



JMT(K)18P10A

Description

JMT P-channel MOSFET

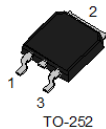
Features

- -100V,-18A
- $R_{DS(ON)}=75m\Omega$ (Typ.) @ $V_{GS}=-10V$
- $R_{DS(ON)}=80m\Omega$ (Typ.) @ $V_{GS}=-4.5V$
- Advanced Trench Technology
- Provide Excellent $R_{DS(ON)}$ and Low Gate Charge

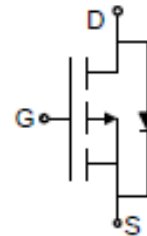
Application

- Load Switch
- PWM Application

Package



JMTK18P10A



Absolute Maximum Ratings ($T_C=25^\circ C$ unless otherwise specified)

Symbol	Parameter		Max.	Units
			TO-252	
V_{DSS}	Drain-Source Voltage		-100	V
V_{GSS}	Gate-Source Voltage		± 25	V
I_D	Continuous Drain Current	$T_C = 25^\circ C$	-18	A
		$T_C = 100^\circ C$	-11.4	A
I_{DM}	Pulsed Drain Current ^{note1}		-72	A
P_D	Power Dissipation	$T_C = 25^\circ C$	73.5	W
$R_{\theta JC}$	Thermal Resistance, Junction to Case		1.7	$^\circ C/W$
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	$^\circ C$



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Electrical Characteristics (T_C=25°C 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	-100	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-100V, V _{GS} =0V,	-	-	-1.0	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} =±25V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1.2	-1.6	-2.2	V
R _{DS(on)}	Static Drain-Source on-Resistance <small>note2</small>	V _{GS} =-10V, I _D =-6A	-	75	95	mΩ
		V _{GS} =-4.5V, I _D =-3A	-	80	110	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-30V, V _{GS} =0V, f=1.0MHz	-	2250	-	pF
C _{oss}	Output Capacitance		-	130	-	pF
C _{rss}	Reverse Transfer Capacitance		-	90	-	pF
Q _g	Total Gate Charge	V _{DS} =-50V, I _D =-6A, V _{GS} =-10V	-	40.4	-	nC
Q _{gs}	Gate-Source Charge		-	7.7	-	nC
Q _{gd}	Gate-Drain("Miller") Charge		-	6.6	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DS} =-30V, I _D =-1A, R _{GEN} =6Ω, V _{GS} =-10V	-	27	-	ns
t _r	Turn-on Rise Time		-	12	-	ns
t _{d(off)}	Turn-off Delay Time		-	150	-	ns
t _f	Turn-off Fall Time		-	45	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-18	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-36	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S =-18A	-	-	-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

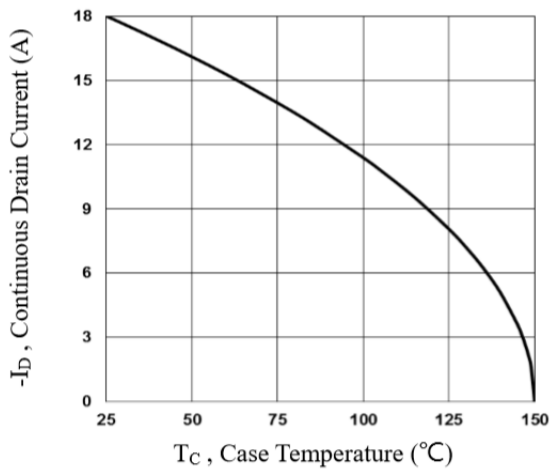


Fig.1 Continuous Drain Current vs. T_C

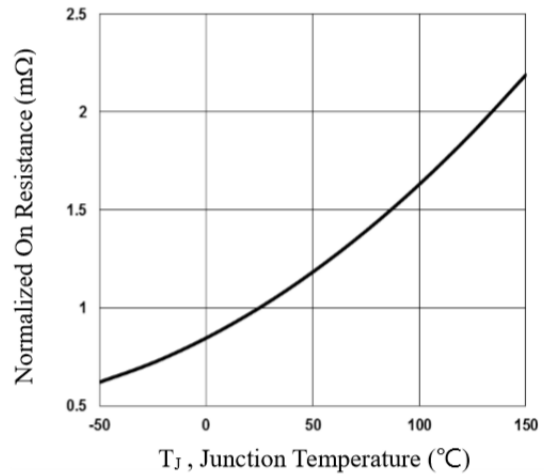


Fig.2 Normalized RDSON vs. T_J

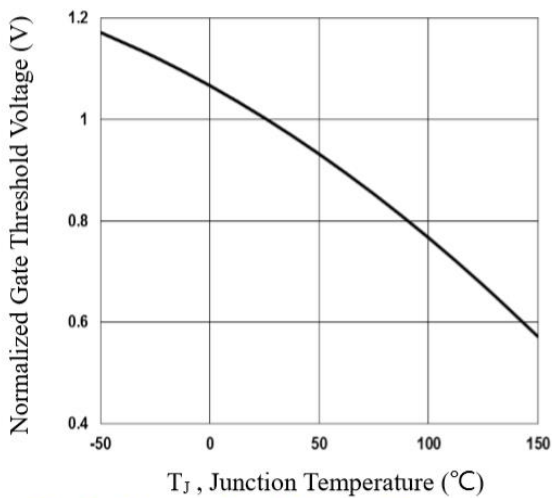


Fig.3 Normalized V_{th} vs. T_J

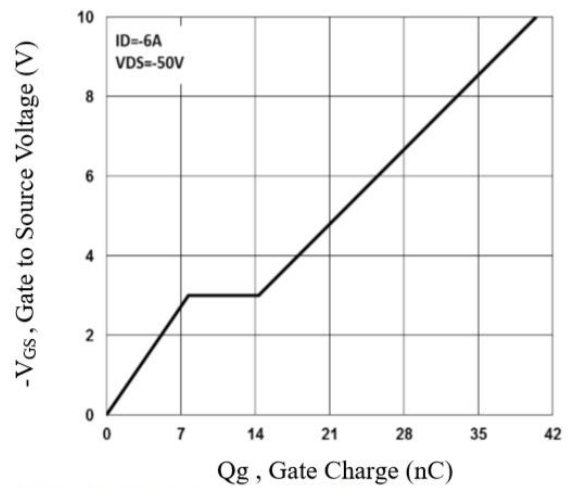


Fig.4 Gate Charge Waveform

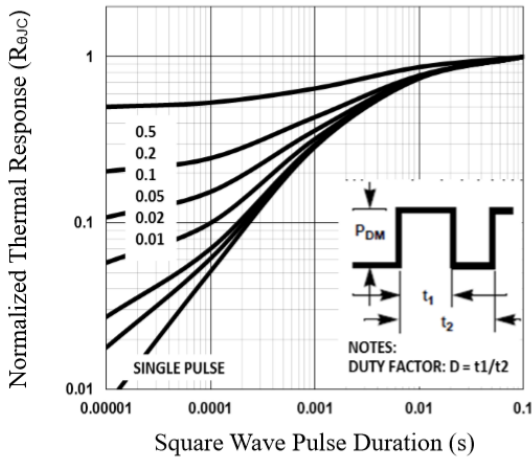


Fig.5 Normalized Transient Impedance

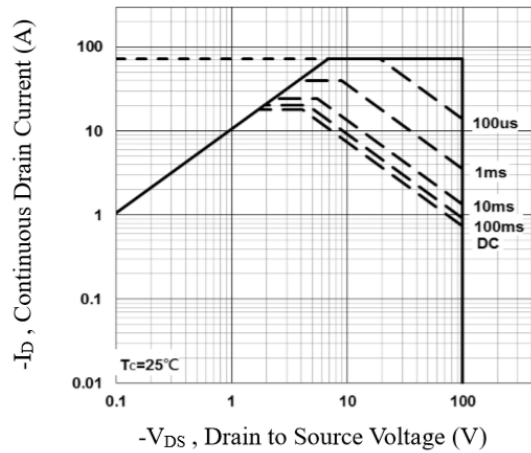


Fig.6 Maximum Safe Operation Area

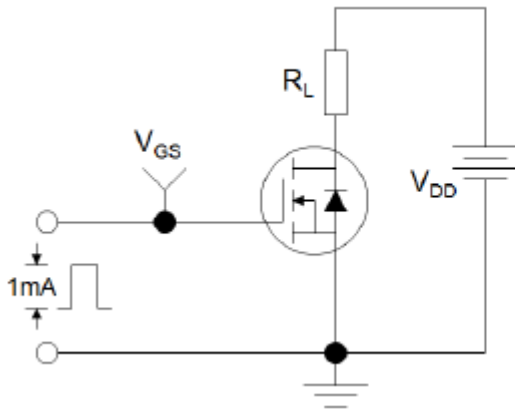


Figure 1: Gate Charge Test Circuit & Waveform

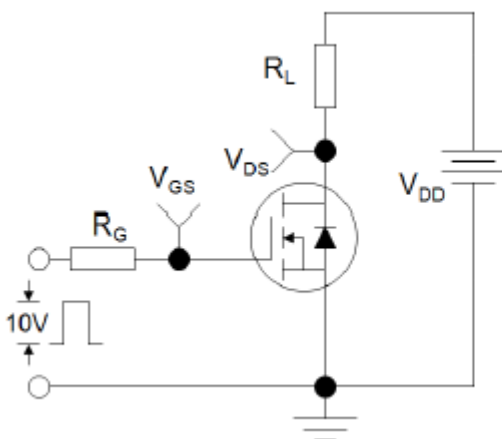
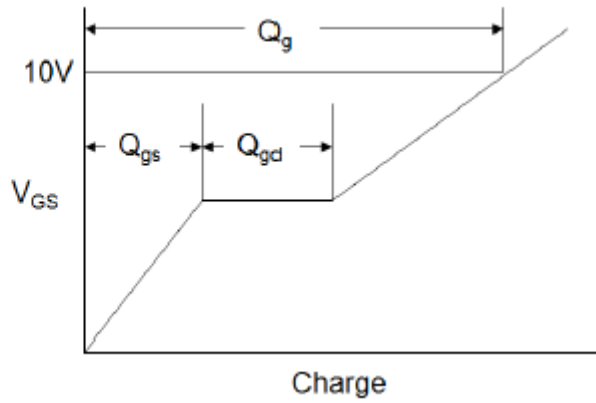


Figure 2: Resistive Switching Test Circuit & Waveforms



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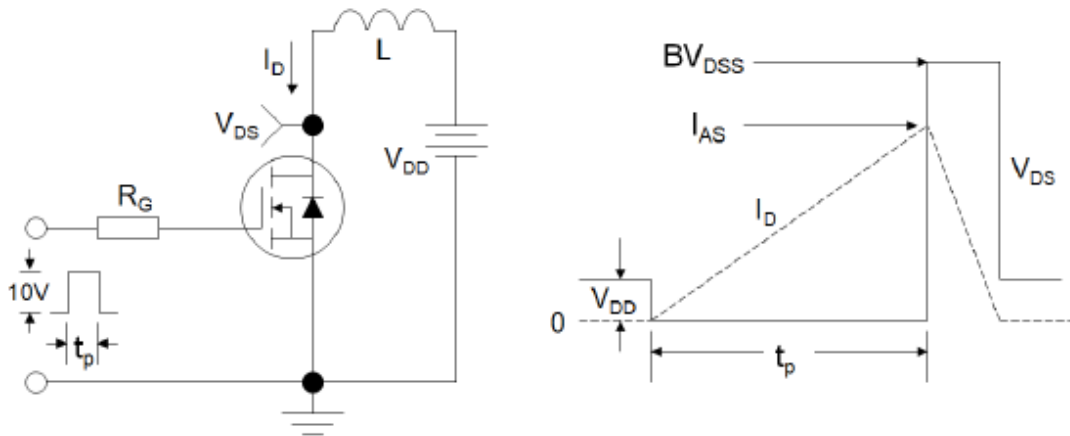
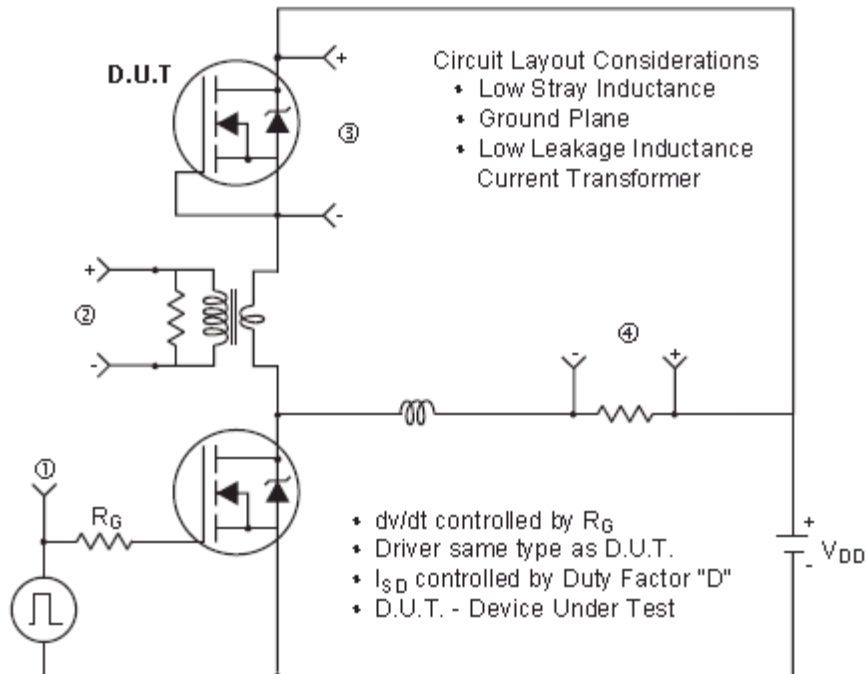


Figure 3: Unclamped Inductive Switching Test Circuit & Waveforms



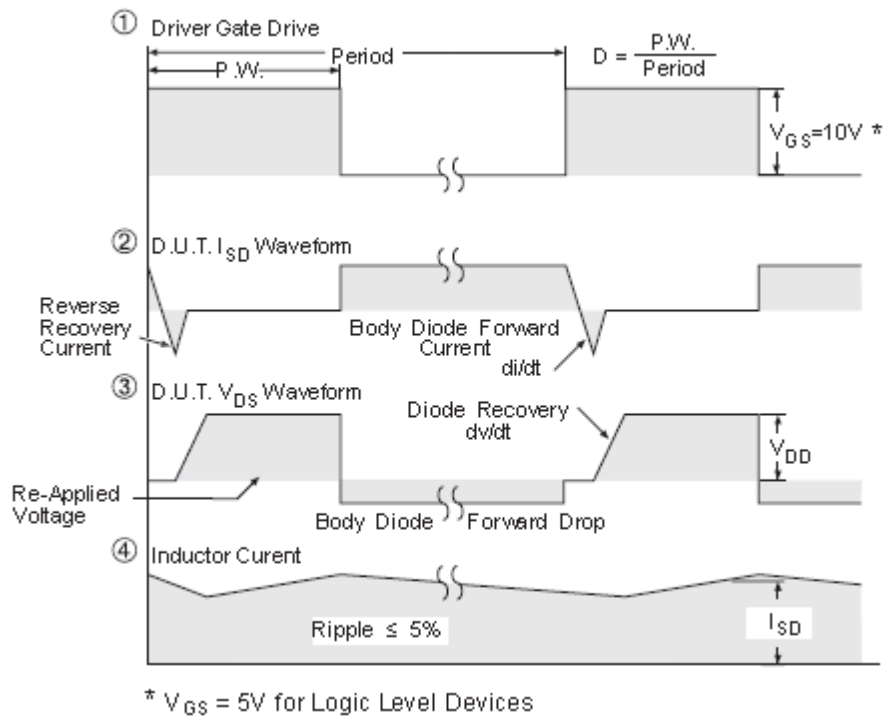
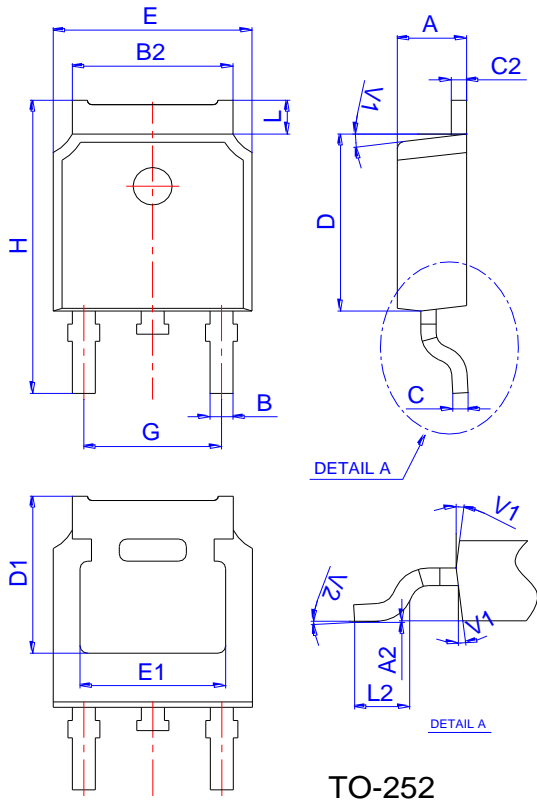


Figure 4: Peak Diode Recovery dv/dt Test Circuit & Waveforms (For N-channel)



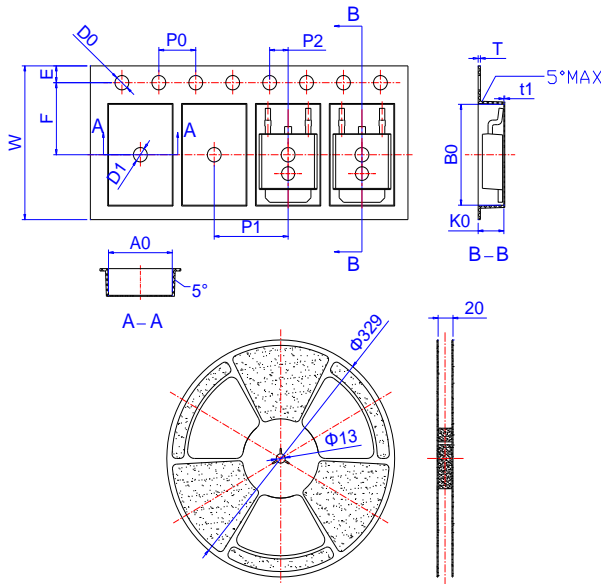
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Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

Reel Specification-TO-252



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	15.90	16.00	16.10	0.626	0.630	0.634
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
D0	1.40	1.50	1.60	0.055	0.059	0.063
D1	1.40	1.50	1.60	0.055	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
A0	6.85	6.90	7.00	0.270	0.271	0.276
B0	10.45	10.50	10.60	0.411	0.413	0.417
K0	2.68	2.78	2.88	0.105	0.109	0.113
T	0.24		0.27	0.009		0.011
t1	0.10			0.004		
10P0	39.80	40.00	40.20	1.567	1.575	1.583

OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TAPING	2,500	25,000	13inch




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