

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

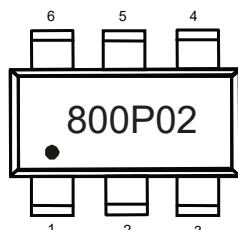
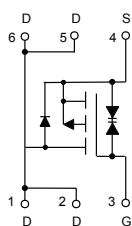
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 143°C/W Junction to Ambient^(Note2)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-20	V
Gate-Source Voltlage		V _{GS}	±12	V
Continuous Drain Current	T _A =25°C	I _D	-0.84	A
	T _A =100°C		-0.53	
Pulsed Drain Current ^(Note3)		I _{DM}	-3.36	A
Total Power Dissipation ^(Note4)		P _D	0.87	W

Note:

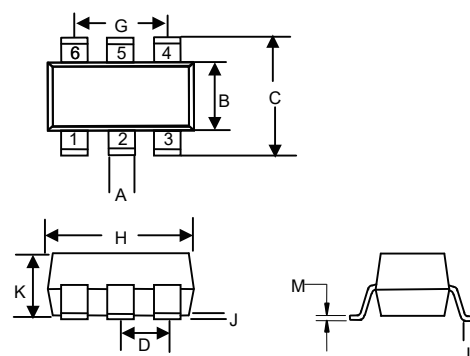
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The Value of $R_{\theta JA}$ is Measured with the Device Mounted on 1in2 FR-4 Board with 1oz. Copper, in a Still Air Environment with $T_A=25^\circ\text{C}$.
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



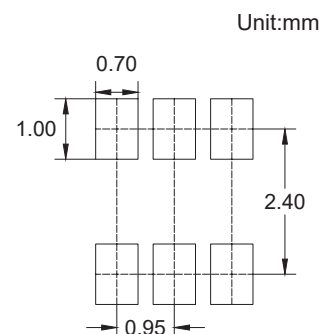
P-Channel MOSFET

SOT23-6L



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.012	0.020	0.30	0.50	
B	0.051	0.070	1.30	1.80	
C	0.087	0.126	2.20	3.20	
D	0.037		0.95		TYP.
G	0.074		1.90		TYP.
H	0.106	0.122	2.70	3.10	
J	0.002	0.006	0.05	0.15	
K	0.030	0.051	0.75	1.30	
L	0.012	0.024	0.30	0.60	
M	0.003	0.008	0.08	0.22	

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	-20			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.33	-0.63	-0.93	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-0.5A		582	800	mΩ
		V _{GS} =-2.5V, I _D =-0.3A		823	1200	
		V _{GS} =-1.8V, I _D =-0.2A		1214	2000	
Gate Resistance	R _g	f=1 MHz, Open Drain		40		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				-0.84	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-0.5A			-1.3	V
Reverse Recovery Time	t _{rr}	I _F =-0.5A, dI _F /dt=100A/μs		14.3		ns
Reverse Recovery Charge	Q _{rr}			7.7		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V,V _{GS} =0V,f=1MHz		37.3		pF
Output Capacitance	C _{oss}			12.3		
Reverse Transfer Capacitance	C _{rss}			6.4		
Total Gate Charge	Q _g	V _{DD} =-10V,V _{GS} =-4.5V,I _D =-0.5A		0.71		nC
Gate-Source Charge	Q _{gs}			0.06		
Gate-Drain Charge	Q _{gd}			0.16		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-10V, V _{GS} =-4.5V R _G =3Ω,I _D =-0.5A,		4.7		ns
Turn-On Rise Time	t _r			5.0		
Turn-Off Delay Time	t _{d(off)}			12.6		
Turn-Off Fall Time	t _f			5.6		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

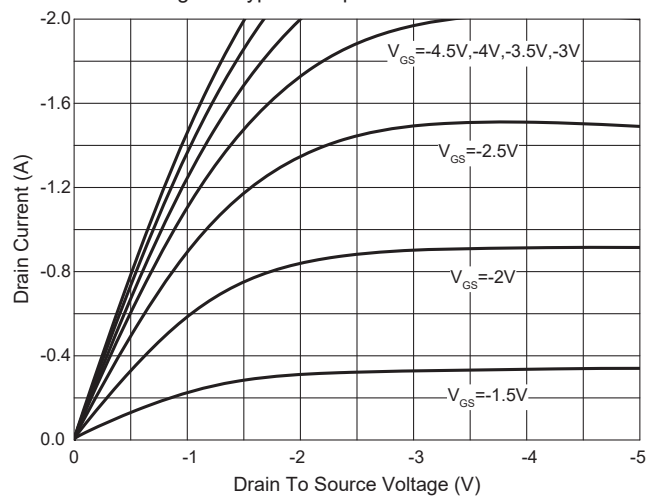


Fig. 2 - Transfer Characteristics

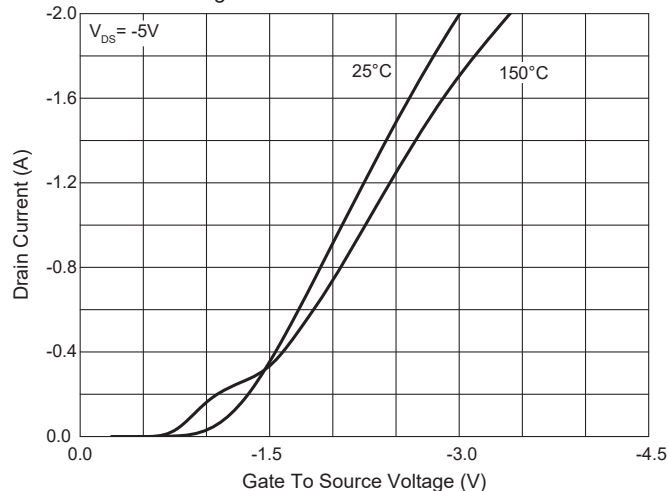


Fig.3- $R_{DS(ON)}-V_{GS}$

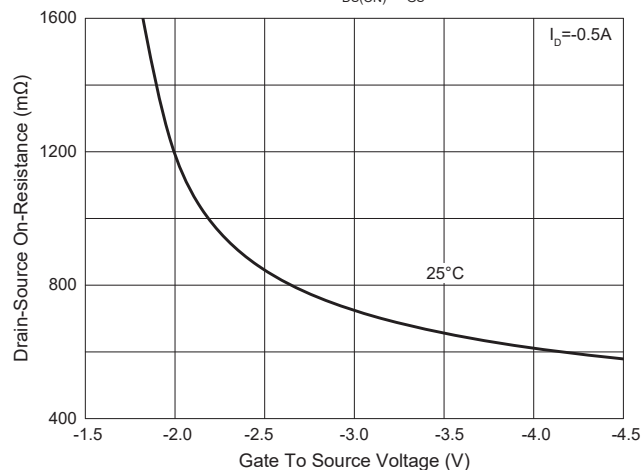


Fig.4- $R_{DS(ON)}-I_D$

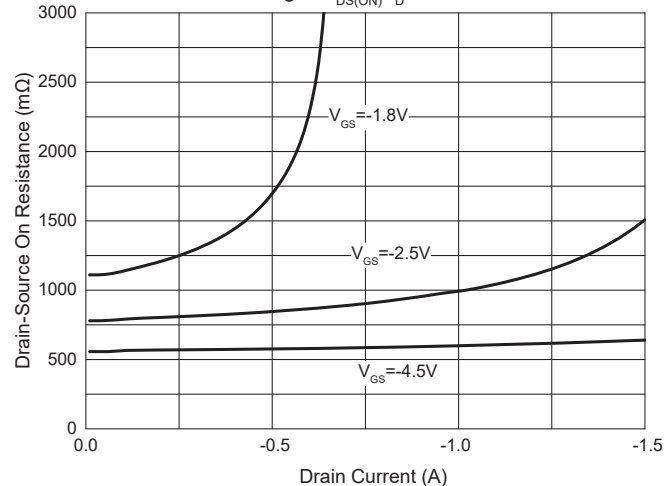


Fig. 5 - Capacitance Characteristics

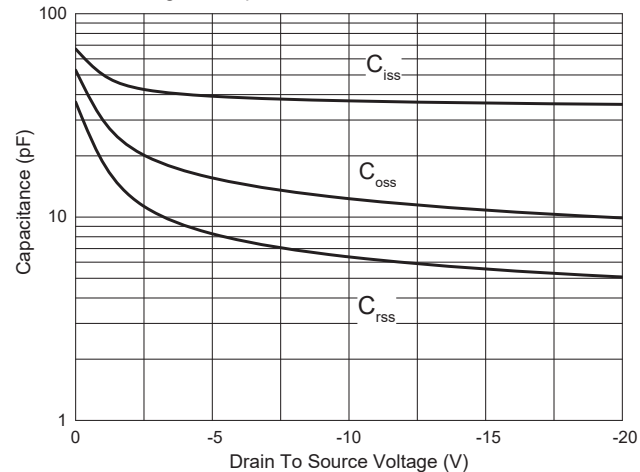
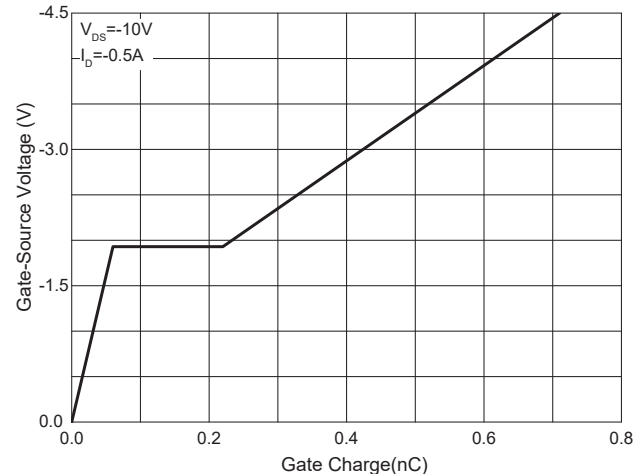


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Normalized Threshold Voltage

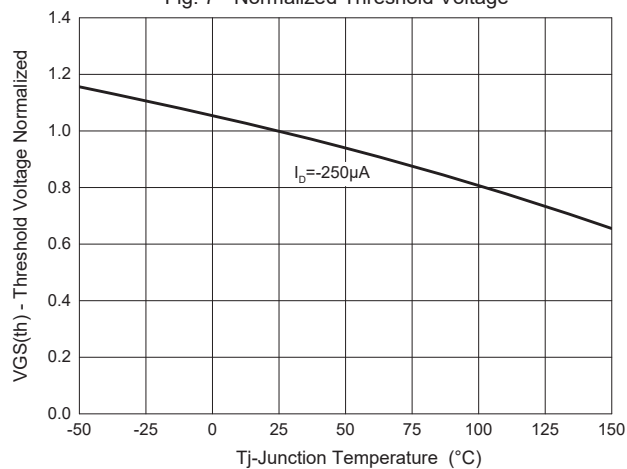


Fig. 8 - Normalized On Resistance Characteristics

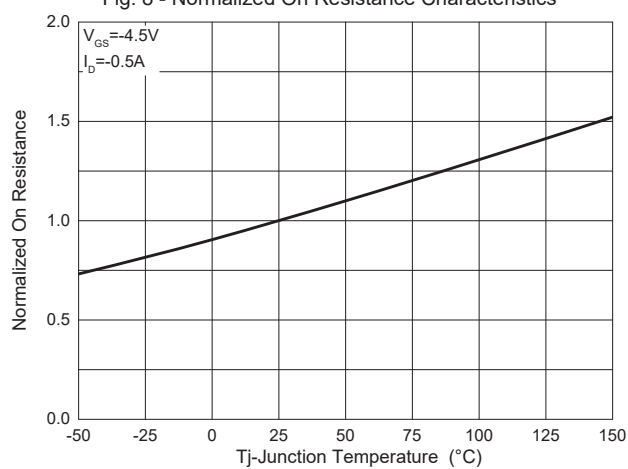


Fig.9- I_S - V_{SD}

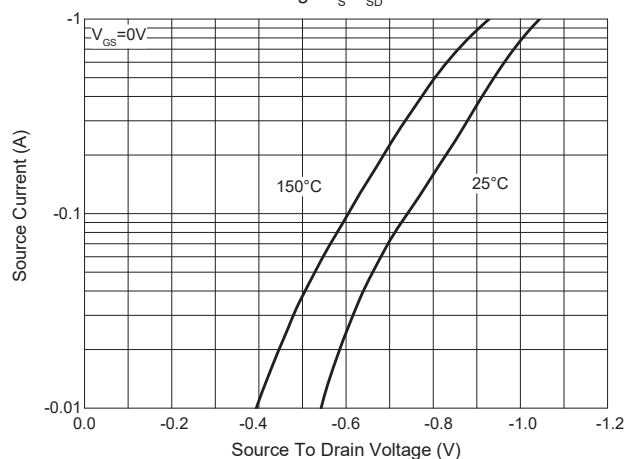


Fig. 10 - Drain Current

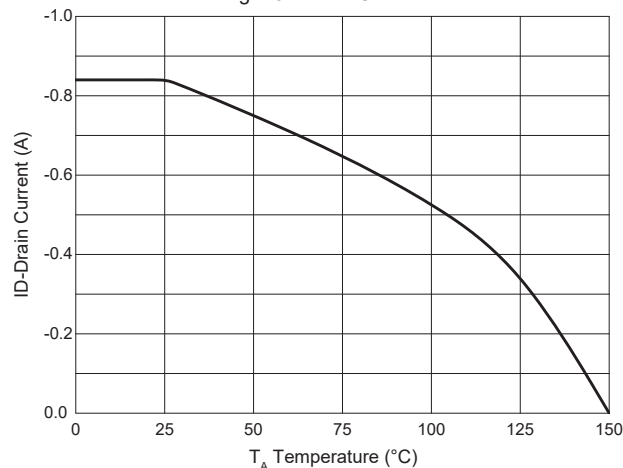
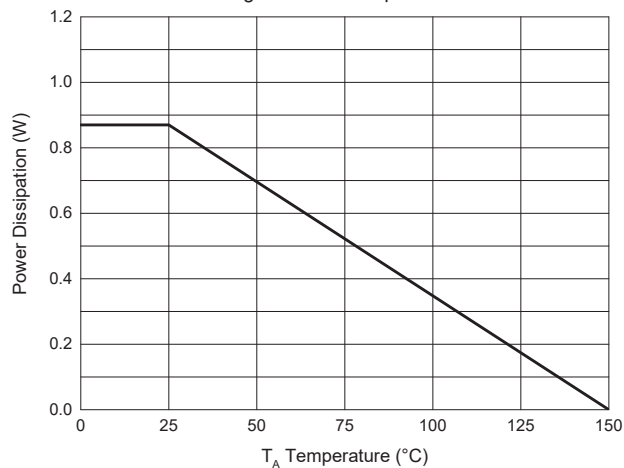


Fig. 11 - PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

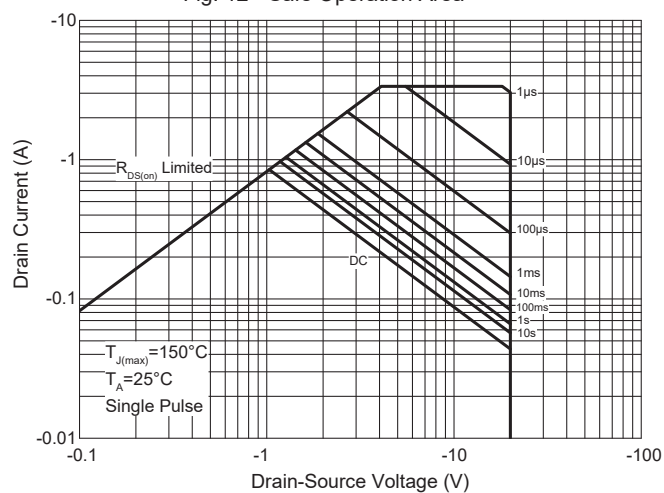
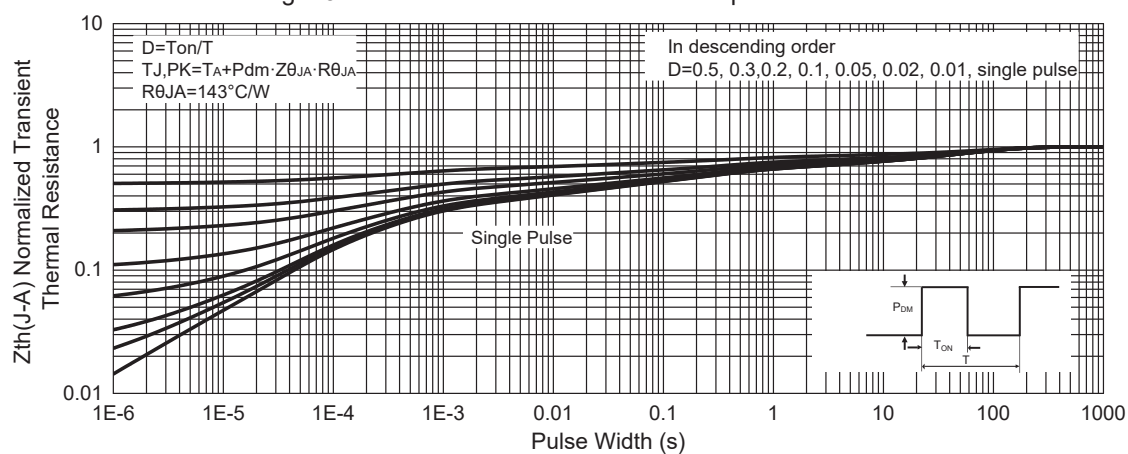


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

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

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