Description

JMT N-channel Enhancement Mode Power MOSFET

Features

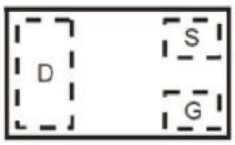
- 20V, 0.75A
  $R_{DS(ON)}$< 165mΩ @ V_{GS} =4.5V
  $R_{DS(ON)}$< 260mΩ @ V_{GS} =2.5V
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Lead free product is acquired
- ESD Protected: 2KV

Application

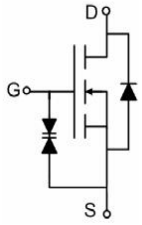
- Load Switch
- PWM Application
- Power management

RoHS

DFN1006-3L



Marking and pin Assignment



Schematic Diagram

Package Marking and Ordering Information

Device Marking	Device	OUTLINE	Device Package	Reel Size	Reel (PCS)	Per Carton (PCS)
34K	JMTD3134K	TAPING	DFN1006-3L	7inch	10000	400000

Absolute Maximum Ratings (T_A=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		20	V
V_{GSS}	Gate-Source Voltage		±10	V
I_D	Continuous Drain Current	T_A= 25℃	0.75	A
		T_A= 100℃	0.5	A
I_{DM}	Pulsed Drain Current note1		3	A
P_D	Power Dissipation	T_A= 25℃	0.15	W
$R_{\theta JA}$	Thermal Resistance, Junction to Case		833	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20V, V_{GS}=0V,	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS}=0V, V_{GS}= ±10V	-	-	±10	uA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	0.4	0.7	1.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS}=4.5V, I_D=0.5A	-	125	165	mΩ
		V_{GS}=2.5V, I_D=0.4A	-	185	260	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=10V, V_{GS}=0V, f=1.0MHz	-	60	-	pF
C_{oss}	Output Capacitance		-	22	-	pF
C_{rss}	Reverse Transfer Capacitance		-	12	-	pF
Q_g	Total Gate Charge	V_{DS}=10V, I_D=0.75A, V_{GS}=4.5V	-	1	-	nC
Q_{gs}	Gate-Source Charge		-	0.28	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	0.22	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=10V, I_D=0.5A, R_{GEN}=10Ω, V_{GS}=4.5V	-	2	-	ns
t_r	Turn-on Rise Time		-	19	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	10	-	ns
t_f	Turn-off Fall Time		-	23	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	0.75	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	3	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V, I_S=0.75A	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Performance Characteristics

Figure1: Output Characteristics

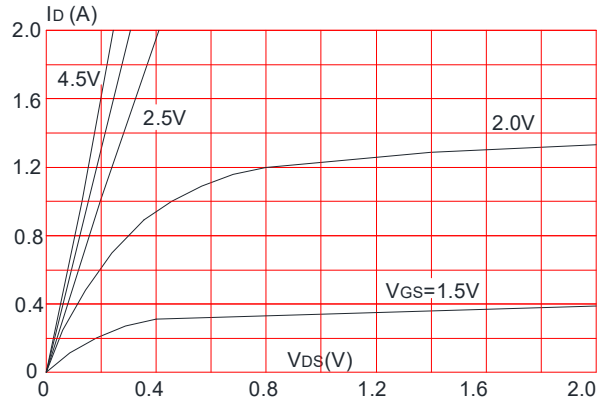


Figure 2: Typical Transfer Characteristics

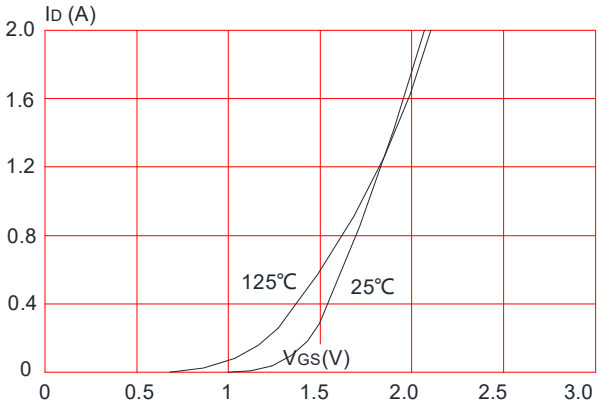


Figure 3: On-resistance vs. Drain Current

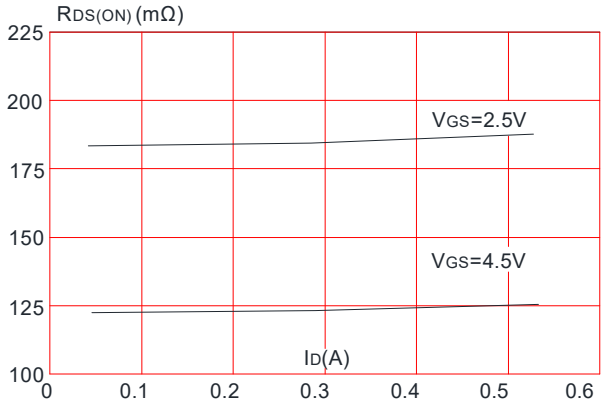


Figure 4: Body Diode Characteristics

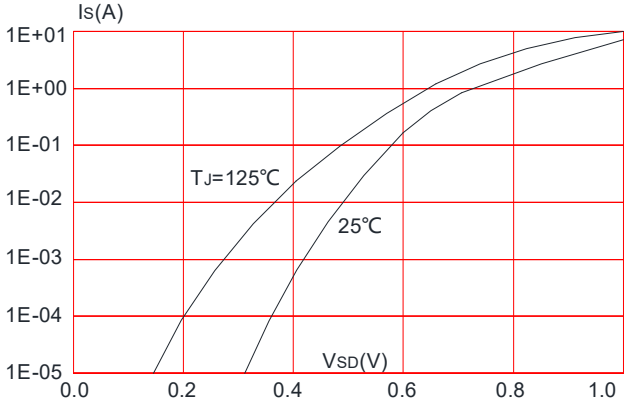


Figure 5: Gate Charge Characteristics

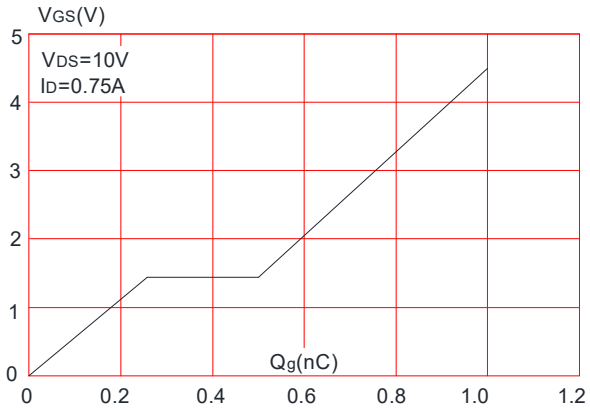


Figure 6: Capacitance Characteristics

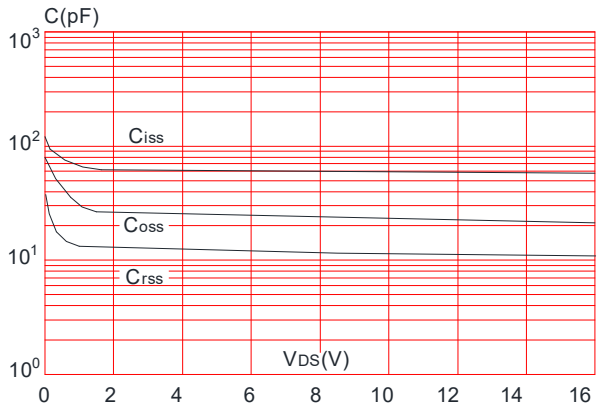


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

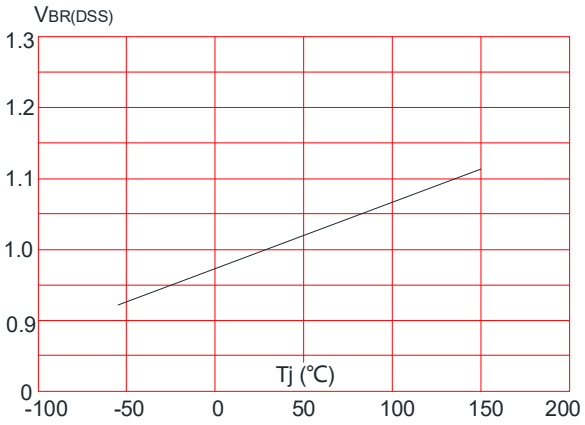


Figure 8: Normalized on Resistance vs. Junction Temperature

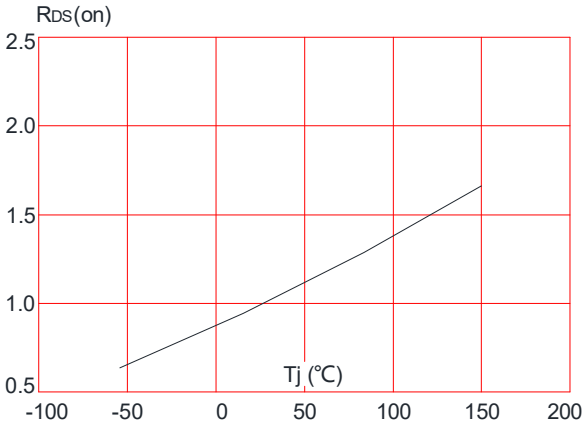


Figure 9: Maximum Safe Operating Area

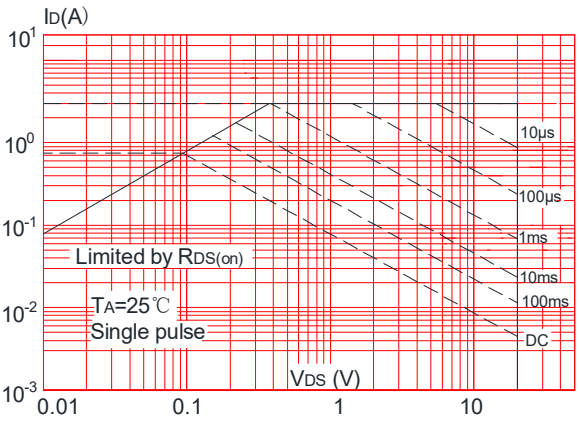


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

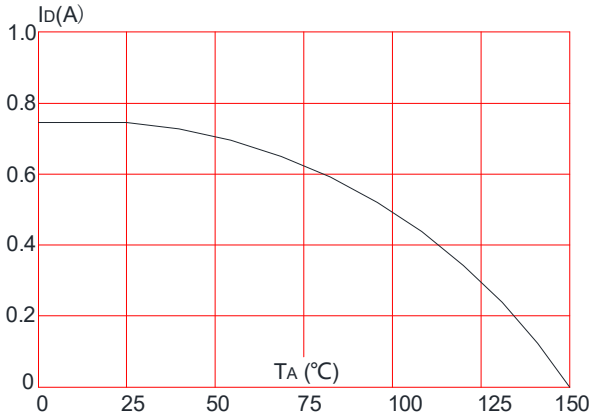
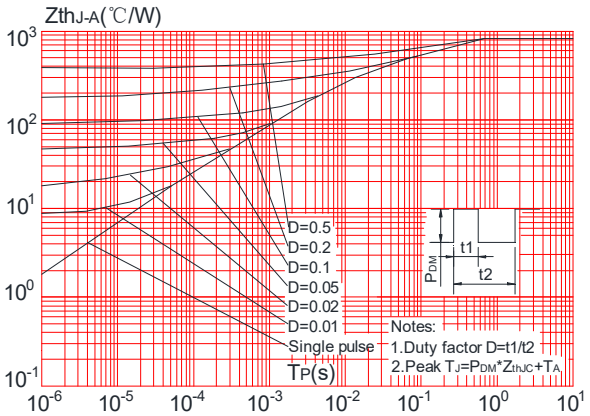


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Test Circuit

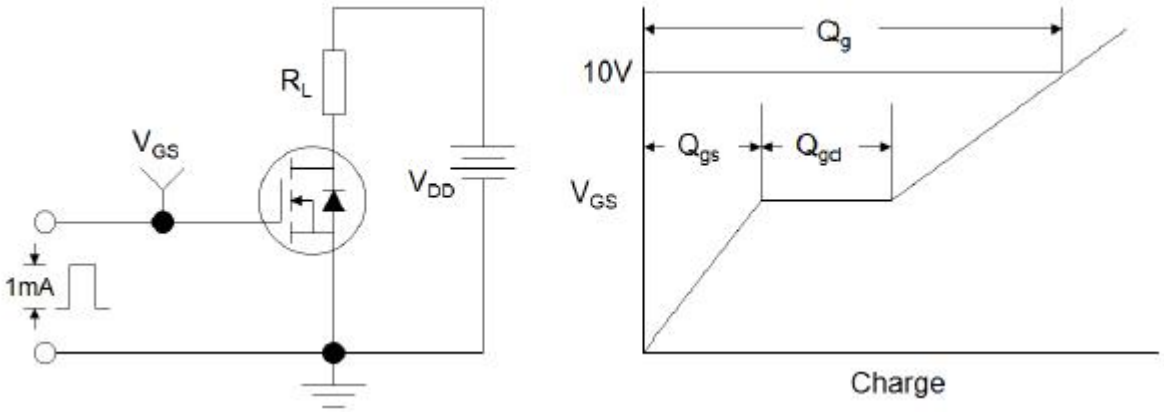


Figure1:Gate Charge Test Circuit & Waveform

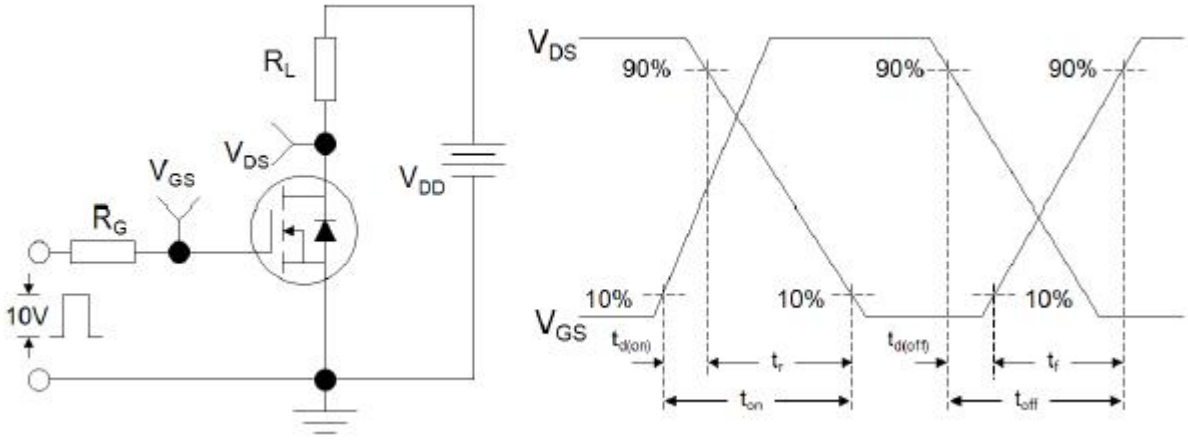


Figure 2: Resistive Switching Test Circuit & Waveforms

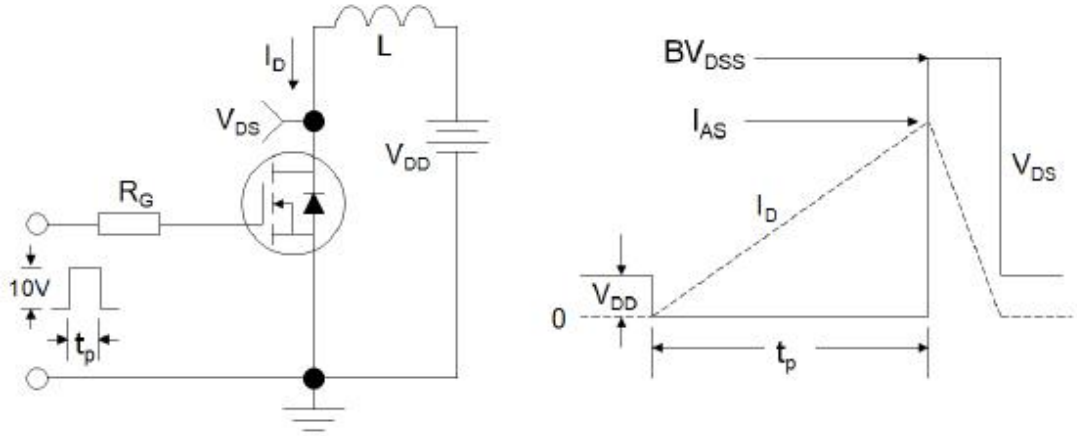
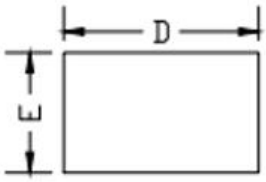
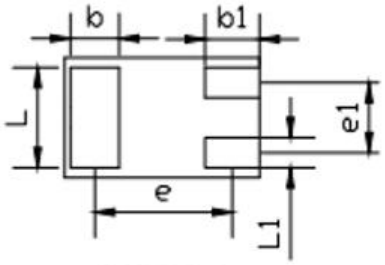


Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms

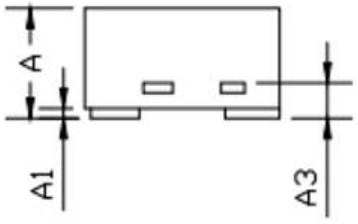
Package Mechanical Data-DFN1006-3L



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN1006		
REF.	MIN.	NOM.	MAX
A	>0.4	-	0.50
A1	0.00	-	0.05
A3	0.127REF.		
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.20	0.25	0.30
b1	0.20	0.30	0.40
L	0.45	0.50	0.55
L1	0.10	0.15	0.20
e	0.675		
e1	0.35		

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.
Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.
Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.
This document supersedes and replaces all information previously supplied.
is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.
Copyright ©2022 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.