

Features

- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 3
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

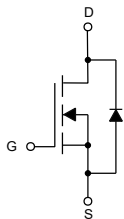
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient

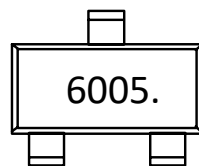
Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	60	V
Gate -Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	$T_A=25^\circ\text{C}$	5.0
		$T_A=70^\circ\text{C}$	4.0
Drain Current-Pulse	I_{DM}	25	A
Power Dissipation	P_D	2.5	W

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure and Marking Code

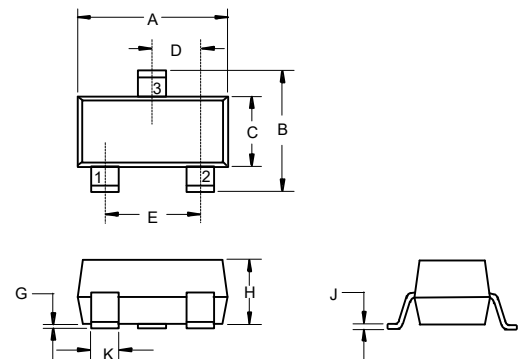


1. GATE
2. SOURCE
3. DRAIN



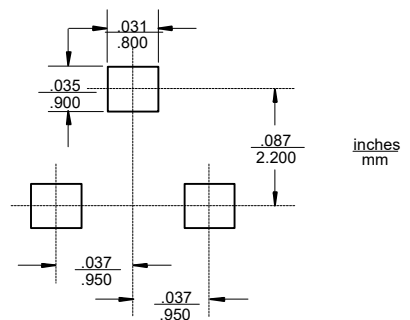
N-CHANNEL MOSFET

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	0.041	0.045	1.05	1.15	
J	0.006	0.007	0.14	0.17	
K	0.012	0.020	0.30	0.50	

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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Gate-Threshold Voltage ^(Note 2)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.5	V
Drain-Source On-Resistance ^(Note 2)	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.0A$		35	44	m Ω
		$V_{GS}=4.5V, I_D=4.0A$		39	49	
Diode Forward Voltage ^(Note 2)	V_{SD}	$V_{GS}=0V, I_S=5.0A$		0.8	1.2	V
Dynamic Characteristics^(Note 3)						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		1018		pF
Output Capacitance	C_{oss}			70		
Reverse Transfer Capacitance	C_{rss}			62		
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=10A$		26.4		nC
Gate-Source Charge	Q_{gs}			5.4		
Gate-Drain Charge	Q_{gd}			6.5		
Reverse Recovery Charge	Q_{rr}	$I_F=20A, di/dt=500A/\mu s$		11.7		ns
Reverse Recovery Time	t_{rr}			23		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=30V, R_L=1\Omega, R_{GEN}=3\Omega, I_D=2A$		10		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			29		
Turn-Off Fall Time	t_f			21		

Note 2. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

3. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Typical Output Characteristics

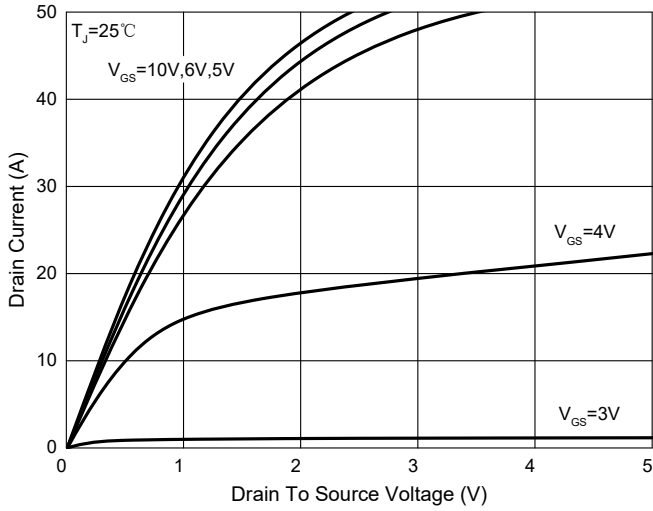


Fig. 2 - Transfer Characteristics

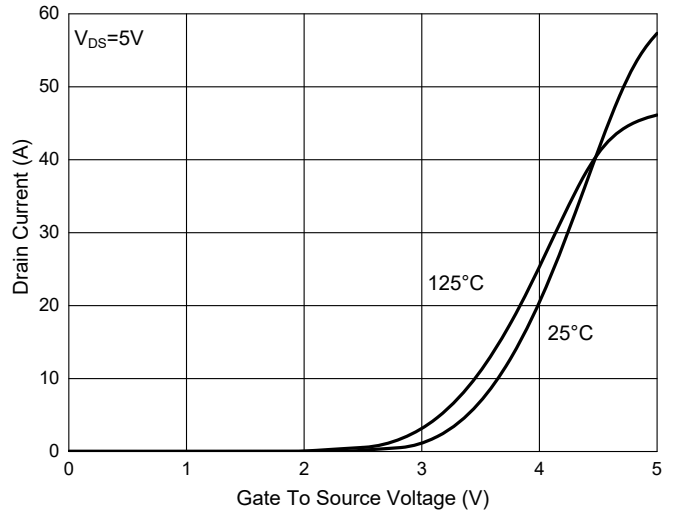


Fig. 3 - $R_{DS(ON)} - I_D$

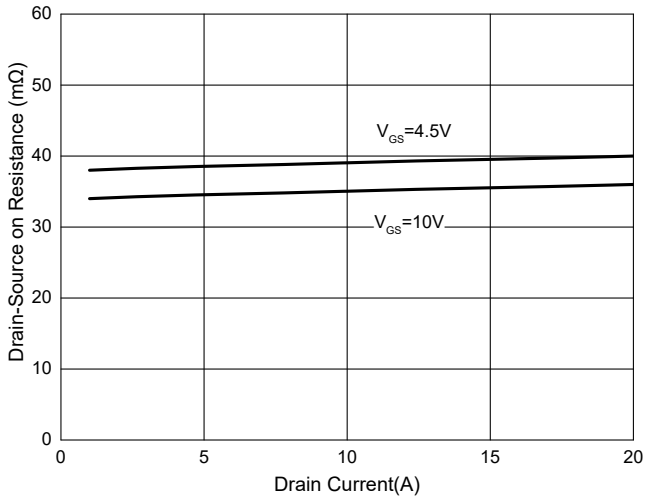


Fig. 4 - Gate Charge

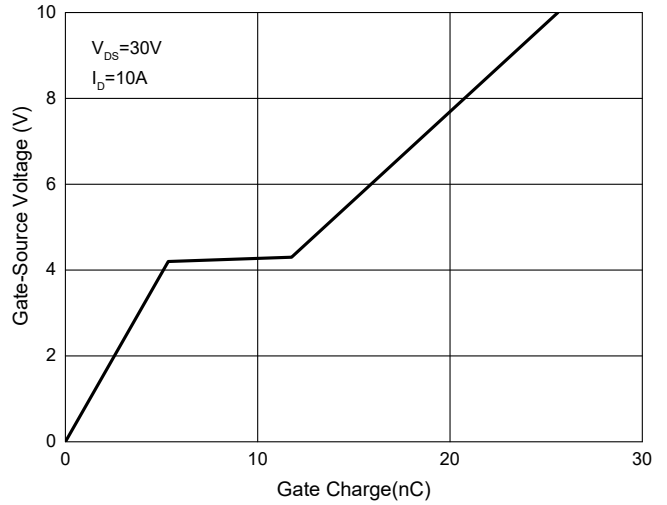


Fig. 5 - Normalized On Resistance Characteristics

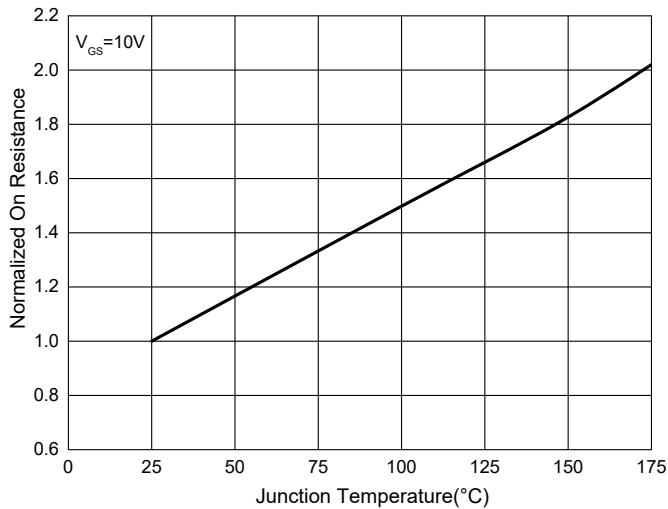
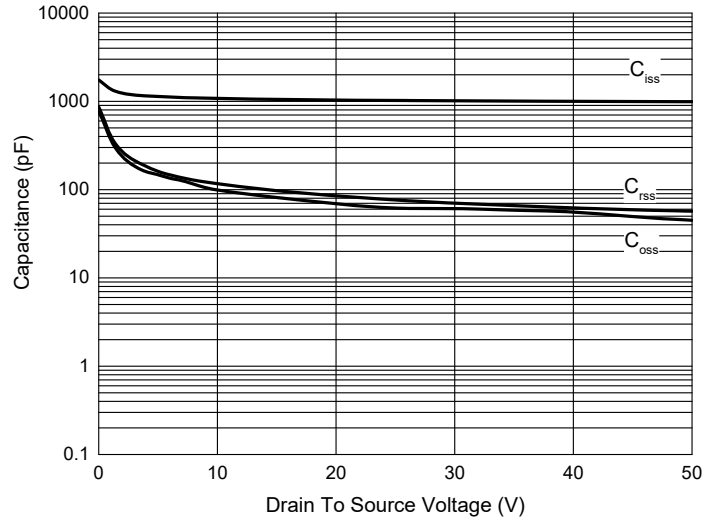


Fig. 6 - Capacitance Characteristics



Curve Characteristics

Fig. 7 - Safe Operation Area

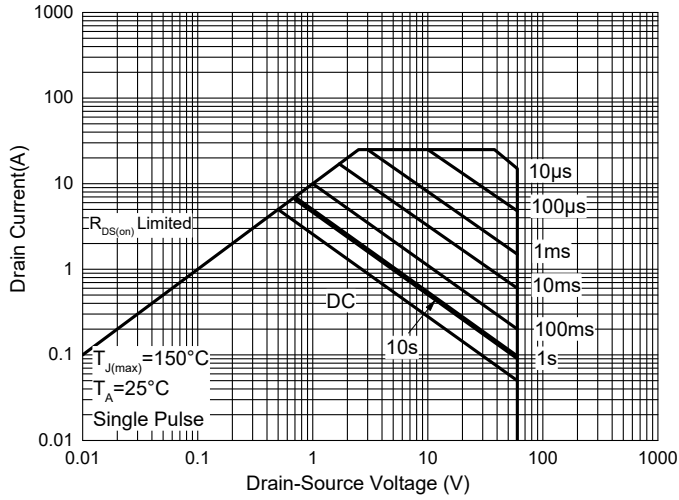
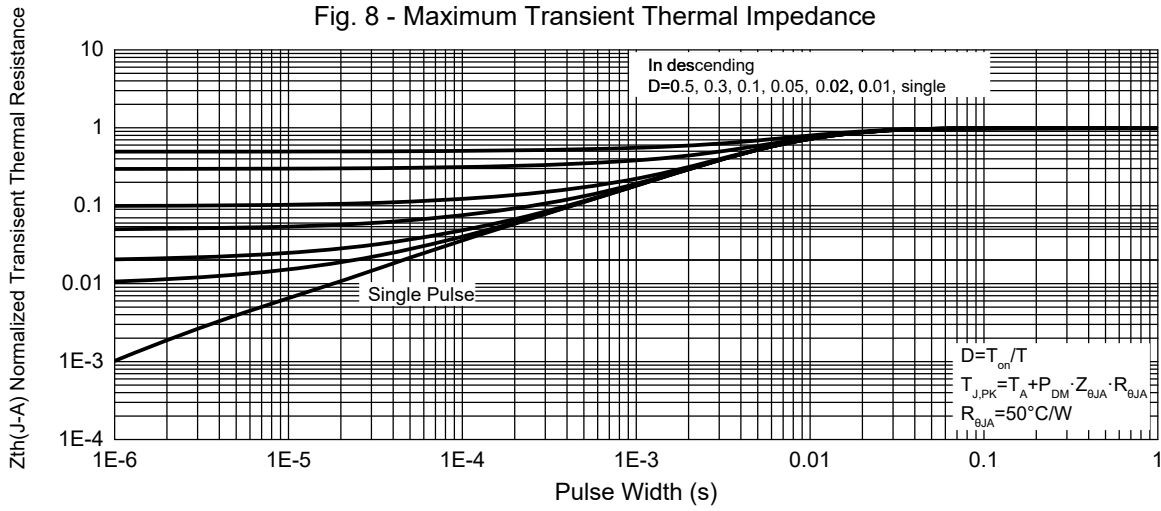


Fig. 8 - Maximum Transient Thermal Impedance



Ordering Information

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

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