

Features

- ESD HBM Class 2
- Trench LV MOSFET Technology
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

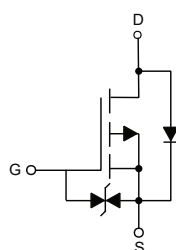
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 413°C/W Junction to Ambient (Note2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-0.66	A
		-0.42	
Pulsed Drain Current (Note3)	I_{DM}	-2.64	A
Total Power Dissipation (Note4)	P_D	0.3	W

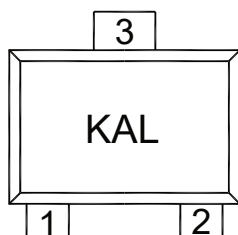
Note:

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

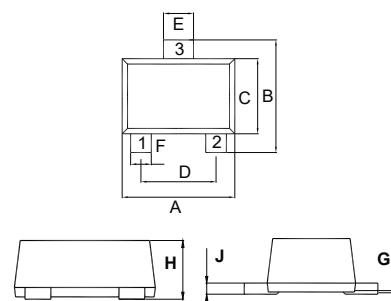


1. GATE
2. SOURCE
3. DRAIN



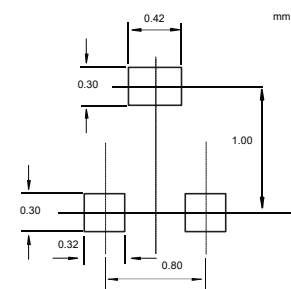
P-Channel MOSFET

SOT-723



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.043	0.051	1.10	1.30	
B	0.043	0.051	1.10	1.30	
C	0.028	0.035	0.70	0.90	
D	0.031		0.80		TYP.
E	0.009	0.017	0.22	0.42	
F	0.005	0.013	0.12	0.32	
G	0.000	0.002	0.00	0.05	
H	0.017	0.021	0.43	0.54	
J	0.003	0.006	0.08	0.15	

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=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-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35	-0.7	-1.1	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V			±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-0.5A		0.35	0.45	Ω
		V _{GS} =-2.5V, I _D =-0.4A		0.47	0.6	
		V _{GS} =-1.8V, I _D =-0.2A		0.68	0.88	
Gate Resistance	R _g	f=1 MHz, Open drain		130		Ω
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-0.8A		1.9		S
Diode Characteristics						
Continuous Body Diode Current	I _S				-0.66	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-0.5A			-1.2	V
Reverse Recovery Time	t _{rr}	I _F =-0.5A, dI _F /dt=100A/μs		20		ns
Reverse Recovery Charge	Q _{rr}			9		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz		63		pF
Output Capacitance	C _{oss}			14		
Reverse Transfer Capacitance	C _{rss}			9		
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-0.8A		1.4		nC
Gate-Source Charge	Q _{gs}			0.4		
Gate-Drain Charge	Q _{gd}			0.4		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-10V, V _{GS} =-4.5V, R _G =10Ω, I _D =-0.2A		6.9		ns
Turn-On Rise Time	t _r			10.5		
Turn-Off Delay Time	t _{d(off)}			33.6		
Turn-Off Fall Time	t _f			55.7		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

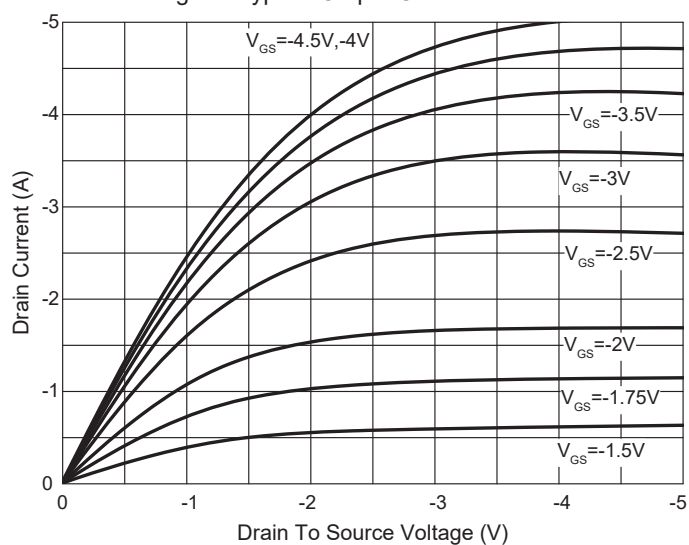


Fig. 2 - Transfer Characteristics

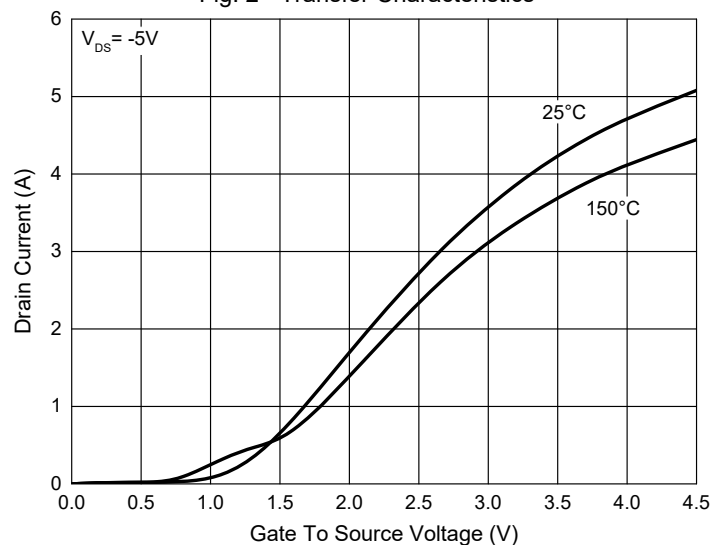


Fig.3- $R_{DS(ON)}-V_{GS}$

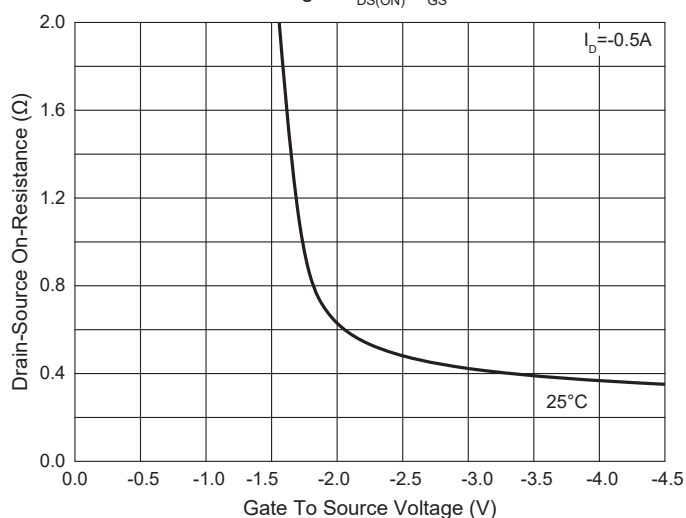


Fig.4- $R_{DS(ON)}-I_D$

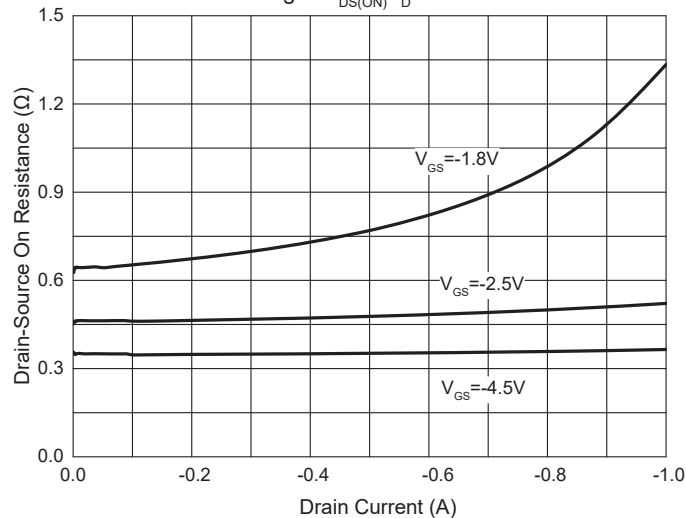


Fig. 5 - Capacitance Characteristics

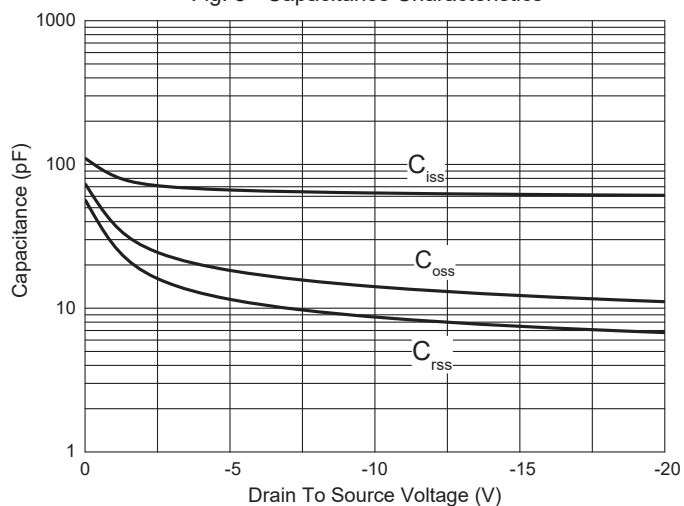
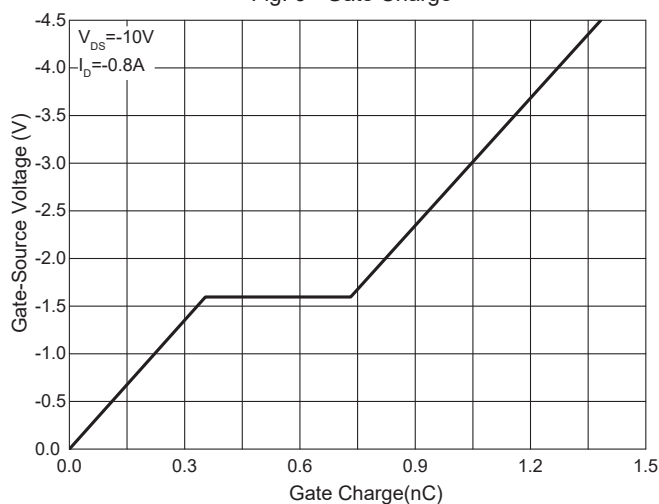


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

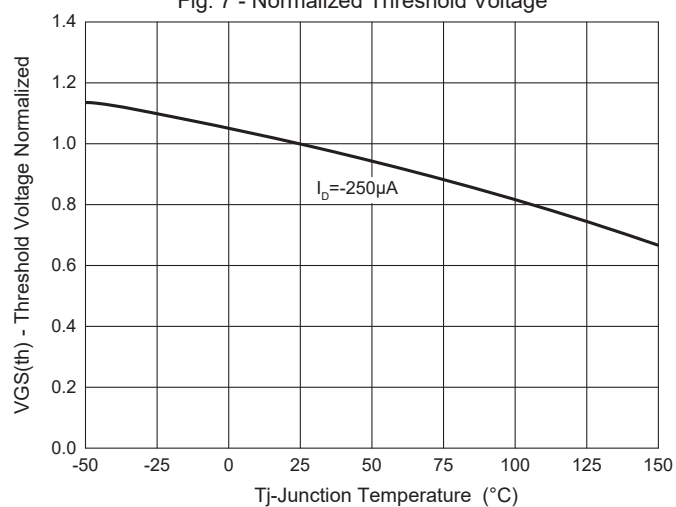


Fig. 8 - Normalized On Resistance Characteristics

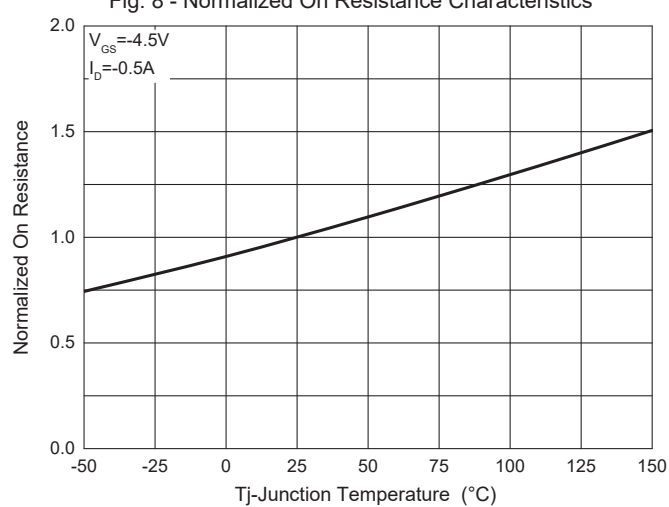


Fig.9- I_S - V_{SD}

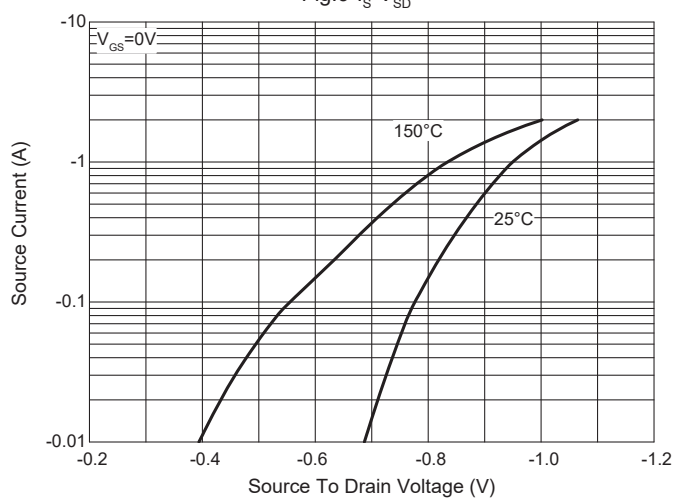


Fig. 10 - Drain Current

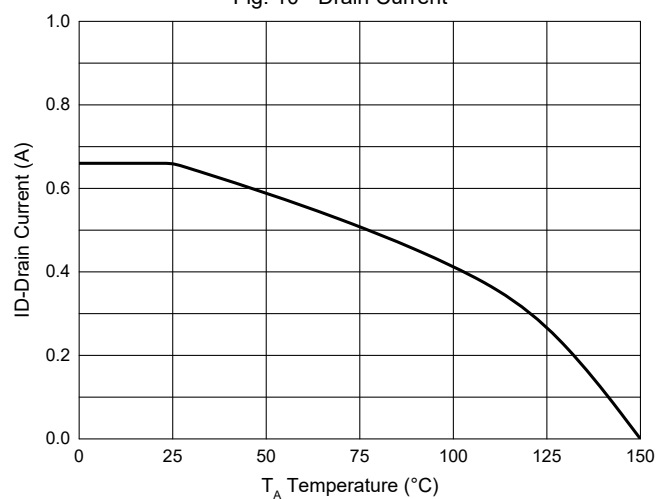
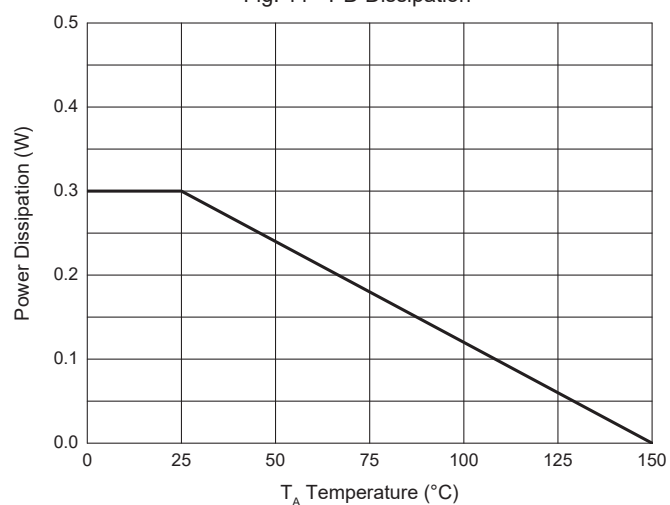


Fig. 11 - PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

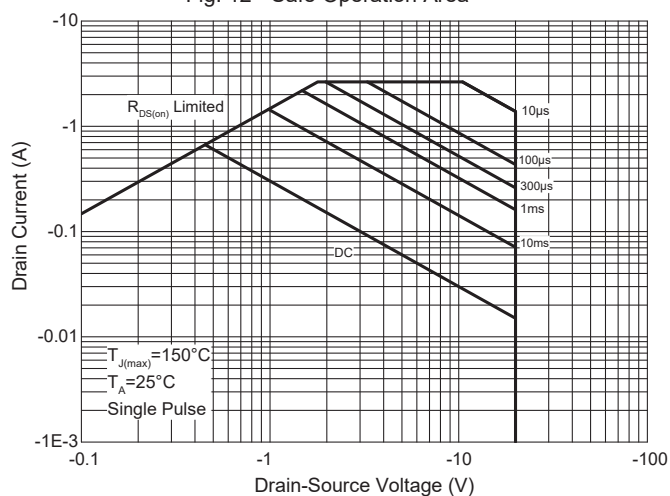
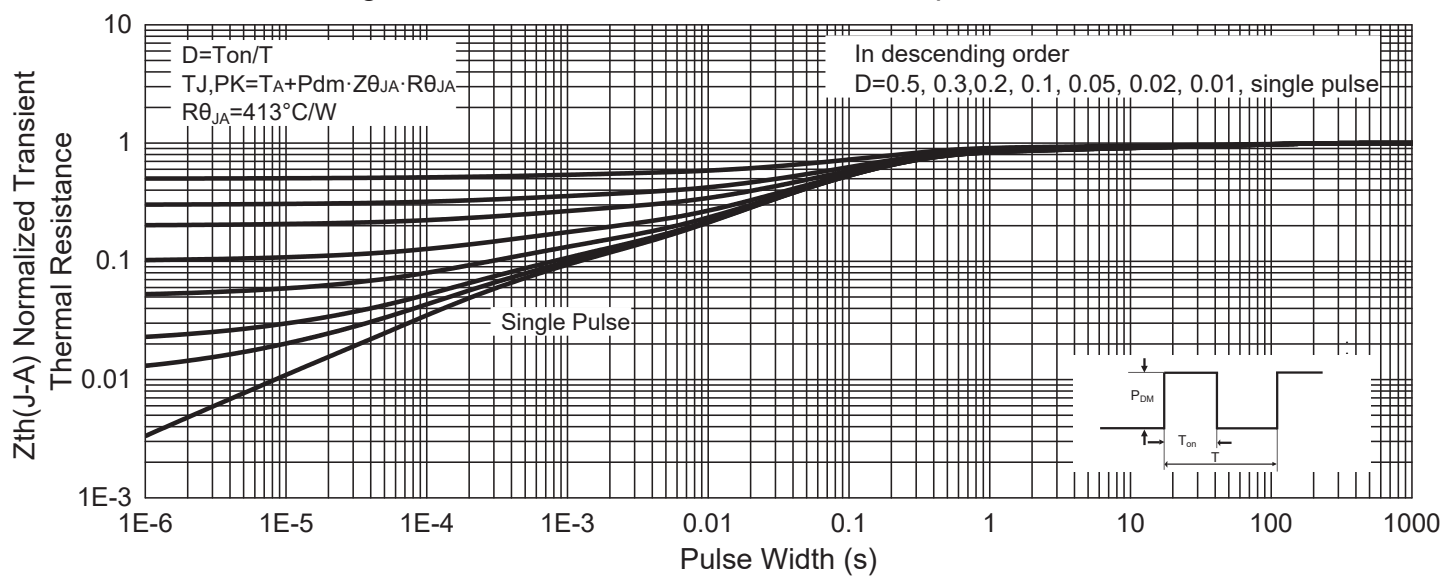


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:8Kpcs/Reel

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