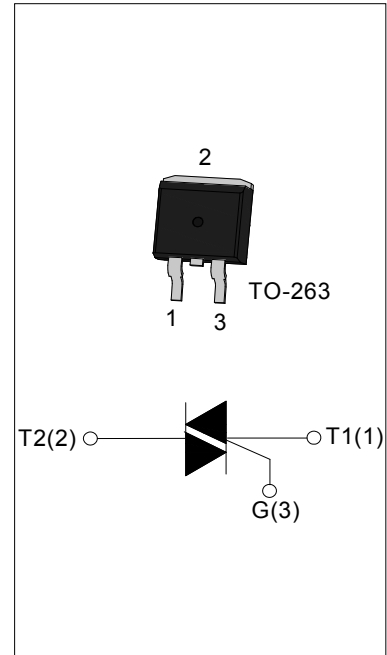


DESCRIPTION:

With high ability to withstand the shock loading of large current, JST24 series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended focus on inductive load. Package TO-263 is RoHS compliant. (2011/65/EU)


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
V_{DRM}/V_{RRM}	600/800/1200/1600	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	°C
Operating junction temperature range	T_j	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	600/800/1200/1600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600/800/1200/1600	V
RMS on-state current	$I_{T(RMS)}$	25	A
TO-263 ($T_C=75^\circ\text{C}$)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	250	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	340	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

$V_{\text{DRM}}/V_{\text{RRM}}$: 600/800V

Symbol	Test Condition	Quadrant		JST24-600/800V		Unit
				BW	CW	
I_{GT}	$V_{\text{D}}=12\text{V } R_{\text{L}}=33\Omega$	I - II -III	MAX	50	35	mA
V_{GT}		I - II -III	MAX	1.3		V
V_{GD}	$V_{\text{D}}=V_{\text{DRM}} T_j=125^{\circ}\text{C}$ $R_{\text{L}}=3.3\text{K}\Omega$	I - II -III	MIN	0.2		V
I_{L}	$I_{\text{G}}=1.2I_{\text{GT}}$	I -III	MAX	80	70	mA
		II		100	80	
I_{H}	$I_{\text{T}}=100\text{mA}$		MAX	75	50	mA
dV/dt	$V_{\text{D}}=2/3V_{\text{DRM}}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	1000	500	V/ μs

$V_{\text{DRM}}/V_{\text{RRM}}$: 1200/1600V

Symbol	Test Condition	Quadrant		JST24-1200V/1600V		Unit
				BW	CW	
I_{GT}	$V_{\text{D}}=12\text{V } R_{\text{L}}=33\Omega$	I - II -III	MAX	50	35	mA
V_{GT}		I - II -III	MAX	1.5		V
V_{GD}	$V_{\text{D}}=V_{\text{DRM}} T_j=125^{\circ}\text{C}$ $R_{\text{L}}=3.3\text{K}\Omega$	I - II -III	MIN	0.2		V
I_{L}	$I_{\text{G}}=1.2I_{\text{GT}}$	I -III	MAX	90	70	mA
		II		100	80	
I_{H}	$I_{\text{T}}=100\text{mA}$		MAX	80	60	mA
dV/dt	$V_{\text{D}}=2/3V_{\text{DRM}}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	1500	1000	V/ μs

$V_{\text{DRM}}/V_{\text{RRM}}$: 600/800V

Symbol	Test Condition	Quadrant		JST24-600/800V		Unit
				B	C	
I_{GT}	$V_{\text{D}}=12\text{V } R_{\text{L}}=33\Omega$	I - II -III	MAX	50	25	mA
		IV		70	50	
V_{GT}		ALL	MAX	1.3		V
V_{GD}	$V_{\text{D}}=V_{\text{DRM}} T_j=125^{\circ}\text{C}$ $R_{\text{L}}=3.3\text{K}\Omega$	ALL	MIN	0.2		V

I _L	I _G = 1.2I _{GT}	I -III-IV	MAX	80	70	mA
		II	MAX	100	90	
I _H	I _T = 100mA		MAX	75	60	mA
dV/dt	V _D = 2/3V _{DRM} Gate Open T _J = 125°C		MIN	500	200	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V _{TM}	I _{TM} = 35A tp = 380μs	T _J = 25°C	1.5	V
I _{DRM}	V _D = V _{DRM} V _R = V _R RM	T _J = 25°C	5	μA
I _R RM		T _J = 125°C	3	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	junction to case(AC)	TO-263	1.3	°C/W
R _{th(j-a)}	junction to ambient		45	

ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p>ST</p> <p>Triacs</p> <p>I_{T(RMS)}:25A</p>	<p>24</p> <p>E:TO-263</p> <p>600:V_{DRM}/V_RRM ≥ 600V 800:V_{DRM}/V_RRM ≥ 800V 1200:V_{DRM}/V_RRM ≥ 1200V 1600:V_{DRM}/V_RRM ≥ 1600V</p>	<p>E</p>	<p>-600</p>	<p>BW</p> <p>BW:I_{GT1-3} ≤ 50mA CW:I_{GT1-3} ≤ 35mA B:I_{GT1-3} ≤ 50mA I_{GT4} ≤ 70mA C:I_{GT1-3} ≤ 25mA I_{GT4} ≤ 50mA</p>	<p>-/</p> <p>Blank: Tube TR: Tape & Reel</p>
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MARKING

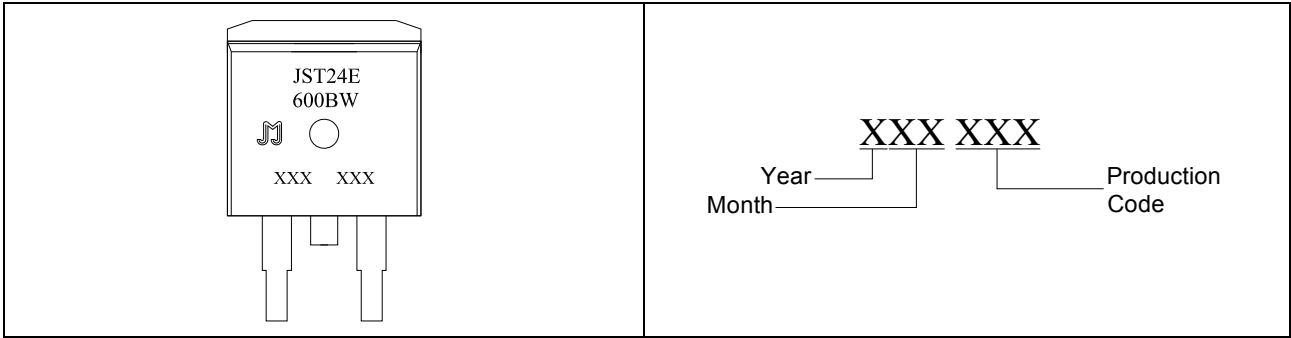


FIG.1: Maximum power dissipation versus RMS on-state current

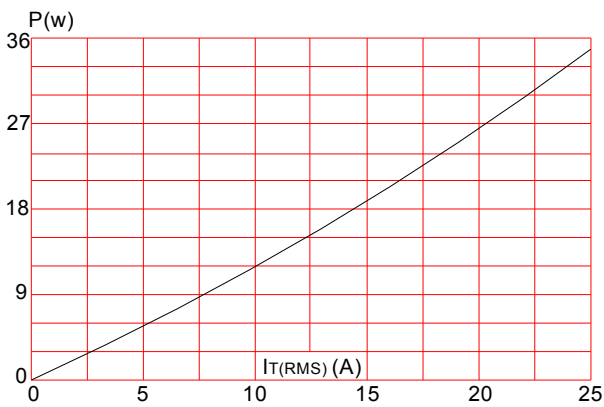


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35 μ m)(full cycle)

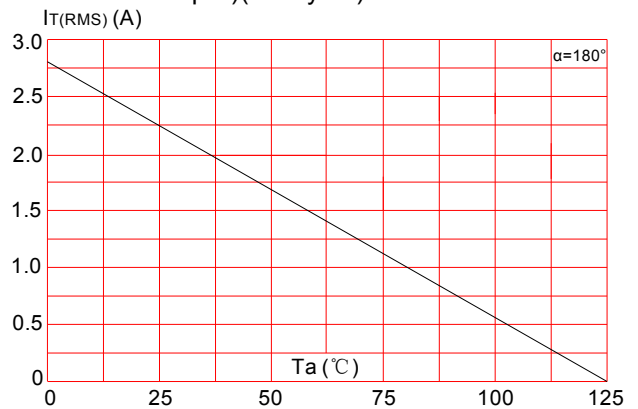


FIG.3: Surge peak on-state current versus number of cycles

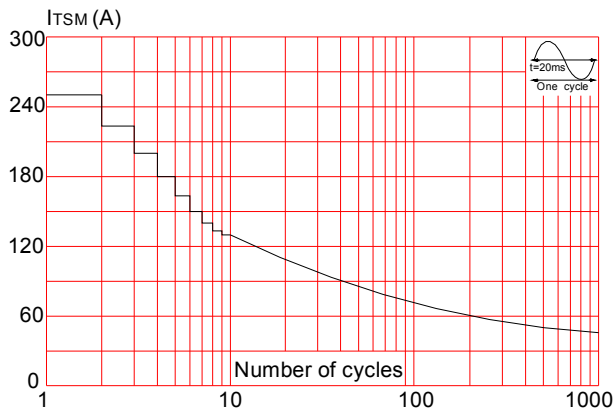


FIG.4: On-state characteristics (maximum values)

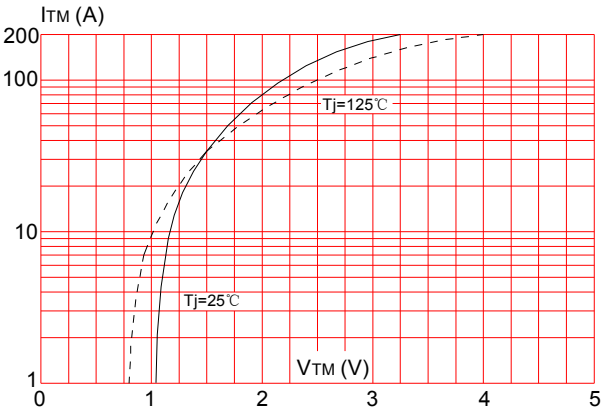


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

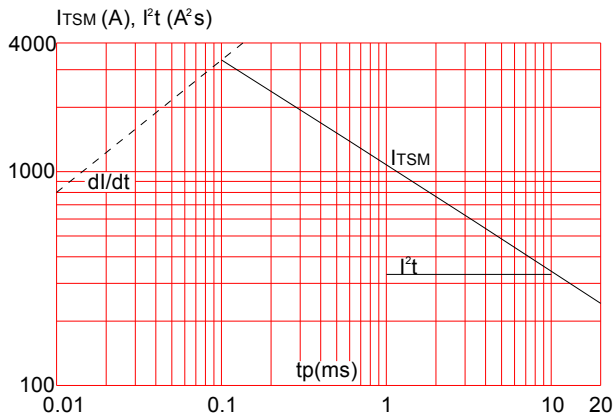
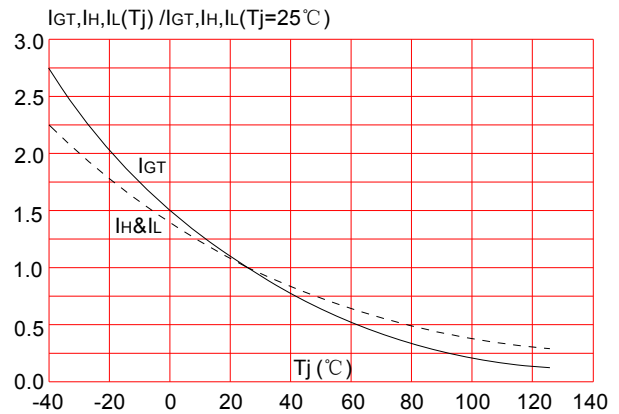
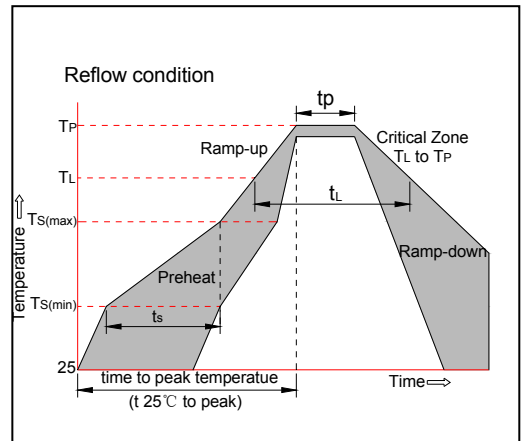


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(\text{min})}$)	+150 $^\circ\text{C}$
	-Temperature Max($T_{s(\text{max})}$)	+200 $^\circ\text{C}$
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3 $^\circ\text{C}/\text{sec. Max}$
$T_{s(\text{max})}$ to T_L - Ramp-up Rate		3 $^\circ\text{C}/\text{sec. Max}$
Reflow	-Temperature(T_L) (Liquidus)	+217 $^\circ\text{C}$
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5) $^\circ\text{C}$
Time within 5 $^\circ\text{C}$ of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6 $^\circ\text{C}/\text{sec. Max}$
Time 25 $^\circ\text{C}$ to Peak Temp (T_p)		8 min. Max
Do not exceed		+260 $^\circ\text{C}$



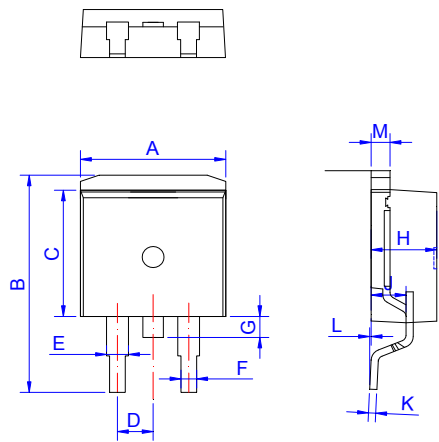
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT (mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III				
JST24E-600(800/1200/1600)BW	600/800/1200/1600	50		TO-263	50	Tube
JST24E-600(800/1200/1600)CW	600/800/1200/1600	35				
Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II - III	IV			
JST24E-600(800)B	600/800	50	70	TO-263	800	Tape & Reel
JST24E-600(800)C	600/800	25	50			

Document Revision History

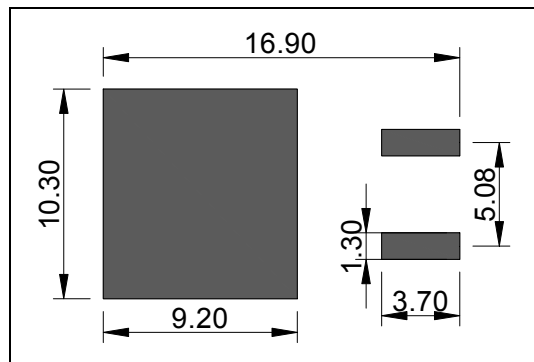
Date	Revision	Changes
April 9, 2021	9	Last update

PACKAGE MECHANICAL DATA

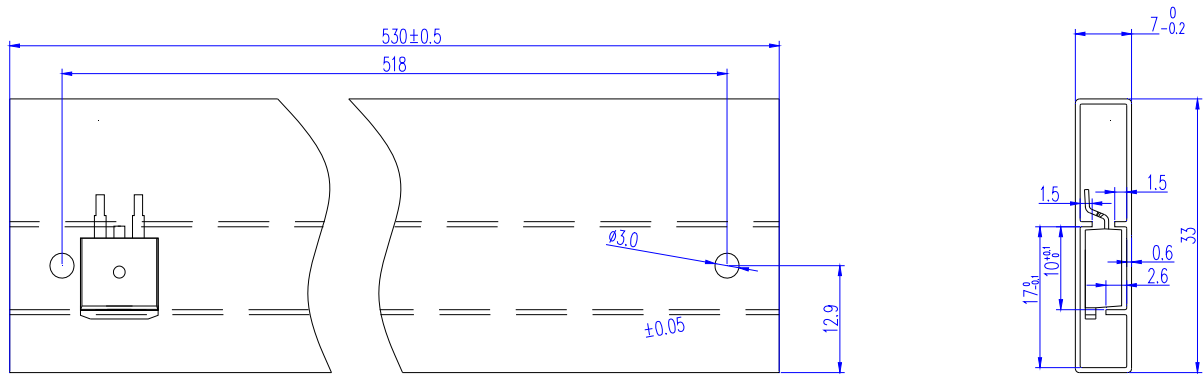


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053

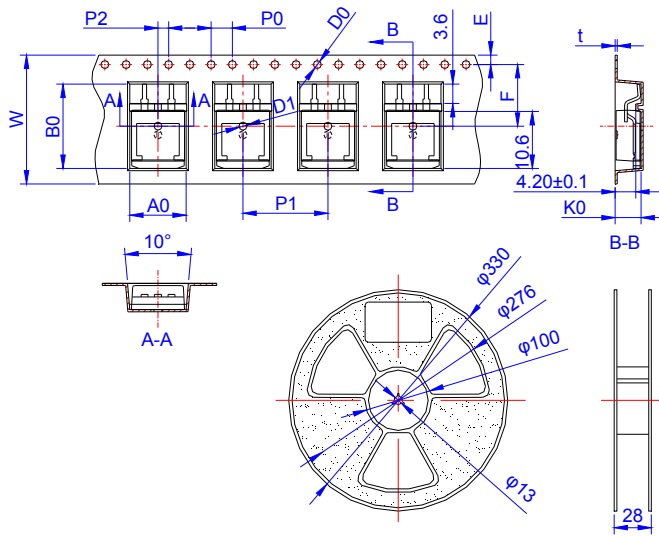
FOOTPRINT-TO-263 (dimensions in mm)



DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-263	TUBE	50	1,000	5,000



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	23.70	24.00	24.30	0.933	0.945	0.957
E	1.65	1.75	1.85	0.065	0.069	0.073
F	11.40	11.50	11.60	0.449	0.453	0.457
D0	-	1.50	1.60	-	0.059	0.063
D1	-	1.50	1.60	-	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	15.90	16.00	16.10	0.626	0.630	0.634
P2	1.90	2.00	2.10	0.075	0.079	0.083
A0	10.80	10.90	11.00	0.425	0.429	0.433
B0	16.20	16.30	16.40	0.638	0.642	0.646
K0	4.80	4.90	5.00	0.189	0.193	0.197
t	0.35	0.40	0.45	0.014	0.016	0.018

PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch



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