Features

- Trench MV MOSFET Technology
- High Density Cell Design For Low RDS(on)
- 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)

N-CHANNEL MOSFET

Maximum Ratings

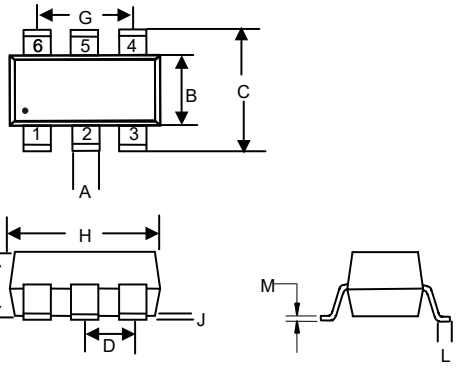
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 73°C/W Junction to Ambient(Note 2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C	I_D	3	A
	T_A=70°C		2.4	
Pulsed Drain Current(Note 3)		I_{DM}	12	A
Total Power Dissipation(Note 4)		P_D	1.7	W

Note:

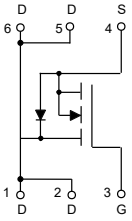
1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°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.

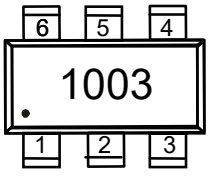
SOT23-6L



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.012	0.020	0.30	0.50	
B	0.051	0.070	1.30	1.80	
C	0.087	0.126	2.20	3.20	
D	0.037		0.95		TYP.
G	0.074		1.90		TYP.
H	0.106	0.122	2.70	3.10	
J	0.002	0.006	0.05	0.15	
K	0.030	0.051	0.75	1.30	
L	0.012	0.024	0.30	0.60	
M	0.003	0.008	0.08	0.22	

Internal Structure and Marking Code





Electrical Characteristics @ 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	100			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.1	1.8	3.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=3A		90	120	mΩ
		V_{GS}=4.5V, I_D=2.4A		95	140	
Forward Transconductance	g_{fs}	V_{DS} =5V, I_D =3A		30		S
Gate Resistance	R_g	f=1 MHz, Open drain		2.2		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				3	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=3A			1.2	V
Reverse Recovery Time	t_{rr}	I_F=3A, dI_F/dt=100A/μs		32		ns
Reverse Recovery Charge	Q_{rr}			33		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V,f=1MHz		897		pF
Output Capacitance	C_{oss}			31		
Reverse Transfer Capacitance	C_{rss}			29		
Total Gate Charge	Q_g	V_{DS}=50V,V_{GS}=10V,I_D=2.5A		23.5		nC
Gate-Source Charge	Q_{gs}			2.9		
Gate-Drain Charge	Q_{gd}			6.2		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=50V, V_{GS}=10V, R_{GEN}=2.2Ω, I_{DS}=3A		8.2		ns
Turn-On Rise Time	t_r			16.8		
Turn-Off Delay Time	$t_{d(off)}$			22.5		
Turn-Off Fall Time	t_f			2.2		

Curve Characteristics

Fig.1 - Typical Output Characteristics

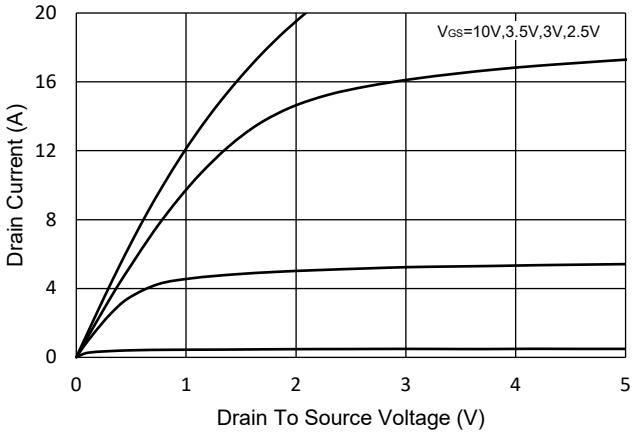


Fig.2 - Transfer Characteristic

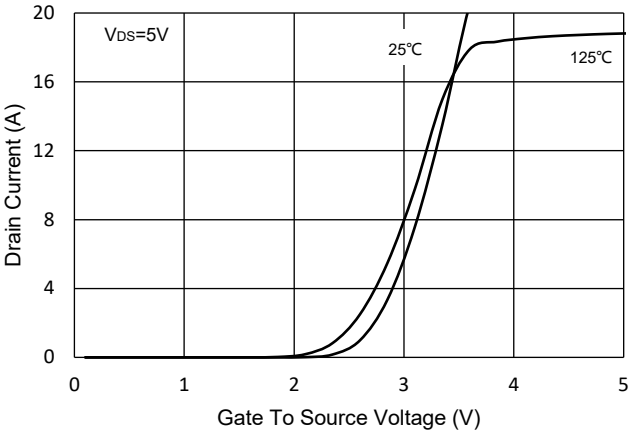


Fig. 3 - $R_{DS(ON)}$—V_{GS}

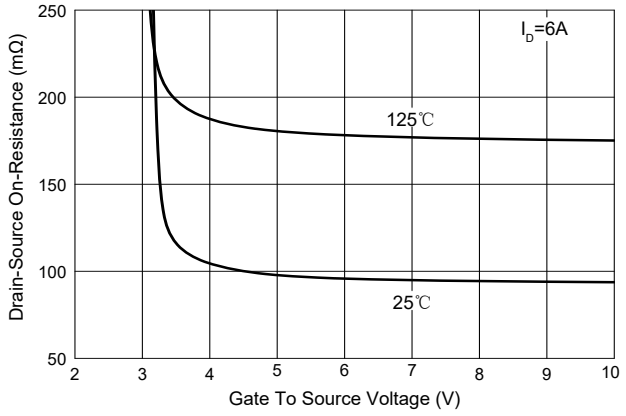


Fig. 4 - $R_{DS(ON)}$—I_D

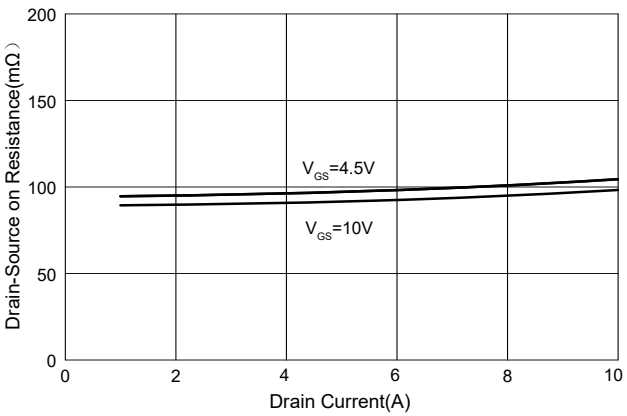


Fig.5 - Capacitance Characteristics

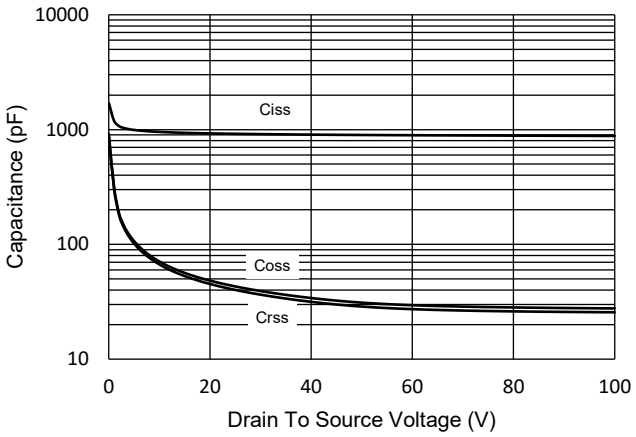
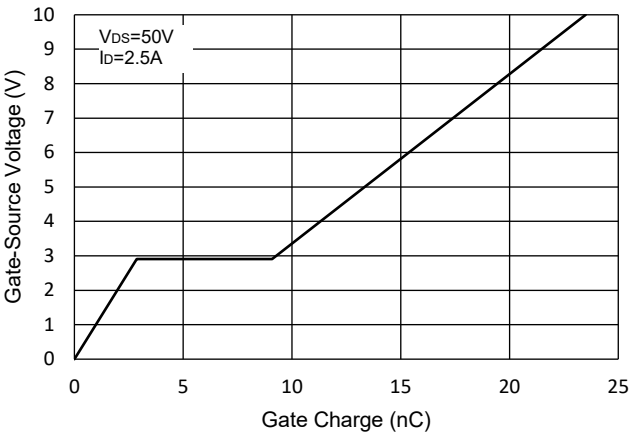


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

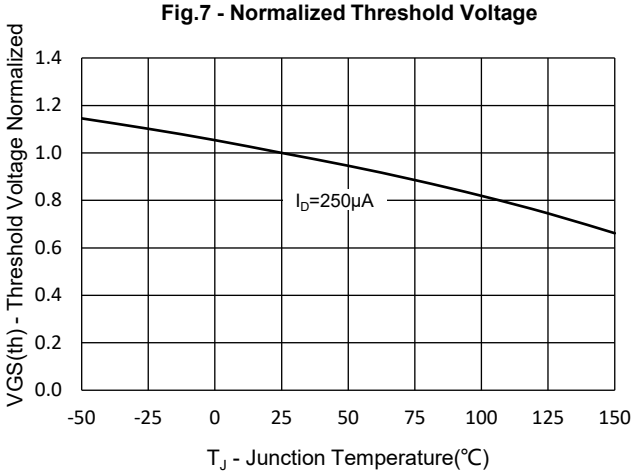


Fig.8 - Normalized On Resistance Characteristics

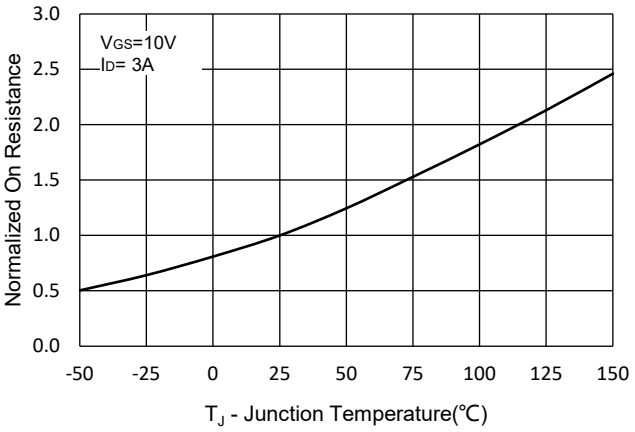


Fig.9 - I_S - V_{SD}

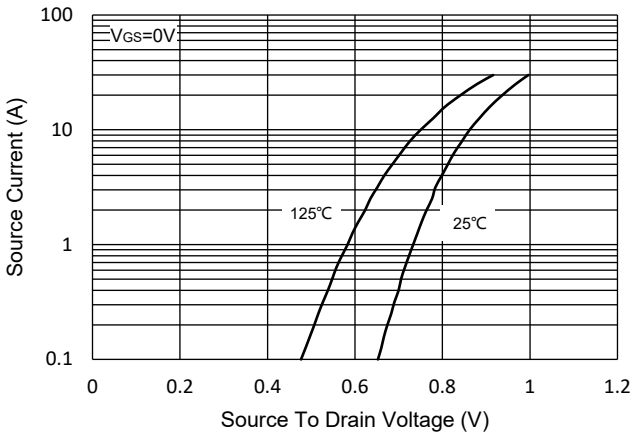


Fig.10 - Drain Current

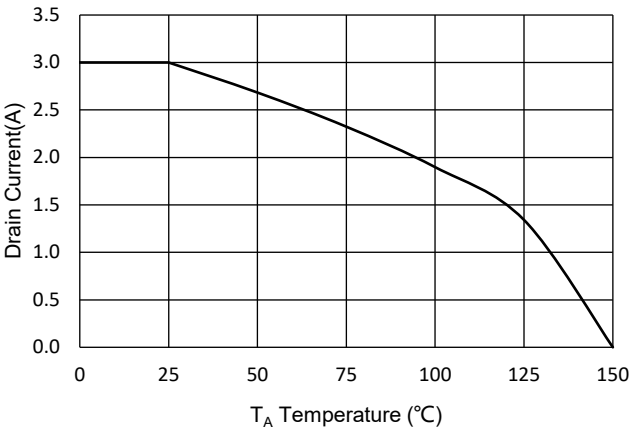
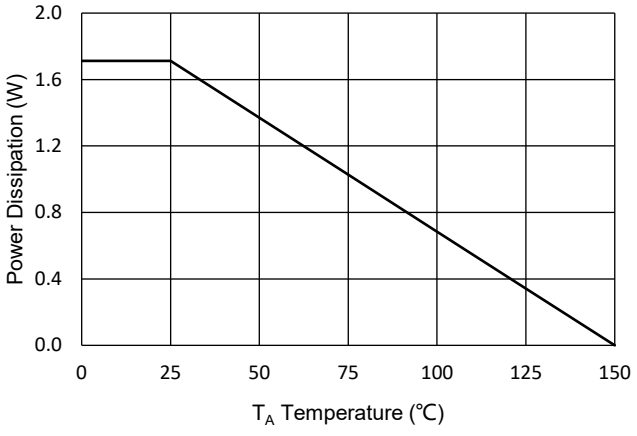


Fig.11 - PD Dissipation



Curve Characteristics

Fig.12 - Safe Operation Area

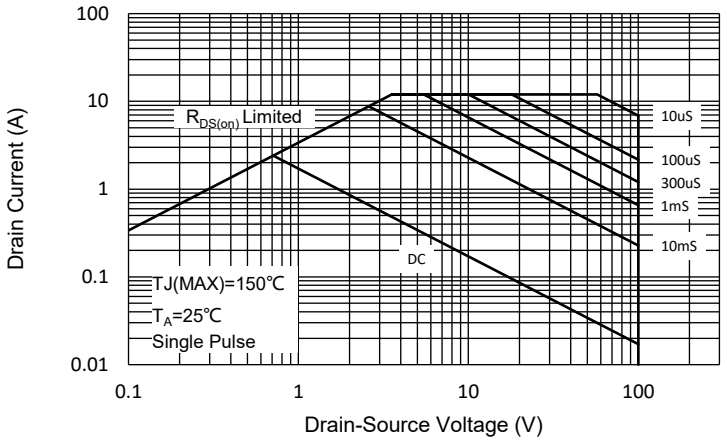
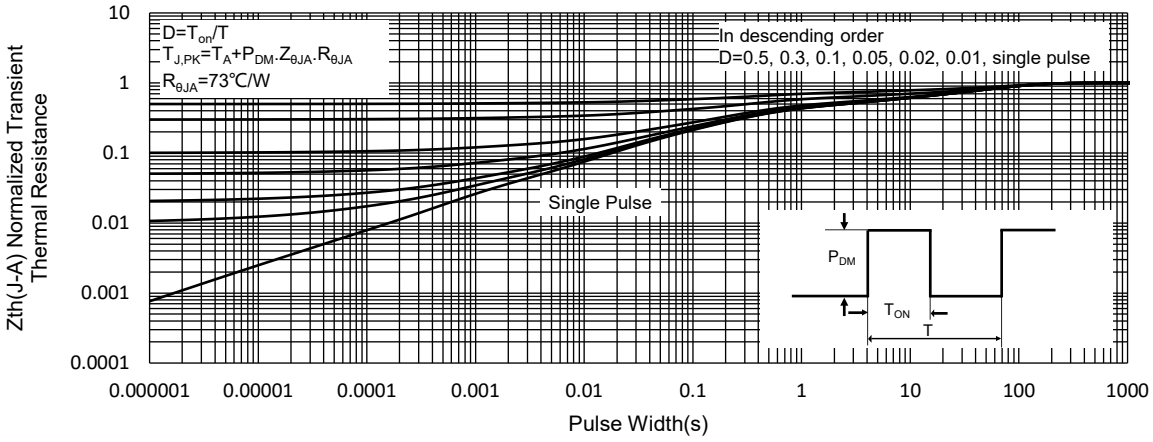


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

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

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