

Features

- Trench LV MOSFET Technology
- High Speed Switching
- 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

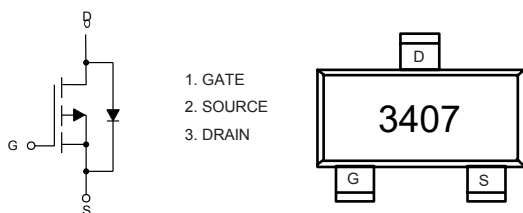
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 83°C/W Junction to Ambient (Note2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-30	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _A =25°C	I _D	-4.3	A
	T _A =100°C		-2.7	
Pulsed Drain Current ^(Note3)		I _{DM}	-17.2	A
Total Power Dissipation ^(Note4)		P _D	1.5	W

Note:

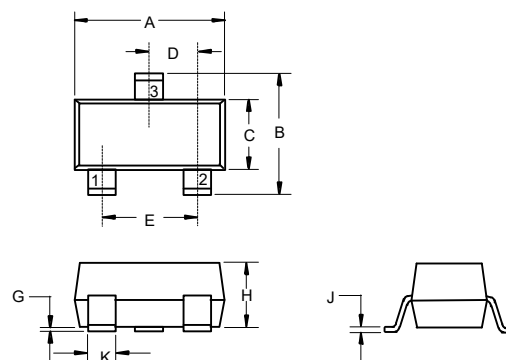
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$.
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



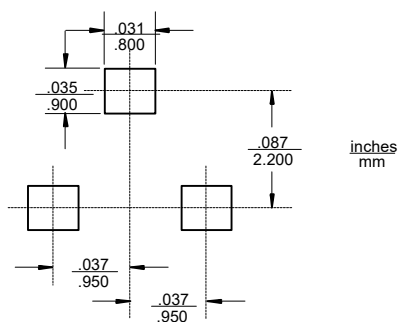
P-CHANNEL MOSFET

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	0.041	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 =-250μA	-30			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.5	-3	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	μA
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-4.1A		36	49	mΩ
		V _{GS} =-4.5V, I _D =-3A		52	65	
Forward Transconductance	g _{FS}	V _{DS} =-10V, I _D =-4.3A		10		S
Gate Resistance	R _g	f=1 MHz, Open drain		20		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				-4.3	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1A			-1	V
Reverse Recovery Time	t _{rr}	I _F =-4.1A, dI _F /dt=100A/μs		29		ns
Reverse Recovery Charge	Q _{rr}			11		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHz		492		pF
Output Capacitance	C _{oss}			75		
Reverse Transfer Capacitance	C _{rss}			58		
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-10V, I _D =-4.1A		8.8		nC
Gate-Source Charge	Q _{gs}			1.5		
Gate-Drain Charge	Q _{gd}			2.3		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-15V, V _{GS} =-10V, R _G =6Ω, I _D =-4.1A		9		ns
Turn-On Rise Time	t _r			4		
Turn-Off Delay Time	t _{d(off)}			31		
Turn-Off Fall Time	t _f			16		

Curve Characteristics

Fig.1 - Typical Output Characteristics

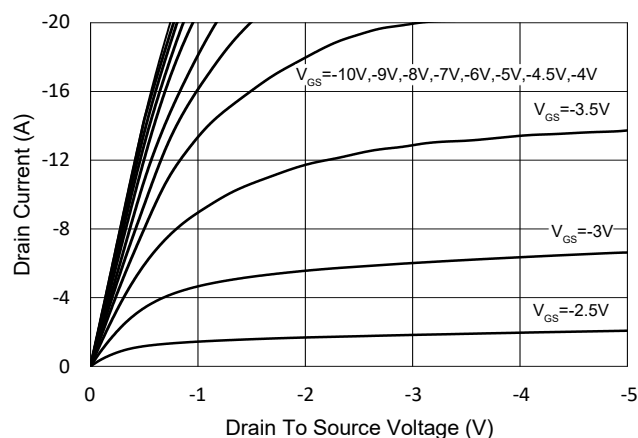


Fig.2 - Transfer Characteristic

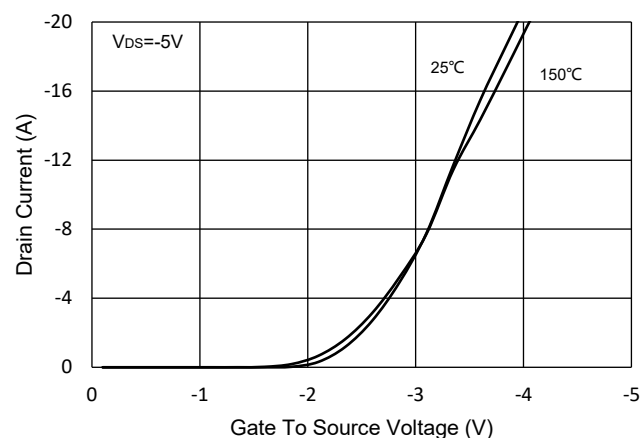


Fig.3 - $R_{DS(ON)} - V_{GS}$

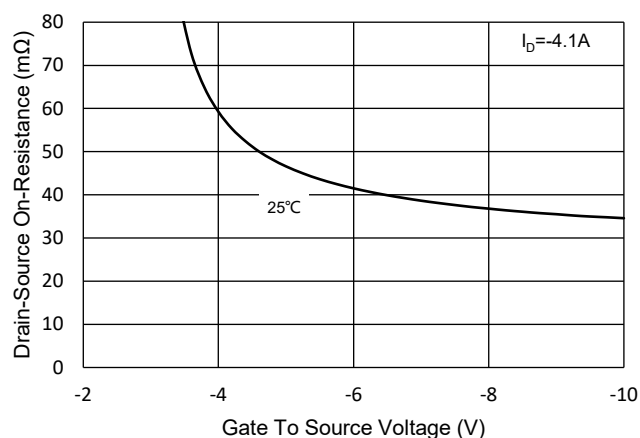


Fig.4 - $R_{DS(ON)} - I_D$

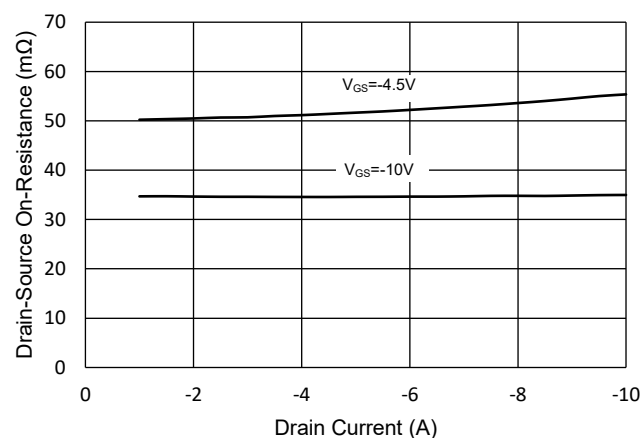


Fig.5 - Capacitance Characteristics

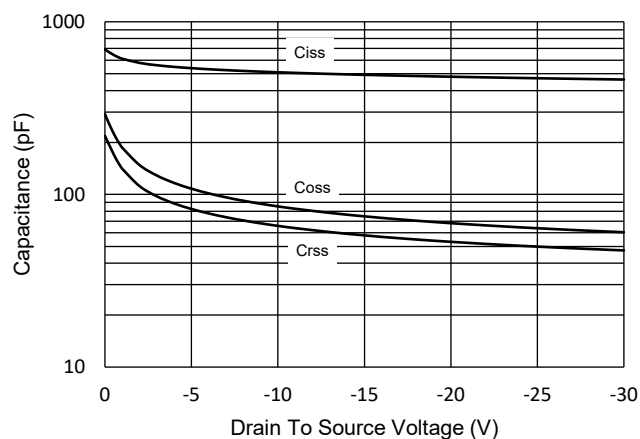
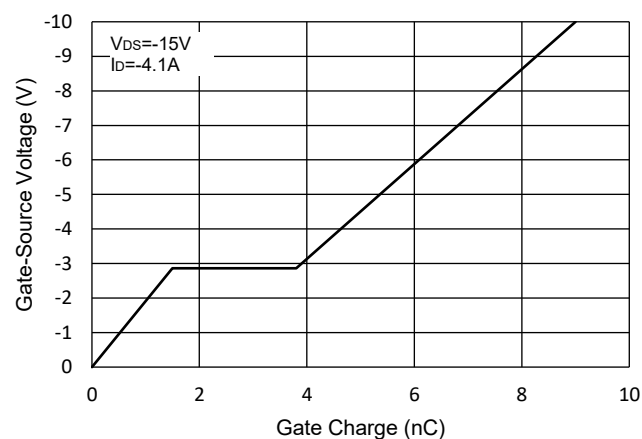


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

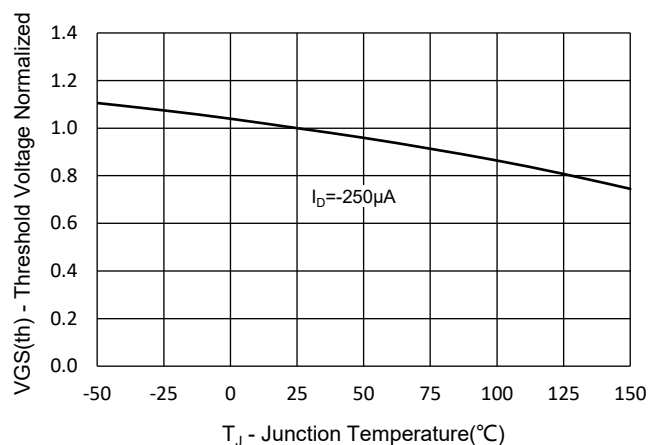


Fig.8 - Normalized On Resistance Characteristics

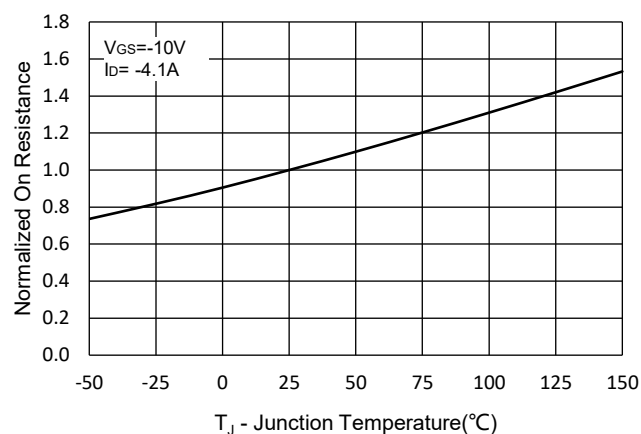


Fig.9 - I_S - V_{SD}

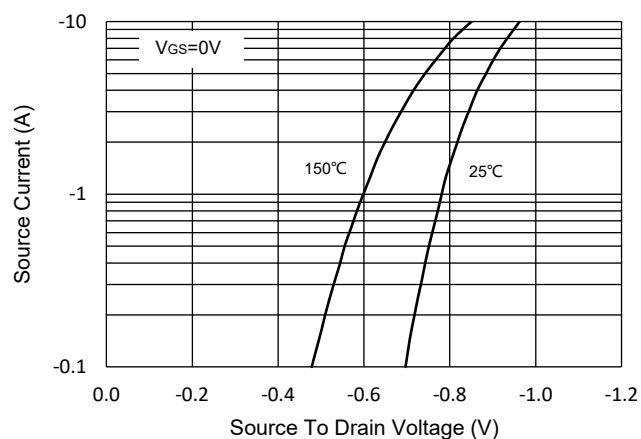


Fig.10 - Drain Current

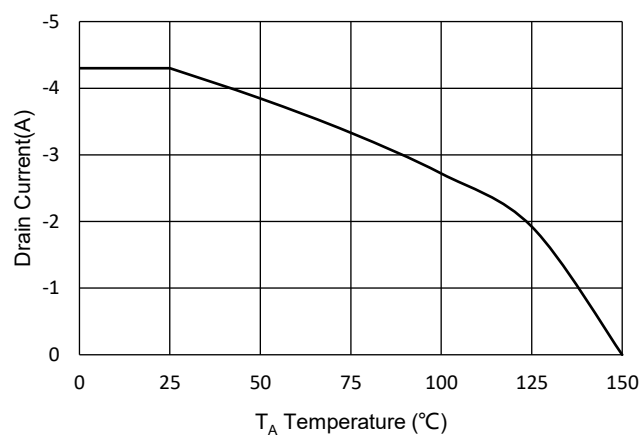
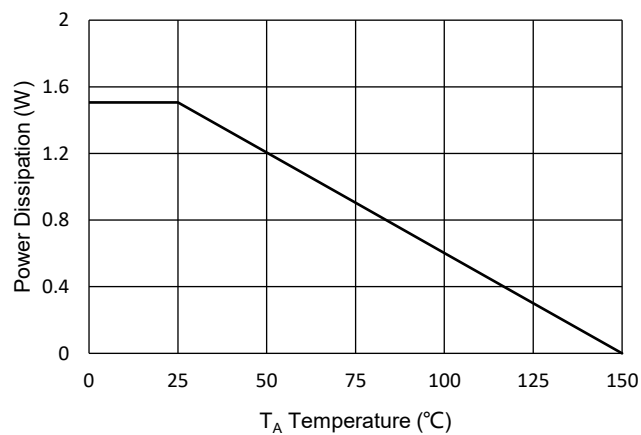


Fig.11 - PD Dissipation



Curve Characteristics

Fig.12 - Safe Operation Area

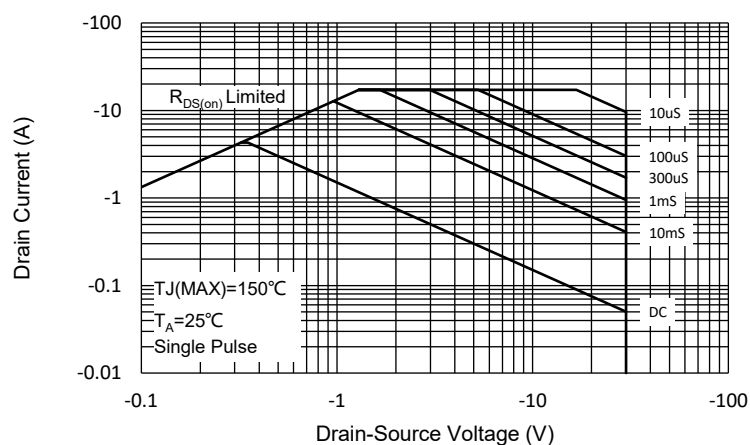
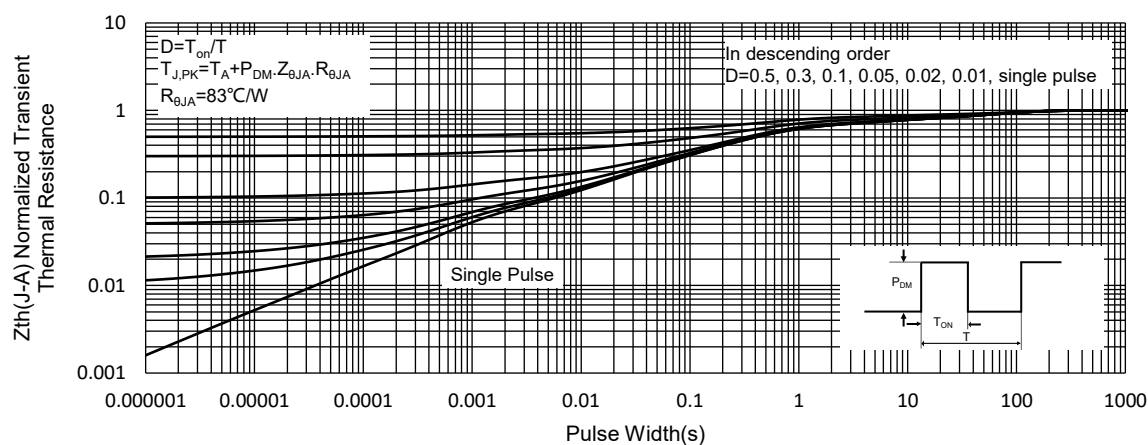


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

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

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