

Features

- Trench Power LV MOSFET Technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device ⁽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: 278°C/W Junction to Ambient ⁽²⁾

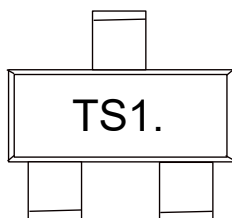
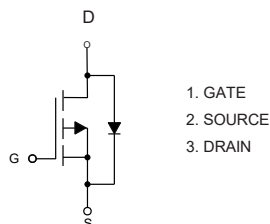
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-2	A
Pulsed Drain Current ⁽³⁾	I_{DM}	-8	A
Total Power Dissipation	P_D	0.45	W

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. Device Mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

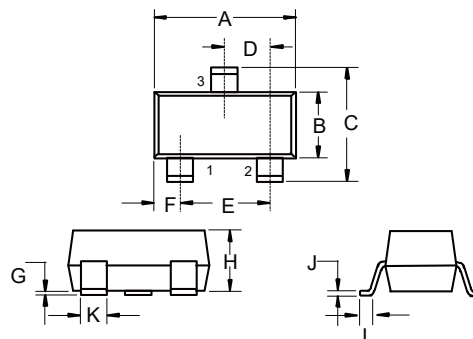
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

Internal Structure and Marking Code



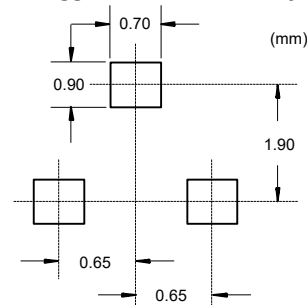
P-CHANNEL MOSFET

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 @ 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	-20			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±10V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.62	-1	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1.5A		100	130	mΩ
		V _{GS} =-2.5V, I _D =-1.2A		130	170	mΩ
		V _{GS} =-1.8V, I _D =-1.0A		165	250	mΩ
Diode Characteristics						
Continuous Body Diode Current	I _S				-2	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-2A			-1.2	V
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V,V _{GS} =0V,f=1MHz		290		pF
Output Capacitance	C _{oss}			47		
Reverse Transfer Capacitance	C _{rss}			29		
Total Gate Charge	Q _g	V _{DS} =-10V,V _{GS} =-4.5V,I _D =-1A		3.9		nC
Gate-Source Charge	Q _{gs}			0.7		
Gate-Drain Charge	Q _{gd}			0.9		
Turn-On Delay Time	t _{d(on)}	V _{DS} =-10V, V _{GEN} =-4.5V, R _G =2.5Ω,I _{DS} =-1A		12		ns
Turn-On Rise Time	t _r			54		
Turn-Off Delay Time	t _{d(off)}			15		
Turn-Off Fall Time	t _f			9		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

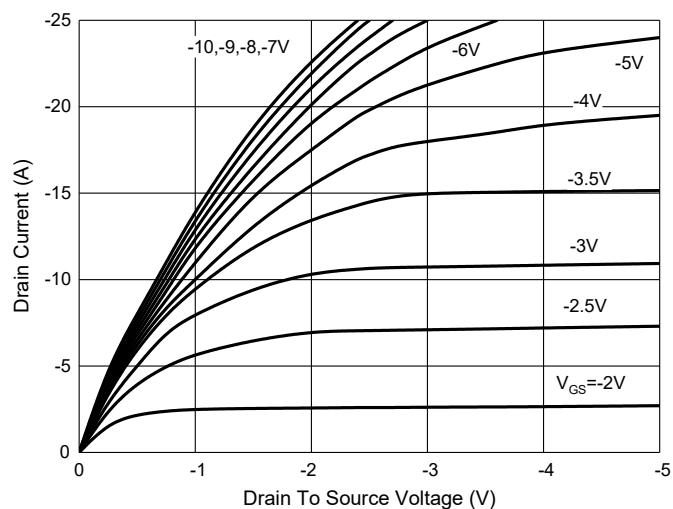


Fig. 2 - Transfer Characteristics

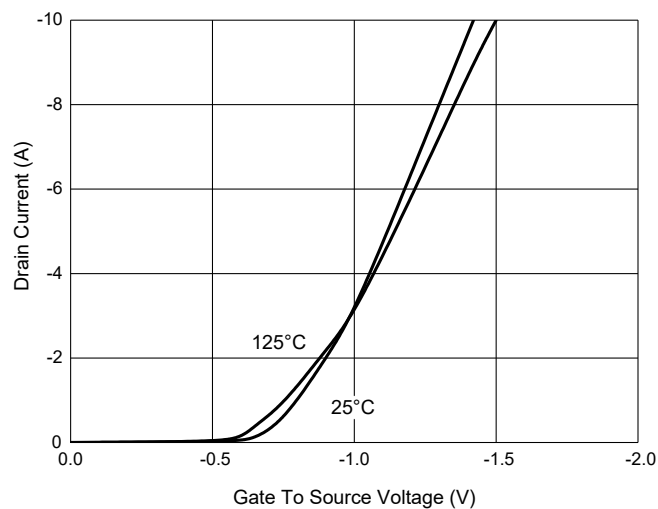


Fig. 3 - $R_{DS(ON)} - I_D$

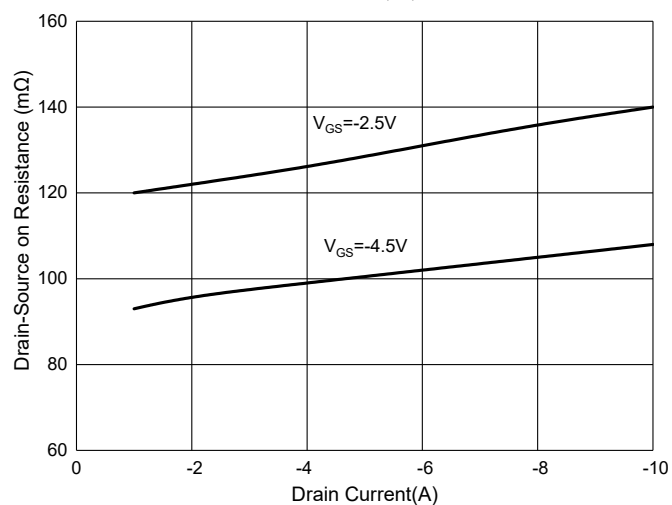


Fig. 4 - Normalized On Resistance Characteristics

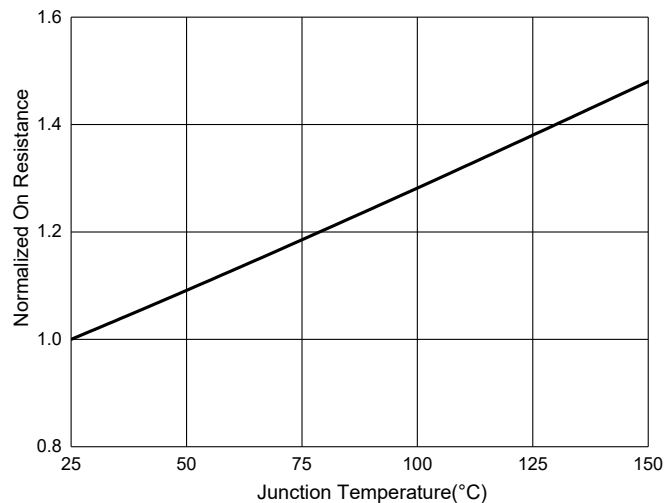


Fig. 5 - Capacitance Characteristics

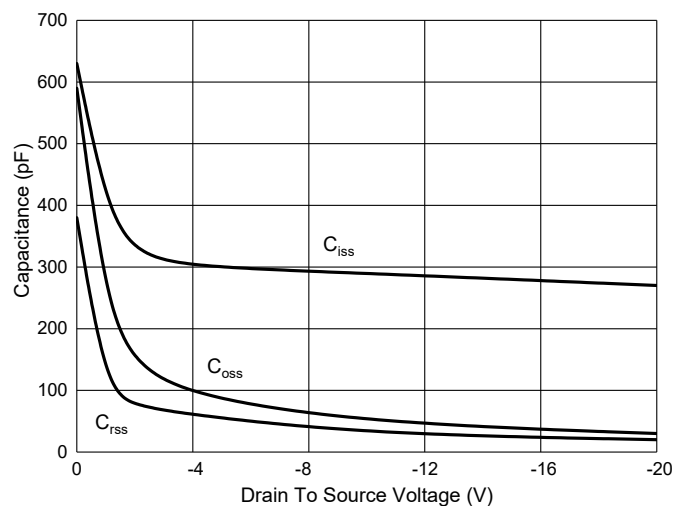
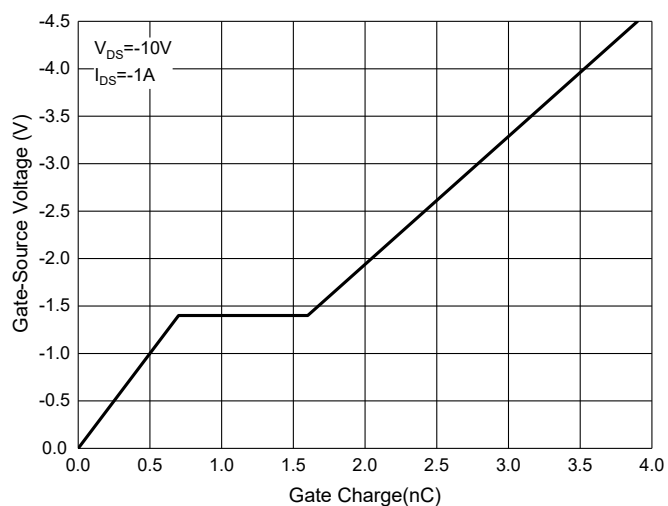
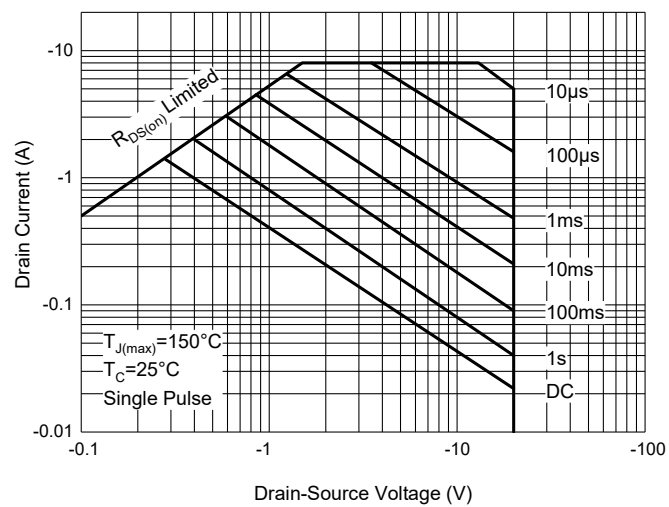


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

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

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