN 3x3	N	60	44.0	1.6	7.5	9.4	9.4	12.2	-	-	±20	34.0	1,087	309.0	8.5	16.6	125
JMSL0610AGDQ	PDFN5x6-8L-D	-	N+N	60	38.0	1.6	8.5	10.6	10.2	13.0	-	-	±20	34.0	1,087	309.0	8.5	16.6	141
JMSL0604AGQ	PDFN5x6-8L	SuperSO8	N	60	112.0	1.6	3.6	4.5	4.7	5.9	-	-	±20	94.0	2,030	445.0	4.4	32.0	115
JMSL0606AGQ	PDFN5x6-8L	SuperSO8	N	60	103.0	1.6	4.0	5.0	5.2	6.5	-	-	±20	94.0	2,030	445.0	4.4	32.0	128
JMSL0606AGWQ	PDFN5x6-8L-W	SuperSO8	N	60	103.0	1.6	4.0	5.0	5.2	6.5	-	-	±20	94.0	2,030	445.0	4.4	32.0	128
JMSH0606AGQ	PDFN5x6-8L	SuperSO8	N	60	103.0	2.9	3.7	4.7	-	-	-	-	±20	216.0	1,492	940.0	109.0	34.0	126
JMSL0606AKQ	TO-252-3L	DPAK	N	60	93.0	1.6	4.6	5.8	6.0	7.5	-	-	±20	94.0	2,122	440.0	4.4	32.0	147
JMSH0606AKQ	TO-252-3L	DPAK	N	60	95.0	2.8	4.4	5.5	-	-	-	-	±20	216.0	1,492	940.0	109.0	34.0	150
JMSL0606AUQ	PDFN3x3-8L	PQFN 3x3	N	60	59.0	1.6	5.0	6.2	6.0	7.8	-	-	±20	94.0	2,122	440.0	4.4	32.0	160
JMSL0605AGDQ	PDFN5x6-8L-D	SuperSO8	N+N	60	61.0	1.6	4.4	5.5	5.6	7.3	-	-	±20	182.0	1,966	596.0	36.0	33.0	145
JMSL0603BGQ	PDFN5x6-8L	SuperSO8	N	60	147.0	1.6	2.4	3.0	3.4	4.4	-	-	±20	338.0	3,174	872.0	39.0	51.0	122

-100 ~ 650V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(th)} Typ (V)	R _{DS(on) Typ} @V _{GS} =10V (mΩ)	R _{DS(on) Max} @V _{GS} =10V (mΩ)	R _{DS(on) Typ} @V _{GS} =4.5V (mΩ)	R _{DS(on) Max} @V _{GS} =4.5V (mΩ)	R _{DS(on) Typ} @V _{GS} =2.5V (mΩ)	R _{DS(on) Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss Typ} (pF)	C _{oss Typ} (pF)	C _{res Typ} (pF)	Q _{s Typ} (nC)	FOM
JMSL0601BGQ	PDFN5x6-8L	SuperSO8	N	60	252.0	1.6	1.3	1.6	1.8	2.5	-	-	±20	1,634.0	4,685	1429.0	40.0	75.0	94
JMSL0612AKQ	TO-252-3L	DPAK	N	60	57.0	1.7	9.9	12.0	12.6	16.0	-	-	±20	58.0	734	204.0	26.0	13.1	130
JMSL0602AGQ	PDFN5x6-8L	SuperSO8	N	60	172.0	1.7	1.8	2.3	2.4	3.2	-	-	±20	240.0	2,880	958.0	44.0	48.0	86
JMSL0620AGEQ	PDFN5x6-8L	SuperSO8	N	60	32.0	1.8	16.0	20.0	23.0	30.0	-	-	±20	26.0	409	143.0	24.0	7.5	120
JMSH1001AE7Q	TO-263-7L	-	N	100	350.0	2.8	1.6	2.0	-	-	-	-	±20	512.0	9,623	2091.0	1.2	155.0	248
JMSH1008AKQ	TO-252-3L	DPAK	N	100	92.0	2.8	6.9	8.3	-	-	-	-	±20	109.0	2,360	368.0	5.9	34.0	235
JMSL1008AKQ	TO-252-3L	DPAK	N	100	98.0	1.6	6.7	8.1	8.5	11.0	-	-	±20	118.0	2,360	368.0	5.9	34.0	228
JMSH1008AGQ	PDFN5x6-8L	SuperSO8	N	100	87.0	2.7	6.2	7.8	-	-	-	-	±20	144.0	1,920	445.0	7.0	30.0	186
JMSL1008AGQ	PDFN5x6-8L	SuperSO8	N	100	88.0	1.8	6.0	7.6	8.0	10.0	-	-	±20	102.0	2,200	445.0	8.0	34.0	204
JMSL1009AGQ	PDFN5x6-8L	SuperSO8	N	100	80.0	1.7	7.0	8.2	8.9	11.2	-	-	±20	165.0	1,314	548.0	26.0	25.0	175
JMSL1010AUQ	PDFN3x3-8L	PQFN 3x3	N	100	46.0	1.9	8.5	10.6	10.5	13.7	-	-	±20	45.0	1,535	335.0	8.2	26.0	221
JMSL1010AGQ	PDFN5x6-8L	SuperSO8	N	100	68.0	1.9	8.0	10.0	10.5	13.7	-	-	±20	94.0	1,535	335.0	8.2	26.0	208
JMSL1010AKQ	TO-252-3L	DPAK	N	100	86.0	1.9	8.3	10.0	10.8	13.5	-	-	±20	94.0	1,535	335.0	8.2	26.0	216
JMSH1010AGQ	PDFN5x6-8L	SuperSO8	N	100	64.0	2.7	8.8	11.0	-	-	-	-	±20	94.0	1,372	291.0	6.2	21.0	185
JMSL1040AGQ	PDFN5x6-8L	SuperSO8	N	100	27.0	1.8	29.0	36.0	39.0	50.0	-	-	±20	14.0	363	85.0	3.0	6.8	197
JMSL1040AUQ	PDFN3x3-8L	PQFN 3x3	N	100	20.0	1.8	29.0	39.0	39.0	50.0	-	-	±20	14.0	363	85.0	3.0	6.8	197
JMSL1018AGQ	PDFN5x6-8L	SuperSO8	N	100	47.0	1.8	15.0	18.7	18.7	24.4	-	-	±20	29.0	769	171.0	5.1	12.7	191
JMSL1018AUQ	PDFN3x3-8L	PQFN 3x3	N	100	29.0	1.8	16.2	20.0	20.8	27.0	-	-	±20	29.0	769	171.0	5.1	12.7	206
JMSL1020AGDQ	PDFN5x6-8L-D	-	N+N	100	27.0	1.8	16.5	20.0	21.0	27.0	-	-	±20	29.0	769	171.0	5.1	12.7	210
JMSL1006AGQ	PDFN5x6-8L	SuperSO8	N	100	110.0	1.8	4.7	5.9	5.9	7.7	-	-	±20	110.0	2,604	567.0	9.6	42.0	197
JMSL1018AKQ	TO-252-3L	DPAK	N	100	45.0	1.9	15.0	18.8	19.5	26.0	-	-	±20	43.0	769	171.0	5.1	12.7	191
JMSH1018AGQ	PDFN5x6-8L	SuperSO8	N	100	45.0	2.7	15.8	19.8	-	-	-	-	±20	39.0	769	171.0	5.1	12.7	201
JMSH1004BGQ	PDFN5x6-8L	SuperSO8	N	100	138.0	2.7	3.3	4.3	-	-	-	-	±20	231.0	3,434	906.0	14.0	57.0	188
JMSH1004BGWQ	PDFN5x6-8L-W	-	N	100	152.0	2.9	3.6	4.3	-	-	-	-	±20	450.0	3,434	906.0	14.0	57.0	205
JMSH1004BEQ	TO-263-3L	D ² PAK	N	100	160.0	2.7	3.5	4.2	-	-	-	-	±20	304.0	3,433	905.0	13.0	57.0	200
JMSH1003AGQ	PDFN5x6-8L	SuperSO8	N	100	170.0	2.7	2.8	3.5	-	-	-	-	±20	346.0	4,374	1140.0	4.7	70.0	196
JMSH1003AGWQ	PDFN5x6-8L-W	-	N	100	178.0	2.9	2.8	3.4	-	-	-	-	±20	481.0	4,797	900.0	19.1	69.0	193
JMSH1004AEQ	TO-263-3L	-	N	100	216.0	2.7	3.0	3.8	-	-	-	-	±20	375.0	4,398	1361.0	8.5	66.0	198
JMSH1003AE7Q	TO-263-7L	D ² PAK7	N	100	196.0	2.7	2.8	3.5	-	-	-	-	±20	406.0	4,398	1361.0	8.5	66.0	185
JMSH1002AEQ	TO-263-3L	D ² PAK	N	100	350.0	2.7	1.6	2.0	-	-	-	-	±20	1,250.0	9,623	2091.0	1.2	155.0	248
JMSH1010AKQ	TO-252-3L	DPAK	N	100	79.0	2.8	9.2	11.5	-	-	-	-	±20	86.0	1,372	291.0	6.2	21.0	193
JMSH1001ATLQ	PowerJE*10x12	TOLL	N	100	348.0	2.8	1.3	1.6	-	-	-	-	±20	512.0	9,623	2091.0	1.2	155.0	202
JMSH1508AEQ	TO-263-3L	D ² PAK	N	150	117.0	3.2	6.7	8.4	-	-	-	-	±20	265.0	3,395	457.0	17.0	47.0	315
JMSH1509AGQ	PDFN5x6-8L	SuperSO8	N	150	87.0	3.2	8.5	9.9	-	-	-	-	±20	331.0	2,181	363.0	7.9	30.0	255
JMSH1516AEQ	TO-263-3L	D ² PAK	N	150	71.0	3.2	14.0	16.8	-	-	-	-	±20	192.0	1,603	196.0	7.5	23.0	322
JMSH1506ASQ	TO-247-3L	TO-247	N	150	174.0	3.2	5.2	6.5	-	-	-	-	±20	540.0	4,320	535.0	7.2	68.0	354
JMSH1507AEQ	TO-263-3L	D ² PAK	N	150	161.0	3.2	5.2	6.5	-	-	-	-	±20	540.0	4,320	535.0	7.2	68.0	354
JMSH1504ATLQ	PowerJE*10x12	TOLL	N	150	227.0	3.2	3.3	4.2	-	-	-	-	±20	800.0	6,540	772.0	6.7	88.0	290
JMSH1504AEQ	TO-263-3L	D ² PAK	N	150	210.0	3.2	3.9	4.9	-	-	-	-	±20	889.0	6,540	772.0	6.7	88.0	343
JMSH1504ASQ	TO-247-3L	TO-247	N	150	230.0	3.2	4.0	4.9	-	-	-	-	±20	889.0	6,540	772.0	6.7	88.0	352
JMSH1535AGQ	PDFN5x6-8L	SuperSO8	N	150	29.0	3.3	27.0	35.0	-	-	-	-	±20	48.0	760	113.0	23.0	12.3	332
JMH65R980AKQ	TO-252-3L	DPAK	N	650	4.0	3.5	820.0	980.0	-	-	-	-	±20	80.0	333	20.0	2.5	9.7	7,954
JMH65R040ASFQ	TO-247-3L	TO-247	N	650	71.0	4.0	35.0	40.0	-	-	-	-	±20	1,125.0	6,843	250.0	4.3	163.0	5,705

Consumer / Industrial-grade MOSFETs with $V_{DS_Max} = -100 \sim 400V$

These LV ($-30V \leq V_{DS_Max} \leq 30V$) and MV ($-100V \leq V_{DS_Max} \leq 40V$, $40V \leq V_{DS_Max} < 400V$) MOSFETs of N-ch or P-ch are designed on either trench or SGT technology platform. While the trench-type MOSFETs generally have higher stamina (i.e. E_{AS}) than the SGT-type MOSFETs at the same die size, the latter would offer lower $R_{DS(ON)}$, Q_g and C_{iss} hence lower conduction and switching losses.

For consumer electronics (fast chargers, FPTVs, personal audio, home appliances, gaming & toys, personal computing, power tools, automobiles, etc.), networking equipment (router, multi-port switches, web / storage / security servers, etc.), communication equipment (4G/5G base stations, BBU, RRUs, AAUs, etc.), industrial equipment (robotics, factory, industrial PCs, energy storage system, solar/wind/hydro power generation, farming, public transportation, etc.), JJM offers the following low/mid-voltage MOSFETs to meet the diverse needs of system designers.

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V_{DS_Max} (V)	I_{D_Max} (A)	$V_{GS(th)_Typ}$ (V)	$R_{DS(ON)_Typ}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON)_Max}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON)_Typ}$ @ $V_{GS}=4.5V$ (m Ω)	$R_{DS(ON)_MAX}$ @ $V_{GS}=4.5V$ (m Ω)	$R_{DS(ON)_Typ}$ @ $V_{GS}=2.5V$ (m Ω)	$R_{DS(ON)_MAX}$ @ $V_{GS}=2.5V$ (m Ω)	V_{GS_Max} (V)	E_{AS_Max} (mJ)	C_{iss_Typ} (pF)	C_{oss_Typ} (pF)	C_{riss_Typ} (pF)	Q_g_Typ (nC)	FOM
JMTK085P04A	TO-252-3L	DDPAK	P	-40	-70.0	-1.5	7.1	9.2	9.3	13.0	-	-	±20	182.0	7,200	625.0	437.0	115.0	817
JMTC085P04A	TO-220C-3L	TO-220	P	-40	-70.0	-1.5	8.0	10.0	11.0	15.0	-	-	±20	324.0	7,200	625.0	437.0	115.0	920
JMTK130P04A	TO-252-3L	DDPAK	P	-40	-40.0	-1.7	10.0	13.0	15.0	22.0	-	-	±20	144.0	3,800	329.0	289.0	68.0	680
JMTG130P04A	PDFN5x6-8L	SuperS08	P	-40	-35.0	-1.7	9.4	12.5	13.4	18.5	-	-	±20	132.0	3,800	329.0	289.0	68.0	639
JMTP130P04A	SOP-8	SOP-8	P	-40	-12.0	-1.7	11.0	14.3	15.5	22.0	-	-	±20	-	3,800	329.0	289.0	68.0	748
JMTQ130P04A	PDFN3x3-8L	PQFN 3x3	P	-40	-30.0	-1.5	10.3	13.0	13.6	19.0	-	-	±20	96.0	3,700	340.0	290.0	42.0	433
JMTP520P04A	SOP-8	SOP-8	P	-40	-5.5	-1.6	39.0	51.0	56.0	78.0	-	-	±20	-	869	94.0	69.0	17.3	675
JMTK440P04A	TO-252-3L	DDPAK	P	-40	-10.0	-1.6	34.0	44.0	44.0	60.0	-	-	±20	-	1,034	107.0	79.5	20.0	680
JMTQ440P04A	PDFN3x3-8L	PQFN 3x3	P	-40	-8.0	-1.6	33.0	43.0	44.0	60.0	-	-	±20	25.0	1,034	107.0	79.5	20.0	660
JMTP440P04A	SOP-8	SOP-8	P	-40	-6.0	-1.5	36.0	47.0	47.0	66.0	-	-	±20	27.6	1,034	107.0	79.5	20.0	720
JMTP850P04A	SOP-8	SOP-8	P	-40	-5.0	-1.6	65.0	85.0	80.0	112.0	-	-	±20	-	573	53.0	42.0	7.1	462
JMTL850P04A	SOT-23	SOT-23	P	-40	-5.0	-1.6	70.0	90.0	90.0	125.0	-	-	±20	-	573	53.0	42.0	7.1	497
JMTM850P04A	SOT-23-6L	-	P	-40	-5.0	-1.6	66.0	85.0	82.0	115.0	-	-	±20	-	573	53.0	42.0	7.1	469
JMTG050P03A	PDFN5x6-8L	SuperS08	P	-30	-80.0	-1.5	3.3	4.3	5.1	7.2	-	-	±20	225.0	9,400	1,000.0	767.0	42.0	139
JMTK050P03A	TO-252-3L	DDPAK	P	-30	-100.0	-1.5	4.0	5.3	5.8	8.2	-	-	±20	225.0	9,400	1,000.0	767.0	42.0	168
JMTK060P03A	TO-252-3L	DDPAK	P	-30	-90.0	-1.6	4.9	6.4	7.5	10.5	-	-	±20	210.0	6,800	769.0	726.0	30.0	147
JMTG060P03A	PDFN5x6-8L	SuperS08	P	-30	-75.0	-1.6	4.3	5.6	7.0	9.8	-	-	±20	210.0	6,800	769.0	726.0	30.0	129
JMTQ080P03A	PDFN3x3-8L	PQFN 3x3	P	-30	-45.0	-1.5	5.8	7.5	9.0	12.6	-	-	±20	144.0	4,650	550.0	486.0	45.0	261
JMTK080P03A	TO-252-3L	DDPAK	P	-30	-60.0	-1.5	5.8	7.5	9.0	12.6	-	-	±20	144.0	4,650	550.0	486.0	76.0	441
JMTI080P03A	TO-251-3L	DDPAK3	P	-30	-60.0	-1.5	5.8	7.5	9.0	12.6	-	-	±20	144.0	4,650	550.0	486.0	45.0	261
JMTG080P03A	PDFN5x6-8L	SuperS08	P	-30	-50.0	-1.5	6.0	7.8	9.0	12.6	-	-	±20	144.0	4,650	550.0	486.0	76.0	456
JMTP080P03A	SOP-8	SOP-8	P	-30	-15.0	-1.5	7.0	9.0	10.0	14.0	-	-	±20	144.0	4,650	550.0	486.0	45.0	315
JMTQ100P03A	PDFN3x3-8L	PQFN 3x3	P	-30	-40.0	-1.6	7.5	10.0	11.6	16.0	-	-	±20	100.0	3,564	416.0	373.0	37.0	278
JMTK100P03A	TO-252-3L	DDPAK	P	-30	-55.0	-1.6	7.5	10.0	11.6	16.0	-	-	±20	121.0	3,564	416.0	373.0	37.0	278
JMTG100P03A	PDFN5x6-8L	SuperS08	P	-30	-45.0	-1.6	7.6	10.0	12.0	16.8	-	-	±20	113.0	3,564	416.0	373.0	37.0	281
JMTK50P03A	TO-252-3L	DDPAK	P	-30	-50.0	-1.5	8.6	11.0	13.0	18.0	-	-	±20	78.8	2,800	346.0	319.0	30.0	258
JMTQ4407A	PDFN3x3-8L	PQFN 3x3	P	-30	-35.0	-1.5	8.6	11.0	13.0	18.0	-	-	±20	78.8	2,800	346.0	319.0	30.0	258
JMTP4407A	SOP-8	SOP-8	P	-30	-12.0	-1.5	9.3	14.0	14.0	20.0	-	-	±20	64.0	2,800	346.0	319.0	30.0	279
JMTK160P03A	TO-252-3L	DDPAK	P	-30	-45.0	-1.6	10.0	14.0	16.0	22.5	-	-	±20	64.0	2,130	280.0	252.0	40.0	400
JMTP160P03D	SOP-8	SOP-8	P+P	-30	-11.0	-1.6	12.7	17.0	19.0	27.0	-	-	±20	68.0	2,130	280.0	252.0	22.0	279

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS,Max} (V)	I _{D,Max} (A)	V _{GS(H),Typ} (V)	R _{DS(ON),Typ} @V _{GS} =10V (mΩ)	R _{DS(ON),Max} @V _{GS} =10V (mΩ)	R _{DS(ON),Typ} @V _{GS} =4.5V (mΩ)	R _{DS(ON),Max} @V _{GS} =4.5V (mΩ)	R _{DS(ON),Typ} @V _{GS} =2.5V (mΩ)	R _{DS(ON),Max} @V _{GS} =2.5V (mΩ)	V _{GS,Max} (V)	E _{AS,Max} (mJ)	C _{iss,Typ} (pF)	C _{oss,Typ} (pF)	C _{res,Typ} (pF)	Q _{s,Typ} (nC)	FOM
JMTQ160P03A	PDFN3x3-8L	PQFN 3x3	P	-30	-15.0	-1.6	11.0	14.0	17.0	24.0	-	-	±20	40.0	2,070	273.0	246.0	22.0	242
JMTP4407B	SOP-8	SOP-8	P	-30	-11.0	-1.5	12.7	16.5	19.0	26.5	-	-	±20	68.0	2,130	280.0	252.0	40.0	508
JMTV200P03A	DFN2020-6L	PQFN 2x2	P	-30	-11.0	-1.5	16.0	20.0	24.0	31.0	-	-	±20	49.0	1,432	186.0	147.0	28.0	448
JMTQ200P03A	PDFN3x3-8L	PQFN 3x3	P	-30	-12.0	-1.5	16.0	21.0	26.0	36.0	-	-	±20	25.0	1,610	195.0	166.0	28.0	448
JMTP4435A	SOP-8	SOP-8	P	-30	-10.0	-1.5	16.0	23.0	25.0	34.0	-	-	±20	-	1,550	327.0	278.0	30.0	480
JMTK340P03A	TO-252-3L	DPAK	P	-30	-20.0	-1.5	26.0	34.0	36.0	50.0	-	-	±20	20.0	968	135.0	109.0	10.0	260
JMTP250P03A	SOP-8	-	P	-30	-9.0	-1.5	19.0	25.0	27.0	38.0	-	-	±20	25.0	1,200	155.0	139.0	52.0	988
JMTP340P03A	SOP-8	SOP-8	P	-30	-7.0	-1.5	27.0	35.0	38.0	54.0	-	-	±20	-	982	135.0	109.0	10.0	270
JMTL3407A	SOT-23	SOT-23	P	-30	-4.1	-1.5	42.0	55.0	62.0	85.0	-	-	±20	-	580	98.0	74.0	11.0	462
JMTP4953A	SOP-8	SOP-8	P+P	-30	-5.1	-1.6	43.0	55.0	66.0	90.0	-	-	±20	-	580	98.0	74.0	6.8	292
JMTP9435A	SOP-8	SOP-8	P	-30	-5.1	-1.6	43.0	55.0	65.0	90.0	-	-	±20	-	596	95.0	68.0	6.8	292
JMTJ3407A	SOT-23-3L	-	P	-30	-4.1	-1.7	44.0	60.0	70.0	85.0	-	-	±20	-	580	98.0	74.0	6.8	299
JMTL3401A	SOT-23	SOT-23	P	-30	-4.2	-0.9	45.0	55.0	53.0	68.0	72.0	96.0	±12	-	880	105.0	65.0	16.0	720
JMTJ3401A	SOT-23-3L	-	P	-30	-4.2	-0.9	48.0	60.0	57.0	78.0	77.0	112.0	±12	-	880	105.0	65.0	8.5	408
JMTG030P02A	PDFN5x6-8L	SuperSO8	P	-20	-85.0	-0.7	-	-	2.1	2.7	2.7	3.8	±12	154.0	15,000	1,600.0	1,068.0	100.0	-
JMTQ55P02A	PDFN3x3-8L	PQFN 3x3	P	-20	-55.0	-0.7	-	-	6.6	8.5	8.0	12.0	±12	-	4,600	460.0	459.0	56.0	-
JMTK50P02A	TO-252-3L	DPAK	P	-20	-60.0	-0.7	-	-	6.6	8.5	8.0	12.0	±12	-	4,590	505.0	440.0	56.0	-
JMTI210P02A	TO-251-3L	DPAK3	P	-20	-20.0	-0.7	-	-	12.0	16.0	17.0	24.0	±12	36.0	2,000	242.0	231.0	16.0	-
JMTP085P02A	SOP-8	-	P	-20	-15.0	-0.7	-	-	7.0	9.0	9.0	13.0	±12	56.0	4,600	460.0	459.0	56.0	-
JMTV210P02A	DFN2020-6L	PQFN 2x2	P	-20	-12.0	-0.7	-	-	17.0	22.0	22.0	30.0	±12	-	2,000	242.0	231.0	16.0	-
JMTV250P02A	DFN2020-6L	PQFN 2x2	P	-20	-10.0	-0.7	-	-	15.3	19.2	21.4	27.8	±12	25.0	1,200	191.0	168.0	14.0	-
JMTV2305A	DFN2020-6L	PQFN 2x2	P	-20	-7.0	-0.7	-	-	25.0	31.0	36.0	47.0	±12	16.0	830	132.0	85.0	8.8	-
JMTJ210P02A	SOT-23-3L	-	P	-20	-7.0	-0.7	-	-	18.7	24.5	22.7	32.0	±12	-	2,000	242.0	231.0	15.3	-
JMTJ250P02A	SOT-23-3L	-	P	-20	-5.0	-0.7	-	-	20.0	26.0	27.0	37.0	±12	-	1,200	191.0	168.0	33.7	-
JMTJ3415KL	SOT-23-3L	-	P	-20	-4.1	-0.7	-	-	29.0	38.0	38.0	53.0	±10	-	289	98.0	22.0	33.7	-
JMTL2305A	SOT-23	SOT-23	P	-20	-4.1	-0.7	-	-	32.0	42.0	42.0	60.0	±12	-	830	132.0	85.0	8.8	-
JMTL3415KL	SOT-23	SOT-23	P	-20	-4.1	-0.7	-	-	31.0	40.0	40.0	56.0	±10	-	289	98.0	22.0	9.0	-
JMTP4953B	SOP-8	-	P+P	-20	-4.0	-0.7	-	-	50.0	65.0	65.0	90.0	±12	-	503	67.0	58.0	4.1	-
JMTM3415KL	SOT-23-6L	-	P	-20	-4.1	-0.7	-	-	30.0	39.0	40.0	56.0	±10	-	289	98.0	22.0	4.1	-
JMTL2301C	SOT-23	SOT-23	P	-20	-3.0	-0.7	-	-	55.0	70.0	70.0	100.0	±12	-	503	67.0	58.0	4.1	-
JMTL2301B	SOT-23	SOT-23	P	-20	-2.5	-0.7	-	-	80.0	104.0	110.0	154.0	±12	-	248	42.0	31.0	4.1	-
JMTL2301E	SOT-23	SOT-23	P	-20	-2.0	-0.7	-	-	95.0	125.0	135.0	190.0	±12	-	185	35.0	25.0	2.2	-
JMTV2333A	DFN2020-6L	PQFN 2x2	P	-12	-8.0	-0.7	-	-	15.0	20.0	22.0	32.0	±12	-	1,300	302.0	279.0	14.0	-
JMTJ2333A	SOT-23-3L	-	P	-12	-7.0	-0.7	-	-	19.5	27.0	26.5	40.0	±12	-	1,300	302.0	279.0	19.0	-
JMTL2305B	SOT-23	SOT-23	P	-12	-4.1	-0.7	-	-	26.0	36.0	35.0	53.0	±12	-	905	210.0	195.0	7.8	-
JMTQ025N02A	PDFN3x3-8L	PQFN 3x3	N	20	80.0	0.7	2.2	2.9	2.5	3.5	3.7	5.6	±12	150.0	5,392	902.0	366.0	52.0	114
JMTK90N02A	TO-252-3L	DPAK	N	20	90.0	0.7	-	-	2.8	4.0	4.0	6.0	±12	110.0	3,200	460.0	445.0	48.0	-
JMTG90N02A	PDFN5x6-8L	SuperSO8	N	20	75.0	0.7	-	-	3.0	4.5	4.3	6.5	±12	90.0	3,200	460.0	445.0	48.0	-
JMTQ90N02A	PDFN3x3-8L	PQFN 3x3	N	20	60.0	0.7	-	-	2.8	4.0	4.0	6.0	±12	110.0	3,200	460.0	445.0	48.0	-
JMTK75N02A	TO-252-3L	DPAK	N	20	75.0	0.7	-	-	4.1	5.0	6.5	9.0	±12	56.2	2,500	407.0	386.0	32.0	-
JMTI080N02A	TO-251-3L	DPAK3	N	20	50.0	0.7	-	-	6.0	8.0	8.3	12.0	±12	36.0	1,458	238.0	212.0	16.0	-
JMTQ050N02A	PDFN3x3-8L	PQFN 3x3	N	20	50.0	0.7	-	-	3.8	5.0	5.5	8.0	±12	56.2	2,500	407.0	386.0	23.0	-
JMTK2006A	TO-252-3L	DPAK	N	20	60.0	0.7	-	-	4.8	6.5	6.8	10.0	±12	47.6	1,832	289.0	271.0	23.0	-
JMTK2007A	TO-252-3L	DPAK	N	20	50.0	0.7	-	-	6.3	8.0	8.8	13.0	±12	36.0	1,458	238.0	212.0	19.0	-
JMTK100N02A	TO-252-3L	DPAK	N	20	30.0	0.8	-	-	8.0	11.2	11.7	17.5	±12	23.0	1,000	182.0	164.0	19.0	-

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(th)} Typ (V)	R _{DS(on) Typ} @V _{GS} =10V (mΩ)	R _{DS(on) Max} @V _{GS} =10V (mΩ)	R _{DS(on) Typ} @V _{GS} =4.5V (mΩ)	R _{DS(on) Max} @V _{GS} =4.5V (mΩ)	R _{DS(on) Typ} @V _{GS} =2.5V (mΩ)	R _{DS(on) Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss Typ} (pF)	C _{oss Typ} (pF)	C _{rrs Typ} (pF)	Q _{s Typ} (nC)	FOM
JMTV070N02A	DFN2020-6L	PQFN 2x2	N	20	25.0	0.7	-	-	5.3	6.6	7.4	9.6	±12	49.0	1,567	281.0	239.0	19.0	-
JMTV080N02A	DFN2020-6L	PQFN 2x2	N	20	20.0	0.7	-	-	6.5	8.1	8.9	11.6	±12	42.0	1,210	240.0	212.0	15.0	-
JMTV100N02A	DFN2020-6L	PQFN 2x2	N	20	10.0	0.8	-	-	10.0	13.0	15.0	21.0	±12	-	946	204.0	178.0	15.0	-
JMTJ100N02A	SOT-23-3L	-	N	20	8.0	0.8	-	-	11.0	14.0	16.0	22.5	±12	-	1,000	182.0	164.0	15.0	-
JMTL2312A	SOT-23	SOT-23	N	20	6.8	0.7	-	-	16.0	21.0	20.0	30.0	±12	-	780	140.0	80.0	9.0	-
JMTL3416KS	SOT-23	SOT-23	N	20	5.0	0.7	-	-	17.0	22.0	26.0	36.0	±10	-	545	103.0	90.0	8.0	-
JMTL2302C	SOT-23	SOT-23	N	20	4.0	0.7	-	-	21.0	27.0	29.0	44.0	±12	-	358	69.3	58.5	8.0	-
JMTJ2302C	SOT-23-3L	-	N	20	4.0	0.7	-	-	22.0	29.0	29.0	44.0	±12	-	358	69.3	58.5	5.6	-
JMTM8810KS	SOT-23-6L	-	N+N	20	4.8	0.7	-	-	15.0	20.0	25.0	35.0	±10	-	545	103.0	90.0	5.6	-
JMTT8810KS	TSSOP-8	-	N+N	20	4.8	0.7	-	-	17.0	22.0	25.0	35.0	±10	-	545	103.0	90.0	8.0	-
JMTP9926A	SOP-8	SOP-8	N+N	20	6.5	0.7	-	-	14.0	17.5	18.0	23.4	±12	25.0	651	122.0	107.0	9.0	-
JMTP9926B	SOP-8	SOP-8	N+N	20	6.0	0.7	-	-	20.0	28.0	25.5	38.0	±12	-	358	69.3	58.5	5.6	-
JMTL2302B	SOT-23	SOT-23	N	20	3.0	0.7	-	-	45.0	55.0	62.0	85.0	±12	-	184	38.0	28.0	5.6	-
JMTD3134K	DFN1006-3L	-	N	20	0.8	0.7	-	-	125.0	165.0	185.0	260.0	±10	-	60	22.0	12.0	1.0	-
JMTL3134KT5	SOT-523-3L	-	N	20	0.8	0.7	-	-	145.0	190.0	225.0	315.0	±10	-	60	22.0	12.0	1.0	-
JMTL3134KT7	SOT-723-3L	-	N	20	0.8	0.7	-	-	120.0	160.0	180.0	260.0	±10	-	60	22.0	12.0	1.0	-
JMTL3134K	SOT-23	SOT-23	N	20	0.9	0.7	-	-	135.0	175.0	195.0	275.0	±10	-	60	22.0	12.0	1.0	-
JMTLA3134K	SOT-323-3L	-	N	20	0.9	0.7	-	-	135.0	175.0	195.0	275.0	±10	-	60	22.0	12.0	1.0	-
JMTLB3134K	SOT-363-6L	-	N+N	20	0.9	0.7	-	-	135.0	175.0	195.0	275.0	±10	-	60	22.0	12.0	1.0	-
JMTG3002B	PDFN5x6-8L	SuperSO8	N	30	120.0	1.5	1.8	2.4	3.2	5.0	-	-	±20	240.0	4,930	682.0	566.0	93.0	167
JMTE018N03A	TO-263-3L	D ² PAK	N	30	190.0	1.6	1.7	2.3	2.6	3.7	-	-	±20	441.0	6,847	940.0	604.0	93.0	158
JMTC018N03A	TO-220C-3L	TO-220	N	30	190.0	1.7	2.1	2.7	3.0	4.2	-	-	±20	225.0	6,006	931.0	557.0	93.0	195
JMTK018N03A	TO-252-3L	DPAK	N	30	190.0	1.6	2.0	2.6	3.0	4.2	-	-	±20	441.0	6,847	940.0	604.0	93.0	186
JMTG018N03A	PDFN5x6-8L	SuperSO8	N	30	130.0	1.6	1.4	1.8	2.3	3.2	-	-	±20	225.0	6,682	971.0	627.0	93.0	130
JMTE3002B	TO-263-3L	D ² PAK	N	30	180.0	1.5	2.0	2.4	3.5	5.0	-	-	±20	324.0	4,930	682.0	566.0	93.0	181
JMTK3002B	TO-252-3L	DPAK	N	30	180.0	1.5	2.1	2.7	3.5	5.0	-	-	±20	324.0	4,930	682.0	566.0	70.0	147
JMTE3003A	TO-263-3L	D ² PAK	N	30	150.0	1.5	2.3	3.0	4.2	6.0	-	-	±20	225.0	3,500	500.0	431.0	38.0	87
JMTC3003A	TO-220C-3L	TO-220	N	30	150.0	1.6	2.3	3.0	4.2	6.0	-	-	±20	225.0	3,500	500.0	431.0	38.0	87
JMTG3003A	PDFN5x6-8L	SuperSO8	N	30	90.0	1.6	2.2	2.9	3.9	5.5	-	-	±20	225.0	3,500	500.0	431.0	38.0	84
JMTQ3003A	PDFN3x3-8L	PQFN 3x3	N	30	80.0	1.6	2.5	3.3	4.5	6.5	-	-	±20	225.0	3,500	500.0	431.0	70.0	175
JMTK3003A	TO-252-3L	DPAK	N	30	150.0	1.6	2.5	3.3	4.5	6.5	-	-	±20	225.0	3,500	500.0	431.0	38.0	95
JMTG040N03A	PDFN5x6-8L	SuperSO8	N	30	80.0	1.5	2.8	4.0	4.7	6.5	-	-	±20	121.0	2,680	393.0	330.0	30.0	84
JMTK3004A	TO-252-3L	DPAK	N	30	100.0	1.5	2.9	4.0	4.8	6.5	-	-	±20	121.0	2,680	393.0	330.0	30.0	87
JMTK3005L	TO-252-3L	DPAK	N	30	90.0	1.1	3.0	4.0	4.7	6.6	-	-	±20	81.0	1,700	320.0	300.0	45.0	135
JMTQ040N03A	PDFN3x3-8L	PQFN 3x3	N	30	60.0	1.5	3.4	4.4	5.4	7.5	-	-	±20	81.0	2,750	413.0	360.0	30.0	102
JMTI3005A	TO-251-3L	DPAK3	N	30	90.0	1.5	3.1	4.5	5.2	9.5	-	-	±20	81.0	2,100	326.0	282.0	30.0	93
JMTK3005A	TO-252-3L	DPAK	N	30	90.0	1.5	3.3	4.5	6.7	9.5	-	-	±20	95.0	2,100	326.0	282.0	45.0	149
JMTQ3005A	PDFN3x3-8L	PQFN 3x3	N	30	50.0	1.5	3.5	4.7	7.0	10.0	-	-	±20	85.0	2,100	326.0	282.0	45.0	158
JMTC3005A	TO-220C-3L	TO-220	N	30	90.0	1.5	3.8	5.0	7.0	10.0	-	-	±20	90.0	1,950	320.0	240.0	45.0	171
JMTG3005A	PDFN5x6-8L	SuperSO8	N	30	60.0	1.5	3.8	5.0	7.5	11.0	-	-	±20	85.0	2,100	326.0	282.0	45.0	171
JMTP045N03A	SOP-8	SOP-8	N	30	20.0	1.0	4.6	6.0	6.1	8.6	-	-	±20	100.0	1,700	320.0	300.0	45.0	207
JMTK3006B	TO-252-3L	DPAK	N	30	70.0	1.5	4.8	6.0	7.5	12.0	-	-	±20	56.0	1,614	245.0	215.0	33.7	162
JMTQ3006B	PDFN3x3-8L	PQFN 3x3	N	30	40.0	1.5	4.9	6.5	7.9	12.5	-	-	±20	56.0	1,614	245.0	215.0	35.0	172
JMTK50N03A	TO-252-3L	DPAK	N	30	50.0	1.5	5.8	7.5	10.0	14.0	-	-	±20	36.0	1,140	175.0	151.0	35.0	203
JMTG3008A	PDFN5x6-8L	SuperSO8	N	30	40.0	1.5	6.6	8.6	11.0	15.0	-	-	±20	39.0	1,116	187.0	152.0	13.3	88
JMTQ3008A	PDFN3x3-8L	PQFN 3x3	N	30	30.0	1.5	6.0	8.0	9.5	14.0	-	-	±20	39.0	1,116	187.0	152.0	24.0	144
JMTQ075N03D	PDFN3x3-8L	PQFN 3x3	N+N	30	25.0	1.5	8.7	11.0	13.0	18.0	-	-	±20	30.0	1,116	187.0	152.0	13.3	116

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(H)} Typ (V)	R _{DS(ON) Typ} @V _{GS} =10V (mΩ)	R _{DS(ON) Max} @V _{GS} =10V (mΩ)	R _{DS(ON) Typ} @V _{GS} =4.5V (mΩ)	R _{DS(ON) Max} @V _{GS} =4.5V (mΩ)	R _{DS(ON) Typ} @V _{GS} =2.5V (mΩ)	R _{DS(ON) Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss Typ} (pF)	C _{oss Typ} (pF)	C _{rrs Typ} (pF)	Q _{s Typ} (nC)	FOM
JMTP3008A	SOP-8	SOP-8	N	30	15.0	1.5	6.2	8.0	10.0	14.0	-	-	±20	39.0	1,116	187.0	152.0	13.3	82
JMTV3010A	DFN2020-6L	PQFN 2x2	N	30	20.0	1.5	7.5	10.0	11.5	17.0	-	-	±20	33.0	1,011	142.0	119.0	13.3	100
JMTK100N03A	TO-252-3L	DPAK	N	30	40.0	1.5	7.6	10.0	11.5	17.0	-	-	±20	33.0	1,011	142.0	119.0	19.0	144
JMTP4406A	SOP-8	SOP-8	N	30	13.0	1.5	8.8	12.0	13.0	18.0	-	-	±20	33.0	1,011	142.0	119.0	19.0	167
JMTG100N03A	PDFN5x6-8L	SuperSO8	N	30	30.0	1.5	7.0	9.0	11.0	15.0	-	-	±20	28.0	1,011	142.0	119.0	19.0	133
JMTQ100N03A	PDFN3x3-8L	PQFN 3x3	N	30	25.0	1.5	7.0	9.0	10.5	14.5	-	-	±20	23.0	1,011	142.0	119.0	19.0	133
JMTP3010D	SOP-8	SOP-8	N+N	30	12.0	1.5	9.0	12.0	13.0	18.0	-	-	±20	16.0	1,011	142.0	119.0	19.0	171
JMTQ3010D	PDFN3x3-8L-D	-	N+N	30	22.0	1.5	10.0	13.0	14.0	19.0	-	-	±20	24.0	1,011	142.0	119.0	19.0	190
JMTV075N03A	DFN2020-6L	-	N	30	22.0	1.5	6.3	8.0	9.8	13.0	-	-	±20	42.0	1,072	170.0	128.0	23.0	145
JMTK120N03A	TO-252-3L	DPAK	N	30	20.0	1.5	10.0	13.0	16.0	22.5	-	-	±20	16.0	551	108.0	93.0	15.0	150
JMTQ120N03A	PDFN3x3-8L	PQFN 3x3	N	30	18.0	1.5	10.0	13.0	16.0	22.5	-	-	±20	16.0	633	120.0	99.0	15.0	150
JMTQ120N03D	PDFN3x3-8L-D	-	N+N	30	15.0	1.5	11.0	14.0	18.0	25.0	-	-	±20	12.0	614	118.0	98.0	16.0	176
JMTQ240N03A	PDFN3x3-8L	PQFN 3x3	N	30	12.0	1.5	15.0	20.0	21.0	29.0	-	-	±20	11.0	490	79.0	61.0	5.2	78
JMTV120N03A	DFN2020-6L	-	N	30	12.0	1.5	9.5	12.0	14.2	18.5	-	-	±20	20.0	695	115.0	90.0	15.0	143
JMTQ240N03D	PDFN3x3-8L-D	-	N+N	30	12.0	1.5	15.0	20.0	21.0	29.0	-	-	±20	9.9	490	79.0	61.0	5.2	78
JMTV240N03A	DFN2020-6L	-	N	30	10.0	1.5	14.5	18.0	20.5	27.0	-	-	±20	9.0	490	79.0	61.0	10.0	145
JMTP240N03D	SOP-8	-	N+N	30	9.0	1.5	15.0	20.0	21.0	29.0	-	-	±20	9.0	490	79.0	61.0	10.0	150
JMTP260N03D	SOP-8	SOP-8	N+N	30	8.0	0.9	18.0	25.0	20.0	30.0	25.0	40.0	±12	-	702	66.0	52.0	4.8	86
JMTL3404A	SOT-23	SOT-23	N	30	5.8	1.5	18.0	25.0	28.0	40.0	-	-	±20	-	490	79.0	61.0	5.2	94
JMTV3400A	DFN2020-6L	PQFN 2x2	N	30	8.0	0.9	17.0	22.0	19.0	27.0	25.0	38.0	±12	-	702	66.0	52.0	7.5	128
JMTL3400A	SOT-23	SOT-23	N	30	5.8	0.9	19.0	26.0	23.0	32.0	35.0	50.0	±12	-	702	66.0	52.0	7.5	143
JMTJ3400A	SOT-23-3L	-	N	30	5.8	0.9	20.4	26.0	23.0	32.0	30.0	50.0	±12	-	702	66.0	52.0	4.8	98
JMTL3400L	SOT-23	SOT-23	N	30	5.0	0.9	24.0	31.0	27.0	38.0	36.0	54.0	±12	-	507	52.0	43.0	9.1	218
JMTM300N03D	SOT-23-6L	-	N+N	30	4.8	0.9	25.0	33.0	28.0	39.0	38.0	57.0	±12	-	507	52.0	43.0	9.1	228
JMTP380N03D	SOP-8	-	N	30	4.5	1.5	28.0	36.0	40.0	56.0	-	-	±20	3.0	233	44.0	33.0	3.0	84
JMTL3402A	SOT-23	SOT-23	N	30	4.0	0.9	32.0	42.0	36.0	48.0	50.0	70.0	±12	-	285	33.0	27.0	2.6	83
JMTL3406A	SOT-23	SOT-23	N	30	4.0	1.5	29.0	38.0	45.0	65.0	-	-	±20	-	233	44.0	33.0	3.0	87
JMTM3406D	SOT-23-6L	-	N+N	30	3.8	1.5	29.0	38.0	46.0	65.0	-	-	±20	-	233	44.0	33.0	3.0	87
JMTG016N04A	PDFN5x6-8L	SuperSO8	N	40	210.0	1.7	1.2	1.6	2.1	3.0	-	-	±20	420.0	14,700	843.0	830.0	3.0	4
JMTC025N04D	TO-220C-3L	TO-220	N	40	190.0	3.0	1.9	2.6	-	-	-	-	±25	576.0	9,060	1,000.0	666.0	145.0	276
JMTE025N04D	TO-263-3L	D2PAK	N	40	190.0	3.0	1.9	2.6	-	-	-	-	±25	576.0	9,060	1,000.0	666.0	145.0	276
JMTG4004A	PDFN5x6-8L	SuperSO8	N	40	100.0	1.6	2.7	3.5	3.8	5.4	-	-	±20	150.0	5,595	411.0	340.0	65.0	176
JMTK035N04L	TO-252-3L	DPAK	N	40	150.0	1.5	2.9	3.8	3.9	5.5	-	-	±20	196.0	6,857	495.0	322.0	89.0	258
JMTG035N04L	PDFN5x6-8L	SuperSO8	N	40	100.0	1.5	2.2	2.9	3.2	4.5	-	-	±20	196.0	6,857	495.0	322.0	89.0	196
JMTG035N04A	PDFN5x6-8L	SuperSO8	N	40	100.0	2.8	2.7	3.5	-	-	-	-	±25	272.0	4,900	528.0	317.0	89.0	240
JMTE035N04A	TO-263-3L	D ² PAK	N	40	150.0	2.8	3.0	4.0	-	-	-	-	±25	272.0	4,900	528.0	317.0	80.0	240
JMTC035N04A	TO-220C-3L	TO-220	N	40	150.0	2.8	3.0	4.0	-	-	-	-	±25	256.0	4,900	528.0	317.0	80.0	240
JMTK4004A	TO-252-3L	DPAK	N	40	120.0	1.6	3.3	4.3	5.4	7.5	-	-	±20	160.0	5,595	411.0	340.0	65.0	215
JMTC4004A	TO-220C-3L	TO-220	N	40	120.0	1.6	3.4	4.5	4.5	6.5	-	-	±20	148.0	5,595	411.0	340.0	65.0	221
JMTK4005A	TO-252-3L	DPAK	N	40	80.0	1.5	4.2	5.5	6.5	10.0	-	-	±20	104.0	3,800	280.0	230.0	65.0	273
JMTG055N04A	PDFN5x6-8L	PDFN5x6-8L	N	40	75.0	1.5	3.6	4.5	5.0	6.5	-	-	±20	132.0	3,392	294.0	198.0	67.0	241
JMTQ055N04A	PDFN3x3-8L	PQFN 3x3	N	40	70.0	1.5	4.3	5.6	6.2	8.7	-	-	±20	78.0	3,671	296.0	239.0	57.0	245
JMTK4006A	TO-252-3L	DPAK	N	40	70.0	1.5	4.8	6.2	7.2	11.0	-	-	±20	96.0	2,956	225.0	197.0	57.0	274
JMTG062N04D	PDFN5x6-8L-D	-	N+N	40	55.0	1.6	6.2	8.0	8.0	11.0	-	-	±20	71.0	2,820	241.0	201.0	20.0	124
JMTG080N04D	PDFN5x6-8L	SuperSO8	N+N	40	45.0	1.5	7.0	9.0	9.0	13.0	-	-	±20	42.0	2,400	192.0	165.0	45.0	315
JMTQ062N04A	PDFN3x3-8L	PQFN 3x3	N	40	50.0	1.6	4.5	6.0	6.5	9.0	-	-	±20	56.0	2,820	241.0	201.0	20.0	90
JMTI60N04A	TO-251-3L	DPAK3	N	40	60.0	1.7	5.5	7.0	9.0	12.0	-	-	±20	81.0	2,400	192.0	165.0	37.0	204
JMTK60N04B	TO-252-3L	DPAK	N	40	60.0	1.7	5.5	7.0	9.0	12.0	-	-	±20	81.0	2,400	192.0	165.0	45.0	248
JMTQ60N04B	PDFN3x3-8L	PQFN 3x3	N	40	40.0	1.7	5.7	7.5	10.0	14.0	-	-	±20	81.0	2,400	192.0	165.0	45.0	257
JMTG100N04A	PDFN5x6-8L	SuperSO8	N	40	40.0	1.5	8.0	10.0	10.0	14.0	-	-	±20	42.0	1,639	148.0	122.0	16.0	128
JMTG60N04B	PDFN5x6-8L	SuperSO8	N	40	50.0	1.7	5.9	7.7	11.0	16.0	-	-	±20	81.0	2,400	192.0	165.0	45.0	266
JMTC60N04B	TO-220C-3L	TO-220	N	40	60.0	1.7	5.9	7.7	9.3	14.0	-	-	±20	81.0	2,400	192.0	165.0	37.0	218
JMTQ130N04D	PDFN3x3-8L-D	-	N+N	40	20.0	1.6	13.0	17.0	16.0	22.0	-	-	±20	25.0	1,250	114.0	85.0	20.0	260
JMTP080N04A	SOP-8	SOP-8	N	40	15.0	1.5	7.0	9.0	10.4	14.0	-	-	±20	81.0	2,400	192.0	165.0	20.0	140
JMTP080N04D	SOP-8	SOP-8	N+N	40	13.0	1.5	9.6	12.5	13.0	18.0	-	-	±20	81.0	2,400	192.0	165.0	37.0	355

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(th)} Typ (V)	R _{DS(on) Typ} @V _{GS} =10V (mΩ)	R _{DS(on) Max} @V _{GS} =10V (mΩ)	R _{DS(on) Typ} @V _{GS} =4.5V (mΩ)	R _{DS(on) Max} @V _{GS} =4.5V (mΩ)	R _{DS(on) Typ} @V _{GS} =2.5V (mΩ)	R _{DS(on) Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss Typ} (pF)	C _{oss Typ} (pF)	C _{res Typ} (pF)	Q _{s Typ} (nC)	FOM
JMTQ100N04A	PDFN3x3-8L	PQFN 3x3	N	40	30.0	1.5	7.7	10.0	9.8	13.7	-	-	±20	81.0	1,639	148.0	122.0	5.1	39
JMTP130N04A	SOP-8	SOP-8	N	40	10.0	1.5	11.0	14.3	14.0	19.6	-	-	±20	6.8	1,250	114.0	85.0	20.0	220
JMTM170N04A	SOT-23-6L	-	N	40	8.0	1.5	17.5	22.5	21.5	30.0	-	-	±20	-	980	86.2	68.5	11.0	193
JMTP400N04A	SOP-8	SOP-8	N	40	6.0	1.5	28.0	37.0	37.0	52.0	-	-	±20	-	435	58.0	35.0	11.0	308
JMTL400N04A	SOT-23	SOT-23	N	40	5.0	1.5	30.0	40.0	40.0	60.0	-	-	±20	-	435	58.0	35.0	11.0	330
JMTC035N06D	TO-220C-3L	TO-220	N	60	180.0	3.0	3.3	4.3	-	-	-	-	±20	324.0	7,636	577.0	488.0	138.0	455
JMTE035N06D	TO-263-3L	D ² PAK	N	60	180.0	3.0	2.9	3.8	-	-	-	-	±20	324.0	7,660	642.0	620.0	138.0	400
JMTC060N06A	TO-220C-3L	TO-220	N	60	120.0	3.0	4.6	6.0	-	-	-	-	±25	400.0	5,672	392.0	352.0	103.0	474
JMTK060N06A	TO-252-3L	DPAK	N	60	120.0	3.0	4.5	5.9	-	-	-	-	±25	225.0	5,672	392.0	352.0	103.0	464
JMTE060N06A	TO-263-3L	D ² PAK	N	60	120.0	3.0	4.6	6.0	-	-	-	-	±25	400.0	5,672	392.0	372.0	80.0	368
JMTG060N06A	PDFN5x6-8L	SuperSO8	N	60	90.0	3.0	3.9	5.0	-	-	-	-	±25	210.0	5,672	392.0	352.0	103.0	402
JMTK80N06A	TO-252-3L	DPAK	N	60	80.0	3.0	5.3	7.0	-	-	-	-	±20	169.0	4,136	286.0	257.0	103.0	546
JMTC80N06A	TO-220C-3L	TO-220	N	60	80.0	3.0	5.3	7.0	-	-	-	-	±20	169.0	4,136	286.0	257.0	90.0	477
JMTG070N06A	PDFN5x6-8L	SuperSO8	N	60	70.0	3.0	4.6	6.0	-	-	-	-	±20	110.0	4,015	310.0	259.0	90.0	414
JMTP075N06A	SOP-8	SOP-8	N	60	17.0	1.7	6.7	9.0	8.5	12.0	-	-	±20	140.0	6,276	300.0	262.0	77.0	516
JMTG100N06A	PDFN5x6-8L	SuperSO8	N	60	55.0	1.7	7.5	10.0	10.0	14.0	-	-	±20	121.0	4,605	215.0	191.0	77.0	578
JMTG100N06D	PDFN5x6-8L-D	-	N+N	60	50.0	1.7	9.5	12.0	11.5	16.0	-	-	±20	100.0	4,605	215.0	191.0	77.0	732
JMTC58N06B	TO-220C-3L	TO-220	N	60	58.0	1.7	7.5	10.0	10.0	14.0	-	-	±20	121.0	4,605	215.0	191.0	77.0	578
JMTK58N06B	TO-252-3L	DPAK	N	60	58.0	1.7	7.5	10.0	10.0	14.0	-	-	±20	110.0	4,400	210.0	190.0	77.0	578
JMTP110N06A	SOP-8	SOP-8	N	60	12.0	1.7	9.5	12.0	12.0	17.0	-	-	±20	121.0	4,605	215.0	191.0	77.0	732
JMTP110N06D	SOP-8	SOP-8	N+N	60	11.0	1.7	11.0	14.0	13.0	18.0	-	-	±20	81.0	4,605	215.0	191.0	77.0	847
JMTK110N06A	TO-252-3L	DPAK	N	60	55.0	3.0	8.0	10.0	-	-	-	-	±25	72.0	2,065	173.0	156.0	77.0	616
JMTK50N06B	TO-252-3L	DPAK	N	60	50.0	1.6	12.0	17.0	16.0	25.0	-	-	±20	64.0	2,900	140.0	120.0	45.0	540
JMTI50N06B	TO-251-3L	DPAK3	N	60	50.0	1.6	12.0	17.0	16.0	25.0	-	-	±20	64.0	2,900	140.0	124.0	50.0	600
JMTQ35N06A	PDFN3x3-8L	PQFN 3x3	N	60	35.0	1.6	12.0	18.0	15.0	27.0	-	-	±20	64.0	2,900	140.0	124.0	45.0	540
JMTG170N06A	PDFN5x6-8L	SuperSO8	N	60	40.0	1.6	12.0	16.0	16.0	22.0	-	-	±20	49.0	2,900	140.0	124.0	45.0	540
JMTP170N06A	SOP-8	SOP-8	N	60	10.0	1.7	12.7	16.5	16.3	23.0	-	-	±20	64.0	2,900	140.0	124.0	50.0	635
JMTP170N06D	SOP-8	SOP-8	N+N	60	9.2	1.6	16.0	21.0	20.0	28.0	-	-	±20	64.0	2,900	140.0	124.0	50.0	800
JMTK290N06A	TO-252-3L	DPAK	N	60	30.0	1.6	21.0	29.0	28.0	40.0	-	-	±20	23.0	1,488	72.0	64.0	25.0	525
JMTI290N06A	TO-251-3L	DPAK3	N	60	20.0	1.6	21.0	29.0	28.0	40.0	-	-	±20	20.0	1,562	75.4	66.8	25.0	525
JMTK330N06A	TO-252-3L	DPAK	N	60	20.0	1.6	26.0	33.0	33.0	45.0	-	-	±20	18.0	1,148	58.5	49.4	20.3	528
JMTY2310A	SOT-223-3L	SOT-223	N	60	5.0	1.5	75.0	100.0	87.0	125.0	-	-	±20	4.0	350	29.0	23.0	9.0	675
JMTP330N06D	SOP-8	SOP-8	N+N	60	5.0	1.6	30.0	40.0	36.0	50.0	-	-	±20	18.9	1,148	58.5	49.4	20.3	609
JMTK480N06A	TO-252-3L	DPAK	N	60	15.0	1.6	38.0	49.0	45.0	63.0	-	-	±20	9.3	825	79.0	41.0	20.3	771
JMTM2310A	SOT-23-6L	-	N	60	3.0	1.4	74.0	100.0	85.0	120.0	-	-	±20	-	350	29.0	23.0	9.0	666
JMTN2310A	SOT-89-3L	-	N	60	3.0	1.5	71.0	92.0	85.0	119.0	-	-	±20	-	350	29.0	23.0	6.0	426
JMTL2310A	SOT-23	SOT-23	N	60	3.0	1.5	75.0	100.0	85.0	120.0	-	-	±20	-	330	90.0	17.0	9.0	675
JMTL2N7002KS	SOT-23	SOT-23	N	60	0.3	1.6	1,690.0	2,200.0	2,050.0	2,870.0	-	-	±20	-	28	11.0	4.0	1.7	2,873
JMTLA2N7002KS	SOT-323-3L	-	N	60	0.2	1.6	1,600.0	2,100.0	1,900.0	2,700.0	-	-	±20	-	28	11.0	4.0	1.7	2,720
JMTLB2N7002KDS	SOT-363-6L	-	N+N	60	0.2	1.6	1,600.0	2,100.0	1,900.0	2,700.0	-	-	±20	-	28	11.0	4.0	1.7	2,720
JMTD2N7002KS	DFN1006-3L	-	N	60	0.2	1.6	1,660.0	2,200.0	2,000.0	2,800.0	-	-	±20	-	28	11.0	4.0	1.7	2,822
JMTE070N07A	TO-263-3L	D ² PAK	N	68	120.0	3.0	5.8	7.5	-	-	-	-	±20	210.0	4,903	361.0	270.0	49.0	284
JMTK70N07A	TO-252-3L	DPAK	N	68	80.0	3.0	6.6	8.6	-	-	-	-	±20	121.0	4,062	461.0	231.0	35.0	231
JMTC6888A	TO-220C-3L	TO-220	N	68	80.0	3.0	7.5	9.0	-	-	-	-	±20	110.0	4,000	267.0	250.0	35.0	263
JMTE6888A	TO-263-3L	D ² PAK	N	68	80.0	3.0	7.5	9.0	-	-	-	-	±20	110.0	4,000	267.0	250.0	35.0	263
JMTK170N10A	TO-252-3L	DPAK	N	100	59.0	3.0	15.0	20.0	-	-	-	-	±25	98.0	5,211	232.0	163.0	87.0	1,305
JMTC170N10A	TO-220C-3L	TO-220	N	100	59.0	3.0	15.0	20.0	-	-	-	-	±25	108.0	5,191	239.0	164.0	94.0	1,410
JMTK320N10A	TO-252-3L	DPAK	N	100	30.0	1.5	24.0	32.0	26.0	36.0	-	-	±20	52.6	3,217	126.0	113.0	94.0	2,256
JMTI320N10A	TO-251-3L	DPAK3	N	100	30.0	1.5	24.0	32.0	26.0	36.0	-	-	±20	52.6	3,217	126.0	113.0	23.0	552
JMTC320N10A	TO-220C-3L	TO-220	N	100	30.0	1.5	24.0	32.0	26.0	36.0	-	-	±20	52.6	3,217	126.0	113.0	23.0	552
JMTG320N10A	PDFN5x6-8L	SuperSO8	N	100	28.0	1.5	24.0	32.0	26.0	36.0	-	-	±20	52.6	3,217	126.0	113.0	23.0	552
JMTQ320N10A	PDFN3x3-8L	PQFN 3x3	N	100	23.0	1.5	24.0	32.0	26.0	36.0	-	-	±20	52.6	3,217	126.0	113.0	23.0	552
JMTK500N10A	TO-252-3L	DPAK	N	100	20.0	1.5	37.0	48.0	39.0	55.0	-	-	±20	30.0	1,964	90.0	74.0	20.0	740
JMTK10N10A	TO-252-3L	DPAK	N	100	10.0	1.5	86.0	110.0	96.0	140.0	-	-	±20	5.0	765	38.0	33.0	20.0	1,720
JMTI10N10A	TO-251-3L	DPAK3	N	100	10.0	1.5	86.0	110.0	96.0	140.0	-	-	±20	4.4	765	38.0	33.0	12.0	1,032

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(th)} Typ (V)	R _{DS(on) Typ} @V _{GS} =10V (mΩ)	R _{DS(on) Max} @V _{GS} =10V (mΩ)	R _{DS(on) Typ} @V _{GS} =4.5V (mΩ)	R _{DS(on) Max} @V _{GS} =4.5V (mΩ)	R _{DS(on) Typ} @V _{GS} =2.5V (mΩ)	R _{DS(on) Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss Typ} (pF)	C _{oss Typ} (pF)	C _{rrs Typ} (pF)	Q _{s Typ} (nC)	FOM
JMTQ11DN10A	PDFN3x3-8L	PQFN 3x3	N	100	10.0	1.5	92.0	120.0	98.0	137.0	-	-	±20	3.8	811	50.0	35.0	12.0	1,104
JMTJ11DN10A	SOT-23-3L	-	N	100	3.0	1.5	92.0	120.0	98.0	137.0	-	-	±20	-	765	38.0	33.0	18.0	1,656
JMTN11DN10A	SOT-89-3L	-	N	100	3.0	1.5	95.0	125.0	100.0	140.0	-	-	±20	-	765	38.0	33.0	18.0	1,710
JMTP11DN10A	SOP-8	SOP-8	N	100	3.0	1.5	88.0	115.0	100.0	140.0	-	-	±20	4.0	610	40.0	25.0	12.0	1,056
JMTY11DN10A	SOT-223-3L	SOT-223	N	100	5.0	1.5	96.0	125.0	105.0	147.0	-	-	±20	4.0	610	40.0	25.0	12.0	1,152
JMTL3N10A	SOT-23	SOT-23	N	100	2.2	1.5	220.0	286.0	223.0	312.0	-	-	±20	-	321	21.0	15.0	5.3	1,166
JMTG28DN10D	PDFN5x6-8L	SuperSO8	N+N	100	4.5	1.5	225.0	295.0	235.0	330.0	-	-	±20	0.6	321	21.0	15.0	5.3	1,193
JMTM300C02D	SOT-23-6L	-	N+P	20	3.8	0.7	-	-	20.0	28.0	25.0	38.0	±12	-	358	69.3	58.5	5.6	-
				-20	-2.8	-0.7	-	-	50.0	65.0	63.0	88.0		-	503	67.0	58.0		
JMTG075C03D	PDFN5x6-8L	SuperSO8	N+P	30	15.0	1.5	8.8	10.0	13.6	15.0	-	-	±20	39.0	1,116	187.0	152.0	13.3	117
				-30	-10.0	-1.6	21.0	25.0	31.0	40.0	-	-		36.0	1,240	151.0	138.0		279
JMTG100C03D	PDFN5x6-8L-D	-	N+P	30	12.0	1.5	9.6	13.0	13.7	17.0	-	-	±20	33.0	1,011	142.0	119.0	13.3	128
				-30	-10.0	-1.6	21.0	25.0	31.0	40.0	-	-		36.0	1,240	151.0	138.0		279
JMTQ120C03D	PDFN3x3-8L-D	-	N+P	30	11.0	1.5	12.0	16.0	18.0	25.0	-	-	±20	20.0	584	112.0	96.0	15.0	180
				-30	-11.0	-1.6	21.0	27.0	31.0	43.0	-	-		25.0	1,200	155.0	139.0		315
JMTG200C03D	PDFN5x6-8L-D	-	N+P	30	11.0	1.5	13.0	17.0	20.0	28.0	-	-	±20	9.0	490	79.0	61.0	10.0	130
				-30	-11.0	-1.5	16.0	21.0	23.0	32.0	-	-		30.0	1,432	186.0	147.0		160
JMTP240C03D	SOP-8	SOP-8	N+P	30	9.0	1.5	16.0	21.0	24.0	33.0	-	-	±20	12.0	490	79.0	61.0	5.2	83
				-30	-7.0	-1.5	27.0	35.0	38.0	54.0	-	-		30.0	982	135.0	109.0		140
JMTQ240C03D	PDFN3x3-8L-D	-	N+P	30	10.0	1.5	14.0	18.0	24.0	31.0	-	-	±20	11.0	490	79.0	61.0	5.2	73
				-30	-8.0	-1.6	20.0	28.0	35.0	49.0	-	-		23.0	982	135.0	109.0		104
JMTG120C03D	PDFN5x6-8L-D	-	N+P	30	11.5	1.4	9.0	12.0	13.5	19.0	-	-	±20	20.0	584	112.0	96.0	52.0	468
				-30	-11.5	-1.5	18.5	24.0	28.0	39.0	-	-		25.0	1,200	155.0	139.0	52.0	962
JMTP120C03D	SOP-8	SOP-8	N+P	30	10.0	1.4	10.0	13.0	15.0	20.0	-	-	±20	17.0	584	112.0	96.0	15.0	150
				-30	-12.0	-1.5	19.0	25.0	27.0	35.0	-	-		24.0	1,200	155.0	139.0		285
JMTQ250C03D	PDFN3x3-8L-D	-	N+P	30	9.0	1.5	16.0	21.0	25.0	35.0	-	-	±20	12.0	490	79.0	61.0	52.0	832
				-30	-5.0	-1.6	40.0	52.0	64.0	90.0	-	-		12.0	580	98.0	74.0		2,080
JMTQ380C03D	PDFN3x3-8L-D	-	N+P	30	6.0	1.5	28.0	36.0	40.0	56.0	-	-	±20	-	233	44.0	33.0	3.0	84
				-30	-5.0	-1.6	38.0	50.0	56.0	78.0	-	-		-	580	98.0	74.0		114
JMTP170C04D	SOP-8	SOP-8	N+P	40	10.0	1.5	15.0	20.0	19.0	27.0	-	-	±20	19.0	980	86.2	68.5	11.0	165
				-40	-10.0	-1.6	34.0	44.0	46.0	62.0	-	-		27.5	1,034	107.0	79.5		374
JMTG170C04D	PDFN5x6-8L-D	-	N+P	40	16.0	1.5	16.0	22.0	22.0	31.0	-	-	±20	19.0	980	86.2	68.5	11.0	176
				-40	-16.0	-1.6	40.0	52.0	50.0	70.0	-	-		27.5	1,034	107.0	79.5		440
JMTQ170C04D	PDFN3x3-8L-D	-	N+P	40	14.0	1.5	16.0	22.0	20.0	28.0	-	-	±20	16.0	980	86.2	68.5	11.0	176
				-40	-14.0	-1.6	38.0	50.0	50.0	70.0	-	-		25.0	1,034	107.0	79.5		418
JMTP230C04D	SOP-8	SOP-8	N+P	40	8.0	1.5	17.0	22.0	25.0	35.0	-	-	±20	13.0	633	67.0	58.0	12.0	204
				-40	-6.0	-1.6	41.0	53.0	58.0	81.0	-	-		17.6	860	87.0	70.0		492
JMGE540P10A	TO-263-3L	D ² PAK	P	-100	-35.0	-1.6	36.0	47.0	41.0	57.0	-	-	±20	90.0	2,120	194.0	13.0	34.0	1,224
JMGK540P10A	TO-252-3L	DPAK	P	-100	-35.0	-1.6	40.0	52.0	44.0	62.0	-	-	±20	87.0	2,120	194.0	13.0	40.0	1,600
JMGC540P10A	TO-220C-3L	TO-220	P	-100	-35.0	-1.6	41.0	53.0	46.0	64.0	-	-	±20	82.0	2,120	194.0	13.0	40.0	1,640
JMGG540P10A	PDFN5x6-8L	SuperSO8	P	-100	-25.0	1.5	37.0	50.0	41.0	60.0	-	-	±20	81.0	2,120	194.0	13.0	40.0	1,480
JMPL1025AE	TO-263-3L	D ² PAK	P	-100	-49.0	-2.0	21.0	25.0	29.0	38.0	-	-	±20	304.0	2,525	427.0	32.0	37.0	777
JMPL1025AK	TO-252-3L	DPAK	P	-100	-46.0	-2.0	22.0	28.0	31.0	40.0	-	-	±20	304.0	2,525	427.0	32.0	37.0	814
JMPL1050AG	PDFN5x6-8L	SuperSO8	P	-100	-27.0	-2.0	36.0	50.0	48.0	65.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	720
JMPL1050AU	PDFN3x3-8L	PQFN 3x3	P	-100	-26.0	-2.0	38.0	50.0	51.0	66.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	760
JMPL1050AK	TO-252-3L	DPAK	P	-100	-30.0	-2.0	37.0	50.0	50.0	66.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	740
JMPL1050AY	SOT-223-3L	SOT-223	P	-100	-9.7	-2.0	40.0	52.0	53.0	68.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	800
JMPL1050AP	SOP-8	SOP-8	P	-100	-6.3	-2.0	36.0	50.0	57.0	70.0	-	-	±20	109.0	1,412	222.0	2.6	20.0	720
JMSL030SAG	PDFN5x6-8L	SuperSO8	N	30	327.0	1.7	0.55	0.69	0.80	0.99	-	-	±20	342.0	7,543	5,253.0	422.0	120.0	66
JMSL0301AG	PDFN5x6-8L	SuperSO8	N	30	245.0	1.7	0.85	1.10	1.30	1.70	-	-	±20	205.0	4,185	2,860.0	233.0	64.0	54
JMSL0302AK	TO-252-3L	DPAK	N	30	161.0	1.6	1.7	2.2	2.2	2.9	-	-	±20	205.0	4,185	2,861.0	233.0	64.0	109
JMSL0302AG	PDFN5x6-8L	SuperSO8	N	30	178.0	1.7	1.3	1.6	2.0	2.9	-	-	±20	101.0	2,975	2,650.0	117.0	39.0	51
JMSL0302AU	PDFN3x3-8L	PQFN 3x3	N	30	145.0	1.7	1.2	1.5	2.0	2.9	-	-	±20	101.0	2,975	2,650.0	117.0	39.0	47
JMSL0302BG	PDFN5x6-8L	SuperSO8	N	30	152.0	1.6	1.5	2.0	2.1	2.9	-	-	±20	94.0	2,526	1,924.0	186.0	40.0	60
JMSL0302BU	PDFN3x3-8L	PQFN 3x3	N	30	135.0	1.6	1.5	1.9	2.2	2.8	-	-	±20	94.0	2,526	1,924.0	186.0	40.0	60

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(Th)} _Typ (V)	R _{DS(ON)_Typ} @V _{GS} =10V (mΩ)	R _{DS(ON)_Max} @V _{GS} =10V (mΩ)	R _{DS(ON)_Typ} @V _{GS} =4.5V (mΩ)	R _{DS(ON)_Max} @V _{GS} =4.5V (mΩ)	R _{DS(ON)_Typ} @V _{GS} =2.5V (mΩ)	R _{DS(ON)_Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss-Typ} (pF)	C _{oss-Typ} (pF)	C _{rrs-Typ} (pF)	Q _{s-Typ} (nC)	FOM
JMSL0302DG	PDFN5x6-8L	SuperSO8	N	30	174.0	1.7	1.3	1.65	2.1	2.9	-	-	±20	118.0	2,628	1,298.0	64.0	44.0	57
JMSL0303AG	PDFN5x6-8L	SuperSO8	N	30	136.0	1.6	1.7	2.2	2.4	3.2	-	-	±20	61.0	2,091	1,539.0	147.0	32.0	54
JMSL0303AK	TO-252-3L	DPAK	N	30	118.0	1.6	2.7	3.5	3.5	4.5	-	-	±20	94.0	2,526	1,924.0	186.0	40.0	108
JMSL0303AU	PDFN3x3-8L	PQFN 3x3	N	30	119.0	1.6	1.8	2.2	2.7	3.5	-	-	±20	61.0	2,091	1,539.0	147.0	32.0	58
JMSL0307AG	PDFN5x6-8L	SuperSO8	N	30	65.0	1.7	3.8	4.8	5.8	7.5	-	-	±20	20.0	866	739.0	54.0	13.5	51
JMSL0310AU	PDFN3x3-8L	PQFN 3x3	N	30	60.0	1.7	4.0	5.0	6.0	8.0	-	-	±20	20.0	866	739.0	54.0	13.5	54
JMSL0307AV	DFN2020-6L	PQFN 2x2	N	30	29.0	1.6	3.7	4.8	5.3	7.0	-	-	±20	20.0	866	739.0	54.0	13.5	50
JMSL0315AU	PDFN3x3-8L	PQFN 3x3	N	30	43.0	1.7	7.0	8.8	10.6	13.8	-	-	±20	8.5	468	363.0	41.0	7.7	54
JMSL0315AG	PDFN5x6-8L	SuperSO8	N	30	44.0	1.7	7.0	8.8	10.0	13.0	-	-	±20	5.0	468	363.0	41.0	7.7	54
JMSL0315AK	TO-252-3L	DPAK	N	30	41.0	1.7	9.5	11.8	13.0	15.9	-	-	±20	5.0	468	363.0	41.0	7.7	73
JMSL0315AP	SOP-8	SOP-8	N	30	14.0	1.6	8.2	10.0	11.4	15.0	-	-	±20	6.0	468	363.0	41.0	7.7	63
JMSL0315AV	DFN2020-6L	PQFN 2x2	N	30	22.0	1.6	7.2	9.0	10.5	13.6	-	-	±20	8.5	468	363.0	41.0	7.7	55
JMSL0315AGD	PDFN5x6-8L-D	-	N+N	30	37.0	1.7	7.5	9.5	10.5	14.0	-	-	±20	5.0	468	363.0	41.0	7.7	58
JMSL0315AUD	PDFN3x3-8L-D	-	N+N	30	36.0	1.7	8.8	11.0	12.4	16.0	-	-	±20	8.5	468	363.0	41.0	7.7	68
JMSL0315APD	SOP-8	SOP-8	N+N	30	12.4	1.6	9.5	12.0	12.3	15.6	-	-	±20	6.1	468	363.0	41.0	7.7	73
JMSL0315ARD	W-DFN3030-8L	-	N+N	30	37.0	1.7	6.5	8.5	10.0	13.0	-	-	±20	8.5	469	363.0	41.0	7.7	50
JMSL040SAG	PDFN5x6-8L	SuperSO8	N	40	349.0	1.5	0.6	0.8	0.8	1.0	-	-	±20	506.0	7,622	4,052.0	184.0	116.0	67
JMG010V04A	PDFN5x6-8L	SuperSO8	N	40	200.0	1.5	0.7	1.0	1.1	1.6	-	-	±20	420.0	7,400	1,930.0	110.0	125.0	91
JMSL0401BG	PDFN5x6-8L	SuperSO8	N	40	243.0	1.5	0.83	1.0	1.2	1.6	-	-	±20	317.0	5,490	3,080.0	125.0	82.0	68
JMSH0401BG	PDFN5x6-8L	SuperSO8	N	40	265.0	2.8	0.90	1.1	-	-	-	-	±20	441.0	5,280	3,405.0	71.0	68.0	61
JMSH0401ATL	PowerJE*10x12	TOLL	N	40	336.0	2.5	1.0	1.3	-	-	-	-	±20	317.0	5,978	3,004.0	114.0	89.0	89
JMSH0401AG	PDFN5x6-8L	SuperSO8	N	40	182.0	2.5	1.3	1.7	-	-	-	-	±20	194.0	3,446	1,841.0	46.0	44.0	57
JMSL0401AG	PDFN5x6-8L	SuperSO8	N	40	189.0	1.5	1.3	1.7	1.7	2.3	-	-	±20	163.0	3,133	1,993.0	75.0	46.0	60
JMSL0402AG	PDFN5x6-8L	SuperSO8	N	40	168.0	1.5	1.6	2.0	2.2	3.0	-	-	±20	163.0	3,133	1,993.0	75.0	46.0	74
JMSL0402AK	TO-252-3L	DPAK	N	40	150.0	1.5	1.8	2.2	2.2	3.0	-	-	±20	163.0	3,133	1,993.0	75.0	46.0	83
JMSL0402BG	PDFN5x6-8L	SuperSO8	N	40	130.0	1.5	1.9	2.5	2.5	3.4	-	-	±20	126.0	2,131	1,538.0	95.0	36.0	68
JMG020V04A	PDFN5x6-8L	SuperSO8	N	40	140.0	1.5	1.9	2.5	2.7	4.8	-	-	±20	125.0	3,162	1,099.0	157.0	42.0	80
JMSL0402AU	PDFN3x3-8L	PQFN 3x3	N	40	119.0	1.5	2.0	2.5	2.7	3.5	-	-	±20	126.0	2,131	1,538.0	95.0	36.0	72
JMSL0403AG	PDFN5x6-8L	SuperSO8	N	40	109.0	1.5	2.5	3.1	3.3	4.5	-	-	±20	79.0	1,424	927.0	48.0	22.0	55
JMSL0403AU	PDFN3x3-8L	PQFN 3x3	N	40	99.0	1.6	2.5	3.1	3.5	4.6	-	-	±20	79.0	1,424	927.0	48.0	22.0	55
JMGK020V04A	TO-252-3L	DPAK	N	40	160.0	1.5	2.5	3.3	3.5	4.9	-	-	±20	182.0	3,162	1,099.0	157.0	42.0	105
JMSL0406AG	PDFN5x6-8L	SuperSO8	N	40	70.0	1.7	4.2	5.2	5.8	7.6	-	-	±20	36.0	1,204	536.0	51.0	17.9	75
JMSL0406AGD	PDFN5x6-8L-D	-	N+N	40	43.0	1.7	5.7	6.9	7.2	9.5	-	-	±20	22.0	1,227	526.0	55.0	19.4	111
JMSL0406AK	TO-252-3L	DPAK	N	40	73.0	1.7	4.5	5.4	6.2	7.8	-	-	±20	36.0	1,204	536.0	51.0	17.9	81
JMSL0406AU	PDFN3x3-8L	PQFN 3x3	N	40	55.0	1.7	4.5	5.6	5.9	7.8	-	-	±20	36.0	1,204	536.0	51.0	17.9	81
JMSL0406AP	SOP-8	SOP-8	N	40	17.8	1.7	4.8	6.0	6.0	7.8	-	-	±20	36.0	1,204	536.0	51.0	17.9	86
JMSL0601AG	PDFN5x6-8L	SuperSO8	N	60	275.0	1.5	0.90	1.20	1.30	1.70	-	-	±20	480.0	6,338	2,157.0	34.0	102.0	92
JMSH0601AG	PDFN5x6-8L	SuperSO8	N	60	197.0	3.0	1.4	1.8	-	-	-	-	±20	375.0	6,035	1,365.0	35.0	78.0	109
JMSH0601ATL	PowerJE*10x12	TOLL	N	60	348.0	2.8	1.2	1.6	-	-	-	-	±20	480.0	7,312	2,239.0	53.0	102.0	122
JMSH0601BG	PDFN5x6-8L	SuperSO8	N	60	303.0	2.8	1.0	1.3	-	-	-	-	±20	1,014.0	7,219	1,841.0	47.0	102.0	102
JMSH0602AC	TO-220-3L	TO-220	N	60	195.0	3.0	1.8	2.3	-	-	-	-	±20	375.0	6,035	1,365.0	35.0	78.0	140
JMSH0602AE	TO-263-3L	D ² PAK	N	60	195.0	3.0	2.0	2.5	-	-	-	-	±20	375.0	6,035	1,365.0	35.0	78.0	156
JMSL0601BG	PDFN5x6-8L	SuperSO8	N	60	226.0	1.6	1.8	2.4	-	-	-	-	±20	375.0	4,685	1,429.0	40.0	75.0	135
JMSL0602AG	PDFN5x6-8L	SuperSO8	N	60	147.0	1.7	1.9	2.5	2.5	3.5	-	-	±20	240.0	2,880	958.0	44.0	48.0	91
JMG031V06A	PDFN5x6-8L	SuperSO8	N	60	160.0	3.0	2.3	3.0	-	-	-	-	±25	196.0	3,383	1,940.0	118.0	46.0	106
JMSL0604AG	PDFN5x6-8L	SuperSO8	N	60	98.0	1.8	3.9	4.9	5.0	6.3	-	-	±20	109.0	2,030	445.0	4.4	32.0	125
JMSL0606AG	PDFN5x6-8L	SuperSO8	N	60	97.0	1.8	4.0	5.0	5.2	6.5	-	-	±20	76.0	2,030	445.0	4.4	32.0	128
JMSL0606AGD	PDFN5x6-8L-D	-	N+N	60	55.0	1.8	6.4	7.8	7.6	9.7	-	-	±20	76.0	2,030	445.0	4.4	32.0	205
JMSL0606AU	PDFN3x3-8L	PQFN 3x3	N	60	52.0	1.5	5.0	6.2	6.6	8.3	-	-	±20	80.0	2,122	440.0	4.4	31.0	155
JMSL0606AC	TO-220-3L	TO-220	N	60	115.0	1.8	5.2	6.3	7.0	8.8	-	-	±20	80.0	2,030	445.0	4.4	32.0	166
JMSL0606AE	TO-263-3L	D ² PAK	N	60	115.0	1.8	5.2	6.3	7.0	8.8	-	-	±20	80.0	2,030	445.0	4.4	32.0	166
JMSL0606AP	SOP-8	SOP-8	N	60	15.3	1.8	5.3	6.4	6.7	8.4	-	-	±20	80.0	2,030	445.0	4.4	32.0	170
JMSL0609APD	SOP-8	SOP-8	N+N	60	10.0	1.7	7.0	9.2	9.5	12.5	-	-	±20	80.0	2,122	440.0	4.4	31.0	217
JMSL0606AK	TO-252-3L	DPAK	N	60	90.0	1.7	4.6	5.8	6.0	7.5	-	-	±20	51.0	2,122	440.0	4.4	31.0	143
JMSL0609AG	PDFN5x6-8L	SuperSO8	N	60	43.0	1.5	7.2	9.4	9.0	12.0	-	-	±20	34.0	1,087	309.0	8.5	16.6	120

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(H)} _Typ (V)	R _{DS(ON)_Typ} @V _{GS} =10V (mΩ)	R _{DS(ON)_Max} @V _{GS} =10V (mΩ)	R _{DS(ON)_Typ} @V _{GS} =4.5V (mΩ)	R _{DS(ON)_Max} @V _{GS} =4.5V (mΩ)	R _{DS(ON)_Typ} @V _{GS} =2.5V (mΩ)	R _{DS(ON)_Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss-Typ} (pF)	C _{oss-Typ} (pF)	C _{rrs-Typ} (pF)	Q _{s-Typ} (nC)	FOM
JMSL0610AGD	PDFN5x6-8L-D	-	N+N	60	35.0	1.5	8.5	10.6	10.2	13.0	-	-	±20	34.0	1,087	309.0	8.5	16.6	141
JMSL0609AU	PDFN3x3-8L	PQFN 3x3	N	60	39.0	1.5	7.5	9.4	9.4	12.2	-	-	±20	34.0	1,087	309.0	8.5	16.6	125
JMSL0609AP	SOP-8	SOP-8	N	60	13.6	1.7	7.5	9.5	9.5	12.5	-	-	±20	34.0	1,083	349.0	8.5	17.2	129
JMSL0613APD	SOP-8	SOP-8	N+N	60	10.2	1.7	10.5	13.5	12.5	16.5	-	-	±20	34.0	1,083	349.0	8.5	17.2	181
JMSL0612AG	PDFN5x6-8L	SuperSO8	N	60	34.0	1.6	9.5	12.0	12.0	16.0	-	-	±20	20.0	731	224.0	7.4	13.9	132
JMSL0612AU	PDFN3x3-8L	PQFN 3x3	N	60	38.0	1.6	10.0	12.5	12.3	16.0	-	-	±20	20.0	731	224.0	7.4	13.9	139
JMSL0612AK	TO-252-3L	DPAK	N	60	52.0	1.6	9.9	12.0	12.6	16.0	-	-	±20	20.0	731	224.0	7.4	13.9	138
JMSL0615AP	SOP-8	SOP-8	N	60	12.7	1.7	10.0	12.5	13.0	16.9	-	-	±20	20.0	731	224.0	7.4	13.9	139
JMSL0615APD	SOP-8	SOP-8	N+N	60	9.7	1.7	12.0	15.0	15.0	20.0	-	-	±20	20.0	731	224.0	7.4	13.9	167
JMSL0615AGD	PDFN5x6-8L-D	-	N+N	60	30.0	1.6	10.5	13.5	13.5	17.5	-	-	±20	20.0	731	224.0	7.4	13.9	146
JMSL0615AUD	PDFN3x3-8L-D	-	N+N	60	24.0	1.7	11.0	13.8	14.0	18.4	-	-	±20	26.0	731	224.0	7.4	13.9	153
JMSL0615AV	DFN2020-6L	PQFN 2x2	N	60	21.0	1.6	9.8	12.8	12.5	16.3	-	-	±20	20.0	731	224.0	7.4	13.9	136
JMSL0620AGE	PDFN5x6-8L	SuperSO8	N	60	31.0	1.8	16.0	20.0	23.0	30.0	-	-	±20	26.0	409	143.0	24.0	7.5	120
JMSL0620AGDE	PDFN5x6-8L-D	-	N+N	60	24.0	1.8	16.0	20.0	23.0	30.0	-	-	±20	26.0	409	143.0	24.0	7.5	120
JMSL0620AUE	PDFN3x3-8L	PQFN 3x3	N	60	24.0	1.8	16.0	20.0	23.0	30.0	-	-	±20	26.0	409	143.0	24.0	7.5	120
JMSL0630AG	PDFN5x6-8L	SuperSO8	N	60	25.0	1.7	22.0	28.0	28.0	37.0	-	-	±20	13.5	288	92.0	22.0	5.8	128
JMSL0630AGD	PDFN5x6-8L-D	-	N+N	60	19.3	1.7	22.0	28.0	28.0	37.0	-	-	±20	13.5	288	92.0	22.0	5.8	128
JMSL0630AU	PDFN3x3-8L	PQFN 3x3	N	60	19.8	1.7	22.0	27.0	30.0	38.0	-	-	±20	13.5	288	92.0	22.0	5.8	128
JMSH0801AG	PDFN5x6-8L	SuperSO8	N	80	196.0	2.8	1.7	1.9	-	-	-	-	±20	729.0	5,552	2,010.0	35.0	88.0	145
JMSH0801AS	TO-247-3L	TO-247	N	80	315.0	2.8	1.3	1.7	-	-	-	-	±20	696.0	12,007	3,462.0	28.9	190.0	247
JMSH0802BG	PDFN5x6-8L	SuperSO8	N	80	163.0	2.9	2.2	2.5	-	-	-	-	±20	192.0	5,552	2,010.0	35.0	88.0	194
JMSH0802AC	TO-220-3L	TO-220	N	80	300.0	2.8	1.5	1.9	-	-	-	-	±20	696.0	12,007	3,462.0	28.9	190.0	285
JMSH0802AE	TO-263-3L	D ² PAK	N	80	300.0	2.8	1.5	1.9	-	-	-	-	±20	696.0	12,007	3,462.0	28.9	190.0	285
JMSL0803AG	PDFN5x6-8L	SuperSO8	N	80	128.0	1.8	2.8	3.5	4.2	5.9	-	-	±20	180.0	3,960	1,290.0	9.0	63.0	176
JMSH0803AG	PDFN5x6-8L	SuperSO8	N	80	143.0	2.8	2.4	2.8	-	-	-	-	±20	180.0	4,250	1,340.0	8.0	63.0	148
JMSH0803AC	TO-220-3L	TO-220	N	80	194.0	2.9	2.5	3.0	-	-	-	-	±20	304.0	5,552	2,010.0	35.0	88.0	220
JMSH0803AE	TO-263-3L	D ² PAK	N	80	194.0	2.9	2.5	3.0	-	-	-	-	±20	304.0	5,552	2,010.0	35.0	88.0	220
JMSH0803AGS	PDFN5x6-8L	SuperSO8	N	80	144.0	2.8	2.9	3.6	-	-	-	-	±20	266.0	2,107	1,624.0	19.0	35.8	104
JMSH0804AG	PDFN5x6-8L	SuperSO8	N	80	126.0	2.8	2.8	3.6	-	-	-	-	±20	290.0	3,780	1,370.0	22.0	63.0	176
JMSH0804AE	TO-263-3L	D ² PAK	N	85	139.0	2.8	3.6	4.5	-	-	-	-	±20	180.0	3,783	1,373.0	22.0	63.0	227
JMSH0804AK	TO-252-3L	DPAK	N	80	101.0	2.8	3.6	4.2	-	-	-	-	±20	180.0	3,783	1,373.0	22.0	63.0	227
JMSH0804BK	TO-252-3L	DPAK	N	80	137.0	3.0	3.2	4.0	-	-	-	-	±20	317.0	4,114	1,208.0	24.0	77.0	246
JMSH0804AGS	PDFN5x6-8L	SuperSO8	N	80	112.0	2.8	3.8	4.6	-	-	-	-	±20	231.0	2,107	1,624.0	19.0	35.8	136
JMSH0804AKS	TO-252-3L	DPAK	N	80	86.0	2.8	4.1	4.8	-	-	-	-	±20	290.0	2,130	1,555.0	14.7	32.0	131
JMSH0804BCS	TO-220-3L	TO-220	N	85	132.0	2.8	4.0	5.0	-	-	-	-	±20	180.0	2,083	1,142.0	18.0	35.0	140
JMSH0804BES	TO-263-3L	D ² PAK	N	85	132.0	2.8	4.0	5.0	-	-	-	-	±20	180.0	2,083	1,142.0	18.0	35.0	140
JMSH0804CE	TO-263-3L	D ² PAK	N	85	146.0	2.8	3.2	4.0	-	-	-	-	±20	317.0	4,144	1,208.0	24.0	77.0	246
JMSH0804DE	TO-263-3L	D ² PAK	N	85	137.0	3.0	4.1	4.8	-	-	-	-	±20	180.0	4,562	738.0	15.9	71.0	291
JMSH0804DC	TO-220-3L	TO-220	N	85	144.0	3.0	4.3	4.9	-	-	-	-	±20	180.0	4,562	738.0	15.9	71.0	305
JMSH0804NC	TO-220-3L	TO-220	N	80	158.0	3.0	3.5	4.4	-	-	-	-	±20	434.0	3,503	1,048.0	23.0	82.0	287
JMSH0804NE	TO-263-3L	D ² PAK	N	80	158.0	3.0	3.3	4.2	-	-	-	-	±20	434.0	3,503	1,048.0	23.0	82.0	271
JMSH0804NG	PDFN5x6-8L	SuperSO8	N	80	139.0	3.0	3.1	3.9	-	-	-	-	±20	434.0	3,503	1,048.0	23.0	82.0	254
JMSH0805AG	PDFN5x6-8L	SuperSO8	N	85	107.0	2.7	3.7	4.5	-	-	-	-	±20	115.0	2,451	677.0	18.0	39.7	147
JMSH0805AC	TO-220-3L	TO-220	N	85	121.0	2.8	4.2	5.0	-	-	-	-	±20	115.0	2,451	677.0	18.0	39.7	167
JMSH0805AE	TO-263-3L	D ² PAK	N	85	121.0	2.8	4.2	5.0	-	-	-	-	±20	115.0	2,451	677.0	18.0	39.7	167
JMSL0805AG	PDFN5x6-8L	SuperSO8	N	85	104.0	2.0	3.9	4.9	5.6	7.3	-	-	±20	106.0	2,901	802.0	22.0	40.8	159
JMSH0806AGS	PDFN5x6-8L	SuperSO8	N	80	92.0	3.2	5.4	6.8	-	-	-	-	±20	110.0	1,306	724.0	10.6	16.8	91
JMSH0806ACS	TO-220-3L	TO-220	N	80	83.0	3.2	6.3	7.6	-	-	-	-	±20	130.0	1,306	724.0	10.6	16.8	106
JMSH0806AES	TO-263-3L	D ² PAK	N	80	83.0	3.2	6.3	7.6	-	-	-	-	±20	130.0	1,306	724.0	10.6	16.8	106
JMSH0830AG	PDFN5x6-8L	SuperSO8	N	80	25.0	3.3	22.0	28.0	-	-	-	-	±20	18.0	481	183.0	8.7	8.0	176
JMSL0830AG	PDFN5x6-8L	SuperSO8	N	80	27.0	2.0	22.0	28.0	30.0	39.0	-	-	±20	11.0	512	186.0	8.2	9.4	207
JMSH0904NC	TO-220-3L	TO-220	N	90	151.0	3.0	3.8	4.8	-	-	-	-	±20	600.0	3,525	960.0	22.0	56.0	213
JMSH0904NE	TO-263-3L	D ² PAK	N	90	151.0	3.0	3.6	4.5	-	-	-	-	±20	600.0	3,525	960.0	22.0	56.0	202
JMSH1001ATL	PowerJE [®] 10x12	TOLL	N	100	411.0	2.8	1.3	1.6	-	-	-	-	±20	1,250.0	9,623	2,091.0	1.2	155.0	202
JMSH1001AE7	TO-263-7L	D ² PAK7	N	100	290.0	2.7	1.6	2.0	-	-	-	-	±20	984.0	9,623	2,091.0	1.2	155.0	248

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{2-Max} (A)	V _{GS(ON)_Typ} (V)	R _{DS(ON)_Typ} @V _{GS=10V} (mΩ)	R _{DS(ON)_Max} @V _{GS=10V} (mΩ)	R _{DS(ON)_Typ} @V _{GS=4.5V} (mΩ)	R _{DS(ON)_Max} @V _{GS=4.5V} (mΩ)	R _{DS(ON)_Typ} @V _{GS=2.5V} (mΩ)	R _{DS(ON)_Max} @V _{GS=2.5V} (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss_Typ} (pF)	C _{oss_Typ} (pF)	C _{rrs_Typ} (pF)	Q _{s_Typ} (nC)	FOM
JMSH1001BTL	PowerJE*10x12	TOLL	N	100	300.0	2.8	1.7	2.0	-	-	-	-	±20	1,250.0	7,011	1,512.0	4.7	102.0	173
JMSH1002AC	TO-220-3L	TO-220	N	100	270.0	2.7	1.8	2.3	-	-	-	-	±20	720.0	9,623	2,091.0	32.0	155.0	279
JMSH1002AE	TO-263-3L	D ² PAK	N	100	270.0	2.7	1.6	2.0	-	-	-	-	±20	720.0	9,623	2,091.0	32.0	155.0	248
JMSH1002AS	TO-247-3L	TO-247	N	100	287.0	2.8	1.7	2.0	-	-	-	-	±20	126.0	9,623	2,091.0	12.0	155.0	264
JMSH1002BC	TO-220-3L	TO-220	N	100	258.0	2.7	2.3	2.8	-	-	-	-	±20	694.0	7,011	1,512.0	4.7	102.0	235
JMSH1002BE	TO-263-3L	D ² PAK	N	100	258.0	2.7	2.1	2.6	-	-	-	-	±20	694.0	7,011	1,512.0	4.7	102.0	214
JMSH1002CC	TO-220-3L	TO-220	N	100	219.0	2.8	2.6	3.1	-	-	-	-	±20	558.0	5,740	1,193.0	7.6	83.0	216
JMSH1002CE	TO-263-3L	D ² PAK	N	100	219.0	2.8	2.4	2.9	-	-	-	-	±20	558.0	5,740	1,193.0	7.6	83.0	199
JMSH1002CTL	PowerJE*10x12	TOLL	N	100	295.0	2.8	1.9	2.4	-	-	-	-	±20	1,250.0	5,740	1,193.0	7.6	83.0	158
JMSH1002NC	TO-220-3L	TO-220	N	100	219.0	2.8	2.4	2.9	-	-	-	-	±20	968.0	7,741.0	1,315	21.0	114.0	274
JMSH1002NE	TO-263-3L	D ² PAK	N	100	219.0	2.8	2.2	2.8	-	-	-	-	±20	968.0	7,741.0	1,315	21.0	114.0	251
JMSH1002NTL	PowerJE*10x12	TOLL	N	100	291.0	2.8	2.0	2.5	-	-	-	-	±20	968.0	7,741.0	1,315	21.0	114.0	228
JMSL1003AG	PDFN5x6-8L	SuperSO8	N	100	135.0	1.6	2.8	3.4	3.4	4.3	-	-	±20	259.0	4,646	1,214.0	5.8	78.0	218
JMSH1003AG	PDFN5x6-8L	SuperSO8	N	100	144.0	2.7	2.8	3.5	-	-	-	-	±20	238.0	4,374	1,140.0	4.7	70.0	196
JMSH1003ATL	PowerJE*10x12	TOLL	N	100	228.0	2.8	2.7	3.4	-	-	-	-	±20	512.0	4,398	1,361.0	8.5	66.0	178
JMSH1003CC	TO-220-3L	TO-220	N	100	197.0	2.8	2.9	3.6	-	-	-	-	±20	558.0	5,740	1,193.0	7.6	83.0	241
JMSH1004AC	TO-220-3L	TO-220	N	100	190.0	2.7	3.0	3.6	-	-	-	-	±20	245.0	4,398	1,361.0	8.5	66.0	198
JMSH1004AE	TO-263-3L	D ² PAK	N	100	190.0	2.7	3.0	3.6	-	-	-	-	±20	245.0	4,398	1,361.0	8.5	66.0	198
JMSH1004ACR	TO-220AS-3L	-	N	100	165.0	2.7	3.0	3.6	-	-	-	-	±20	245.0	4,398	1,361.0	8.5	66.0	198
JMSL1004BG	PDFN5x6-8L	SuperSO8	N	100	117.0	1.7	3.4	4.1	4.3	5.2	-	-	±20	205.0	3,709	873.0	6.7	62.0	211
JMSH1004BG	PDFN5x6-8L	SuperSO8	N	100	112.0	2.7	3.3	4.3	-	-	-	-	±20	231.0	3,434	906.0	14.0	57.0	188
JMSH1004BC	TO-220-3L	TO-220	N	100	139.0	2.7	3.5	4.2	-	-	-	-	±20	304.0	3,433	905.0	13.0	57.2	200
JMSH1004BE	TO-263-3L	D ² PAK	N	100	139.0	2.7	3.5	4.2	-	-	-	-	±20	304.0	3,433	905.0	13.0	57.2	200
JMSH1004NC	TO-220-3L	TO-220	N	100	130.0	3.0	4.3	4.9	-	-	-	-	±20	338.0	4,025	660.0	13.6	64.0	275
JMSH1004NE	TO-263-3L	D ² PAK	N	100	130.0	3.0	4.1	4.8	-	-	-	-	±20	338.0	4,025	660.0	13.6	64.0	262
JMSH1004NG	PDFN5x6-8L	SuperSO8	N	100	122.0	3.0	4.0	4.8	-	-	-	-	±20	338.0	4,025	660.0	13.6	64.0	256
JMSH1005AC	TO-220-3L	TO-220	N	100	128.0	2.7	4.4	5.3	-	-	-	-	±20	265.0	2,816	614.0	7.4	42.0	185
JMSL1005AG	PDFN5x6-8L	SuperSO8	N	100	108.0	1.9	4.2	5.3	5.3	6.9	-	-	±20	146.0	2,896	631.0	7.8	48.0	202
JMSH1005AE	TO-263-3L	D ² PAK	N	100	128.0	2.7	4.4	5.3	-	-	-	-	±20	265.0	2,816	614.0	7.4	42.0	185
JMGC044V10D	TO-220C-3L	TO-220	N	100	145.0	1.5	4.4	5.7	5.3	8.5	-	-	±20	196.0	5,100	2,800.0	355.0	93.0	409
JMSL1006AG	PDFN5x6-8L	SuperSO8	N	100	108.0	1.9	4.7	5.9	5.9	7.7	-	-	±20	110.0	2,604	567.0	9.6	42.0	197
JMSH1006AG	PDFN5x6-8L	SuperSO8	N	100	102.0	2.7	5.3	6.6	-	-	-	-	±20	110.0	2,369	545.0	11.6	38.0	201
JMSL1006AK	TO-252-3L	DPAK	N	100	99.0	1.7	5.4	6.6	6.6	8.0	-	-	±20	125.0	2,604	567.0	9.6	42.0	227
JMSH1006AC	TO-220-3L	TO-220	N	100	114.0	2.7	5.2	6.4	-	-	-	-	±20	130.0	2,369	545.0	11.6	38.0	198
JMSH1006AE	TO-263-3L	D ² PAK	N	100	114.0	2.7	5.2	6.4	-	-	-	-	±20	130.0	2,369	545.0	11.6	38.0	198
JMSH1006AK	TO-252-3L	DPAK	N	100	90.0	2.7	5.5	6.6	-	-	-	-	±20	154.0	2,369	545.0	11.6	38.0	209
JMSH1006ACR	TO-220AS-3L	-	N	100	114.0	2.7	5.3	6.4	-	-	-	-	±20	130.0	2,369	545.0	11.6	38.0	201
JMSL1008AG	PDFN5x6-8L	SuperSO8	N	100	93.0	1.7	6.0	7.6	8.0	10.0	-	-	±20	101.0	2,200	445.0	8.0	34.0	204
JMSL1008AC	TO-220-3L	TO-220	N	100	114.0	1.8	6.5	7.8	8.1	10.2	-	-	±20	88.0	2,360	368.0	5.9	34.0	221
JMSL1008AE	TO-263-3L	D ² PAK	N	100	114.0	1.8	6.5	7.8	-	-	-	-	±20	88.0	2,360	368.0	5.9	34.0	221
JMSL1008AP	SOP-8	SOP-8	N	100	12.0	1.8	7.4	8.9	9.2	11.5	-	-	±20	101.0	2,360	368.0	5.9	34.0	252
JMSH1008AG	PDFN5x6-8L	SuperSO8	N	100	92.0	2.8	6.2	7.8	-	-	-	-	±20	101.0	1,920	445.0	7.0	30.0	186
JMSH1008AC	TO-220-3L	TO-220	N	100	95.0	2.8	6.8	8.0	-	-	-	-	±20	101.0	1,920	445.0	7.0	30.0	204
JMSH1008AE	TO-263-3L	D ² PAK	N	100	95.0	2.8	6.8	8.0	-	-	-	-	±20	101.0	1,920	445.0	7.0	30.0	204
JMSL1008AK	TO-252-3L	DPAK	N	100	82.0	1.7	6.7	8.1	8.5	11.0	-	-	±20	101.0	2,200	445.0	8.0	34.0	228
JMGC088V10A	TO-220C-3L	TO-220	N	100	80.0	1.6	7.1	8.9	9.0	13.5	-	-	±20	90.0	2,046	865.0	25.0	34.0	241
JMGK088V10A	TO-252-3L	DPAK	N	100	80.0	1.6	7.2	9.1	9.1	13.5	-	-	±20	90.0	2,046	865.0	25.0	34.0	245
JMGG088V10A	PDFN5x6-8L	SuperSO8	N	100	75.0	1.6	7.3	9.2	9.0	13.5	-	-	±20	90.0	2,046	865.0	25.0	34.0	248
JMSL1008AUN	DFN3333-8L	-	N	100	36.0	1.8	7.4	9.3	9.1	11.8	-	-	±20	122.0	2,200	445.0	8.0	34.0	252
JMSL1009AG	PDFN5x6-8L	SuperSO8	N	100	77.0	1.7	7.0	8.2	8.9	11.2	-	-	±20	86.0	1,314	548.0	26.0	25.0	175
JMSL1009AU	PDFN3x3-8L	PQFN 3x3	N	100	67.0	1.7	7.6	8.8	9.7	11.8	-	-	±20	86.0	1,314	548.0	26.0	25.0	190
JMGP088V10A	SOP-8	SOP-8	N	100	20.0	1.6	7.5	9.7	9.4	14.0	-	-	±20	90.0	2,046	865.0	25.0	39.4	296
JMGI088V10A	TO-251-3L	DPAK3	N	100	80.0	1.6	7.7	10.0	9.4	14.0	-	-	±20	90.0	2,046	865.0	25.0	39.4	303
JMSL1010AG	PDFN5x6-8L	SuperSO8	N	100	58.0	1.9	8.0	10.0	10.5	13.7	-	-	±20	94.0	1,535	335.0	8.2	26.0	208
JMSL1010AU	PDFN3x3-8L	PQFN 3x3	N	100	38.0	1.9	9.6	12.0	12.0	15.6	-	-	±20	45.0	1,535	335.0	8.2	26.0	250

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GSMH, Typ} (V)	R _{DS(ON), Typ} @V _{GS} =10V (mΩ)	R _{DS(ON), Max} @V _{GS} =10V (mΩ)	R _{DS(ON), Typ} @V _{GS} =4.5V (mΩ)	R _{DS(ON), Max} @V _{GS} =4.5V (mΩ)	R _{DS(ON), Typ} @V _{GS} =2.5V (mΩ)	R _{DS(ON), Max} @V _{GS} =2.5V (mΩ)	V _{GS-Max} (V)	E _{AS, Max} (mJ)	C _{iss, Typ} (pF)	C _{oss, Typ} (pF)	C _{rrs, Typ} (pF)	Q _{s, Typ} (nC)	FOM
JMSH1010AK	TO-252-3L	DPAK	N	100	64.0	2.7	9.2	11.5	-	-	-	-	±20	86.0	1,372	291.0	6.2	21.0	193
JMSH1010AC	TO-220-3L	TO-220	N	100	65.0	2.7	9.4	11.8	-	-	-	-	±20	68.0	1,372	291.0	6.2	21.0	197
JMSH1010AE	TO-263-3L	D ² PAK	N	100	65.0	2.7	9.4	11.8	-	-	-	-	±20	68.0	1,372	291.0	6.2	21.0	197
JMSL1010AK	TO-252-3L	DPAK	N	100	70.0	1.9	8.3	10.0	10.8	13.5	-	-	±20	48.0	1,535	335.0	8.2	26.0	216
JMSH1010AG	PDFN5x6-8L	SuperSO8	N	100	63.0	2.7	8.8	11.0	-	-	-	-	±20	86.0	1,372	291.0	6.2	21.0	185
JMSL1010AC	TO-220-3L	TO-220	N	100	72.0	1.9	7.9	10.0	10.4	13.6	-	-	±20	94.0	1,535	335.0	8.2	26.0	205
JMSL1010AP	SOP-8	SOP-8	N	100	11.0	1.8	9.2	11.1	11.8	14.8	-	-	±20	51.0	1,535	335.0	8.2	26.0	239
JMSL1013AGD	PDFN5x6-8L-D	-	N+N	100	48.0	1.7	10.4	13.0	12.9	16.8	-	-	±20	68.0	1,535	335.0	8.2	26.0	270
JMSH1018AG	PDFN5x6-8L	SuperSO8	N	100	33.0	3.2	15.8	19.8	-	-	-	-	±20	39.0	769	171.0	5.1	12.7	201
JMSL1018AG	PDFN5x6-8L	SuperSO8	N	100	35.0	1.9	14.5	18.2	18.7	24.4	-	-	±20	29.0	769	171.0	5.1	13.0	189
JMSL1018AGD	PDFN5x6-8L-D	-	N+N	100	31.0	2.0	17.0	21.0	22.0	29.0	-	-	±20	29.0	769	171.0	5.1	12.7	216
JMSL1018AGD	PDFN5x6-8L-D	-	N+N	100	31.0	2.0	17.0	21.0	22.0	29.0	-	-	±20	29.0	769	171.0	5.1	12.7	216
JMSL1018AK	TO-252-3L	DPAK	N	100	40.0	1.9	14.0	17.0	18.5	23.0	-	-	±20	24.0	769	171.0	5.1	12.7	178
JMSL1018AP	SOP-8	SOP-8	N	100	8.1	1.9	15.8	19.8	19.0	25.0	-	-	±20	24.0	769	171.0	5.1	12.7	201
JMSL1023AY	SOT-223-3L	SOT-223	N	100	19.4	1.9	19.0	23.8	23.3	31.0	-	-	±20	50.0	769	171.0	5.1	12.7	241
JMSL1040AG	PDFN5x6-8L	SuperSO8	N	100	18.9	2.0	29.0	36.0	39.0	50.0	-	-	±20	11.3	363	85.0	3.0	6.8	197
JMSL1040AV	DFN2020-6L	PQFN 2x2	N	100	4.7	1.9	29.0	36.0	37.0	48.0	-	-	±20	20.0	363	85.0	3.0	6.8	197
JMSL1040AU	PDFN3x3-8L	PQFN 3x3	N	100	18.0	2.0	29.0	36.0	38.0	50.0	-	-	±20	11.0	363	85.0	3.0	6.8	197
JMSL1040AGD	PDFN5x6-8L-D	-	N+N	100	18.4	2.0	28.0	36.0	40.0	52.0	-	-	±20	11.3	363	85.0	3.0	6.8	190
JMSL1040AUD	PDFN3x3-8L-D	-	N+N	100	17.0	2.0	31.0	39.0	39.0	51.0	-	-	±20	11.0	363	85.0	3.0	6.8	211
JMSL1040AY	SOT-223-3L	SOT-223	N	100	13.0	2.0	30.0	39.0	38.0	50.0	-	-	±20	21.0	363	85.0	3.0	6.8	204
JMSL1040AC	TO-220-3L	TO-220	N	100	26.0	1.9	30.0	36.0	38.0	48.0	-	-	±20	10.0	363	85.0	3.0	6.8	204
JMSL1040AE	TO-263-3L	D ² PAK	N	100	26.0	1.9	30.0	36.0	38.0	48.0	-	-	±20	10.0	363	85.0	3.0	6.8	204
JMSL1040AK	TO-252-3L	DPAK	N	100	24.0	2.0	32.0	39.0	43.0	54.0	-	-	±20	10.0	363	85.0	3.0	6.8	218
JMSL1040APD	SOP-8	SOP-8	N	100	12.3	2.0	31.0	40.0	40.0	52.0	-	-	±20	11.3	363	85.0	3.0	6.8	211
JMGK10V10A	TO-252-3L	DPAK	N	100	10.0	1.7	116.0	151.0	136.0	190.0	-	-	±20	1.6	154	34.0	6.0	4.3	499
JMSL1070AK	TO-252-3L	DPAK	N	100	18.1	2.0	57.0	70.0	70.0	91.0	-	-	±20	1.0	187	54.0	5.0	3.9	222
JMSL1070AY	SOT-223-3L	SOT-223	N	100	8.4	2.0	54.0	70.0	75.0	98.0	-	-	±20	1.0	187	54.0	5.0	3.9	211
JMSL1070APD	SOP-8	SOP-8	N	100	5.5	1.8	57.0	70.0	71.0	92.0	-	-	±20	1.0	187	54.0	5.0	3.9	222
JMSL10130AK	TO-252-3L	DPAK	N	100	9.0	1.7	115.0	138.0	144.0	180.0	-	-	±20	4.9	96	32.0	2.9	2.5	288
JMGK10V10A	TO-252-3L	DPAK	N	100	10.0	1.7	116.0	151.0	136.0	190.0	-	-	±20	1.6	154	34.0	6.0	4.3	499
JMGP10V10A	SOP-8	SOP-8	N	100	10.0	1.7	108.0	140.0	128.0	179.0	-	-	±20	-	154	34.0	6.0	4.3	464
JMGY7V10A	SOT-223-3L	SOT-223	N	100	7.0	1.7	105.0	137.0	125.0	175.0	-	-	±20	1.0	150	34.0	6.0	4.3	452
JMGY7V10A	SOT-223	-	N	100	7.0	1.7	105.0	137.0	125.0	175.0	-	-	±20	1.0	150	34.0	6.0	4.3	452
JMGP10V10A	SOP-8	SOP-8	N	100	7.0	1.7	108.0	140.0	128.0	179.0	-	-	±20	1.6	150	34.0	6.0	4.3	464
JMGL3V10A	SOT-23	SOT-23	N	100	3.0	1.7	112.0	146.0	131.0	182.0	-	-	±20	-	150	34.0	6.0	4.3	482
JMGM14DV10A	SOT-23-6L	-	N	100	3.0	1.7	110.0	140.0	133.0	186.0	-	-	±20	-	150	34.0	6.0	4.3	473
JMGL3V10A	SOT-23	SOT-23	N	100	3.0	1.7	112.0	146.0	131.0	182.0	-	-	±20	-	150	34.0	6.0	4.3	482
JMGM14DV10A	SOT-23-6L	-	N	100	3.0	1.7	110.0	140.0	133.0	186.0	-	-	±20	-	150	34.0	6.0	4.3	473
JMSL10130AM	SOT-23-6L	-	N	100	2.1	1.9	105.0	126.0	135.0	169.0	-	-	±20	0.9	103	47.0	4.9	2.3	242
JMSL10130AL	SOT-23	SOT-23	N	100	1.8	1.9	105.0	131.0	139.0	174.0	-	-	±20	0.8	103	47.0	4.9	2.3	242
JMSL10130AP	SOP-8	SOP-8	N	100	2.4	1.7	107.0	134.0	140.0	175.0	-	-	±20	0.9	103	47.0	4.9	2.6	278
JMSL10130AY	SOT-223-3L	SOT-223	N	100	5.9	1.9	110.0	138.0	137.0	180.0	-	-	±20	0.9	103	47.0	4.9	2.3	253
JMSL10130AGD	PDFN5x6-8L-D	-	N+N	100	10.0	1.7	99.0	124.0	120.0	156.0	-	-	±20	0.9	103	47.0	4.9	2.3	228
JMSL10130APD	SOP-8	SOP-8	N+N	100	2.4	1.7	111.0	139.0	155.0	195.0	-	-	±20	0.9	103	47.0	4.9	2.5	278
JMSL10130AUD	PDFN3x3-8L-D	-	N+N	100	10.1	1.7	100.0	125.0	123.0	160.0	-	-	±20	0.9	103	47.0	4.9	2.6	260

-100~400V

Continued

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V _{DS-Max} (V)	I _{D-Max} (A)	V _{GS(M)-Typ} (V)	R _{DS(ON)-Typ} @V _{GS=10V} (mΩ)	R _{DS(ON)-Max} @V _{GS=10V} (mΩ)	R _{DS(ON)-Typ} @V _{GS=4.5V} (mΩ)	R _{DS(ON)-Max} @V _{GS=4.5V} (mΩ)	R _{DS(ON)-Typ} @V _{GS=2.5V} (mΩ)	R _{DS(ON)-Max} @V _{GS=2.5V} (mΩ)	V _{GS-Max} (V)	E _{AS-Max} (mJ)	C _{iss-Typ} (pF)	C _{oss-Typ} (pF)	C _{rrs-Typ} (pF)	Q _{s-Typ} (nC)	FOM
JMSH1207AG	PDFN5x6-8L	SuperSO8	N	120	94.0	3.0	5.6	7.0	-	-	-	-	±20	135.0	2,208	424.0	8.3	35.0	196
JMGG070V12D	PDFN5x6-8L	SuperSO8	N	120	90.0	3.0	5.7	7.4	-	-	-	-	±25	182.0	3,600	2,400.0	156.0	90.0	513
JMSH1207AC	TO-220-3L	TO-220	N	120	112.0	2.9	5.9	7.1	-	-	-	-	±20	135.0	2,208	424.0	8.3	35.0	207
JMSH1207AE	TO-263-3L	D ² PAK	N	120	112.0	2.9	5.9	7.1	-	-	-	-	±20	135.0	2,208	424.0	8.3	35.0	207
JMGG140V12A	PDFN5x6-8L	SuperSO8	N	120	50.0	3.0	11.0	14.0	-	-	-	-	±25	81.0	1,625	1,230.0	29.0	37.0	407
JMSH1305AC	TO-220-3L	TO-220	N	135	147.0	3.0	4.3	5.0	-	-	-	-	±20	540.0	4,307	611.0	4.2	61.0	262
JMSH1305AE	TO-263-3L	D ² PAK	N	135	147.0	3.0	4.3	5.0	-	-	-	-	±20	540.0	4,307	611.0	4.2	61.0	262
JMSH1504AC	TO-220-3L	TO-220	N	150	185.0	3.2	4.2	5.2	-	-	-	-	±20	889.0	6,540	772.0	6.7	88.0	370
JMSH1504AE	TO-263-3L	D ² PAK	N	150	185.0	3.2	3.9	4.9	-	-	-	-	±20	889.0	6,540	772.0	6.7	88.0	343
JMSH1504AE7	TO-263-7L	D ² PAK7	N	150	205.0	3.2	3.8	4.8	-	-	-	-	±20	889.0	6,540	772.0	6.7	88.0	334
JMSH1504AS	TO-247-3L	TO-247	N	150	201.0	3.2	4.0	4.9	-	-	-	-	±20	889.0	6,540	772.0	6.7	88.0	352
JMSH1504ATL	PowerJE*10x12	TOLL	N	150	263.0	3.2	3.3	4.2	-	-	-	-	±20	1,201.0	6,540	772.0	6.7	88.0	290
JMSH1505ATL	PowerJE*10x12	TOLL	N	150	159.0	3.2	4.6	5.8	-	-	-	-	±20	800.0	4,320	535.0	7.2	68.0	313
JMSH1507AC	TO-220-3L	TO-220	N	150	115.0	3.0	5.2	6.5	-	-	-	-	±20	540.0	4,320	535.0	7.2	68.0	354
JMSH1507AE	TO-263-3L	D ² PAK	N	150	115.0	3.0	5.2	6.5	-	-	-	-	±20	540.0	4,320	535.0	7.2	68.0	354
JMSH1506AE7	TO-263-7L	-	N	150	181.0	3.2	4.9	6.0	-	-	-	-	±20	540.0	4,320	535.0	7.2	68.0	333
JMSH1506AS	TO-247-3L	TO-247	N	150	157.0	3.2	5.2	6.2	-	-	-	-	±20	540.0	4,320	535.0	7.2	68.0	354
JMSL1507AGN	DFN5060-8L	-	N	150	105.0	2.1	5.7	7.1	7.1	9.2	-	-	±20	484.0	4,510	457.0	46.0	69.0	393
JMSH1507AGN	DFN5060-8L	-	N	150	99.0	3.2	6.0	7.5	-	-	-	-	±20	484.0	3,395	457.0	30.0	51.0	306
JMSH1508AC	TO-220-3L	TO-220	N	150	98.0	3.2	7.1	8.8	-	-	-	-	±20	265.0	3,395	457.0	17.4	47.0	334
JMSH1508AE	TO-263-3L	D ² PAK	N	150	98.0	3.2	6.7	8.4	-	-	-	-	±20	265.0	3,395	457.0	17.4	47.0	315
JMSH1509AG	PDFN5x6-8L	SuperSO8	N	150	75.0	3.0	8.5	9.9	-	-	-	-	±20	231.0	2,181	363.0	7.9	30.0	255
JMSH1509AC	TO-220-3L	TO-220	N	150	90.0	3.0	9.0	10.9	-	-	-	-	±20	211.0	3,609	348.0	4.8	47.0	423
JMSH1509AE	TO-263-3L	D ² PAK	N	150	90.0	3.0	9.0	10.9	-	-	-	-	±20	211.0	3,609	348.0	4.8	47.0	423
JMSH1511AC	TO-220-3L	TO-220	N	150	78.0	3.0	11.5	13.9	-	-	-	-	±20	194.0	2,890	280.0	3.9	38.0	437
JMSH1511AE	TO-263-3L	D ² PAK	N	150	78.0	3.0	11.5	13.9	-	-	-	-	±20	194.0	2,890	280.0	3.9	38.0	437
JMSH1513AG	PDFN5x6-8L	SuperSO8	N	150	60.0	3.2	10.5	13.0	-	-	-	-	±20	217.0	2,128	274.0	9.0	30.0	315
JMSH1513AC	TO-220-3L	TO-220	N	150	69.0	3.2	10.8	13.7	-	-	-	-	±20	173.0	2,128	274.0	9.0	30.0	324
JMSH1513AE	TO-263-3L	D ² PAK	N	150	69.0	3.2	10.6	13.3	-	-	-	-	±20	173.0	2,128	274.0	9.0	30.0	318
JMSH1516AG	PDFN5x6-8L	SuperSO8	N	150	51.0	3.2	14.2	16.8	-	-	-	-	±20	135.0	1,603	196.0	7.5	23.0	327
JMSH1516AC	TO-220-3L	TO-220	N	150	61.0	3.2	14.5	16.9	-	-	-	-	±20	135.0	1,603	196.0	7.5	23.0	334
JMSH1516AE	TO-263-3L	D ² PAK	N	150	61.0	3.2	14.5	16.9	-	-	-	-	±20	135.0	1,603	196.0	7.5	23.0	334
JMSH1552AG	PDFN5x6-8L	SuperSO8	N	150	20.0	3.2	43.0	52.0	-	-	-	-	±20	13.0	540	69.0	4.1	7.6	327
JMSH1552AU	PDFN3x3-8L	PQFN 3x3	N	150	15.0	3.2	45.0	52.0	-	-	-	-	±20	13.0	540	69.0	4.1	7.6	342
JMSH1552AK	TO-252-3L	DPAK	N	150	20.0	3.2	43.0	52.0	-	-	-	-	±20	13.0	540	69.0	4.1	7.6	327
JMSH1552AP	SOP-8	SOP-8	N	150	4.6	3.2	43.0	52.0	-	-	-	-	±20	13.0	540	69.0	4.1	7.3	314
JMSH1565AGS	PDFN5x6-8L	SuperSO8	N	150	18.0	3.2	52.0	65.0	-	-	-	-	±20	20.0	306	70.0	3.8	5.3	276
JMSH1565AUS	PDFN3x3-8L	PQFN 3x3	N	150	14.0	3.2	54.0	65.0	-	-	-	-	±20	20.0	306	70.0	3.8	5.3	286
JMSH1565AKS	TO-252-3L	DPAK	N	150	18.0	3.2	52.0	65.0	-	-	-	-	±20	16.0	306	70.0	3.8	5.3	276
JMSH1565APS	SOP-8	SOP-8	N	150	4.1	3.2	52.0	65.0	-	-	-	-	±20	16.0	306	70.0	3.8	5.3	276
JMSH1535AG	PDFN5x6-8L	SuperSO8	N	150	28.0	3.3	27.0	35.0	-	-	-	-	±20	48.0	760	113.0	23.0	12.3	332
JMSH1566AG	PDFN5x6-8L	SuperSO8	N	150	11.6	3.3	57.0	72.0	-	-	-	-	±20	10.5	360	54.0	3.8	5.9	336
JMSH2010BC	TO-220-3L	TO-220-3L	N	200	129.0	3.3	9.4	10.9	-	-	-	-	±20	841.0	3,318	436.0	41.0	48.0	451
JMSH2010BE	TO-263-3L	D ² PAK	N	200	129.0	3.3	9.1	10.7	-	-	-	-	±20	841.0	3,318	436.0	41.0	48.0	437
JMSH2010BS	TO-247-3L	TO-247-3L	N	200	130.0	3.3	8.8	10.6	-	-	-	-	±20	841.0	3,318	436.0	41.0	48.0	422
JMSH2010BTL	PowerJE*10x12	TOLL	N	200	118.0	3.3	8.0	9.6	-	-	-	-	±20	882.0	3,318	436.0	41.0	48.0	384

High-voltage MOSFETs ($\geq 400V$)

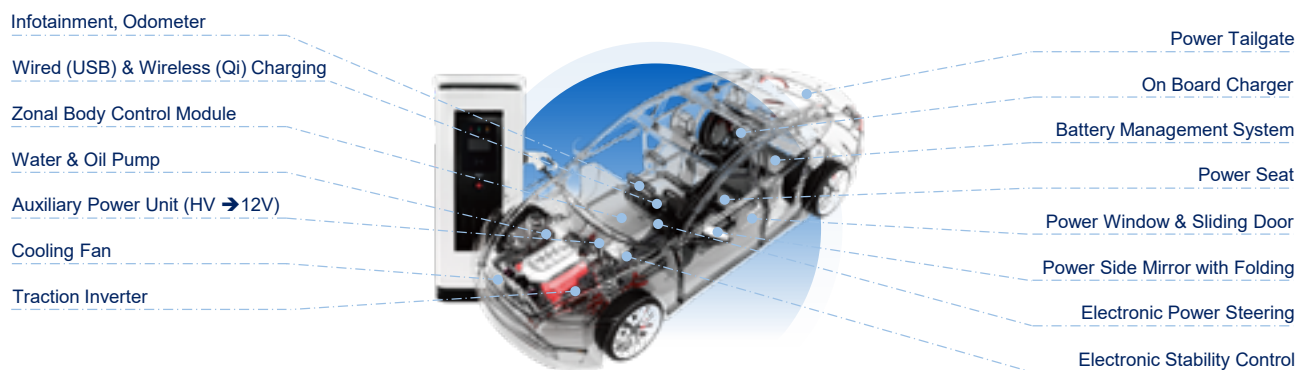
Consumer / Industrial-grade MOSFETs with $400V \leq V_{DS,Max} \leq 1kV$

There exist two technology platforms in the design of high-voltage MOSFETs: planar, SJ (super-junction). The latter is further divided into two device structures: multi-layer epitaxy, deep trench.

For battery charging, DC-DC voltage switching including power inverting, AC or DC motor driving, and other high-voltage applications, JJM offers the following high-voltage MOSFETs to meet the diverse needs of system designers. These MOSFETs are designed in either planar or SJ technology platform.

Product Name	JJM Package	Compatible Industry-common Package	Configuration	$V_{DS,Max}$ (V)	$I_{D,Max}$ (A)	$V_{GS(th),Typ}$ (V)	$R_{DS(ON),Typ}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON),Max}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON),Typ}$ @ $V_{GS}=4.5V$ (m Ω)	$R_{DS(ON),Max}$ @ $V_{GS}=4.5V$ (m Ω)	$R_{DS(ON),Typ}$ @ $V_{GS}=2.5V$ (m Ω)	$R_{DS(ON),Max}$ @ $V_{GS}=2.5V$ (m Ω)	$V_{GS,Max}$ (V)	$E_{AS,Max}$ (mJ)	$C_{iss,Typ}$ (pF)	$C_{oss,Typ}$ (pF)	$C_{res,Typ}$ (pF)	Q_s,Typ (nC)	FOM
JMPK840G1	TO-252-3L	DPAK	N	500	9.0	3.0	680.0	800.0	-	-	-	-	±30	180.0	1,100	106.0	32.0	19.5	13,260
JMPF20N60G1	TO-220FP-3L	-	N	600	20.0	3.0	310.0	380.0	-	-	-	-	±30	605.0	3,229	271.0	17.0	61.0	18,910
JMPF13N60G1	TO-220FP-3L	-	N	600	13.0	3.0	500.0	650.0	-	-	-	-	±30	304.0	2,125	181.0	15.0	61.0	30,500
JMPF8N60G1	TO-252-3L	DPAK	N	600	8.0	3.0	1,000.0	1,180.0	-	-	-	-	±30	145.8	1,160	109.0	12.0	26.0	26,000
JMPK2N60G1	TO-252-3L	DPAK	N	600	2.0	3.0	3,900.0	4,700.0	-	-	-	-	±30	54.0	293	35.0	7.0	10.0	39,000
JMPK1N60G1	TO-252-3L	DPAK	N	600	1.0	3.0	8,800.0	11,000.0	-	-	-	-	±30	-	137	17.0	3.0	4.8	42,240
JMPF20N65G1	TO-220FP-3L	-	N	650	20.0	3.0	350.0	440.0	-	-	-	-	±30	661.0	3,300	255.0	13.0	86.0	30,100
JMPF16N65G1	TO-220FP-3L	-	N	650	16.0	3.0	480.0	580.0	-	-	-	-	±30	461.0	2,740	214.0	15.0	71.0	34,080
JMPF10N65G1	TO-220FP-3L	-	N	650	10.0	3.0	750.0	950.0	-	-	-	-	±30	245.0	1,720	140.0	11.0	71.0	53,250
JMPF9N65G1	TO-220FP-3L	-	N	650	9.0	3.0	900.0	1,080.0	-	-	-	-	±30	218.0	1,446	128.0	13.0	32.0	28,800
JMPK9N65G1	TO-252-3L	DPAK	N	650	9.0	3.0	900.0	1,080.0	-	-	-	-	±30	211.0	1,400	114.0	26.0	32.0	28,800
JMPK7N65G1	TO-252-3L	DPAK	N	650	7.0	3.0	1,150.0	1,350.0	-	-	-	-	±30	198.0	1,148	106.0	12.0	22.0	25,300
JMPFP7N65G1	TO-220FA-3L	-	N	650	7.0	3.0	1,100.0	1,350.0	-	-	-	-	±30	198.0	1,148	106.0	12.0	22.0	24,200
JMPK2N65G1	TO-252-3L	DPAK	N	650	2.0	3.0	4,500.0	5,500.0	-	-	-	-	±30	31.0	296	34.0	7.0	22.0	99,000
JMPF10N80G1	TO-220FP-3L	-	N	800	10.0	3.5	740.0	900.0	-	-	-	-	±30	605.0	2,578	217.0	26.0	78.0	57,720
JMPF9N90G1	TO-220FP-3L	-	N	900	9.0	3.5	960.0	1,100.0	-	-	-	-	±30	605.0	2,500	186.0	23.0	86.0	82,560
JMPF6N100G1	TO-220FP-3L	-	N	1000	6.0	3.5	12,000.0	14,000.0	-	-	-	-	±30	461.0	2,495	173.0	22.0	86.0	103,000
JMH65R190AC	TO-220-3L	-	N	650	20.0	3.5	170.0	190.0	-	-	-	-	±20	405.0	1,560	61.0	11.7	38.0	6,460
JMH65R190AE	TO-263-3L	D ² PAK	N	650	20.0	3.5	170.0	190.0	-	-	-	-	±20	405.0	1,560	61.0	11.7	38.0	6,460
JMH65R190APLN	DFN8080-4L	-	N	650	17.4	3.5	169.0	190.0	-	-	-	-	±20	405.0	1,560	61.0	11.7	38.0	6,422
JMH65R190AS	TO-247-3L	TO-247	N	650	20.0	3.5	168.0	190.0	-	-	-	-	±20	405.0	1,560	61.0	11.7	38.0	6,384
JMH65R190AW	TO-262-3L	-	N	650	20.0	3.5	170.0	190.0	-	-	-	-	±20	405.0	1,560	61.0	11.7	38.0	6,460
JMH65R190AF	TO-220FP-3L	-	N	650	20.0	3.5	170.0	190.0	-	-	-	-	±20	405.0	1,560	61.0	11.7	38.0	6,460
JMH65R190AFFD	TO-220FP-3L	-	N	650	20.0	3.5	170.0	190.0	-	-	-	-	±20	405.0	1,560	61.0	11.7	38.0	6,460
JMH65R290AE	TO-263-3L	D ² PAK	N	650	12.0	3.5	259.0	290.0	-	-	-	-	±25	281.0	1,056	31.0	10.0	22.0	5,698
JMH65R290AF	TO-220FP-3L	-	N	650	12.0	3.5	260.0	290.0	-	-	-	-	±25	281.0	1,056	31.0	10.0	22.0	5,720
JMH65R290APLN	DFN8080-4L	-	N	650	10.0	3.5	262.0	290.0	-	-	-	-	±20	281.0	1,056	31.0	10.0	22.0	5,764
JMH65R290ACFP	TO-220FP-NL	-	N	650	12.0	3.5	260.0	290.0	-	-	-	-	±25	281.0	1,056	31.0	10.0	22.0	5,720
JMH65R430APLN	DFN8080-4L	-	N	650	10.4	3.5	370.0	430.0	-	-	-	-	±20	180.0	703	25.0	2.1	18.4	6,808
JMH65R430AE	TO-263-3L	D ² PAK	N	650	11.2	3.5	364.0	430.0	-	-	-	-	±20	180.0	703	25.0	2.1	18.4	6,698
JMH65R430AF	TO-220FP-3L	-	N	650	11.2	3.5	364.0	430.0	-	-	-	-	±20	180.0	703	25.0	2.1	18.4	6,698
JMH65R430ACFP	TO-220FP-NL	-	N	650	11.2	3.5	364.0	430.0	-	-	-	-	±20	180.0	703	25.0	2.1	18.4	6,698
JMH65R430AK	TO-252-3L	DPAK	N	650	11.2	3.5	370.0	430.0	-	-	-	-	±20	180.0	703	25.0	2.1	18.4	6,808
JMH65R980ACFP	TO-220FP-NL	-	N	650	4.0	3.5	895.0	980.0	-	-	-	-	±20	80.0	333	20.0	2.5	9.7	8,682
JMH65R980AF	TO-220FP-3L	-	N	650	4.0	3.5	895.0	980.0	-	-	-	-	±20	80.0	333	20.0	2.5	9.7	8,682
JMH65R980AK	TO-252-3L	DPAK	N	650	4.0	3.5	900.0	980.0	-	-	-	-	±20	80.0	333	20.0	2.5	9.7	8,730
JMH65R980APLN	DFN8080-4L	-	N	650	4.0	3.5	890.0	980.0	-	-	-	-	±20	80.0	333	20.0	2.5	9.7	8,633

APPLICATIONS OF AUTO-GRADE POWER SEMICONDUCTORS IN AUTOMOBILES



The shift from brushed to brushless motors, the proliferation of LEDs to replace the filament-type light bulbs in lightings, the increasing use of DC motors to improve fuel efficiency, the adoption of more IA (artificial intelligence) technology in driver assistance (e.g. blind-spot warning, lane departure warning, lane keeping assist, adaptive cruise control, etc.) result in the use of more and more power semiconductor components in vehicles. In alignment to the mega trend of electrification of transportation & mobility, Jiangsu JieJie Microelectronics (a.k.a. JJM®) has been offering more and more automotive-grade components to E-mobility (battery storage, renewable energy source, electric propulsion) accent & exterior lightings, ADAS (advanced driver assistant systems), vehicle-to-vehicle communications & cybersecurity, telematics and infotainment, etc.

In the auto-grade MOSFETs which bear 'Q' as the last letter in the product name, the die is designed with key performance matrices {ON-resistance $R_{DS(ON)}$, input capacitance C_{ISS} , total gate charge Q_g } minimized and SOA (safe operating area) further optimized. Assembled in the thermally efficient low-profile packages like the TOLL-compatible PowerJE®10x12 and PDFN5x6-8L with long protruded lead pins, these auto-grade MOSFETs offer world-class power efficiency, lower operating temperature, exceptional long-term reliability despite of the hostile working environment typical inside and outside of automobiles.

At JJM, the auto-grade diodes (TVS, ESD, rectifier, zener, etc.) are constructed with the patented clip assembly process. Compared to the traditional A+B structure, the risk of cold joint is minimized, thermal and physical stress on the die surface are minimized. All these result in outstanding long-term component reliability. Long-standing and reliable protection to prevent the semiconductor devices (application processor, mixed-signal interface IC, etc.) used in key sub-systems like power and traction inverter from damage by spurious electrical surges and other hazard are achieved. These auto-grade diodes offer world-class electrical performance like clamping voltage tailored to specific application requirement, low leakage current, and fast response as well as compliance to AEC-Q101-Rev-E stress test standards.

Motor Driving in Automobiles



- 01 Auto-grade power semiconductor components (MOSFET, TVS) from JJM are being extensively applied to motor driving in the many sub-systems in automobiles: EPS (electronic power steering), oil pumps, water pumps, power windows, rear trunk / hatch, power seats, power sunroofs, etc.
- 02 Auto-grade MOSFETs offer outstanding performance matrices {ON-resistance $R_{DS(ON)}$, input capacitance C_{ISS} , total gate charge Q_g } with the SOA (safe operating area) further optimized. Assembled in the thermally efficient low-profile packages like the TOLL-compatible PowerJE®10x12, and the PDFN5x6-8L with long protruded lead pins, these power-efficient auto-grade MOSFETs are widely applied in various applications inside automobiles. The long-term reliability are ensured by their compliance to the AEC-Q101-Rev-E stress test standards.
- 03 Assembled in the patented DO-218 package of JJM, the auto-grade TVS (transient voltage suppressor) can be applied to both $12V_{DC}$ and $24V_{DC}$ systems. They were tested to pass ISO 16750-2 P5a/5b compliant load-dump test and off $P_{PP,Max}$ performance of 4.6 ~ 8kW. Besides the ability to perform consistently across all key electrical matrices, these TVS also offer high surge immunity and exceptional long-term operating reliability. Hence, these auto-grade TVS are field-proven to be indispensable for the protection of valuable electronic sub-systems inside automobiles.

Components Recommended: Auto-grade MOSFETs

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V_{DS_Max} (V)	I_{D_Max} (A)	$V_{GS(th)_Typ}$ (V)	$R_{DS(ON)_Typ}$ @ $V_{GS} = 10V$ (m Ω)	$R_{DS(ON)_Max}$ @ $V_{GS} = 10V$ (m Ω)	V_{GS_Max} (V)	E_{AS_Max} (mJ)	C_{iss_Typ} (pF)	Q_g_Typ (nC)
PDFN5x6-8L	PDFN5x6-8L	SuperSO8	N	40	276	2.8	0.9	1.1	± 20	441	5,280	68.0
PowerJE*10x12	PowerJE*10x12	TOLL	N	40	337	2.8	1.0	1.3	± 20	317	5,280	68.0
PDFN5x6-8L	PDFN5x6-8L	SuperSO8	N	40	197	2.8	1.3	1.7	± 20	194	3,015	42.0
PDFN5x6-8L	PDFN5x6-8L	SuperSO8	N	40	182	2.8	1.6	2.0	± 20	194	3,020	41.0
PDFN5x6-8L	PDFN5x6-8L	SuperSO8	N	40	128	1.5	2.5	3.1	± 20	79	1,424	22.0
PDFN5x6-8L	PDFN5x6-8L	SuperSO8	N	40	90	1.6	4.2	5.2	± 20	36	1,204	17.9
PDFN5x6-8L-D	PDFN5x6-8L-D	-	N+N	40	49	1.6	5.5	6.9	± 20	36	1,227	17.9
PowerJE*10x12	PowerJE*10x12	TOLL	N	60	348	2.8	1.2	1.6	± 20	480	7,312	102.0
PDFN5x6-8L	PDFN5x6-8L	SuperSO8	N	60	225	2.8	1.3	1.7	± 20	375	5,874	81.0
PDFN5x6-8L	PDFN5x6-8L	SuperSO8	N	60	168	2.8	1.9	2.4	± 20	240	3,562	50.0
PDFN5x6-8L-D	PDFN5x6-8L-D	-	N+N	60	38	1.6	8.5	10.6	± 20	34	1,087	16.6

Components Recommended: Auto-grade TVS

Product Name		Package	ISO16750-2 P5A	V_{R_Max}	@ I_R	V_{BR}		@ I_T	V_{C_Max}	@ I_{PP}
Uni-Polar	Bi-Polar		Test Pulse: 10 times	(V)	(mA)	Min (V)	Max (V)	(mA)	(V)	(A)
SM8S22A-AL	SM8S22CA-AL	DO-218AB	US: 101V/1Q/400ms	22	5	24.4	26.9	5	35.5	186
SM8S24A-AL	SM8S24CA-AL	DO-218AB	US: 101V/1Q/400ms	24	5	26.7	29.5	5	38.9	170
SM8S30A-AL	SM8S30CA-AL	DO-218AB	US: 202V/4Q/350ms	30	5	33.3	36.8	5	48.4	136
SM8S33A-AL	SM8S33CA-AL	DO-218AB	US: 202V/4Q/350ms	33	5	36.7	40.6	5	53.3	124
SM8S36A-AL	SM8S36CA-AL	DO-218AB	US: 202V/4Q/350ms	36	5	40.0	44.2	5	58.1	114
SM6P22A	SM6P22C	SMC	US: 87V/2Q/150ms	22	5	24.4	26.9	5	35.5	141
SM6P24A	SM6P24C	SMC	US: 87V/2Q/150ms	24	5	26.7	29.5	5	38.9	129
SM6P30A	SM6P30C	SMC	US: 151V/8Q/150ms	30	5	33.3	36.8	5	48.4	103
SM6P33A	SM6P33C	SMC	US: 151V/8Q/150ms	33	5	36.7	40.6	5	53.3	94
SM6P36A	SM6P36C	SMC	US: 151V/8Q/150ms	36	5	40.0	44.2	5	58.1	86

Power Sourcing (Lightings incl.) in Automobiles



- Auto-grade power semiconductor components (MOSFET, TVS) from JJM are being extensively applied to power sourcing applications (accent lights, head lamp, incl.) in automobiles.
- Partly attributed by the advanced wafer process, the auto-grade MOSFETs offer excellent electrical characteristics such as $R_{DS(ON)}$ and Q_g . The resultant low switching and conduction loss significantly reduce operating temperature hence they are good fit for the power conversion circuits running at high frequency to minimize BOM (bill of materials) space. The portfolio of auto-grade MOSFETs currently cover V_{DS_Max} from 40 ~ 150V (medium-voltage category). Future releases shall be extended all the way to 650V and higher.
- The auto-grade TVS are assembled with the patented clip assembly process. Compared to the traditional A+B structure, the risk of cold joint is minimized, thermal and physical stress on the die surface are minimized, high degree of long-term operating reliability are resulted. On top, the excellent voltage clamping ability, low leakage current and fast response are typical of these auto-grade TVS. Compliance to the AEC-Q101-Rev-E stress test standards provide another further warranty to trustable operation.

Components Recommended: Auto-grade MOSFETs

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V_{DS_Max} (V)	I_{D_Max} (A)	$V_{GS(th)_Typ}$ (V)	$R_{DS(ON) Typ} @ V_{GS} = 10V$ (m Ω)	$R_{DS(ON) Max} @ V_{GS} = 10V$ (m Ω)	V_{GS_Max} (V)	E_{AS_Max} (mJ)	C_{iss_Typ} (pF)	Q_g_Typ (nC)
JMSL0609AGQ	PDFN5x6-8L	SuperSO8	N	60	67	1.6	7.2	9.4	± 20	34	1,087	16.6
JMSL0609AUQ	PDFN3x3-8L	PQFN 3x3	N	60	44	1.6	7.5	9.4	± 20	34	1,087	16.6
JMSL0610AGDQ	PDFN5x6-8L-D	-	N+N	60	38	1.6	8.5	10.6	± 20	34	1,087	16.6
JMSL0612AGQ	PDFN5x6-8L	SuperSO8	N	60	52	1.6	9.5	12.0	± 20	20	731	13.9
JMSL0612AUQ	PDFN3x3-8L	PQFN 3x3	N	60	36	1.6	10.0	12.5	± 20	20	731	13.9
JMSL0615AGDQ	PDFN5x6-8L-D	-	N+N	60	33	1.6	10.5	13.5	± 20	20	731	13.9
JMSL1006AGQ	PDFN5x6-8L	SuperSO8	N	100	110	1.8	4.7	5.9	± 20	110	2,604	42.0
JMSL1008AGQ	PDFN5x6-8L	SuperSO8	N	100	88	1.8	6.0	7.6	± 20	102	2,200	34.0
JMSL1010AGQ	PDFN5x6-8L	SuperSO8	N	100	68	1.9	8.0	10.0	± 20	94	1,535	26.0
JMSL1010AUQ	PDFN3x3-8L	PQFN 3x3	N	100	46	1.9	8.5	10.6	± 20	45	1,535	26.0
JMSL1018AGQ	PDFN5x6-8L	SuperSO8	N	100	47	1.8	15.0	18.7	± 20	29	769	12.7
JMSH1507AEQ	TO-263-3L	D ² PAK	N	150	161	3.2	5.2	6.5	± 20	540	4,320	68.0
JMSH1508AEQ	TO-263-3L	D ² PAK	N	150	117	3.2	6.7	8.4	± 20	265	3,395	47.0
JMSH1509AGQ	PDFN5x6-8L	SuperSO8	N	150	87	3.2	8.5	9.9	± 20	331	2,181	30.0
JMSH1535AGQ	PDFN5x6-8L	SuperSO8	N	150	29	3.3	27.0	35.0	± 20	48	760	12.3

Components Recommended: Auto-grade TVS

Product Name		Package	P_{PP}	V_{R_Max}	$@ I_R$	V_{BR} (V)		$@ I_T$	V_{C_Max}	$@ I_{FP}$
Uni-Polar	Bi-Polar		(W)	(V)	(μ A)	Min	Max	(mA)	(V)	A
SMBJ22A-AU	SMBJ22CA-AU	SMB	600	22	1	24.4	26.9	1	35.5	16.9
SMBJ24A-AU	SMBJ24CA-AU	SMB	600	24	1	26.7	29.5	1	38.9	15.4
SMBJ26A-AU	SMBJ26CA-AU	SMB	600	26	1	28.9	31.9	1	42.1	14.3
SMBJ30A-AU	SMBJ30CA-AU	SMB	600	30	1	33.3	36.8	1	48.4	12.4
SMBJ33A-AU	SMBJ33CA-AU	SMB	600	33	1	36.7	40.6	1	53.3	11.3
10BJ22A-AU	10BJ22CA-AU	SMB	1,000	22	1	24.4	26.9	1	35.5	28.2
10BJ24A-AU	10BJ24CA-AU	SMB	1,000	24	1	26.7	29.5	1	38.9	25.7
10BJ26A-AU	10BJ26CA-AU	SMB	1,000	26	1	28.9	31.9	1	42.1	23.8
10BJ30A-AU	10BJ30CA-AU	SMB	1,000	30	1	33.3	36.8	1	48.4	20.7
10BJ33A-AU	10BJ33CA-AU	SMB	1,000	33	1	36.7	40.6	1	53.3	18.8
15BJ22A-AU	15BJ22CA-AU	SMBF	1,500	22	1	24.4	26.9	1	35.5	42.3
15BJ24A-AU	15BJ24CA-AU	SMBF	1,500	24	1	26.7	29.5	1	38.9	38.6
15BJ26A-AU	15BJ26CA-AU	SMBF	1,500	26	1	28.9	31.9	1	42.1	35.6
15BJ30A-AU	15BJ30CA-AU	SMBF	1,500	30	1	33.3	36.8	1	48.4	31.0
15BJ33A-AU	15BJ33CA-AU	SMBF	1,500	33	1	36.7	40.6	1	53.3	28.2

Battery Management (BMS) in Automobiles



- Auto-grade power semiconductor components (MOSFET, TVS) from JJM manifest unique benefits to battery management system whose behavior is critical to NEVs (new energy vehicles).
- JJM offers auto-grade MOSFETs with ON-resistance as low as 0.58 mΩ which contribute to lower operating temperature. Assembled in state-of-the-art packaging process, the resulted power discrete component perfectly customer demands for the often conflicting requirement of high power and low heat dissipation. To name a few, auto-grade MOSFETs housed in the PDFN5x6-8L, PowerJE®7x8 (compatible with sTOLL), PowerJE®10 x12 (compatible with TOLL) offer some of the best class-leading performance in the industry. In addition, these components undergo the rigorous AEC-Q101-REV-E compliant stress tests, hence they are field proven to meet the challenge of harsh operating conditions typical of automobiles.
- The auto-grade TVS are manufactured with the patented clip assembly process. As opposed to the traditional A+B assembly, cold joint is minimized, die stress is much reduced, outstanding long-term reliability is achieved. These components achieve excellent peak pulse power P_{PP_Max} at 1kW and more in the minuscule SMB package size. Both uni-directional-bi-directional type of protection capabilities are available. Overall, the excellent electrical performance, the outstanding voltage clamping ability, the low leakage current, the fast response to incoming spurious voltage surges, and the compliance to AEC-Q101-Rev-E stress test standards make these auto-grade TVS from JJM a perfect answer to the ever demanding safety and reliability requirement upon the tens of millions of vehicles purchased by consumers nowadays.

Components Recommended: Auto-grade MOSFETs

Product Name	JJM Package	Compatible Industry-common Package	Configuration	V_{DS_Max} (V)	I_{D_Max} (A)	$V_{GS(th)_Typ}$ (V)	$R_{DS(ON)_Typ}$ @ $V_{GS} = 10V$ (mΩ)	$R_{DS(ON)_Max}$ @ $V_{GS} = 10V$ (mΩ)	V_{GS_Max} (V)	E_{AS_Max} (mJ)	C_{iss_Typ} (pF)	Q_g_Typ (nC)
JMSL040SAGQ	PDFN5x6-8L	SuperSO8	N	40	387.0	1.5	0.58	0.75	±20	506.0	7,654	114.0
JMSH040SAGQ	PDFN5x6-8L	SuperSO8	N	40	378.0	2.8	0.65	0.8	±20	938.0	7,319	97.0
JMSL0401BGQ	PDFN5x6-8L	SuperSO8	N	40	299.0	1.5	0.83	0.98	±20	726.0	5,495	80.0
JMSH0401BGQ	PDFN5x6-8L	SuperSO8	N	40	276.0	2.8	0.90	1.1	±20	441.0	5,280	68.0
JMSH0401ATLQ	PowerJE®10x12	TOLL	N	40	337.0	2.8	1.0	1.25	±20	317.0	5,280	68.0
JMSL0401AGQ	PDFN5x6-8L	SuperSO8	N	40	198.0	1.6	1.3	1.7	±20	194.0	3,125	47.0
JMSH0401AGQ	PDFN5x6-8L	SuperSO8	N	40	197.0	2.8	1.3	1.7	±20	194.0	3,015	42.0
JMSL0402AGQ	PDFN5x6-8L	SuperSO8	N	40	183.0	1.6	1.6	2.0	±20	163.0	3,133	46.0
JMSH0402AGQ	PDFN5x6-8L	SuperSO8	N	40	182.0	2.8	1.6	2.0	±20	194.0	3,020	41.0
JMSL0402BGQ	PDFN5x6-8L	SuperSO8	N	40	158.0	1.6	1.9	2.5	±20	126.0	2,131	36.0
JMSL0403AGQ	PDFN5x6-8L	SuperSO8	N	40	128.0	1.5	2.5	3.1	±20	79.0	1,424	22.0
JMSL0406AGQ	PDFN5x6-8L	SuperSO8	N	40	90.0	1.6	4.2	5.2	±20	36.0	1,204	17.9
JMSH0406AGQ	PDFN5x6-8L	SuperSO8	N	40	90.0	2.8	4.1	5.1	±20	96.0	1,027	14.9
JMSL0406AKQ	TO-252-3L	DPAK	N	40	78.0	1.6	4.7	5.6	±20	36.0	1,204	17.9
JMSL0406AGDQ	PDFN5x6-8L-D	-	N+N	40	49.0	1.6	5.5	6.9	±20	36.0	1,227	17.9
JMSH0406AGDQ	PDFN5x6-8L-D	-	N+N	40	50.0	2.8	5.2	6.5	±20	96.0	1,027	14.9
JMSL0406AUQ	PDFN3x3-8L	PQFN 3x3	N	40	57.0	1.6	4.5	5.6	±20	36.0	1,204	17.9

Components Recommended: Auto-grade TVS

Product Name		Package	ISO16750-2 P5A	V_{R_Max}	@ I_R	V_{BR}		@ I_T	V_{C_Max}	@ I_{PP}
Uni-Polar	Bi-Polar		Test Pulse: 10 times	(V)	(mA)	Min (V)	Max (V)	(mA)	(V)	(A)
SMBJ22A-AU	SMBJ22CA-AU	SMB	600	22	1	24.4	26.9	1	35.5	16.9
SMBJ24A-AU	SMBJ24CA-AU	SMB	600	24	1	26.7	29.5	1	38.9	15.4
SMBJ26A-AU	SMBJ26CA-AU	SMB	600	26	1	28.9	31.9	1	42.1	14.3
SMBJ30A-AU	SMBJ30CA-AU	SMB	600	30	1	33.3	36.8	1	48.4	12.4
SMBJ33A-AU	SMBJ33CA-AU	SMB	600	33	1	36.7	40.6	1	53.3	11.3

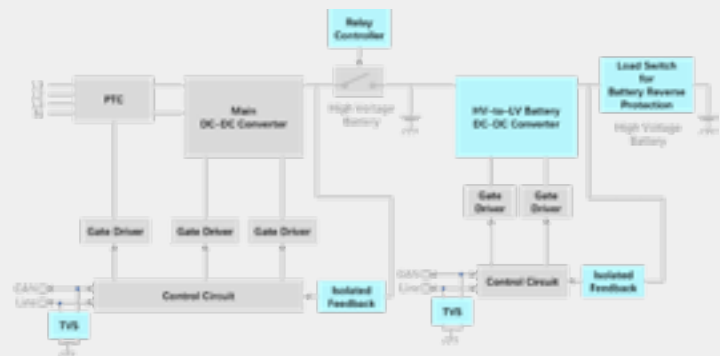
CHARGING STATION

NEV (new energy vehicle) Charging Station operate in similar fashion as the fuel dispensers in typical gas station. They are either secured to the ground or wall-mounted. Nowadays, charging station are commonly installed in public establishments (government & commercial buildings, shopping malls, restaurants, banks, hotels, underground & ground-level parking lots, etc.) and private properties (1/2-car attached garages, parking lots, etc.) in residential area to refill the battery energy depleted at standard / fast speed depending on the capability of the charging and the receiving ends. The input of charging station is directly connected to the provincial / national electric power grid while the output end is equipped with a bulky charging plug with AC / DC output voltage level.



Today, many NEV charging station provide more than one charging plug with V_{AC} output to facilitate standard (7 ~ 22kW) to rapid (CCS type for 50 ~ 350kW). In comparison, the CHAdeMO type charging plug provides V_{DC} output at 25 ~ 100kW. The typical 'slow' charging station is designed to output V_{AC} in either single-phase or three-phase to provide charging rate at 7 / 22 / 40 kW. This is converted into DC voltage by the OBC (on-board charger) inside the NEV to re-charge the on-board battery storage. Such 'slow' charger is generally installed in residential & commercial parking lots. Charging station with V_{DC} output (also known as 'off-board charger') directly re-charge the on-board battery storage without the OBC. Such charging station are typically designed to support high charging rate at 60 / 120 / 200 kW or more

The AC power from the grid are fed into the OBC of an NEV through the charging station. The OBC converts V_{AC} to V_{DC} in order to re-charge the on-board battery storage, typically through some kind of distribution box. On the other hand, charging station with V_{DC} output embeds inside a number of AC-to-DC power modules connected in series & parallel configuration. In view of the commercial offerings in the market, there exist 3 major trends: 1) multiple output levels with each at a constant power rating; 2) multiple output voltages with each at a constant charging current; 3) multiple high-power modules connected in series & parallel configuration.



In charging station with V_{DC} output, there are two key power stages. The PFC (power factor correction) stage maintains the phase relationship between input current and voltage. As a result, the total harmonic distortion (THD) cast upon the current in the AC power grid are significantly reduced. The reactive power dissipated are minimized and the overall energy efficiency are improved.

In charging station with V_{DC} output, the second key power stage is the DC-DC up-inverter. This takes the DC-level output from the PFC stage and converts it to the voltage level required for battery charging. The output voltage and current of the up-inverter vary over time depending on the overall health and charge level of the on-board battery storage.

JJM offers a wide range of automotive-grade power discrete semiconductor components to suit the PFC and DC-DC up-inverter (primary-side and secondary-side rectification) power stages. These include, rectifier bridges, FRED (fast recovery epitaxy diode), TVS (transient voltage suppressor), ESD protection for the CAN communication port, low-VF schottky rectifiers, and power MOSFETs.

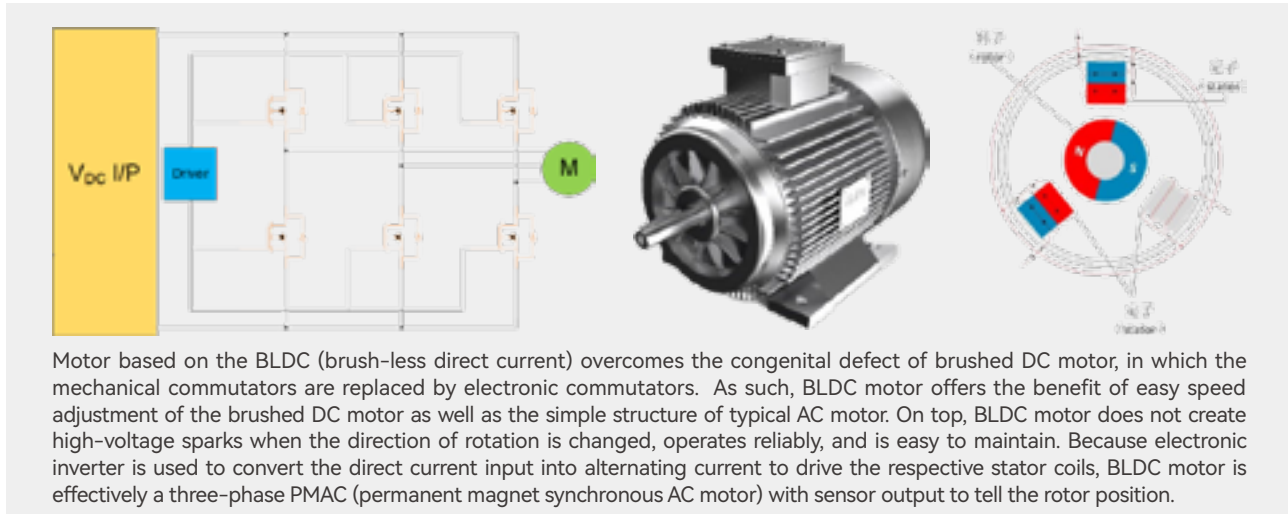
Components Recommended: Auto-grade Epitaxial Fast Recovery Rectifiers

Product Name	$I_{F(AV),Max}$ (A)	$V_{RRM,Max}$ (V)	$I_{FSM,Max}$ (A)	$V_{F,Max}$ (V) @ I_F (A)	$I_{R,Max}$ (mA)	$Q_{r,Max}$ (nC)	$t_{rr,Max}$ (ns)	JJM Package
JECR3006SL	30.0	600	270	2.8	5.0	50.0	22	TO-247J-2L
JECR6006SL	60.0	600	600	2.4	5.0	74.0	50	TO-247J-2L

Components Recommended: Auto-grade ESD over CAN Ports

Product Name	Direction	$V_{RWM,Max}$ (V)	$V_{BR,Min}$ (V)	V_C,Max (V)	@ I_{pp} (A)	I_R,Max (mA)	$P_{pp,Max}$ (W)	$V_{ESD-Air}$ (kV)	$V_{ESD-Contact}$ (kV)	$C_{j,Typ}$ (pF)	JJM Package
JEB24TZBH	Bi-dir	24.0	26.7	60.0	6	1.00	350	±30	±30	15	SOT-23

BLDC



Motor based on the BLDC (brush-less direct current) overcomes the congenital defect of brushed DC motor, in which the mechanical commutators are replaced by electronic commutators. As such, BLDC motor offers the benefit of easy speed adjustment of the brushed DC motor as well as the simple structure of typical AC motor. On top, BLDC motor does not create high-voltage sparks when the direction of rotation is changed, operates reliably, and is easy to maintain. Because electronic inverter is used to convert the direct current input into alternating current to drive the respective stator coils, BLDC motor is effectively a three-phase PMAC (permanent magnet synchronous AC motor) with sensor output to tell the rotor position.

The MOSFETs from Jiangsu JieJie Microelectronics (a.k.a. JJM®) are being extensively used in motor driving within power tools, fans, electric bicycles, garden tools, vacuum cleaners, electric fans. They exhibit the following properties.

- 01 Outstanding ON-resistance $R_{DS(ON)}$ to minimize the operating temperature and conduction loss, strong avalanche performance E_{AS} to sustain high surge without damage (e.g. JMTG035N04A)
- 02 Exceptional input gate charge Q_g hence low switching loss and the ability to support high switching frequency. All these allow the operating temperature to be reduced and better long-term reliability to be achieved
- 03 V_{DS_Max} ranges from 30V to 150V, $R_{DS(ON)}$ is as low as 0.55m Ω (e.g. JMSL030SAG) and 0.57m Ω (e.g. JMSL040SAG), FOM is as low as 47
- 04 Assembled in highly thermal efficient power packages like PDFN3x3/5x6-8L, DFN2020-6L, TO-220/247/251/252/263-3L, SOP-8L, SOT-23, SOT-23-3/6L, etc.
- 05 All electrical parameters exhibit negligible lot-to-lot variation and good long-term reliability
- 06 Complete product portfolio to meet the diversified requirement on performance requirement, price expectation, and application space constraint, etc.

Depending on the breakdown voltage $V_{BR(DSS)_Min}$ requirement, JJM offers $V_{DS_Max} = 30 \sim 100V$ Trench & SGT MOSFETs based on trench or SGT technology platform from 30V to 200V for motor driving under various application environment. System engineers simply select the right MOSFETs based on output power and peak/average current requirement.

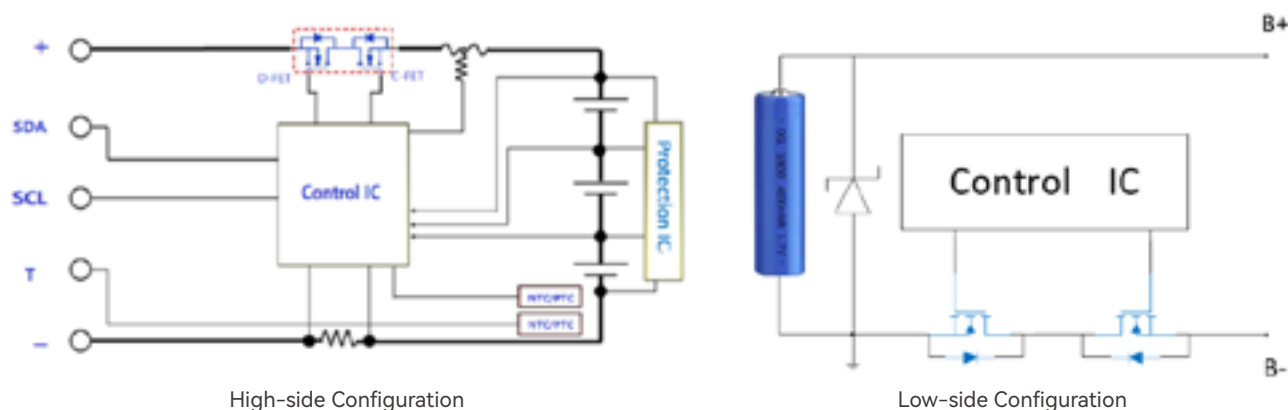
Components Recommended: MOSFETs

11.1 ~ 21.0V (3 ~ 5 cells in series)		18.5 ~ 29.4V (5 ~ 7 cells in series)		25.9 ~ 36.0V (7 ~ 9 cells in series)		> 36V (> 9 cells in series)	
30V		40V		60V		≥80V	
Product Name							
JMSL030SAG	JMTG3002B	JMSL040SAG	JMSL0403AG	JMSL0601AG	JMTG060N06A	JMSH0801AG	JMSH0806AGS
JMSL0301AG	JMTG3003A	JMGG010V04A	JMTG4004A	JMSL0601BG	JMTK060N06A	JMSH0802BG	JMSH0830AG
JMSL0302AG	JMTG040N03A	JMSL0401BG	JMTK4004A	JMSL0602AG	JMTK80N06A	JMSH0803AG	JMSH1003AG
JMSL0302BG	JMTG3005A	JMSL0401AG	JMTK4005A	JMGG031V06A	JMTE035N06D	JMSH0803AGS	JMSH1004BG
JMSL0303AG	JMTK3002B	JMSL0402AG	JMSL0406AK	JMSL0604AG	JMTG070N06A	JMSH0804AG	JMGG044V10D
JMTK3003A	JMTK3004A	JMSL0402BG	JMTG035N04A	JMSL0606AG	JMTG100N06A	JMSH0804AGS	JMSH1006AG
JMTK3005A	JMTK3006B	JMGG020V04A				JMSH0805AG	JMSH1008AG
JMTG018N03A	JMTK018N03A					JMGG088V10A	

Components Recommended: SCRs

Product Name	$I_{T(RMS)_Max}$ (A)	I_{TSM_Max} @ $f = 50Hz$ (A)	V_{DRM_Min} (V)	I_{GT-I_Max} (mA)	I_{GT-II_Max} (mA)	I_{GT-III_Max} (mA)	I_{GT-IV_Max} (mA)	T_{J_Max} (°C)	JJM Package
JMH65R190APLN	DFN8080-4L	-	SJ	N	650	17	3.5	169	190
JMH65R190AF	TO-220FP-3L	-	SJ	N	650	20	3.5	170	190
JMH65R290APLN	DFN8080-4L	-	SJ	N	650	10	3.5	262	290

BMS



High-side Configuration

Low-side Configuration

With our everyday livings being more harmonized with green environment and surrounded by increasingly IA (artificial intelligence) injected merchandise, battery packs based on different chemicals have become part of our digital lifestyle. They exist, in various forms & sizes, inside smart phones, wearables, laptops, electronic toys, robot vacuum cleaners, E-bikes, power tools, UAVs (unmanned aerial vehicles), robots, power banks, portable energy storage, NEVs (new energy vehicles) and the traditional ICE (internal combustion engine) based vehicles. BMS (Battery management system) is instrumental to how well the battery pack operates and how reliable the operation is. In typical operation, BMS first collects the state of charge of the battery pack, analyze the loading and subsequently exchange the key information with the relevant sub-systems outside of the battery pack. Along the way, BMS has to make balance act upon all the units inside the battery pack, determine if any of the units is to be shut down, or be re-charged at a specific rate, or continue to release its stored energy at a specific rate. All these decision must be made depending on the real-time condition inside and outside of the battery pack, while safety must be ensured at all time.

Regardless of the type of materials used in each renewable battery cell, BMS is a system capable of real-time monitoring and management of battery pack. The electrical properties of each battery cell is monitored in real time, diagnosis of the state of charge is subsequently carried out, warning are given and action are taken whenever appropriate, charging/pre-charge/discharge and charge-balancing are executed in accordance to the operating environment like thermal condition. Key objectives are: protect the battery cells from hazardous damage, improve the health of the individual battery cells, ensure the safe operation of the aggregated battery pack.

Why is BMS needed?

01

Safe operation of the battery pack: Over-discharge may cause permanent damage to battery cells. Over-heated and over-charged battery cells may cause unexpected rupture and subsequent explosion.

02

Functional requirements: During operation, it is necessary to know the capacity of the energy stored in the battery pack in real time. Load / Charge balancing must be vigorously taken care of in order to maintain the good health of the battery pack. BMS achieves these by carefully controlling the operating temperature.

The low / medium-voltage power MOSFETs from Jiangsu JieJie Microelectronics (a.k.a. JJM®) are extensively used for BMS in battery packs shipped within and outside of domestic China. They offer the following features and advantages.

- With the pitch size between two neighboring cells smaller than $1\mu\text{m}$, die area of the MOSFET is optimized to achieve the best power density possible
- Low internal ON-resistance and input gate charge contribute to the excellent condition and switching losses of the MOSFETs
- Because of good consistency upon the ON/OFF threshold voltage level across all MOSFETs manufactured, bin management at FT stage is trivial, multiple MOSFETs can be connected in parallel to facilitate large output current without any of them being falsely turned ON
- All MOSFETs exhibit high UIS avalanche breakdown capability and are 100% screened for their UIS performance at the FT (final test) stage during production
- Because these MOSFETs are housed in packages with outstanding thermal properties (i.e. low thermal resistance), high level of continuous output current can be supported

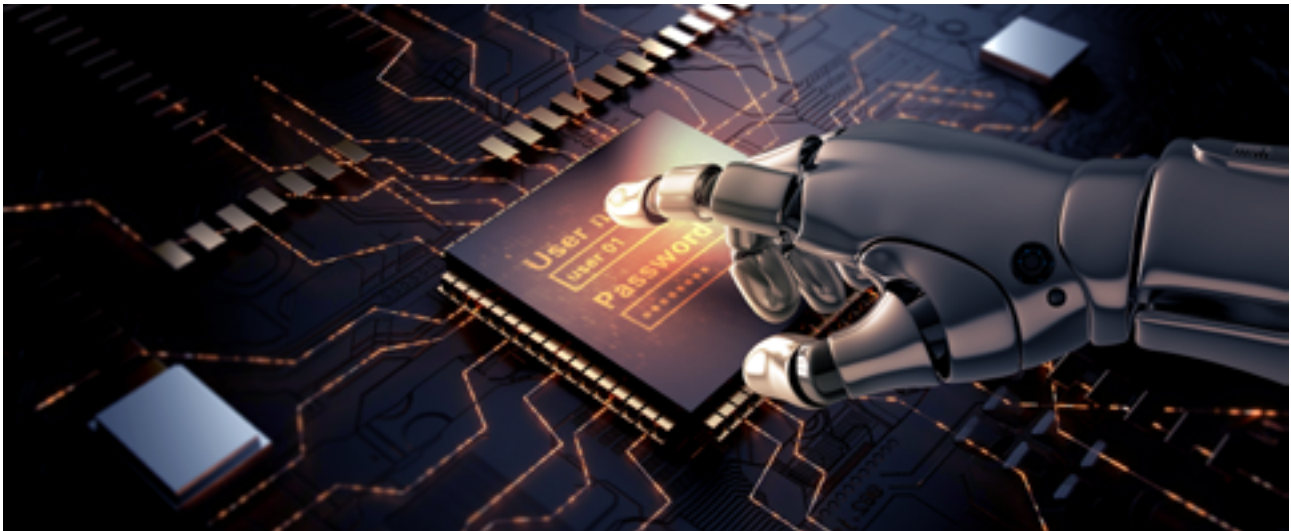
For BMS application, JJM offers MOSFETs housed in different packages and with $V_{DS,Max}$ covering 30 ~ 200V. These components are based on either SGT or trench technology platform. System designers simply choose the right MOSFET based on the loading requirement (e.g. power rating of the motor being driven) and the output current needed.

Components Recommended: MOSFETs

Battery Voltage	11.1 ~ 21.0V (3 ~ 5 cells in series)		18.5 ~ 29.4V (5 ~ 7 cells in series)		25.9 ~ 36.0V (7 ~ 9 cells in series)	> 36V (> 9 cells in series)
MOSFET V_{DS}	30V		40V		60V	≥80V
Product Name						
MOSFET Typically Used at Output Terminals of BMS	JMSL030SAG	JMTG018N03A	JMSL040SAG	JMSL0403AG	JMSL0606AK	JMSH0804AE
	JMSL0301AG	JMTG3002B	JMGG010V04A	JMTG4004A	JMSL0606AE	JMSH0805AE
	JMSL0302AG	JMTG3003A	JMSL0401BG	JMTK4004A	JMTK060N06A	JMSH1003AE
	JMSL0302BG	JMTG040N03A	JMSL0401AG	JMTK4005A	JMTK80N06A	JMSH1004BE
	JMSL0303AG	JMTG3005A	JMSL0402AG	JMSL0406AK	JMTK70N07A	JMSH1006AE
	JMTK3003A	JMTK3002B	JMSL0402BG	JMTG035N04A	JMTE035N06D	JMSH1008AE
	JMTK3005A	JMTK3004A	JMGG020V04A	JMGG010V04A	JMTK58N06B	JMSH1001ATL
	JMTK3006B				JMSH0801ATL	
MOSFET Typically Used for Battery Charging	JMTL3401A	JMTP9435A	JMTL850P04A	JMTP520P04A		
	JMTP4953A	JMTP4435A	JMTP440P04A			

Components Recommended: TVS

Product Name		$V_{R,Max}$	$I_{R,Max} @ V_R$	$V_{BR,Min} @ I_T$	$V_{BR,Max} @ I_T$	$I_{T,Max}$	$V_{C,Max} @ I_{PP}$	$I_{PP,Max}$
Uni-Polar	Bi-Polar	(V)	(μA)	(V)	(V)	(mA)	(V)	(A)
SMCJ5.0A	SMCJ5.0CA	5	300	6.4	7	10	9.2	163
SMCJ6.0A	SMCJ6.0CA	6	250	6.67	7.37	10	10.3	145.6
SMAJ5.0A	SMAJ5.0CA	5	120	6.4	7	10	9.2	43.5
SMAJ6.0A	SMAJ6.0CA	6	120	6.67	7.37	10	10.3	38.8
SMBJ5.0A	SMBJ5.0CA	5	120	6.4	7	10	9.2	65.2
SMBJ6.0A	SMBJ6.0CA	6	120	6.67	7.37	10	10.3	58.3
SMDJ5.0A	SMDJ5.0CA	5	800	6.4	7	10	9.2	326.1
SMDJ6.0A	SMDJ6.0CA	6	800	6.67	7.37	10	10.3	291.3
5.0SMDJ11A	5.0SMDJ11CA	11	5	12.2	13.5	10	18.2	275
5.0SMDJ12A	5.0SMDJ12CA	12	5	13.3	14.7	10	19.9	252

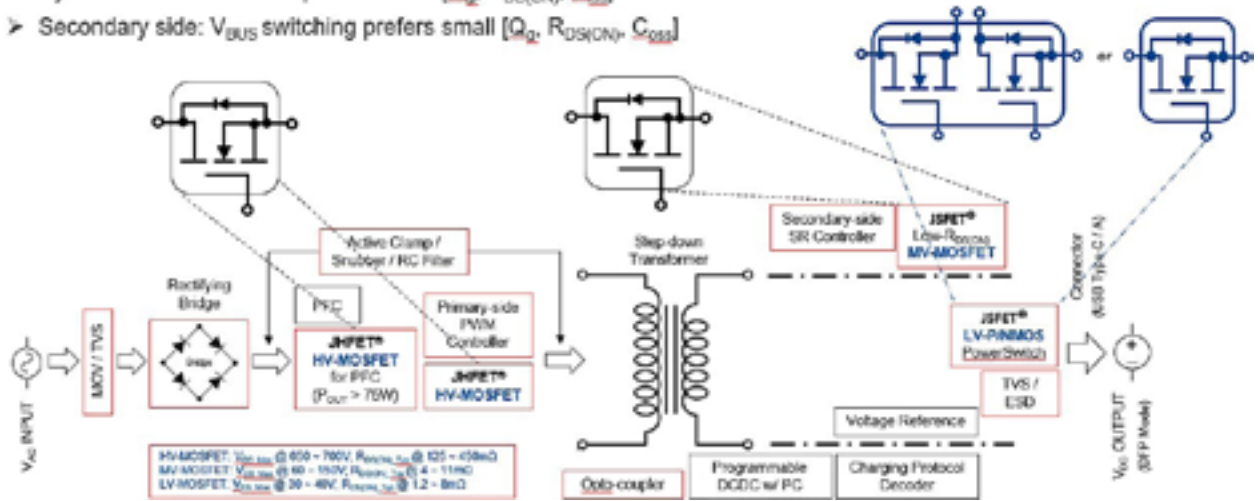


FAST CHARGER

□ Primary side: HV MOSFET w/ small t_{rr} for hard-switching in PFC and soft-switching in regulation

□ Secondary side

- Synchronous rectification prefers small $[Q_g, R_{DS(ON)}, C_{oss}]$
- Secondary side: V_{BUS} switching prefers small $[Q_g, R_{DS(ON)}, C_{oss}]$



In view of the latest effort by European Commission for universal chargers announced on Oct. 4, 2022, fast chargers equipped with USB-C® (EN IEC 62680-1-3:2021 Stds.) shall become a common scene from the end of CY2024. As far as the current state stands in Q4CY2022, fast chargers with output power ranging from 18W to 100W (even 120W or greater) and with one or more USB Type-A and Type-C output ports, which support fast charging protocols (USB PD3.0/3.1, USB BC1.2, UFCS T/TAF 083-2022, Qualcomm QCxx, MediaTek PExxx, Huawei S/FCP, Oppo D/FCP, Samsung AFC, Apple 2.4A, etc.) have already been proliferating among consumers who embrace digital life style and green energy. They are commonly used to re-charge the battery embedded in mobile IoT or EIoT (artificial or edge internet-on-thing) products such as smartphones, tablets, smart watches, AWS earphones, and laptops. The more advanced design are equipped with 3rd-generation WBG (wide-band-gap) power semiconductor devices (gallium nitride D/E-mode HEMT). In spite of the physically compact size, they do not generate excessive high temperature that may cause hand injuries. On top, many of the world's top smartphone OEMs stop bundling chargers with their new generation of smartphones in recent years. This results in the hockey-stick effect such that these compact faster chargers have become mainstream in the market.

Flyback and LLC are the commonly used topologies in the AC/DC power conversion sub-system in the fast chargers. Flyback topology is frequently used in designs with output power less than 65W while LLC topology are typically found in fast chargers with output power of 90W and higher to meet the power efficiency required by the regulatory bodies in the world. Due to the relatively lower BOM cost that those of the LLC topology, ACF-Flyback topology is adopted by more and more medium-power designs. For example, it is favoured by many designs in which the 3rd-generation WBG (wide band-gap) GaN (gallium nitride) based HEMTs (high electron mobility transistor) are incorporated. Independent of the topology used, the internal block diagram of a typical fast charger is shown here.

Jiangsu JieJie Microelectronics (a.k.a. JJM®) offers a rich portfolio of discrete semiconductor components to the implementation of fast chargers. These include anti-surge MOV and TVS at the AC input end, FRD (fast recovery diodes) that suppress the voltage spikes caused by the transformer leakage, HV MOSFETs which perform the down conversion (high-voltage DC to low-voltage DC) and PFC (75W+ design) function in the primary-side, MV/LV MOSFETs for synchronous rectification and power-switching at the USB Type-A/C ports, ESD protection for the USB PD (power delivery) protocol decoder IC, etc.

Components Recommended for Primary-side: FRDs used in PFC

Product Name	Charger's O/P (W)	$I_{F(AV)}_{Max}$ (A)	$V_{RRM_{Max}}$ (V)	$I_{FSM_{Max}}$ (A)	$V_{F_{Max}}$ (V)	@ I_F (A)	I_R_{Max} (mA)	C_j_{Max} (pF)	$t_{rr_{Max}}$ (ns)	JJM Package
RS1010FL	20 ~ 65	1.0	1000	25	1.3	1.0	5.0	7.0	500	SOD-123FL
RS1MAF	20 ~ 65	1.0	1000	30	1.3	1.0	5.0	7.0	500	SMAF
RS3MB	90 ~ 120	3.0	1000	100	1.3	3.0	5.0	30.0	500	SMB
US5M	90 ~ 120	5.0	1000	125	1.7	5.0	5.0	35.0	75	SMC

Components Recommended for Secondary-side: ESD Protection over USB Type-A & Type-C Ports

Product Name	Pin(s) Protected	Direction	V_{RWM_Max} (V)	V_{BR_Min} (V)	V_{C_Max} (V)	@ I_{PP} (A)	I_{R_Max} (mA)	P_{PP_Max} (W)	V_{ESD_Air} (kV)	$V_{ESD_Contact}$ (kV)	C_{j_Typ} (pF)	JJM Package
JEU24P3	VBUS	Uni-dir	24.0	26.0	35.0	200	0.50	5,100	±30	±30	750	DFN2x2-3L
JEU12N3		Uni-dir	12.0	13.0	32.0	180	1.00	4,500	±30	±30	950	
JEU12T2BL	CC0 / CC1	Uni-dir	12.0	13.0	26.0	20	0.15	500	±30	±30	90	SOT23
JEU05T2B		Uni-dir	5.0	6.0	16.7	18	1.00	350	±15	±8	150	
JEB12C	D+ / D-	Bi-dir	12.0	13.3	30.0	12	1.00	350	±30	±30	1.0	SOD-323
JEB03CX		Bi-dir	3.3	3.6	17.5	20	0.10	350	±30	±30	1.0	

01

At the primary-side of a typical AC-DC fast chargers, regardless of whether the HV MOSFETs or the fast proliferating GaN-based e-Mode HEMT is populated, JJM provides the HV SJ (super-junction) MOSFETs which is based on the advanced JHFET® technology platform for PFC switching. At the secondary-side, the MV/LV SGT (shielded-gate trench MOSFETs which is based on the advanced JSFET® technology platform provide reliable and high-efficiency operation for synchronous rectification and output current switches at the USB-C® port.

02

The JHFET-based N-ch SJ MOSFETs at $V_{DS_Max} = 650V$ from JJM offer ON-resistance $R_{DS(ON)}$ as low as 169 mΩ, Q_g at down to 9.7 nC, C_{iss} as small as 333 pF. All these SJ MOSFETs were tested to pass the UIS test during FT (final test) stage at the A/T (assembly & test) sites. The N-ch SGT MOSFETs which is based on the JSFET technology platform offer V_{DS_Max} at 30 ~ 200V.

03

Their ON-resistance $R_{DS(ON)}$ are as low as 1.2 mΩ, Q_g are at down to 7.7 nC, and FOM are as small as 47. Again, all these SGT MOSFETs were tested to pass the UIS test during FT stage at the A/T sites. With extremely low C_{iss} , C_{oss} , C_{rss} and Q_g and superior SOA (safe operation area), etc., these power semiconductor devices effectively address the challenges of soft/hard switching, spurious voltage spikes induced by inductive loadings, EMI, etc. Such outstanding static and dynamic electrical properties are attributed to the patented JSFET and JHFET technology platforms of JJM. Overall, the performance of these SGT and SJ MOSFETs are at world class levels.

Components Recommended for Primary-side: HV MOSFETs used in PFC and PWM Switching

Product Name	JJM Package	Compatible Industry-common Package	Platform	Configuration	V_{DS_Max} (V)	I_{D_Max} (A)	$V_{GS(th)_Typ}$ (V)	$R_{DS(ON)_Typ}$ @ $V_{GS}=10V$ (mΩ)	$R_{DS(ON)_Max}$ @ $V_{GS}=10V$ (mΩ)	V_{GS_Max} (V)	C_{iss_Typ} (pF)	Q_g_Typ (nC)	E_{AS_Max} (mJ)	FOM	Applicability
JMH65R190APLN	DFN8080-4L	-	SJ	N	650	17	3.5	169	190	±20	1,560	38.0	405	6,422	for $P_{OUT} > 100W$
JMH65R190AF	TO-220FP-3L	-	SJ	N	650	20	3.5	170	190	±20	1,560	38.0	405	6,460	for $P_{OUT} > 100W$
JMH65R290APLN	DFN8080-4L	-	SJ	N	650	10	3.5	262	290	±20	1,056	22.0	281	5,764	for $P_{OUT} \leq 100W$
JMH65R290ACFP	TO-220FP-NL	-	SJ	N	650	12	3.5	260	290	±20	1,056	22.0	281	5,720	for $P_{OUT} \leq 100W$
JMH65R430APLN	DFN8080-4L	-	SJ	N	650	10	3.5	370	430	±20	703	18.4	180	6,808	for $P_{OUT} \leq 65W$
JMH65R430AF	TO-220FP-3L	-	SJ	N	650	11	3.5	364	430	±20	703	18.4	180	6,698	for $P_{OUT} \leq 65W$
JMH65R430ACFP	TO-220FP-NL	-	SJ	N	650	11	3.5	364	430	±20	703	18.4	180	6,698	for $P_{OUT} \leq 65W$
JMH65R430AK	TO-252-3L	DPAK	SJ	N	650	11	3.5	370	430	±20	703	18.4	180	6,808	for $P_{OUT} \leq 65W$
JMH65R490AFFD	TO-220FP-3L	-	SJ	N	650	5	3.5	430	490	±20	677	20.0	180	8,600	for $P_{OUT} \leq 45W$
JMH65R980AFFD	TO-220FP-3L	-	SJ	N	650	4	3.5	895	980	±20	343	10.1	72	9,040	for $P_{OUT} \leq 20W$
JMH65R980AK	TO-252-3L	-	SJ	N	650	4	3.5	900	980	±20	333	9.7	80	8,730	for $P_{OUT} \leq 20W$

Components Recommended for Secondary-side: MV MOSFETs used in Synchronous Rectification

Product Name	Package	Compatible Industry-common Package	V _{DS,Max} (V)	I _{D,Max} (A)	V _{GS(th),Typ} (V)	R _{DS(ON),Typ} @ V _{GS} =10V (mΩ)	R _{DS(ON),Max} @ V _{GS} =10V (mΩ)	V _{GS,Max} (V)	C _{iss,Typ} (pF)	Q _{g,Typ} (nC)	E _{AS,Max} (mJ)	FOM	Applicability
JMSL0609AP	SOP-8L	SOP-8	60	14	1.7	7.5	9.5	±20	1,083	17.2	34	129	For P _{OUT} < 65W
JMSL0609AG	PDFN5x6-8L	SuperS08	60	43	1.5	7.2	9.4	±20	1,087	16.6	34	120	For P _{OUT} < 65W
JMSL1003AG	PDFN5x6-8L	SuperS08	100	135	1.6	2.8	3.4	±20	4,646	78.0	259	218	For P _{OUT} ≥ 100W
JMSL1004BG	PDFN5x6-8L	SuperS08	100	117	1.7	3.4	4.1	±20	3,709	13.9	20	47	For P _{OUT} ≥ 100W
JMSL1006AG	PDFN5x6-8L	SuperS08	100	108	1.9	4.7	5.9	±20	2,604	42.0	110	197	For P _{OUT} ≥ 65W
JMSH1006AG	PDFN5x6-8L	SuperS08	100	102	2.7	5.3	6.6	±20	2,369	38.0	110	201	For P _{OUT} ≥ 65W
JMSL1008AG	PDFN5x6-8L	SuperS08	100	93	1.7	6.0	7.6	±20	2,200	34.0	101	204	For P _{OUT} < 65W
JMSL1009AG	PDFN5x6-8L	SuperS08	100	75	1.7	7.0	8.2	±20	1,314	25.0	86	175	For P _{OUT} < 65W
JMSL1010AG	PDFN5x6-8L	SuperS08	100	58	1.9	8.0	10.0	±20	1,535	26.0	94	208	For P _{OUT} < 65W
JMSL1018AG	PDFN5x6-8L	SuperS08	100	35	1.9	14.5	18.2	±20	769	13.0	29	189	For P _{OUT} < 65W
JMSL1018AP	SOP-8L	SOP-8L	100	8	1.9	15.8	19.8	±20	769	12.7	24	201	For P _{OUT} < 65W
JMSH1207AG	PDFN5x6-8L	SuperS08	120	94	3.0	5.6	7.0	±20	2,208	35.0	135	196	For P _{OUT} ≥ 65W
JMSH1509AG	PDFN5x6-8L	SuperS08	150	75	3.0	8.5	9.9	±20	2,181	30.0	231	255	For P _{OUT} > 65W

Components Recommended for Secondary-side: LV/MV MOSFETs used in USB-C (DFP-mode) output port for V_{BUS}

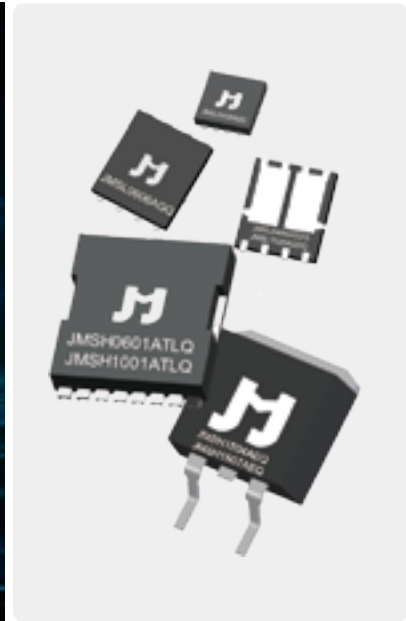
Product Name	JJM Package	Compatible Industry-common Package	Platform	Configuration	V _{DS,Max} (V)	I _{D,Max} (A)	V _{GS(th),Typ} (V)	R _{DS(ON),Typ} @ V _{GS} =10V (mΩ)	R _{DS(ON),Max} @ V _{GS} =10V (mΩ)	V _{GS,Max} (V)	C _{iss,Max} (pF)	Q _{g,Typ} (nC)	E _{AS,Max} (mJ)	FOM	Applicability
JMTQ080P03A	PDFN3x3-8L	PQFN 3x3	Trench	P	-30	-45	-1.5	5.8	7.3	±20	4,650	45.0	144	261	for I _{OUT} ≥ 3A
JMTQ100P03A	PDFN3x3-8L	PQFN 3x3	Trench	P	-30	-40	-1.6	7.5	10.0	±20	3,564	37.0	121	278	for I _{OUT} < 3A
JMSL0302AU	PDFN3x3-8L	PQFN 3x3	SGT	N	30	145	1.7	1.2	1.5	±20	2,975	39.0	101	47	for I _{OUT} ≥ 5A
JMSL0302BU	PDFN3x3-8L	PQFN 3x3	SGT	N	30	135	1.6	1.5	1.9	±20	2,526	40.0	94	60	for I _{OUT} ≥ 5A
JMSL0303AU	PDFN3x3-8L	PQFN 3x3	SGT	N	30	119	1.6	1.8	2.2	±20	2,091	32.0	61	58	for I _{OUT} ≥ 5A
JMSL0310AU	PDFN3x3-8L	PQFN 3x3	SGT	N	30	60	1.7	4.0	5.0	±20	866	13.5	20	54	for I _{OUT} < 5A
JMSL0315AU	PDFN3x3-8L	PQFN 3x3	SGT	N	30	43	1.7	7.0	8.8	±20	468	7.7	9	54	for I _{OUT} < 3A
JMSL0315AUD	PDFN3x3-8L_D	-	SGT	N + N	30	36	1.7	8.8	11.0	±20	468	7.7	9	68	for I _{OUT} ≤ 2A
JMSL0402AU	PDFN3x3-8L	PQFN 3x3	SGT	N	40	119	1.5	2.0	2.5	±20	2,131	36.0	126	72	for I _{OUT} ≥ 5A
JMSL0403AU	PDFN3x3-8L	PQFN 3x3	SGT	N	40	99	1.6	2.5	3.1	±20	1,424	22.0	79	55	for I _{OUT} ≤ 5A
JMSL0406AU	PDFN3x3-8L	PQFN 3x3	SGT	N	40	55	1.7	4.5	5.6	±20	1,204	17.9	36	81	for I _{OUT} < 5A

JJM focuses on the end markets of consumer electronics, computing & peripherals, industrial, communication and automotive end-systems. In order to make sure that all the MOSFET produced meet the stringent requirement of the individual applications, JJM spent tremendous effort to study the markets and the needs of the customers. As a result, the electrical properties and performance of each JSFET / JHFET produced always deliver the best energy efficiency and long-term reliability without any compromise to cost-effectiveness. Because of the continual pursuit of compactness by consumers, chargers for mobile 3C (computing, communications, consumer electronics) products are getting smaller and smaller. The limited application space inside the charger housing inevitably present a hostile operating environment, thus presenting a heavy toll on the long-term reliability and operation stability upon the power semiconductor devices used. JSFETs and JHFETs easily meet such demand at reasonable cost without any let-up in energy efficiency. JSFETs and JHFETs are available in packages like the low-profile PDFN3x3/5x6/8x8, and the legacy TO-220/247/251/252/263 & SOP-8, etc. The lead-frame, wire/ribbon/clip bonding, and epoxy materials used in the assembly of these MOSFETs are optimized to sustain high level of electrical stress to keep the thermal resistance low. Last but not the least, RoHS and halogen-free compliance are always standard with the MOSFETs from JJM.

LEADING PRODUCT INTRODUCTION

74 Auto-grade 40~150V N-ch JSFET®

Increasingly Found Homes in Automobiles



Of these 74 auto-grade devices, the dies inside and the A/T were all produced at manufacturing sites certified for IATF 16949. All devices passed the AEC-Q101 compliant tests. Outstanding electrical characteristics like $R_{DS(ON)}$ of 0.58 ~ 29.0m Ω , Q_g of 6.8 ~ 155.0nC, FOM of 55 ~ 354 ensure reliable operation in harsh operating environment.

In the thermally efficient SM-type PowerJE®10x12, PDFN3x3 / 5x6-8L/-D, TO-252/263-3/7L, materials used (lead frame, solder, epoxy, etc.) and the manufacturing steps (wire/clip bonding, die-attach, polyimide over die-top, etc.) are of MSL1 to minimize mechanical thermal stress. As such, stable operation over $T_j = -55 \sim 175^\circ\text{C}$ are resulted. All devices shipped are halogen-free & RoHS-compliant.

Key Aspects of 40~150V Q-grade JSFET®

Parametric Performance to Meet the Challenge

Exceptional $R_{DS(ON),Typ}$ at down to 0.58m Ω , FOM as small as 55, $E_{AS,Max}$ as high as 1,634mJ lead to reliable operation under the harsh working environment typical of automobiles.

Unclamped Inductive Switching Tested

Fully UIS tested during production to confirm the device's ability to withstand the avalanche energy common in both resistive and inductive type of loads.

Robustness & Long-term Reliability

All devices passed the stringent AEC-Q101 qualification @ 3 lots & $T_j = 175^\circ\text{C}$. Wafer and A/T production facilities are IATF 16949 certified for quality management.

Robust & Thermal Efficient Packages

SM-type PowerJE®10x12, PDFN3x3/5x6-8L/-D, TO-252-3L, TO-263-3/7L with high immunity to thermal-mechanical stress enable reliable operation under excessively low / high ambient temperature

Market Applications

- 01 DC/DC boost for mini/LED backlighting in infotainment, LED driving in matrix headlights
- 02 Power stages for low / medium-power BLDC/DC motor driving in BCM (body control module) & fuel pump & EPS (electronic power steering), wireless charging
- 03 High/Low-side switching in POL DC/DC (e.g. HPC for automotive gateway & domain controller, SR rectification in OBC)
- 04 V_{BUS} power switch for USB PD 3.0/3.1 compatible DC output via USB Type-C® connectors
- 05 Load switching in various vehicle electrical systems of ICE-based and new-energy PHEV / BEV

Application Circuits

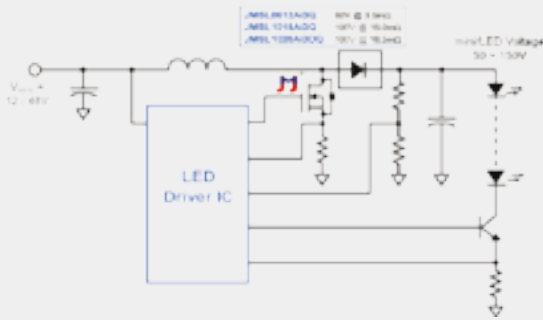


Figure 1: DC/DC Boost in mini/LED Backlighting

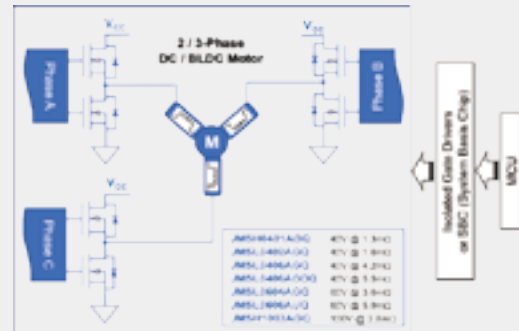


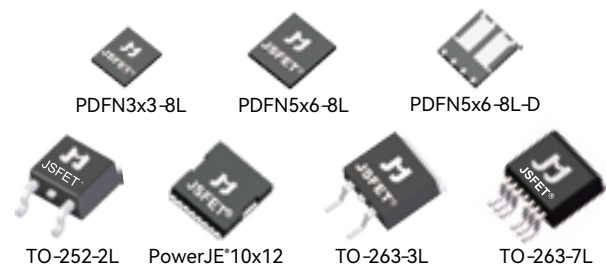
Figure 2: DC/BLDC Motor Driving

These 40 ~ 150V SGT MOSFETs are well suited for applications inside automobiles. Their long-term reliability were tested per AEC-Q101 quality standards. JMSL0406AGQ and its dual-die variant JMSL0406AGDQ are popular in body control module (BCM) for use cases like low-power DC motor driving. With $R_{DS(ON)}$ down to 1.3m Ω , JM5H041AGQ fits the power efficiency requirement of mid/high-power DC motors. Typical applications are: multi-way power seat, power tailgate, centralized door lock, ESC (electronic stability control). At $V_{DS,Max} = 100V$ and assembled in the low-profile PDFN5x5-8L package, JMSL1018AGQ is good for LED backlighting in flat panel display of the infotainment/ADAS unit. In contrast, JMSL1020AGDQ drives two strings of high-brightness LEDs simultaneously for backlighting in larger panel.

Shipping Information

Package	# of Pins	Media	Quantity (pcs)
PowerJE®10x12	8	13-inch Reel	2000
PDFN3x3-8L	8	13-inch Reel	3,000
PDFN5x6-8L	8	13-inch Reel	3,000
PDFN5x6-8L-D	8	13-inch Reel	3,000
TO-252-3L	3	13-inch Reel	3,000
TO-263-3L	3	13-inch Reel	800
TO-263-7L	7	13-inch Reel	800

Samples & production quantities of the Q-grade 40~150V JSFET are available from sales_sh@jjwdz.com and authorized sales distributors.



LEADING PRODUCT INTRODUCTION

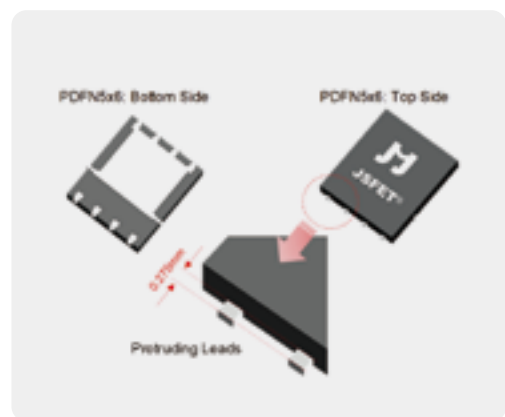
Jiangsu JieJie Micro. launched its start-of-the-art PowerJE® 10x12 Package and domestically leading SGT MOSFET



January 26, 2022 In this feature article, Jiangsu JieJie Microelectronics announces that its independently developed high-power thin package PowerJE® 10x12 has been on large-scale mass production. This package conforms to JEDEC standard MO-299B and is compatible with like TO-LeadLess packages of well-known international manufacturers such as Infineon and Onsemi; moreover, it has passed the stringent 1,000-temperature cycle reliability test (-55 C~150 C). Compared with traditional TO-263-3L package, it has 20% less footprint and 45% less height. While significantly reducing the footprint, it effectively improves the power density, thus suiting extremely compact terminal designs. Excellent thermal resistance contributes to better heat dissipation, which future guarantees the long-term reliability of devices.

Bench-marking	Company	Package	V_{DS_Max} (V)	$R_{DS(ON)_Typ}$ @ $V_{GS}=10V$ (m Ω)	$R_{DS(ON)_Max}$ @ $V_{GS}=10V$ (m Ω)	C_{iss} (pF)	Q_g (nC)	FOM
JMSL030SAG	JieJie Micro.	PDFN5x6-8L	30	0.55	0.69	7,543	120	66
BSx005N03Lxx	EU - Inxx	TDSO8-8	30	0.48	0.55	8,900	122	59
NTxxx4C020N	US - Onxx	DFN5 5x6	30	0.56	0.67	10,144	139	78
PSxxx58-30Yxx	CN - Nexx	LFP56E	30	0.54	0.67	6,912	114	62
CSx17570Q5B*	US - Texx	SON 5x6	30	0.56	0.69	10,400	185	104
Sixx90Axx	US - Vixx	PDFN5x6	30	0.62	0.78	9,120	130	81

In response to the increasing customer demand for performance and BOM (bill of material) space, JieJie Microelectronics launched N-channel JSFET® series of JMSH1001ATL ($V_{DS_Max} = 100V$) and JMSH1504ATL ($V_{DS_Max} = 150V$) incorporating independent intellectual property rights; both are designed with advanced PowerJE® 10x12 package. When $V_{GS} = 10V$, the measurements of $R_{DS(ON)_Typ}$ and FOM of the device are 1.3m Ω / 202 (JMSH1001ATL) and 3.3 m Ω / 290 (JMSH1504ATL), respectively. When it comes to electrical properties, JMSH1001ATL outperforms the competition in China, and is not very different from similar products in Europe, the United States and Japan. Furthermore, the top-ranking linear model/safe operation area (SOA) feature enables devices to function in a safe and reliable manner even in the operating state of high current. The extremely low on-resistance helps improve operational efficiency, reduce system cost, and extend the service life of devices. Both products have extensive applications in power tools, light-duty electric vehicles, photovoltaic energy storage inverters, 5G communication and PoE++ and other terminals.



Fan Jun, Marketing Director of Power Discrete Devices, JieJie Microelectronics: "Powered by the chips designed by the R&D team of JieJie Microelectronics, manufactured by IATF 16949-certified fabs, and subjected to PowerJE® 10x12 assembly test on JieJie Microelectronics' car-grade advanced package production lines, JMSH1001ATL's electrical properties are comparable to that of products of international first-line semiconductor IDM manufacturers, having contributed to the high-end breakthrough in the localization of like products. Featuring excellent thermal conductivity and low package parasitic inductance effect, this device is designed to handle up to 375A of current, thus being ideal for applications with stringent requirements for BOM (bill of material) space, electrical performance and long-term device reliability."

Both products are in mass production. Samples are available from JJM Sales Department, contract agents or related business channels. Information such as product specification and auxiliary system circuit design data such as POD (package outline drawing), simulation models H-Spice and P-Spice can be directly viewed or downloaded from the official website:

<https://www.jjwdz.com/promosfet1/>

SYSTEM CERTIFICATION



Occupational Health and
Safety Management System Certificate

Environmental Management
System Certificate

IECQ Certificate of Conformity

Production Quality
Management Certificates



IATF 16949:2016

ISO 9001:2015

LONG-TERM PRODUCT RELIABILITY

Consumer Level

Test Item	Description	Test Conditions	Duration	DUT Quantity
PreCon	Pre-conditioning & IR Reflow (SMT-type DUTs only)	Bake-out for 24 hrs: $T_A = 125^\circ\text{C}$; Moisture Soak: {MSL1 @ $[T_A = 85^\circ\text{C}, \text{RH} = 85\%]$ for 168 hrs;} or {MSL3 @ $[T_A = 30^\circ\text{C}, \text{RH} = 60\%]$ for 192 hrs.}; IR Reflow for 3 cycles: 1 cycle {preheat zone @ $>185^\circ\text{C}$ -> main heat zone @ 260 (+5/-0) $^\circ\text{C}$ for at least 30s} for $t = 180\text{s}$; JESD22-A113	Executed before the following tests: C-SAM (22 DUTs), TC, PC, H ³ TRB or HAST, IOL	330 Devices
HTRB	High Temperature Reverse Bias	$T_j = 150^\circ\text{C}$; Reverse Bias = Specification Limit x 80%; JESD22-A108	500 Hrs	77 Devices
HTGB	High Temperature Gate Bias	$T_j = 150^\circ\text{C}$; Gate Bias = Specification Limit x 100%; JESD22-A108	500 Hrs	77 Devices
PC (AC)	Pressure Cooker (Auto-clave)	$T_A = 121 \pm 2^\circ\text{C}$; RH = 100%, P = 15psi; Bias = None; JESD22-A102	96 Hrs	77 Devices (pre-conditioned)
TC	Temperature Cycling	$T_A = \{[-55^\circ\text{C} @ 15\text{min.}] \leftrightarrow [150^\circ\text{C} @ 15\text{min.}]\}$ per 1-hr cycle (air-to-air); Bias = None; JESD22-A104	500 Cycles	77 Devices (pre-conditioned)
H ³ TRB	High Humidity High Temperature Reverse Bias	$T_A = 85^\circ\text{C}$; RH = 85%; 80% rated $V_{DS,MAX}$ up to 100V; JESD22-A101	1,000 Hrs	77 Devices (pre-conditioned)
HAST	Highly Accelerated Temperature & Humidity Stress	$T_j = 130^\circ\text{C}$; RH = 85%; $V_{DS} = \pm 80\% V_{DS,MAX}$ up to 42V; $P^A = 33.3\text{ psi}$ JESD22-A110	96 Cycles	77 Devices (pre-conditioned)
IOL	Intermittent Operating Life	$T_A = 25^\circ\text{C}$ Devices powered to ensure $\Delta T_j > 100^\circ\text{C}$ (not to exceed Absolute Maximum Rating) MIL-STD-750 M1037	10,000 Cycles	77 Devices (pre-conditioned)

INDUSTRIAL LEVEL

Test Item	Description	Test Conditions	Duration	DUT Quantity
PreCon	Pre-conditioning & IR Reflow (SMT-type DUTs only)	Bake-out for 24 hrs: $T_A = 125^\circ\text{C}$; Moisture Soak: {MSL1 @ $[T_A = 85^\circ\text{C}, \text{RH} = 85\%]$ for 168 hrs;} or {MSL3 @ $[T_A = 30^\circ\text{C}, \text{RH} = 60\%]$ for 192 hrs.}; IR Reflow for 3 cycles: 1 cycle {preheat zone @ $>185^\circ\text{C}$ -> main heat zone @ $260 (+5/-0)^\circ\text{C}$ for at least 30s} for $t = 180\text{s}$; JESD22-A113	Executed before the following tests: C-SAM (22 DUTs), TC, PC, H ³ TRB or HAST, IOL	330 Devices
HTRB	High Temperature Reverse Bias	$T_J = 150^\circ\text{C}$ Reverse Bias = Specification Limit x 100%; JESD22-A108	1,000 Hrs	77 Devices
HTGB	High Temperature Gate Bias	$T_J = 150^\circ\text{C}$ Gate Bias = Specification Limit x 100%; JESD22-A108	1,000 Hrs	77 Devices
PC (AC)	Pressure Cooker (Auto-clave)	$T_A = 121 \pm 2^\circ\text{C}$; RH = 100%, P = 15psi; Bias = None; JESD22-A102	96 Hrs	77 Devices (pre-conditioned)
TC	Temperature Cycling	$T_A = \{[-55^\circ\text{C} @ 15\text{min.}] \leftrightarrow [150^\circ\text{C} @ 15 \text{min.}]\}$ per 1-hr cycle (air-to-air); Bias = None; JESD22-A104	1,000 Cycles	77 Devices (pre-conditioned)
H ³ TRB	High Humidity High Temperature Reverse Bias	$T_A = 85^\circ\text{C}$; RH = 85%; 80% rated $V_{DS,MAX}$ up to 100V; JESD22-A101	1,000 Hrs	77 Devices (pre-conditioned)
HAST	Highly Accelerated Temperature & Humidity Stress	$T_A = 130^\circ\text{C}$; RH = 85%; $V_{DS} = \pm 80\% V_{DS,MAX}$ up to 42V; P = 33.3 psi JESD22-A110	96 Hrs	77 Devices (pre-conditioned)
IOL	Intermittent Operating Life	$T_A = 25^\circ\text{C}$ Devices powered to ensure $\Delta T_J > 100^\circ\text{C}$ (not to exceed Absolute Maximum Rating) MIL-STD-750 M1037	15,000 Cycles	77 Devices (pre-conditioned)

AUTOMOTIVE LEVEL

Test Item	Description	Test Conditions	Duration	DUT Quantity
PreCon	Pre-conditioning & IR Reflow (SMT-type DUTs only)	Bake-out for 24 hrs: $T_A = 125^\circ\text{C}$; Moisture Soak: {MSL1 @ $[T_A = 85^\circ\text{C}, \text{RH} = 85\%]$ for 168 hrs;} or {MSL3 @ $[T_A = 30^\circ\text{C}, \text{RH} = 60\%]$ for 192 hrs.}; IR Reflow for 3 cycles: 1 cycle {preheat zone @ $>185^\circ\text{C}$ -> main heat zone @ $260 (+5/-0)^\circ\text{C}$ for at least 30s} for $t = 180\text{s}$; JESD22-A113	Executed prior to the following tests: C-SAM, TC, PC, H ³ TRB or HAST, IOL	3 Lots x 330 Devices
HTRB	High Temperature Reverse Bias	$T_J = 175^\circ\text{C}$; Reverse Bias = Specification Limit x 100%; JESD22-A108	1,000 Hrs	3 Lots x 77 Devices
HTGB	High Temperature Gate Bias	$T_J = 175^\circ\text{C}$; Reverse Bias = Specification Limit x 100%; JESD22-A108	1,000 Hrs	3 Lots x 77 Devices
PC (AC)	Pressure Cooker (Auto-clave)	$T_A = 121 \pm 2^\circ\text{C}$; RH = 100%, P = 15psi; Bias = None; JESD22-A102	96 Hrs	3 Lots x 77 Devices (pre-conditioned)
TC	Temperature Cycling	$T_A = \{[-55^\circ\text{C} @ 15\text{min.}] \leftrightarrow [150^\circ\text{C} @ 15 \text{min.}]\}$ per 1-hr cycle (air-to-air); Bias = None; JESD22-A104	1,000 Cycles	3 Lots x 77 Devices (pre-conditioned)
H ³ TRB	High Humidity High Temperature Reverse Bias	$T_A = 85^\circ\text{C}$; RH = 85%; 80% rated $V_{DS,MAX}$ up to 100V; JESD22-A101	1,000 Hrs	3 Lots x 77 Devices (pre-conditioned)
HAST	Highly Accelerated Temperature & Humidity Stress	$T_A = 130^\circ\text{C}$; RH = 85%; $V_{DS} = \pm 80\% V_{DS,MAX}$ up to 42V; P = 33.3 psi; JESD22-A110	96 Hrs	3 Lots x 77 Devices (pre-conditioned)
IOL	Intermittent Operating Life	$T_A = 25^\circ\text{C}$ Devices powered to ensure $\Delta T_J > 100^\circ\text{C}$ (not to exceed Absolute Maximum Rating) MIL-STD-750 M1037	15,000 Cycles	3 Lots x 77 Devices (pre-conditioned)

THROUGH-HOLE PACKING INFORMATION

Package Name		Quantity (pcs)	CBM (cm ³)
SOT-89-3L	Small box	10,000	21 x 21 x 21
	Carton box	40,000	45.0 x 44.5 x 23.2
TO-251-3L	Empty Tube	-	-
	Tube	80	53.6 x 2.0 x 0.54
	Small box	4,950	55.5 x 16 x 4.8
	Carton box	29,700	55.5 x 33.5 x 21.5
TO-251L-3L	Empty Tube	-	-
	Tube	80	53.6 x 2.0 x 0.54
	Small box	4,950	55.5 x 16.0 x 4.8
	Carton box	29,700	55.5 x 33.5 x 21.5
TO-220-3L	Empty Tube	-	-
	Tube	50	53.0 x 3.3 x 0.7
	Small box	1,000	55 x 14 x 4.5
	Carton box	5,000	57 x 26 x 16
TO-220AS-3L	Empty Tube	-	-
	Tube	50	53.0 x 3.3 x 0.7
	Small box	1,000	55 x 14 x 4.5
	Carton box	5,000	57 x 26 x 16
TO-220C-3L	Empty Tube	-	-
	Tube	50	53.0 x 3.3 x 0.7
	Small box	1,000	55 x 14 x 4.5
	Carton box	5,000	57 x 26 x 16
TO-220FA-3L	Empty Tube	-	-
	Tube	50	53 x 3.3 x 0.7
	Small box	1,000	55 x 14 x 4.5
	Carton box	5,000	57 x 26 x 16
TO-220FP-3L	Empty Tube	-	-
	Tube	50	53.0 x 3.3 x 0.7
	Small box	1,000	55 x 14 x 4.5
	Carton box	5,000	57 x 26 x 16
TO-220FP-NL	Empty Tube	-	-
	Tube	50	53 x 3.3 x 0.7
	Small box	1,000	55 x 14 x 4.5
	Carton box	5,000	57 x 26 x 16
TO-262-3L	Empty Tube	-	-
	Tube	50	53 x 3.3 x 0.7
	Small box	1,000	55 x 14 x 4.5
	Carton box	5,000	57 x 26 x 16
TO-247-3L	Empty Tube	-	-
	Tube	30	53 x 4.1 x 0.75
	Small box	450	52 x 13 x 5
	Carton box	2,250	55 x 28 x 18

SURFACE-MOUNT PACKING INFORMATION

Package Name		Quantity (pcs)	CBM (cm ³)
DFN1006-3L	Small box	100,000	21 x 21 x 21
	Carton box	400,000	45 x 45 x 24
DFN2020-6L	Small box	30,000	18.5 x 18.5 x 14
	Carton box	120,000	46 x 40 x 21
DFN3333-8L	Small box	6,000	36.6 x 34.1 x 5.4
	Carton box	300,000	37.5 x 30 x 35.5
TO-220FP-NL	Empty Tube	-	-
	Tube	50	53.0 x 3.3 x 0.7
	Small box	1,000	56.5 x 16.5 x 5.1
	Carton box	5,000	58 x 28.5 x 18.5
DFN8080-4L	Empty Tube	-	-
	Reel	3,000	13 inch
	Small box	6,000	36.6 x 34.1 x 5.4
DFN3030-8L	Carton box	300,000	37.5 x 30.0 x 35.5
	Small box	6,000	36.6 x 34.1 x 5.4
DFN5060-8L	Carton box	30,000	37.5 x 30 x 35.5
	Small box	6,000	36.6 x 34.1 x 5.4
PDFN3x3-8L	Carton box	300,000	37.5 x 30.0 x 35.5
	Small box	6,000	36.6 x 34.1 x 5.4
PDFN3x3-8L-D	Carton box	30,000	37.5 x 30 x 35.5
	Small box	6,000	36.6 x 34.1 x 5.4
PDFN5x6-8L	Carton box	300,000	37.5 x 30 x 35.5
	Small box	6,000	36.6 x 34.1 x 5.4
PDFN5x6-8L-D	Carton box	30,000	37.5 x 30 x 35.5
	Small box	6,000	36.6 x 34.1 x 5.4
PowerJE®7x8 (sTOLL)	Carton box	300,000	37.5 x 30 x 35.5
	Small box	4,000	36.6 x 34.1 x 5.4
PowerJE®10x12 (TOLL)	Carton box	20,000	37.5 x 30 x 35.5
	Small box	2,000	36.6 x 34.1 x 5.4
SOT-23	Carton box	10,000	37.5 x 30 x 35.5
	Small box	30,000	21 x 21 x 21
SOT-23-3L	Carton box	120,000	44 x 44 x 23
	Small box	30,000	21 x 21 x 21
SOT-23-6L	Carton box	120,000	44 x 44 x 23
	Small box	30,000	21 x 21 x 21
SOT-223-3L	Carton box	120,000	44 x 44 x 23
	Small box	8,000	35 x 34 x 5
SOT-323-3L	Carton box	40,000	36.5 x 36 x 25.5
	Small box	45,000	21 x 21 x 21
SOT-363-6L	Carton box	180,000	44 x 44 x 23
	Small box	45,000	21 x 21 x 21
SOT-523-3L	Carton box	180,000	44 x 44 x 23
	Small box	30,000	21 x 21 x 21
SOT-563-6L	Carton box	180,000	44 x 44 x 23
	Small box	30,000	21 x 21 x 21
SOT-723-3L	Carton box	180,000	44 x 44 x 23
	Small box	45,000	21 x 21 x 21
TO-252-3L	Carton box	180,000	44 x 44 x 23
	Small box	2,500	35 x 34 x 5
TO-263-3L	Empty Tube	25,000	36.5 x 36 x 25.5
	Tube	-	-
	Small box	50	53 x 3.3 x 0.7
	Carton box	800	35 x 34 x 5
TO-263-7L	Empty Tube	4,000	36.5 x 36 x 25.5
	Tube	-	-
	Small box	50	53 x 3.3 x 0.7
	Carton box	800	35 x 34 x 5
SOP-8	Carton box	4,000	36.5 x 36 x 25.5
	Small box	8,000	34 x 33 x 5.1
TSSOP-8	Carton box	48,000	37 x 37 x 36
	Small box	10,000	34 x 33 x 5.1
	Carton box	60,000	37 x 37 x 36

LONG-TERM RELIABILITY

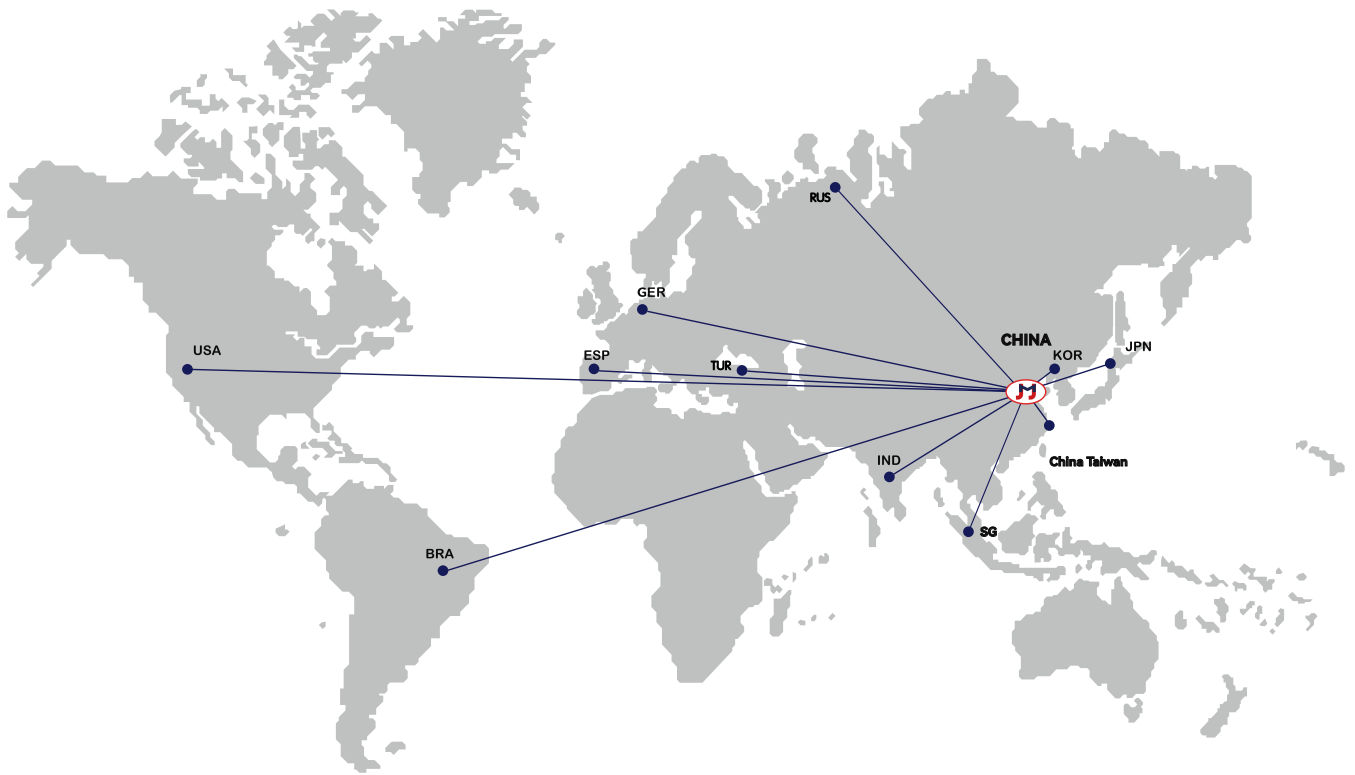
LABORATORY



FAILURE ANALYSIS

LABORATORY





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