

Features

- Advanced Trench Cell Design
- ESD Protected
- 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

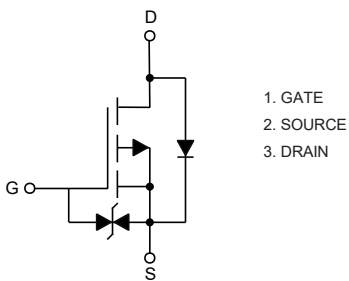
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 150°C/W Junction to Ambient⁽²⁾

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-3.6	A
Pulsed Drain Current ⁽³⁾	I_{DM}	-14.4	A
Total Power Dissipation	P_D	0.83	W

Note:

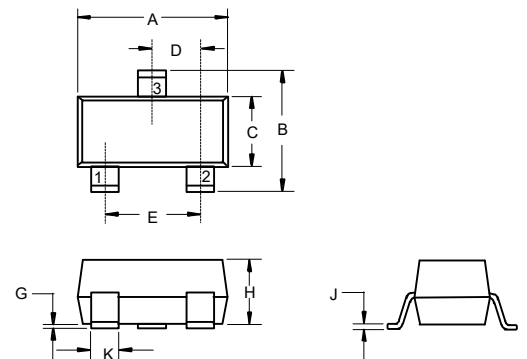
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface Mounted on 1 in² pad area, t≤10 sec.
3. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.

Internal Structure



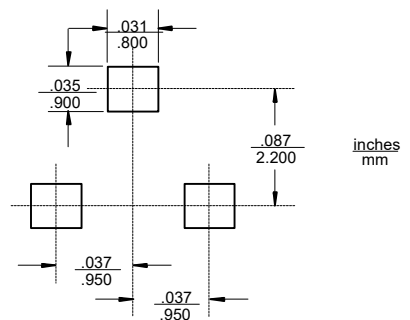
P-CHANNEL MOSFET

SOT-23-3L



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.113	0.117	2.87	2.97	
B	0.108	0.112	2.75	2.85	
C	0.061	0.065	1.55	1.65	
D	0.036	0.038	0.914	0.965	
E	0.073	0.077	1.85	1.95	
G	0.0016	0.0039	0.04	0.100	
H	0.044	0.049	1.12	1.25	
J	0.006	0.007	0.14	0.17	
K	0.013	0.015	0.34	0.37	

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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	-1		-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-2A$		33	41.3	m Ω
		$V_{GS}=-4.5V, I_D=-1A$		53	69	m Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-3.6	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-2A$			-1.3	V
Reverse Recovery Time	t_{rr}	$I_S=-2A, di/dt=100A/\mu s$		10		ns
Reverse Recovery Charge	Q_{rr}			5		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		915		pF
Output Capacitance	C_{oss}			93		
Reverse Transfer Capacitance	C_{rss}			72		
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-2A$		16		nC
Gate-Source Charge	Q_{gs}			2.6		
Gate-Drain Charge	Q_{gd}			2.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-15V, V_{GS}=-10V,$ $R_G=4.5\Omega, R_L=7.5\Omega,$ $I_D=-2A$		208		ns
Turn-On Rise Time	t_r			244		
Turn-Off Delay Time	$t_{d(off)}$			1000		
Turn-Off Fall Time	t_f			676		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

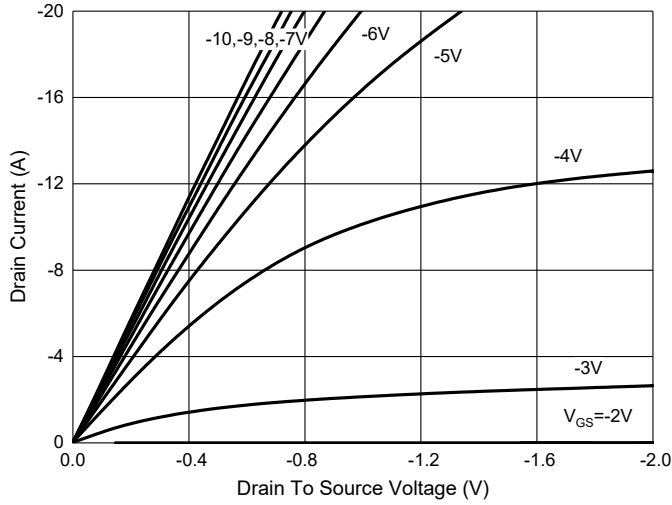


Fig. 2 - $I_S - V_{SD}$

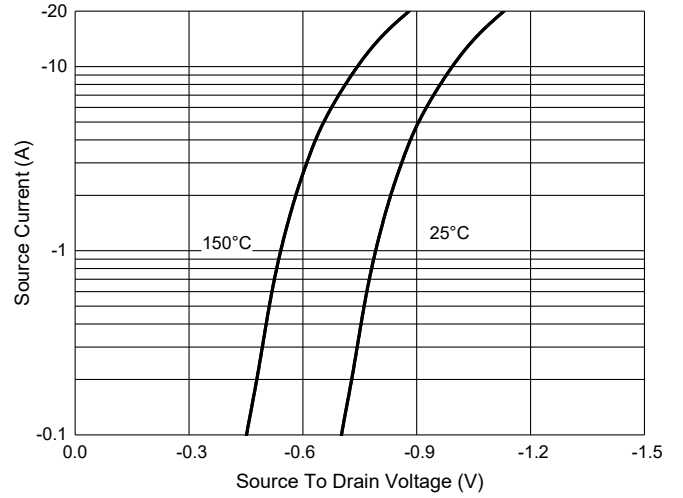


Fig. 3 - $R_{DS(ON)} - I_D$

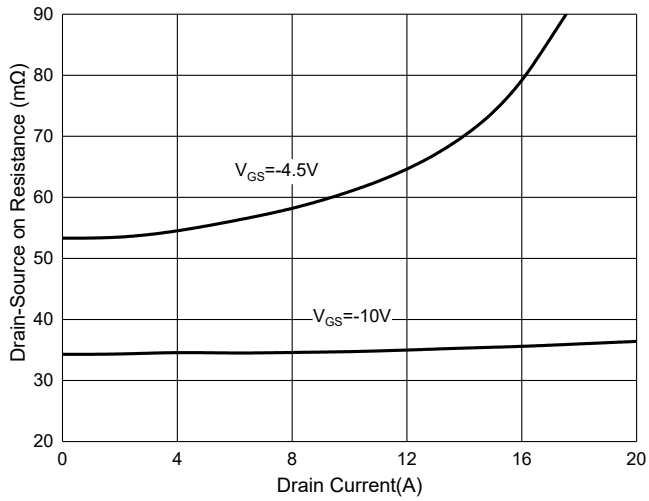


Fig. 4 - Normalized On Resistance Characteristics

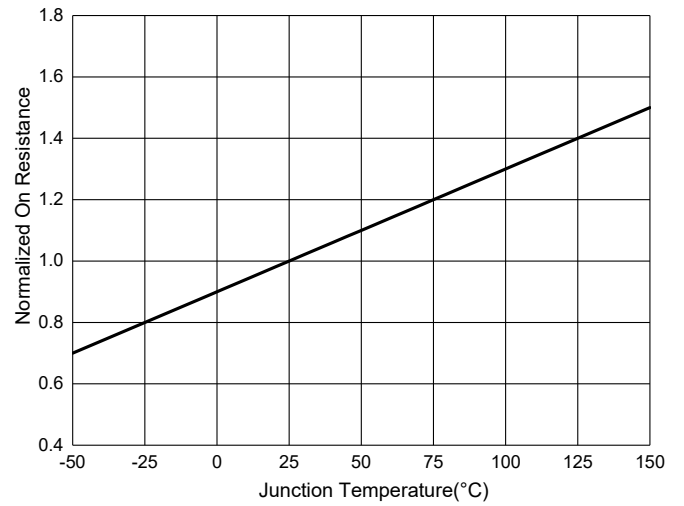


Fig. 5 - Capacitance Characteristics

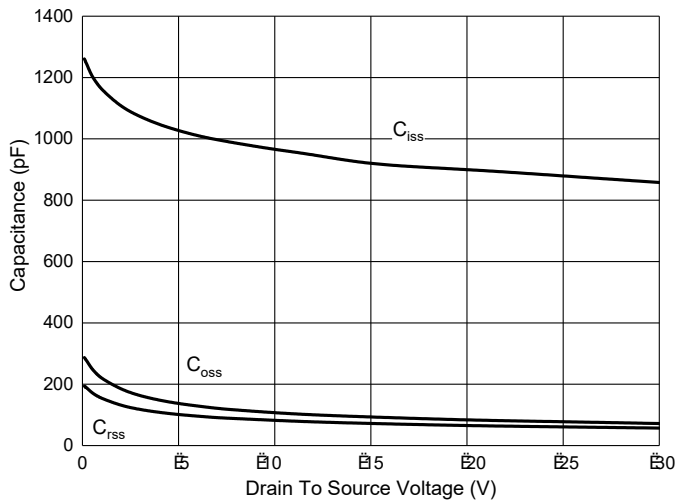
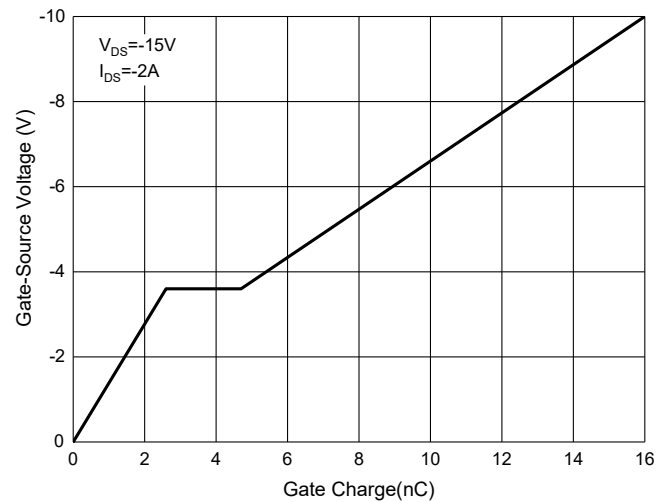
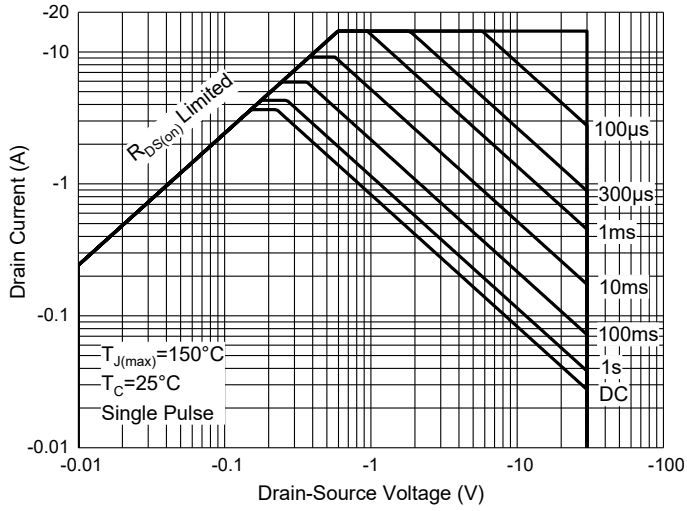


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

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

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