

Features

- Trench MV MOSFET Technology
- ESD Protected Up To 2KV(HBM)
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

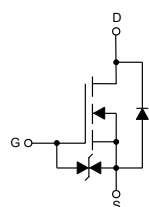
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 383°C/W Junction to Ambient (Note 2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 10	V
Continuous Drain Current	I_D	1	A
		0.6	
Pulsed Drain Current (Note 3)	I_{DM}	4	A
Total Power Dissipation (Note 4)	P_D	0.33	W

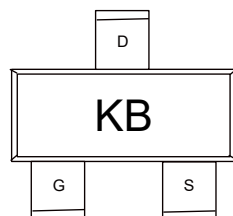
Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-ambient thermal resistance.

Internal Structure and Marking Code

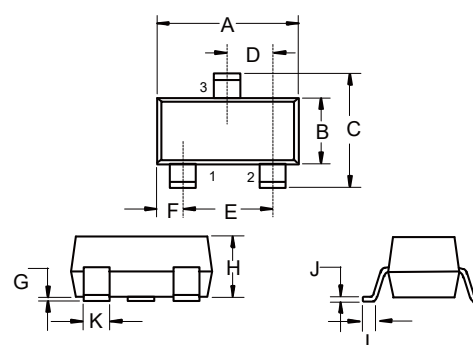


1. GATE
2. SOURCE
3. DRAIN



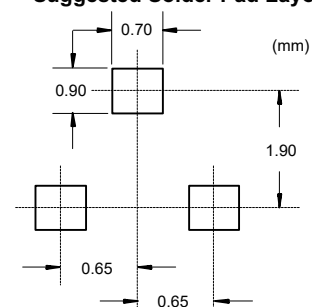
N-Channel MOSFET

SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±10V			±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5	0.8	1.0	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =1A		134	174	mΩ
		V _{GS} =2.5V, I _D =0.8A		157	220	
		V _{GS} =1.8V, I _D =0.5A		199	298	
Forward Transconductance	g _{fs}	V _{DS} =10V, I _D =1A		0.6		S
Diode Characteristics						
Continuous Body Diode Current	I _S				1	A
Body Diode Voltage	V _{SD}	V _{GS} =0V, I _S =0.5A			1.2	V
Reverse Recovery Time	t _{rr}	IF=1A, dIF/dt=100A/μs		13		ns
Reverse Recovery Charge	Q _{rr}			6.3		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		164		pF
Output Capacitance	C _{oss}			11		
Reverse Transfer Capacitance	C _{rss}			8.6		
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =1A		3.5		pC
Gate-Source Charge	Q _{gs}			0.7		
Gate-Drain Charge	Q _{gd}			1.1		
Turn-On Delay Time	t _{d(on)}	V _{GS} =4.5V, V _{DS} =10V, I _D =1A, R _G =2.5Ω		4		ns
Turn-On Rise Time	t _r			12		
Turn-Off Delay Time	t _{d(off)}			10		
Turn-Off Fall Time	t _f			15		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

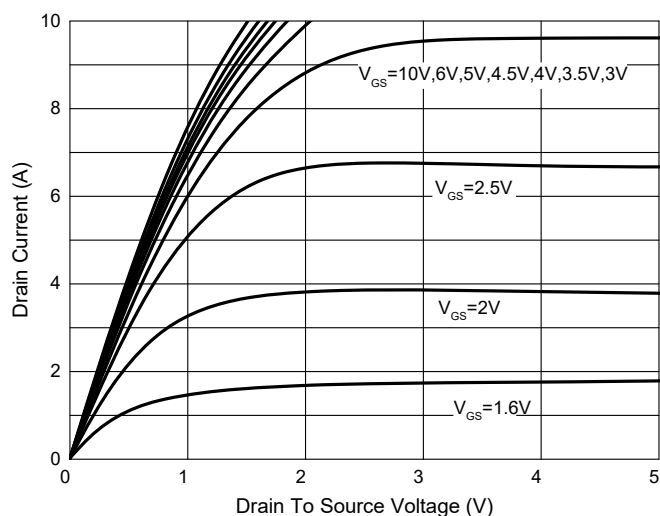


Fig. 2 - Transfer Characteristics

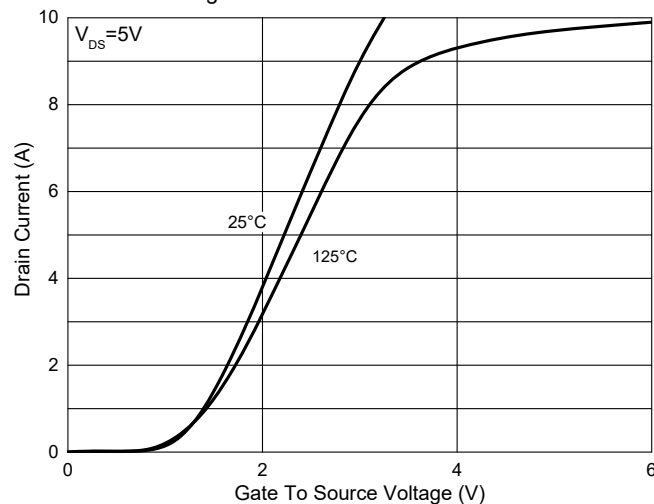


Fig. 3 - $R_{DS(ON)} - V_{GS}$

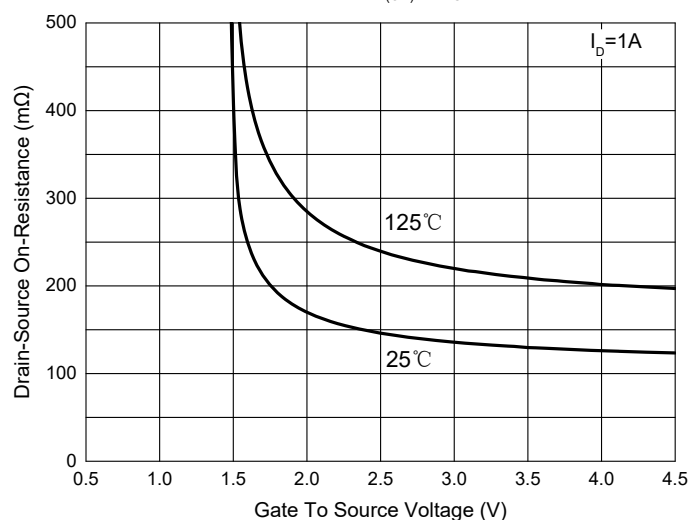


Fig. 4 - $R_{DS(ON)} - I_D$

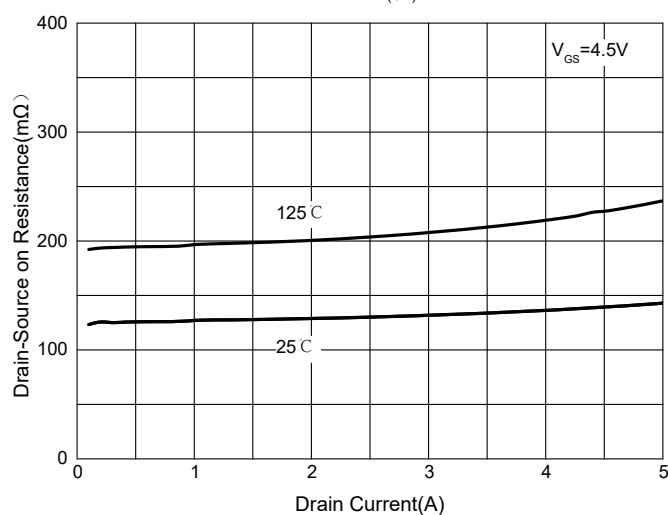


Fig. 5 - Capacitance Characteristics

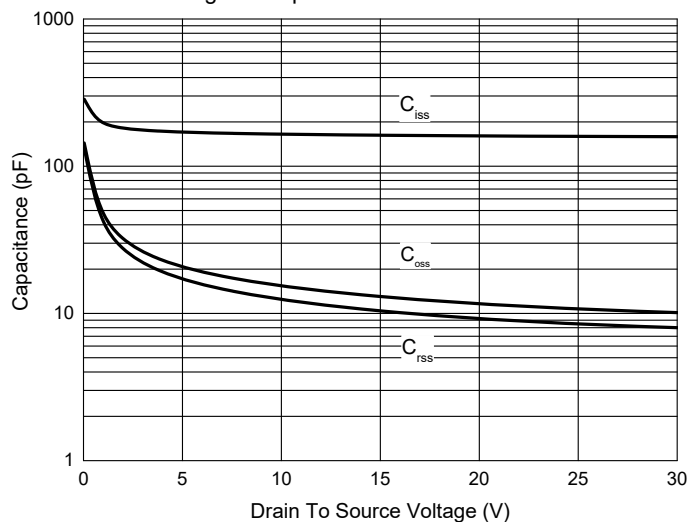
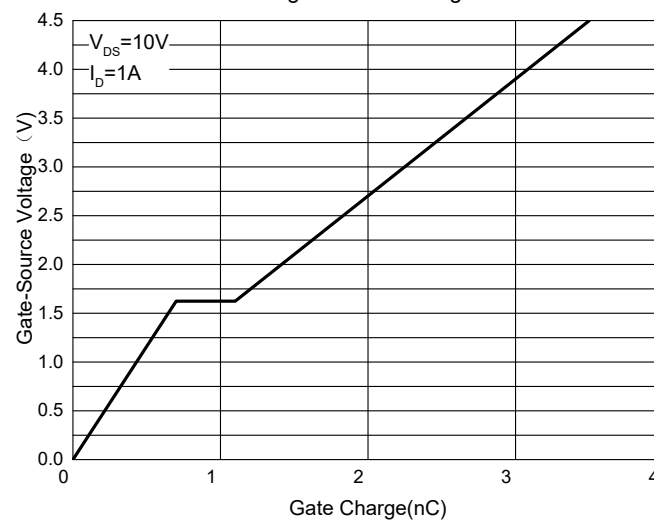


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

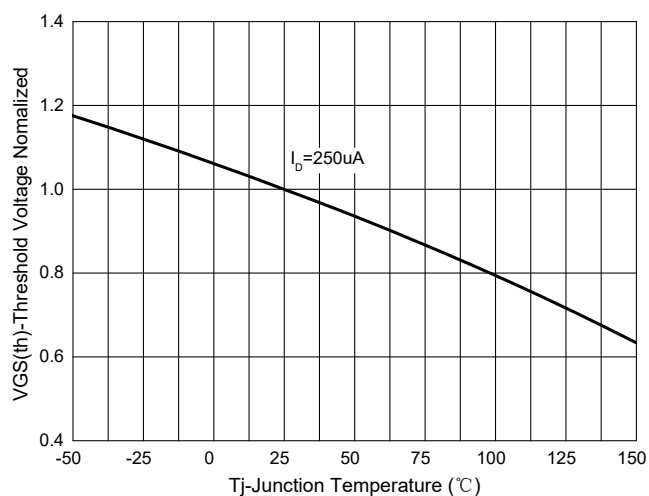


Fig.8-Normalized On Resistance Characteristics

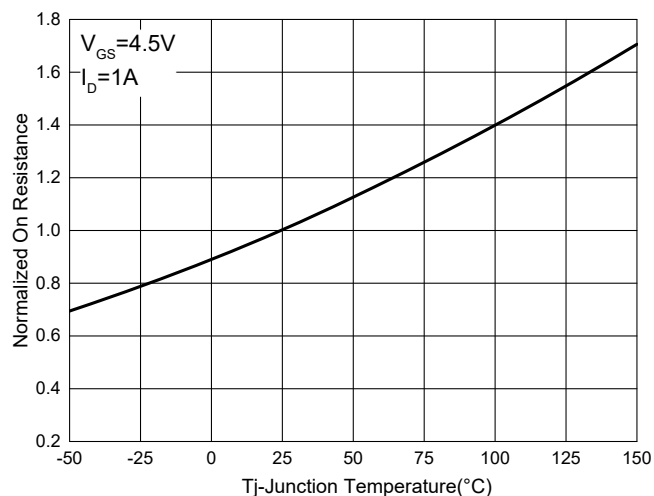


Fig.9 - $I_S - V_{SD}$

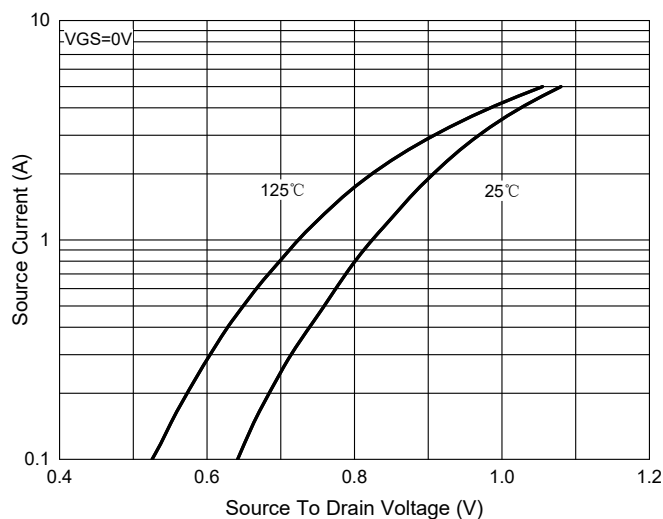


Fig. 10 - Drain Current

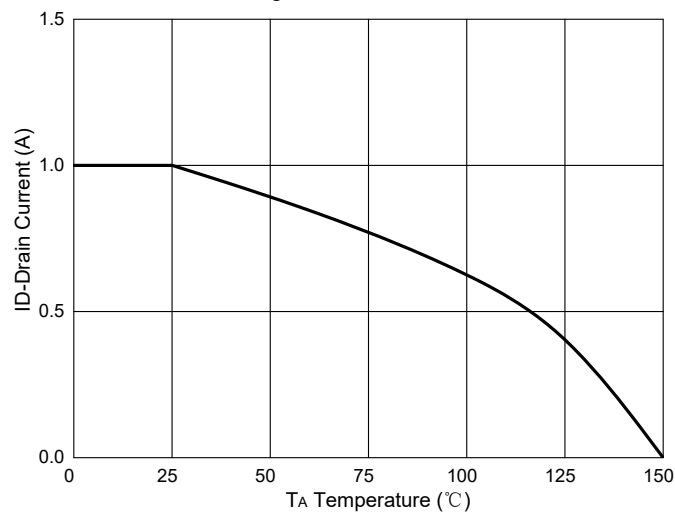
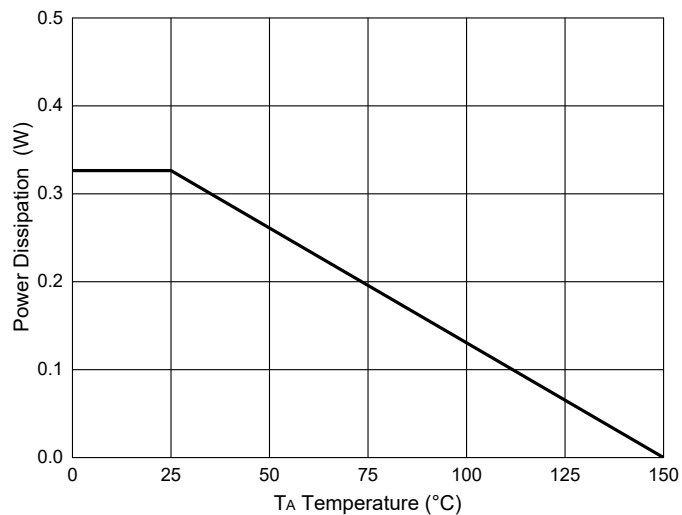
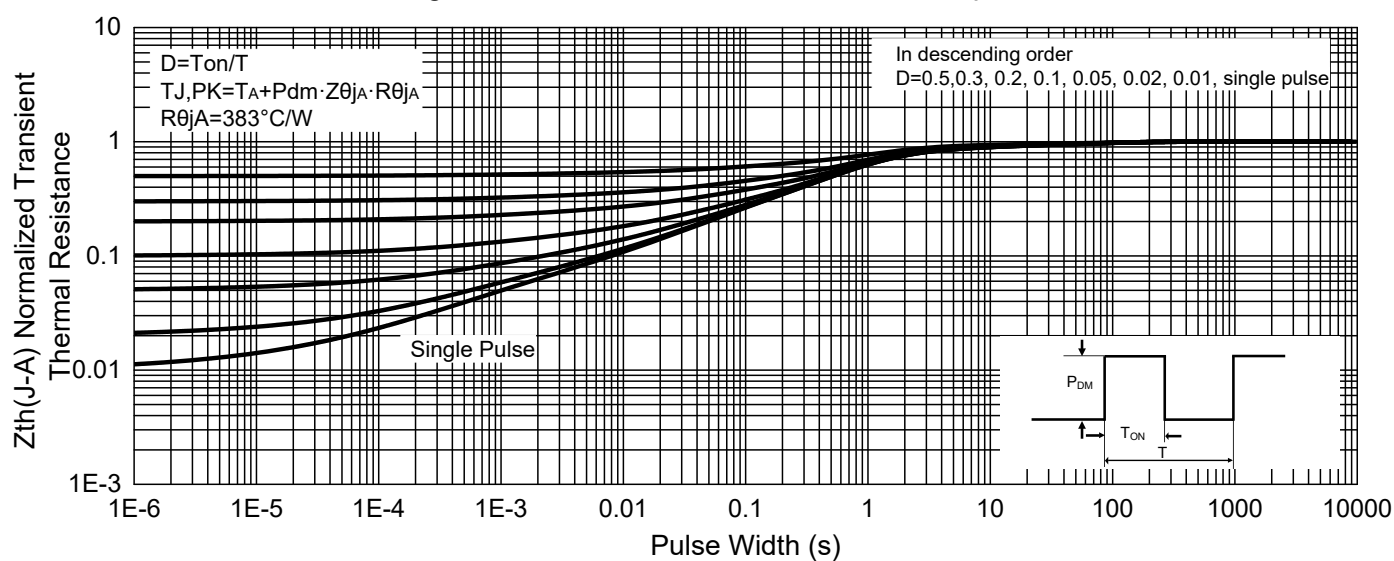


Fig.11-PD Dissipation





Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

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