

Features

- Trench MV MOSFET Technology
- 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

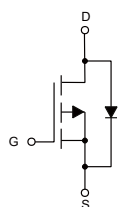
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 117°C/W Junction to Ambient (Note 2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-60	V
Gate-Source Voltlage		V _{GS}	±20	V
Continuous Drain Current	T _A =25°C	I _D	-2.8	A
	T _A =100°C		-1.7	
Pulsed Drain Current ^(Note 3)		I _{DM}	-11.2	A
Total Power Dissipation ^(Note 4)		P _D	1.06	W

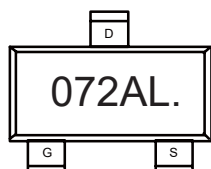
Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds. 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 $T_A=25^\circ\text{C}$.
2. Repetitive rating; pulse width limited by max. junction temperature.
3. P_D is based on max. junction temperature, using junction-ambient thermal resistance.

Internal Structure and Marking Code

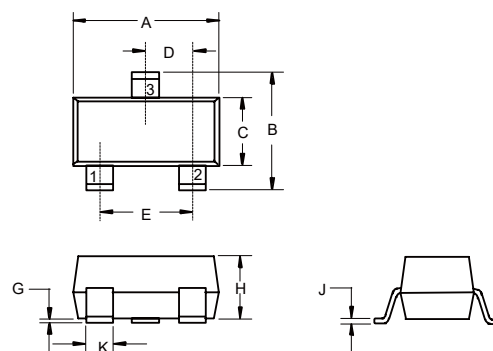


1. GATE
2. SOURCE
3. DRAIN



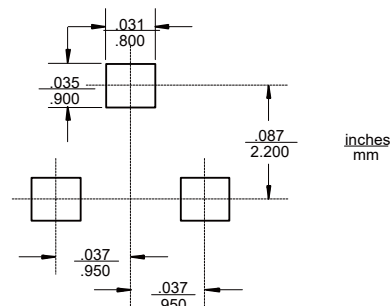
P-Channel MOSFET

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	-60			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.5	-2.0	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-2.7A		55	72	mΩ
		V _{GS} =-4.5V, I _D =-1.4A		66	90	
Gate Resistance	R _g	f=1 MHz, Open drain		6		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				-2.8	A
Body Diode Voltage	V _{SD}	I _S =-2.7A, V _{GS} =0V			-1.2	V
Reverse Recovery Time	t _{rr}	I _F =-2.7A di/dt=100A/μs		20		ns
Reverse Recovery Charge	Q _{rr}			22		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-30V,V _{GS} =0V,f=1MHz		1190		pF
Output Capacitance	C _{oss}			64		
Reverse Transfer Capacitance	C _{rss}			56		
Total Gate Charge	Q _g	V _{DD} =-30V,I _D =-2.7A V _{GS} =-10V		30		nC
Gate-Source Charge	Q _{gs}			2.1		
Gate-Drain Charge	Q _{gd}			4.4		
Turn-On Delay Time	t _{d(on)}	V _{DS} =-30V,V _{GS} =-10V, I _D =-2.7A , R _G =3Ω		7.4		ns
Turn-On Rise Time	t _r			3.5		
Turn-Off Delay Time	t _{d(off)}			43.3		
Turn-Off Fall Time	t _f			15.4		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

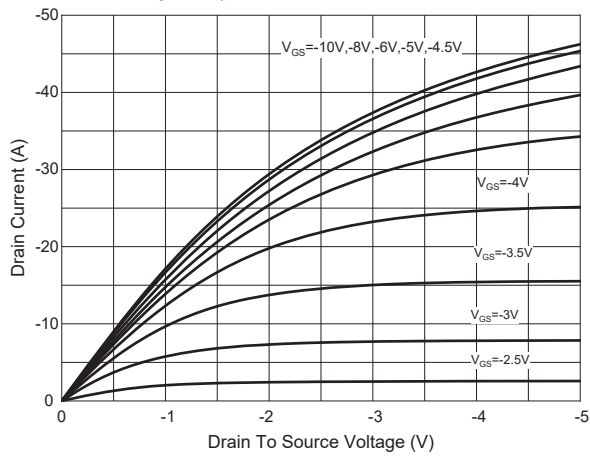


Fig. 2 - Transfer Characteristics

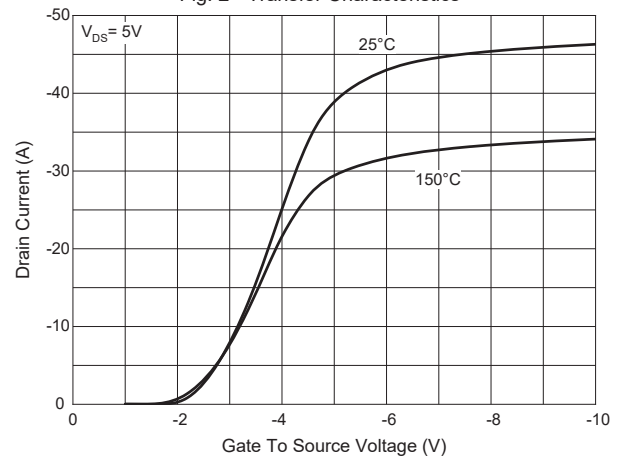


Fig.3- $R_{DS(ON)}-V_{GS}$

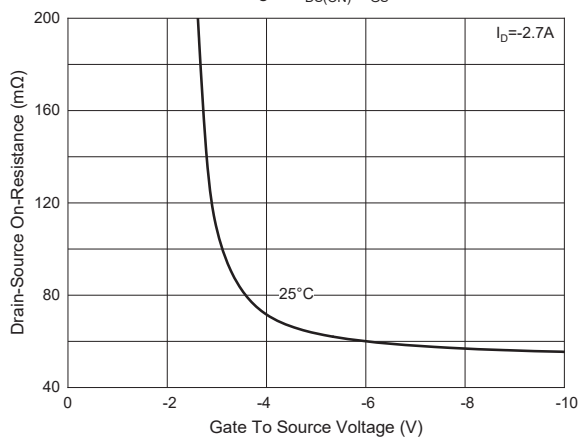


Fig.4- $R_{DS(ON)}-I_D$

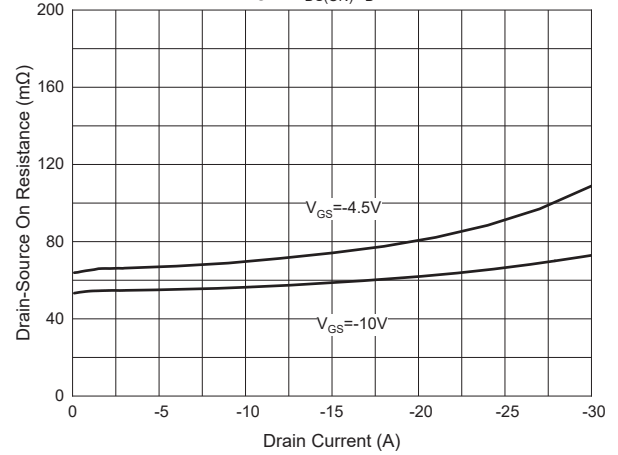


Fig. 5 - Capacitance Characteristics

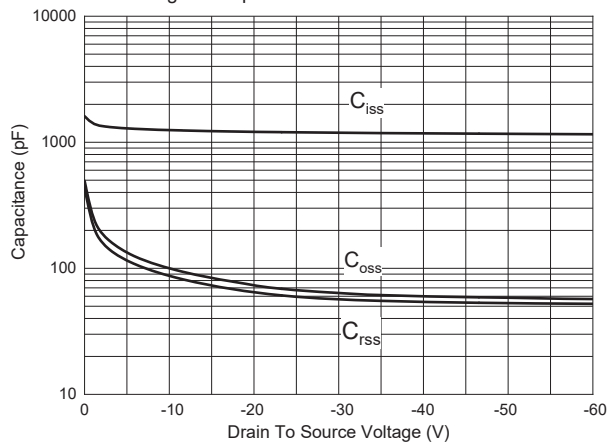
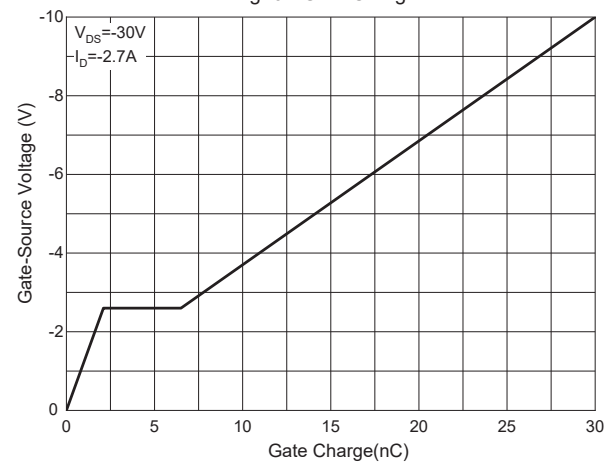


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

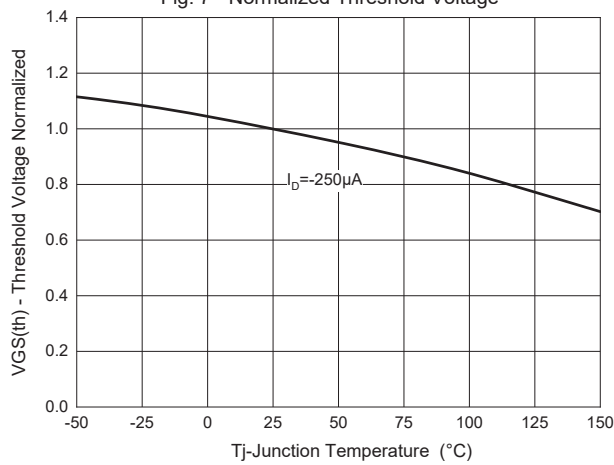


Fig. 8 - Normalized On Resistance Characteristics

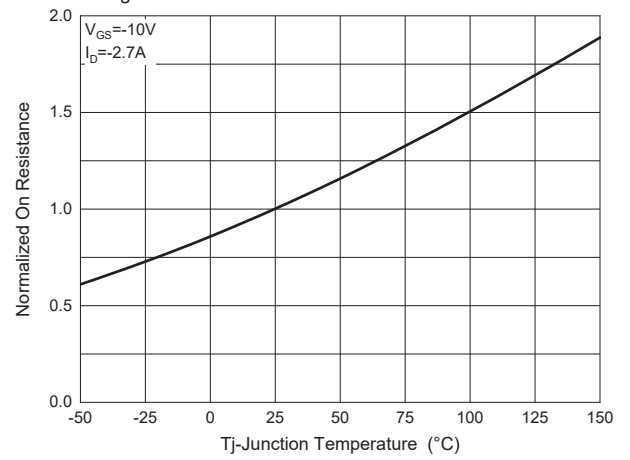


Fig.9- I_S - V_{SD}

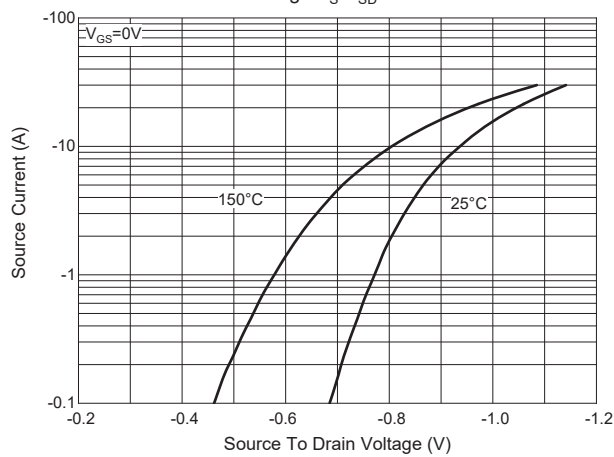


Fig. 10 - Drain Current

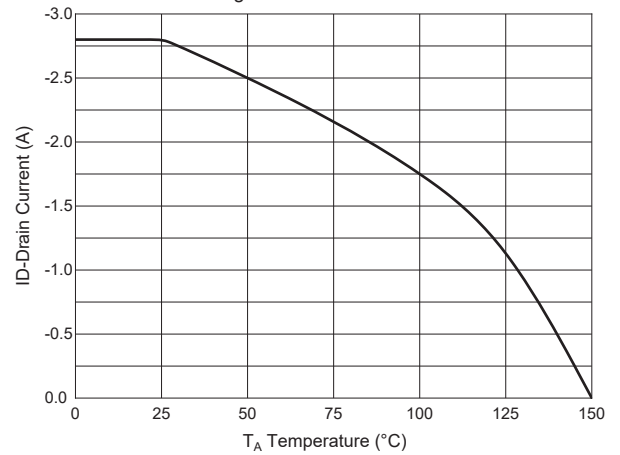
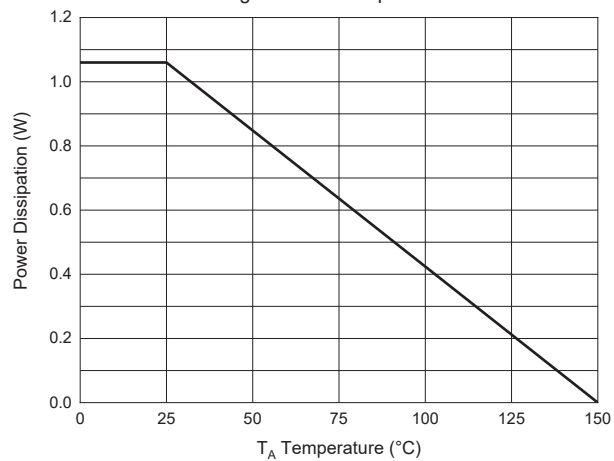


Fig. 11 - PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

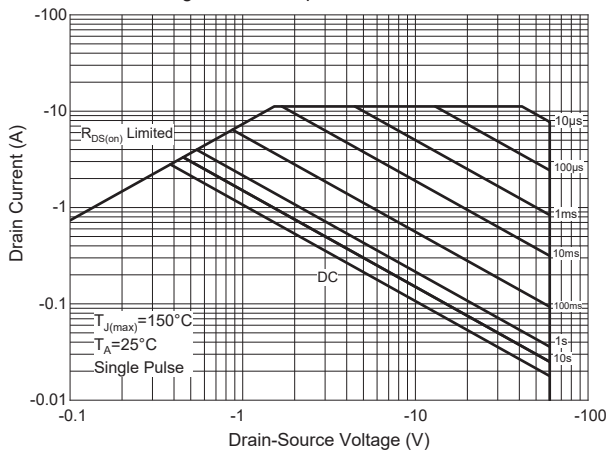
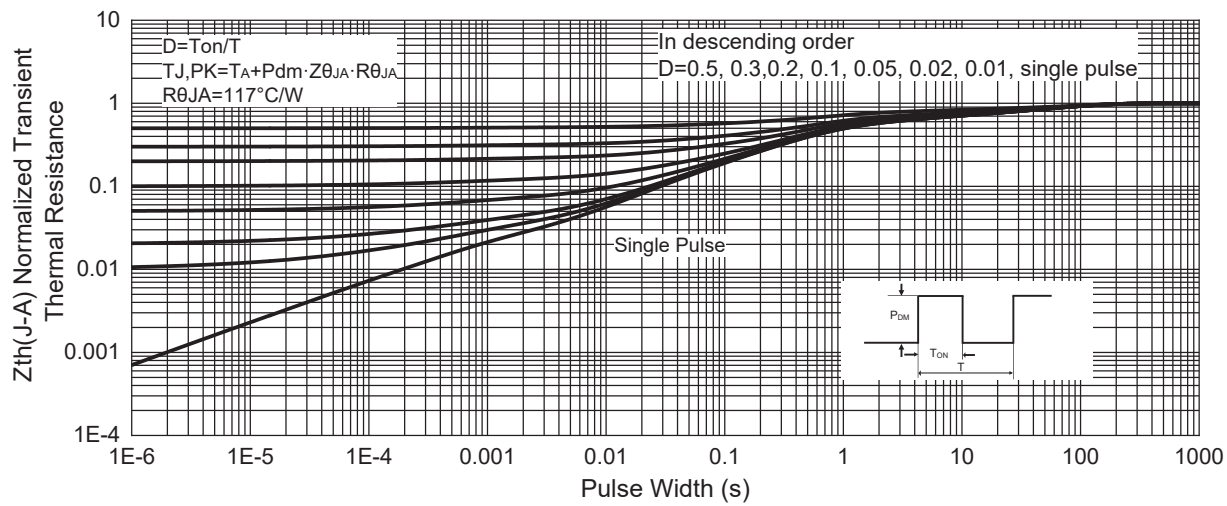


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

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

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