

Features

- ESD Protected up to 1.5KV (HBM)
- Extremely Low Threshold Voltage
- 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

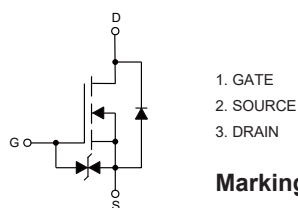
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 500°C/W Junction to Ambient⁽²⁾

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.25	A
Pulsed Drain Current ⁽³⁾	I_{DM}	2	A
Total Power Dissipation	P_D	0.25	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. Surface Mounted on 1 in² pad area, t≤10 sec.
3. Pulse width≤300μs, duty cycle≤2%.

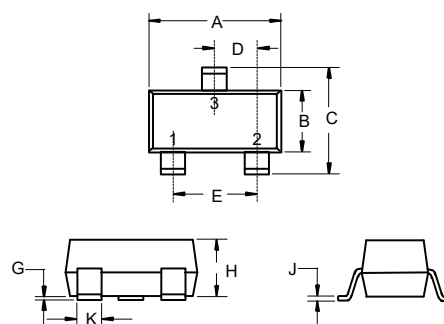
Internal Structure



Marking: SS

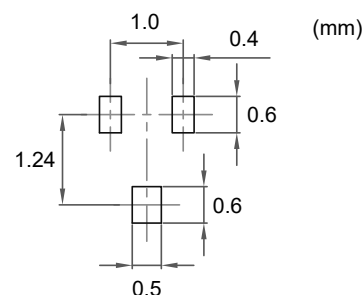
N-CHANNEL MOSFET

SOT-523



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.059	0.067	1.50	1.70	
B	0.030	0.033	0.75	0.85	
C	0.057	0.069	1.45	1.75	
D	0.020		0.50		TYP.
E	0.035	0.043	0.90	1.10	
G	0.000	0.004	0.00	0.10	
H	0.024	0.031	0.60	0.80	
J	0.004	0.008	0.10	0.20	
K	0.006	0.014	0.15	0.35	

Suggested Solder Pad Layout



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	50			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =50V, V _{GS} =0V			1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5		1.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =0.5A			1.6	Ω
		V _{GS} =4.5V, I _D =0.2A			2.5	Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				0.25	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =0.2A			1.3	V
Reverse Recovery Time	t _{rr}	I _S =0.5A, di/dt=100A/μs		42		ns
Reverse Recovery Charge	Q _{rr}			41		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		22.8		pF
Output Capacitance	C _{oss}			3.5		
Reverse Transfer Capacitance	C _{rss}			2.9		
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =0.5A		0.7		nC
Gate-Source Charge	Q _{gs}			0.3		
Gate-Drain Charge	Q _{gd}			0.1		
Turn-On Delay Time	t _{d(on)}	V _{DS} =30V, V _{GEN} =10V, R _G =25Ω, R _L =60Ω, I _{DS} =0.5A		3.8		ns
Turn-On Rise Time	t _r			3.4		
Turn-Off Delay Time	t _{d(off)}			19		
Turn-Off Fall Time	t _f			12		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

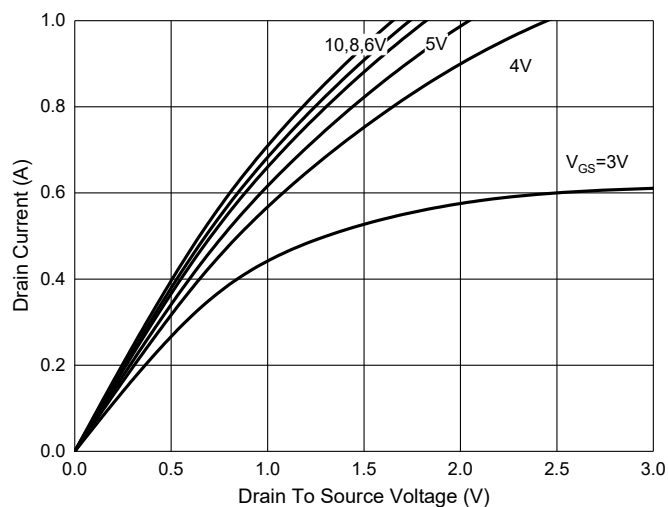


Fig. 2 - Transfer Characteristics

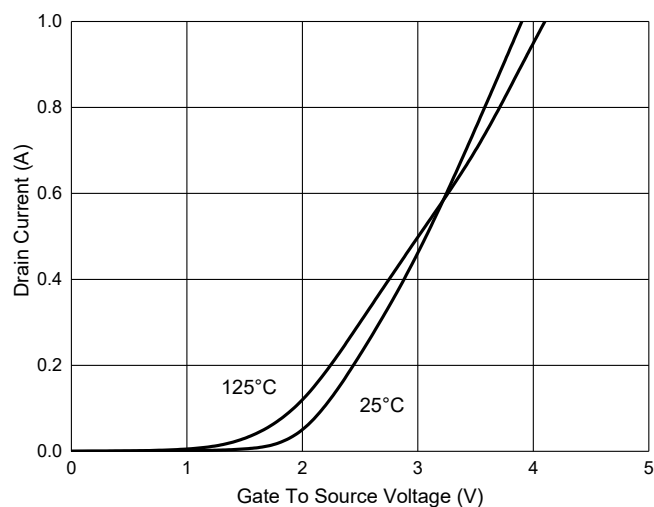


Fig. 3 - $R_{DS(ON)} - I_D$

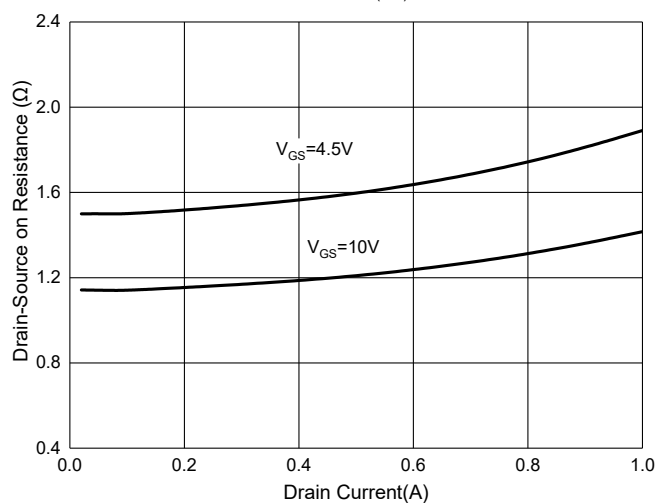


Fig. 4 - Normalized On Resistance Characteristics

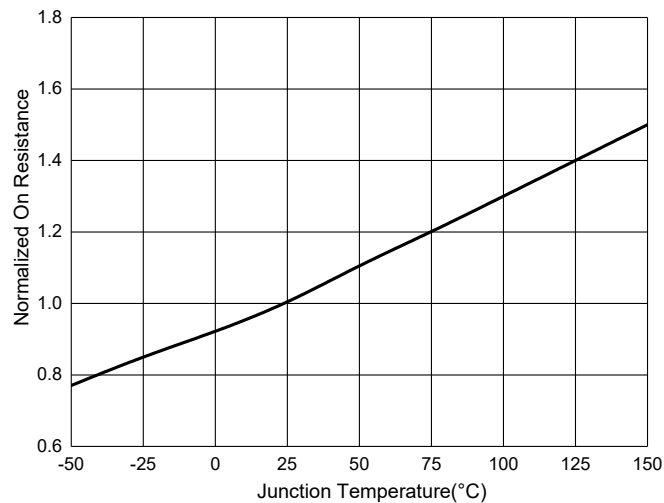


Fig. 5 - Capacitance Characteristics

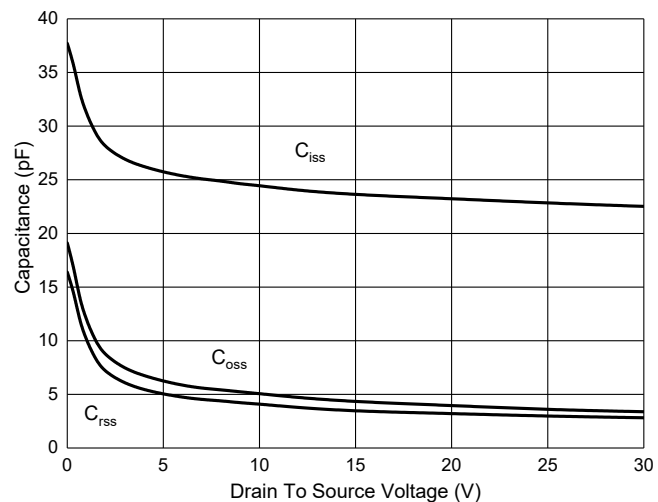
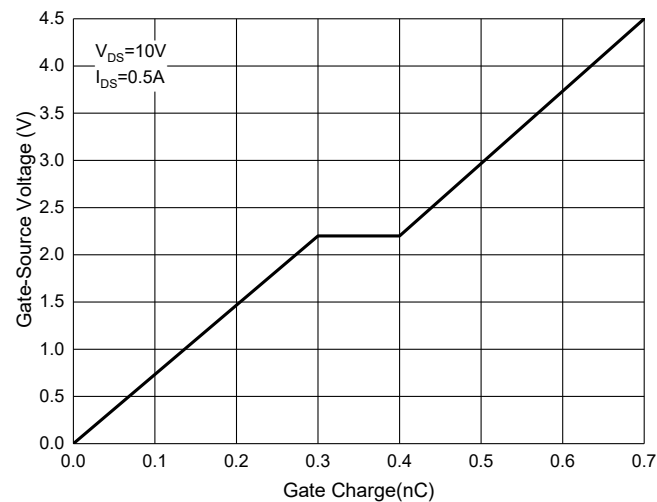


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - I_S — V_{SD}

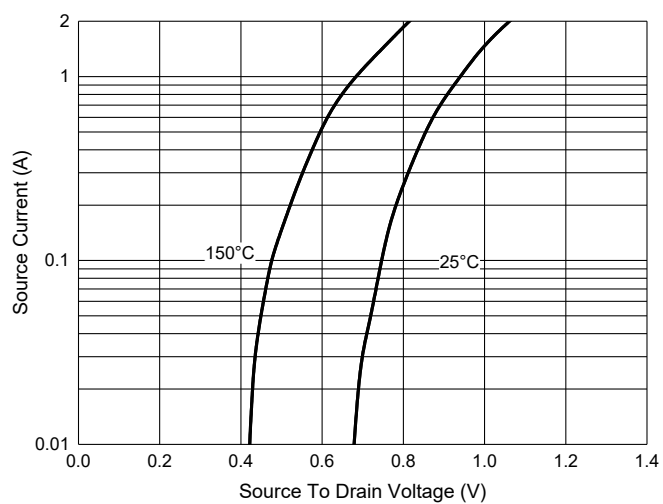
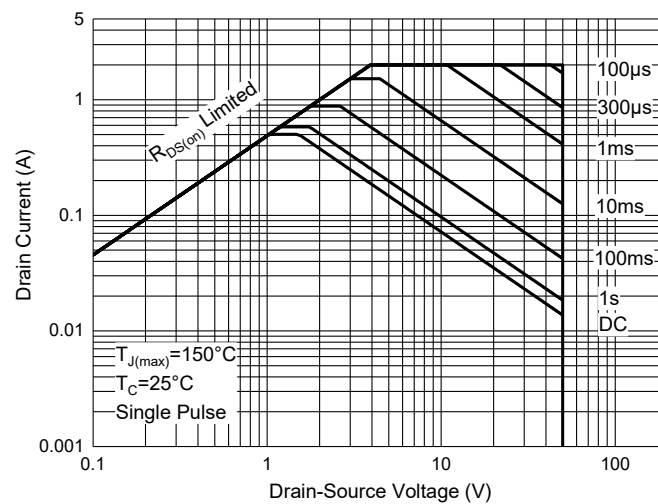


Fig. 8 - Safe Operation Area



Ordering Information

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

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