

Features

- Trench MV MOSFET Technology
- Voltage Controlled Small Signal Switch
- 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

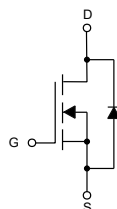
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 357°C/W Junction to Ambient (Note 2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current-Continuous	$T_A=25^\circ\text{C}$	I_D	0.17	A
	$T_A=100^\circ\text{C}$		0.11	
Drain Current-Pulsed (Note3)		I_{DM}	0.68	A
Power Dissipation (Note4)		P_D	0.35	W

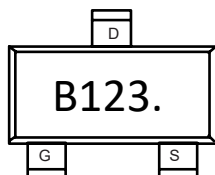
Note:

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 the minimum recommend pad size, in the 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

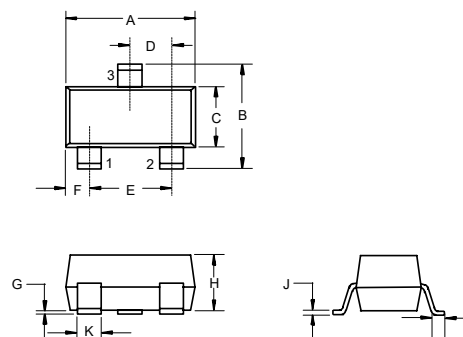


1. GATE
2. SOURCE
3. DRAIN



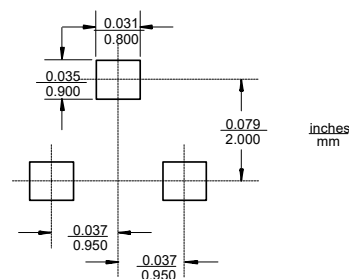
N-Channel MOSFET

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

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	100			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.7	2.8	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =± 20V, V _{DS} =0V			±50	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
		V _{DS} =20V, V _{GS} =0V			10	nA
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =0.17A		2.5	6	Ω
		V _{GS} =4.5V, I _D =0.17A		2.7	10	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =0.17A		450		mS
Gate Resistance	R _g	f=1 MHz, Open drain		6.0		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				0.17	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =0.34A			1.3	V
Reverse Recovery Time	t _{rr}	I _F =1A, dI _F /dt=100A/μs		20		ns
Reverse Recovery Charge	Q _{rr}			6.0		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		35		pF
Output Capacitance	C _{oss}			2.5		
Reverse Transfer Capacitance	C _{rss}			1.6		
Total Gate Charge	Q _g	V _{DS} =50V, V _{GS} =10V, I _D =0.2A		1.6		nC
Gate-Source Charge	Q _{gs}			0.5		
Gate-Drain Charge	Q _{gd}			0.4		
Turn-On Delay Time	t _{d(on)}	V _{DD} =50V, V _{GS} =10V, R _{GEN} =3Ω, I _{DS} =1A		4		ns
Turn-On Rise Time	t _r			20		
Turn-Off Delay Time	t _{d(off)}			7		
Turn-Off Fall Time	t _f			31		

Curve Characteristics

Fig.1 - Typical Output Characteristics

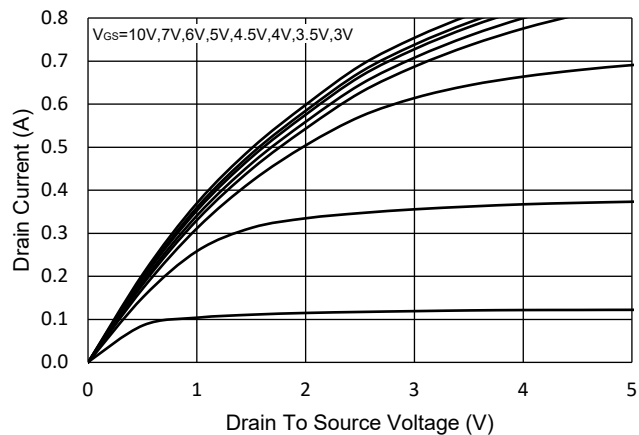


Fig.2 - Transfer Characteristic

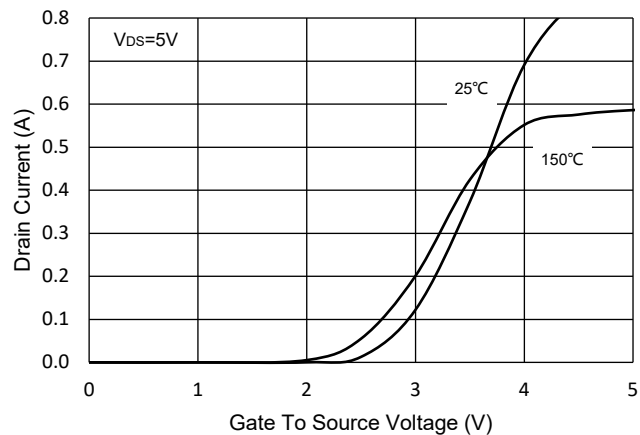


Fig. 3 - $R_{DS(ON)}$ - V_{GS}

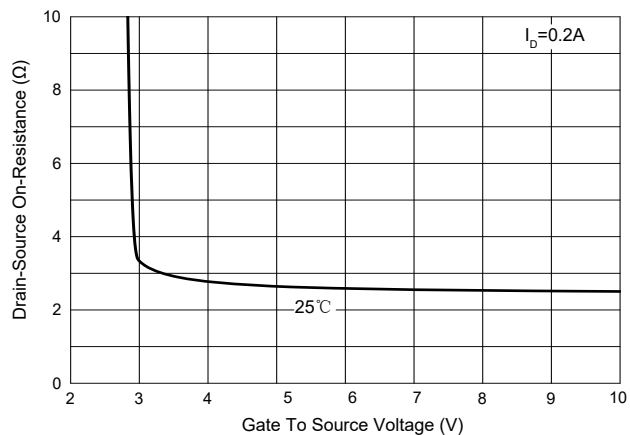


Fig.4 - $R_{DS(ON)}$ - I_D

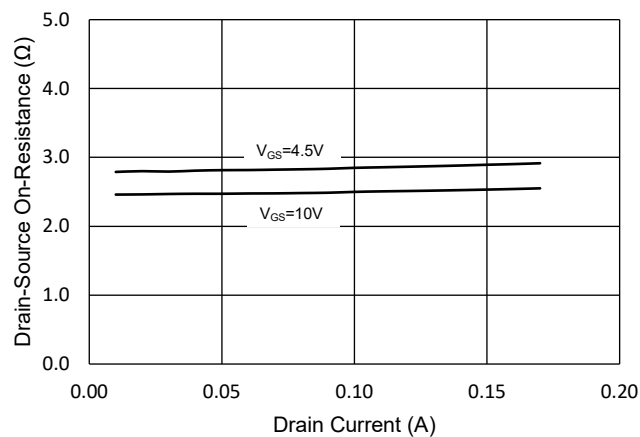


Fig. 5 - Capacitance Characteristics

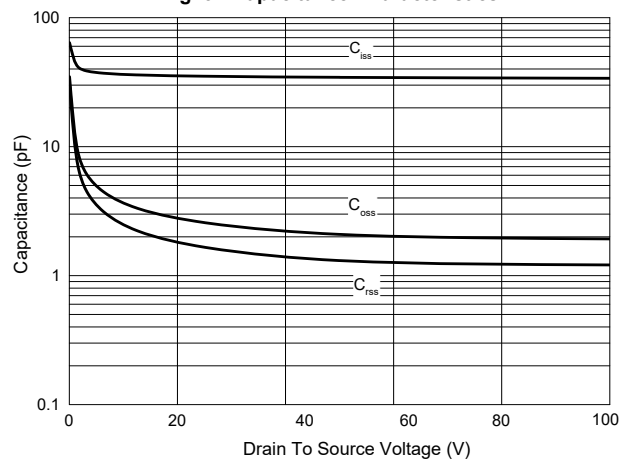
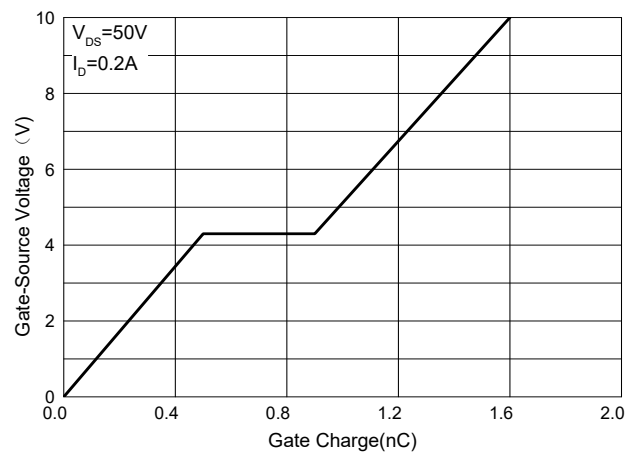


Fig. 6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

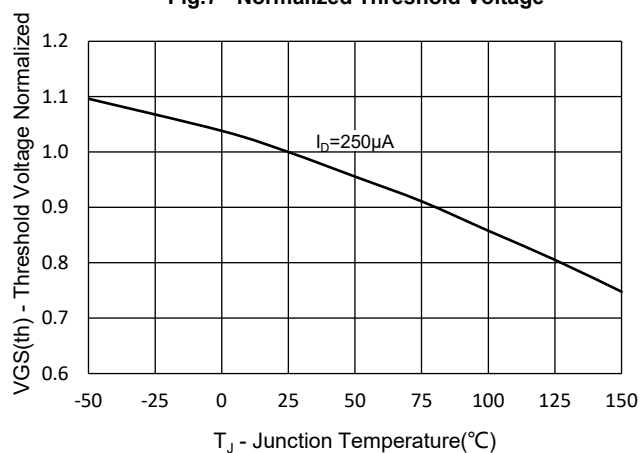


Fig.8 - Normalized On Resistance Characteristics

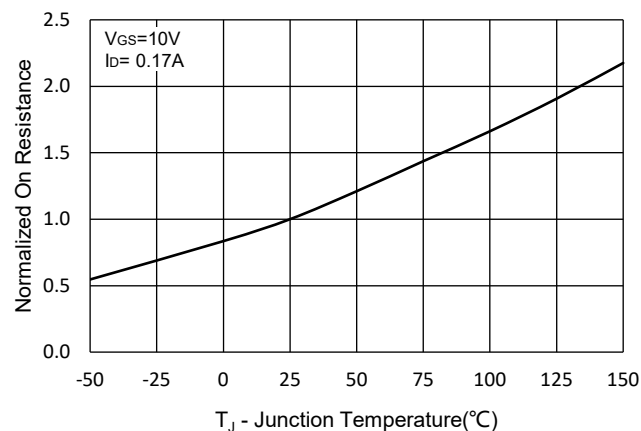


Fig.9 - $I_S - V_{SD}$

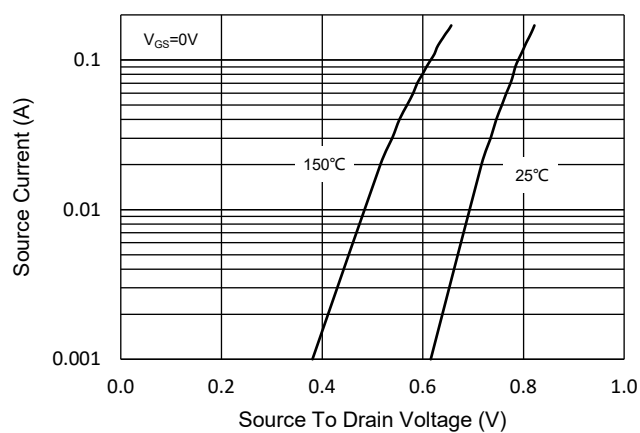


Fig. 10 - Drain Current

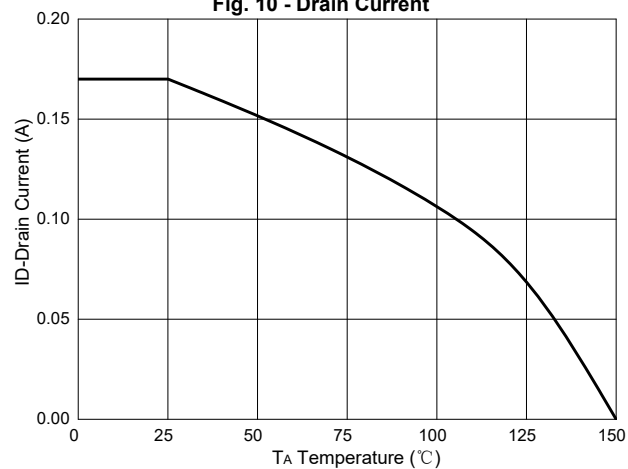
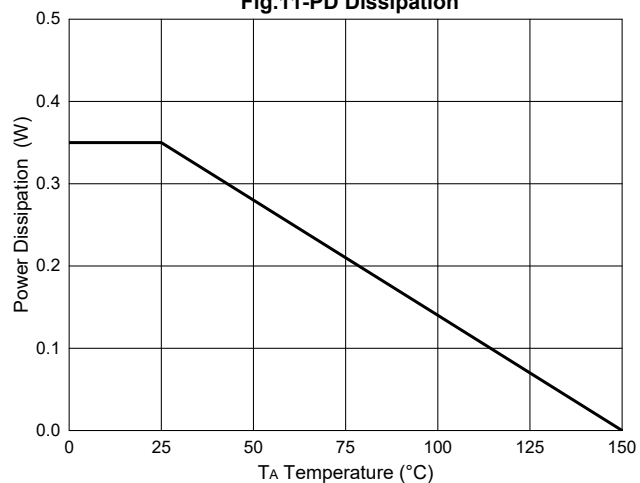


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

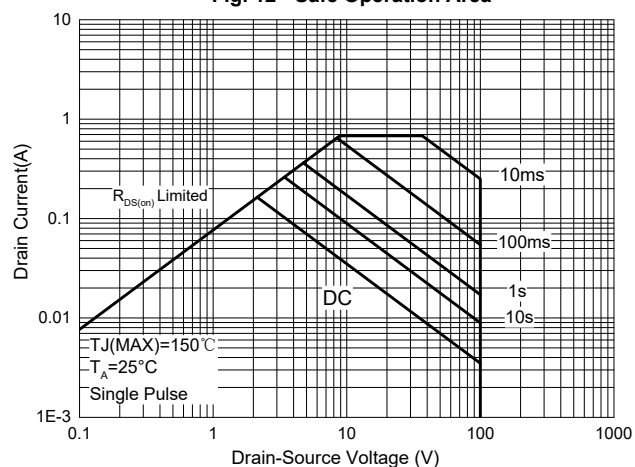
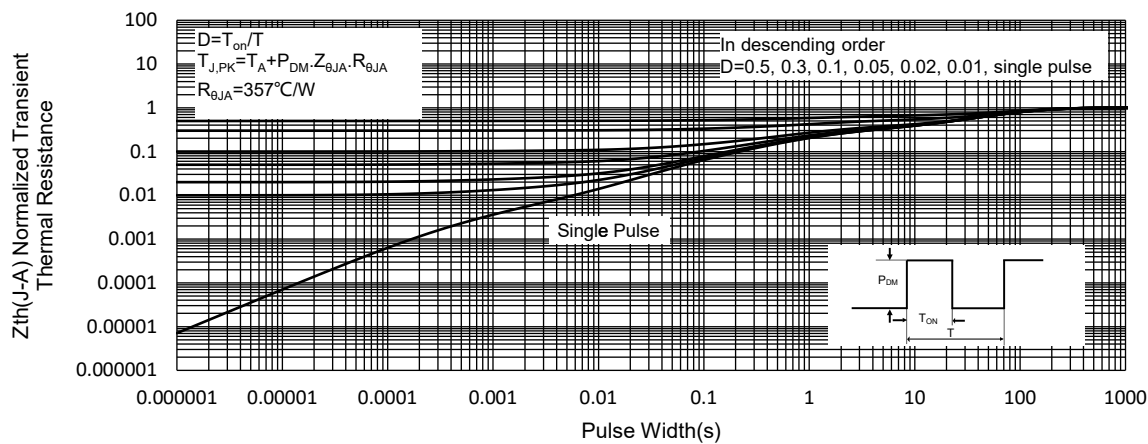


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel
Part Number-13P	Tape&Reel: 10Kpcs/Reel

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