Features

- Excellent Package For Heat Dissipation
- High Density Cell Design For Low $R_{DS(ON)}$
- Moisture Sensitivity Level 3
- 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)

P-CHANNEL MOSFET

Maximum Ratings

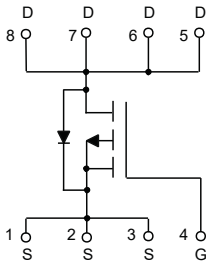
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 87.8°C/W Junction to Ambient (Note 2)

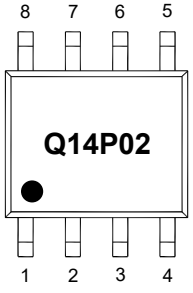
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Volltage		V_{GS}	±10	V
Continuous Drain Current	T_A=25°C	I_D	-14	A
	T_A=100°C		-8.9	
Pulsed Drain Current (Note 3)		I_{DM}	-56	A
Total Power Dissipation (Note 4)		P_D	1.4	W
Single Pulsed Avalanche Energy (Note 5)		E_{AS}	361	mJ

Note:

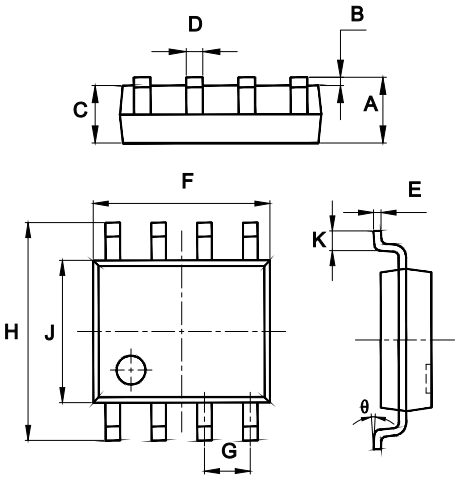
1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°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.
5. T_J=25°C, V_{DD}=-50V, V_{GS}=-5V, R_G=25Ω, L=2mH.

Internal Structure and Marking Code



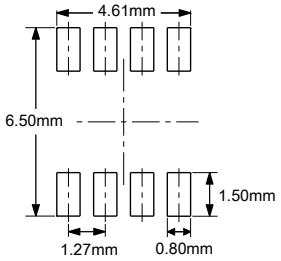


SOP-8



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

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} =±10V			±100	nA
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	-0.4	-0.6	-1	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-13.5A		6.5	8.5	mΩ
		V_{GS}=-2.5V, I_D=-12A		8	10.5	
Gate Resistance	R_g	f=1 MHz, Open drain		6.8		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-14	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-13.5A			-1.2	V
Reverse Recovery Time	t_{rr}	I_F=-1A, di/dt=100A/μs		105		ns
Reverse Recovery Charge	Q_{rr}			188		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V,f=1MHz		4224		pF
Output Capacitance	C_{oss}			562		
Reverse Transfer Capacitance	C_{rss}			506		
Total Gate Charge	Q_g	V_{DS}=-10V,V_{GS}=-4.5V,I_D=-1A		50		nC
Gate-Source Charge	Q_{gs}			4.5		
Gate-Drain Charge	Q_{gd}			11		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-10V, V_{GS}=-4.5V, I_{DS}=-1A,R_G=6Ω		16		ns
Turn-On Rise Time	t_r			26		
Turn-Off Delay Time	$t_{d(off)}$			388		
Turn-Off Fall Time	t_f			166		

Curve Characteristics

Fig.1 - Typical Output Characteristics

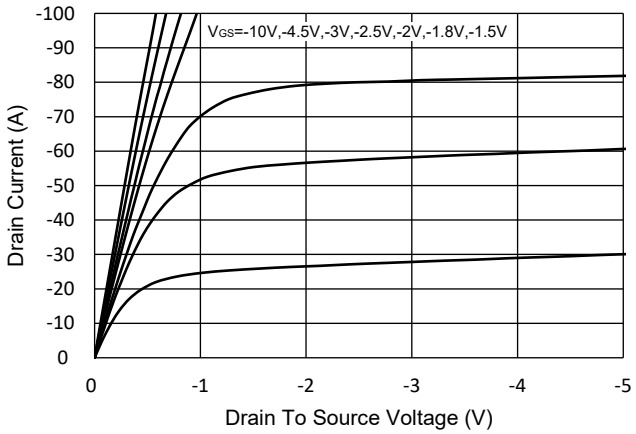


Fig.2 - Transfer Characteristic

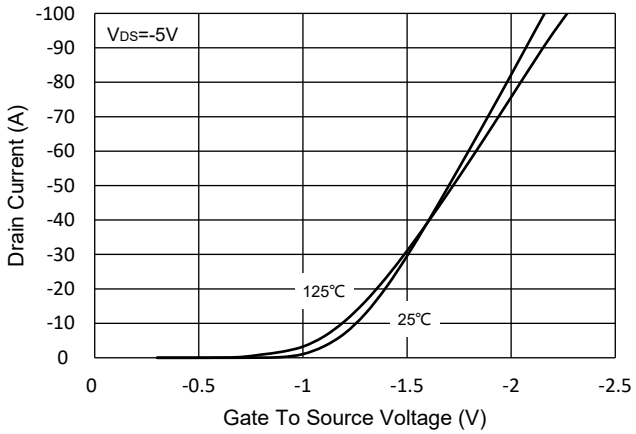


Fig.3 - $R_{DS(ON)}$ - V_{GS}

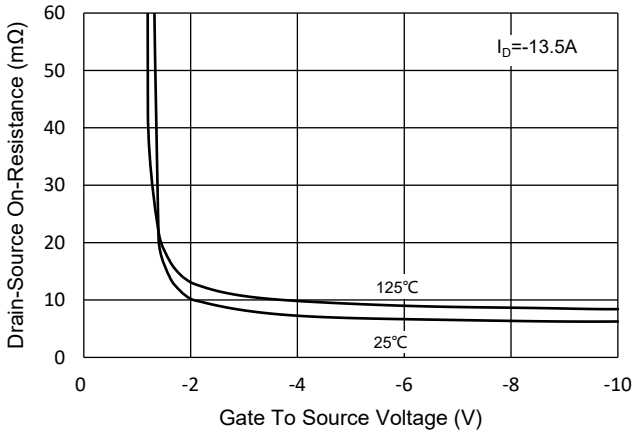


Fig. 4 - $R_{DS(ON)}$—I_D

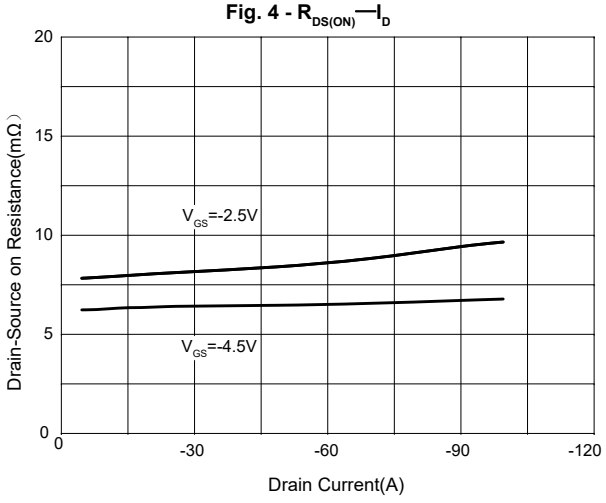


Fig.5 - Capacitance Characteristics

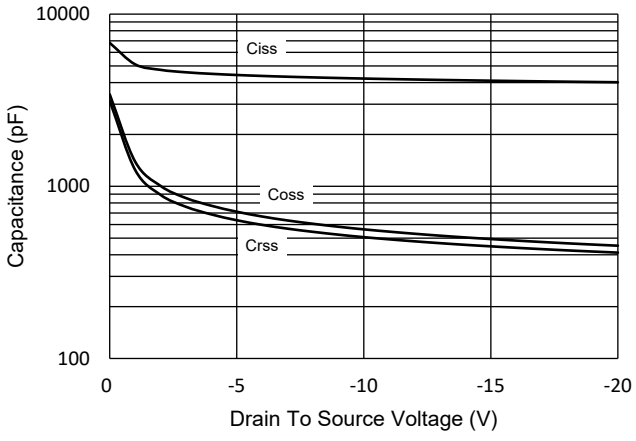
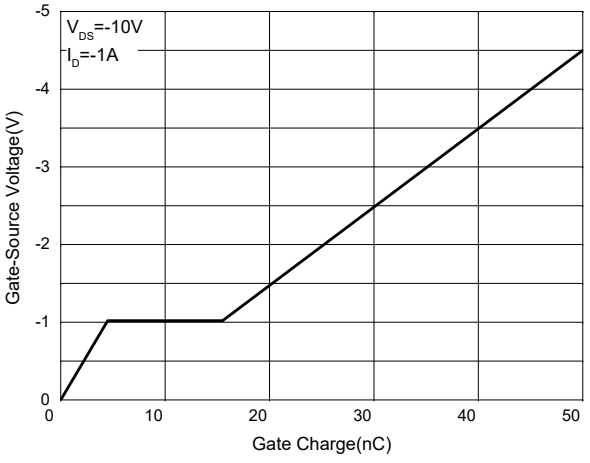


Fig. 6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

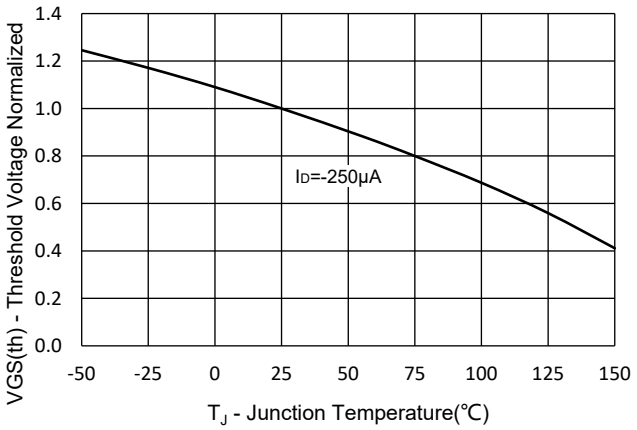


Fig.8 - Normalized On Resistance Characteristics

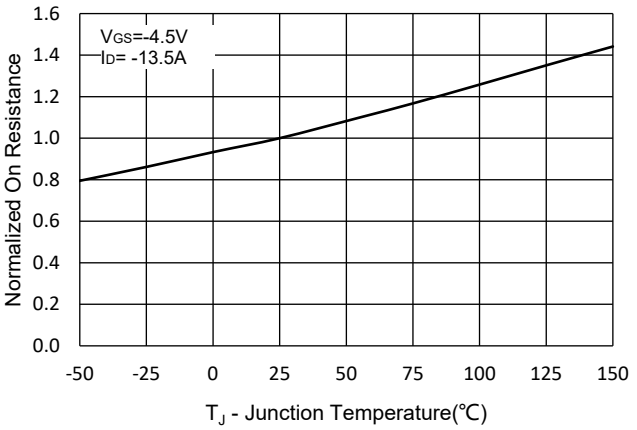


Fig.9 - I_S - V_{SD}

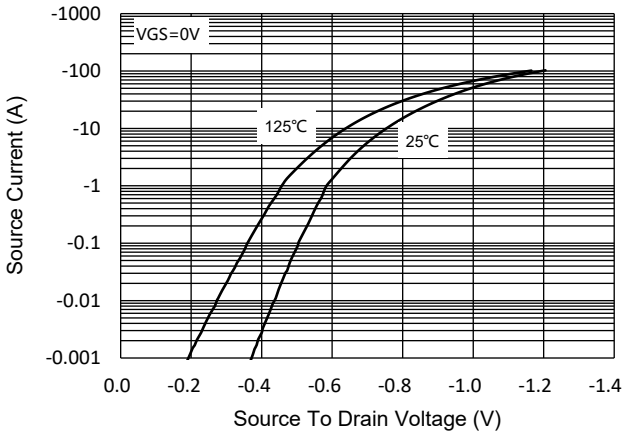


Fig.10 - Drain Current

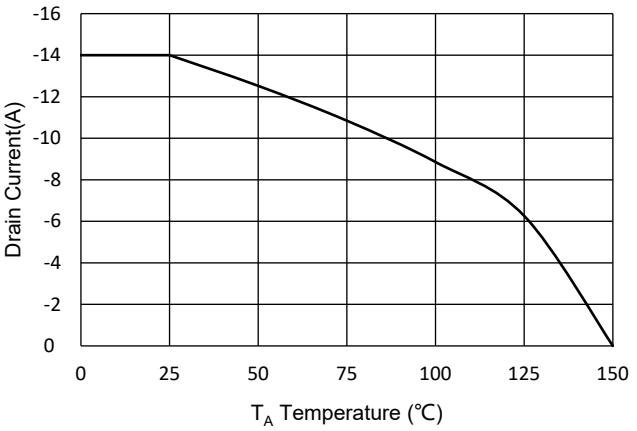
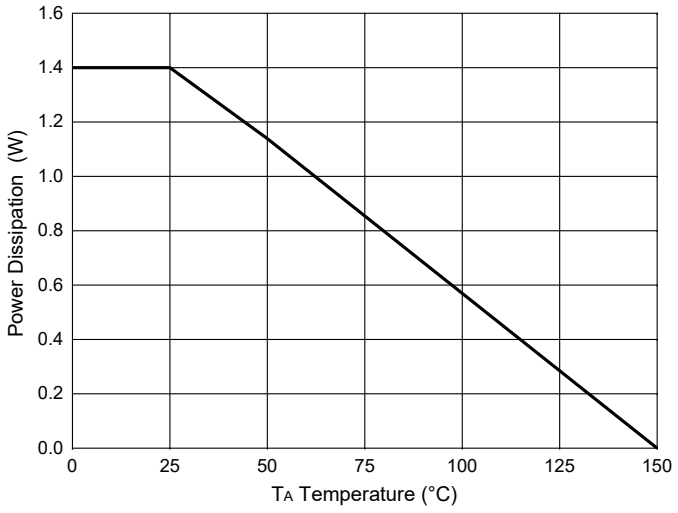


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

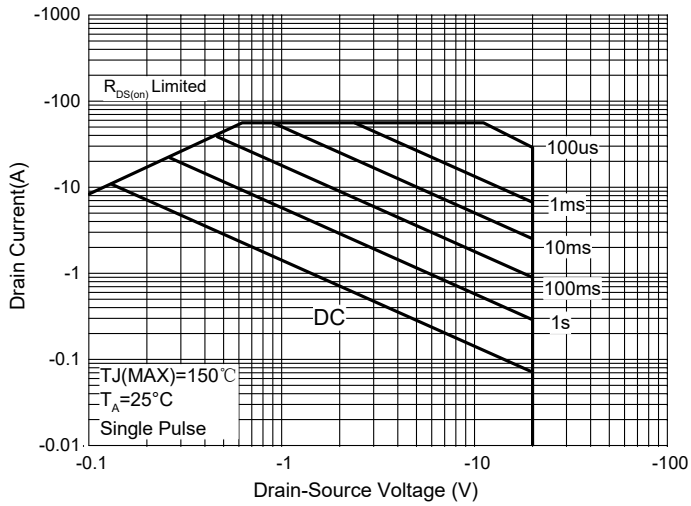
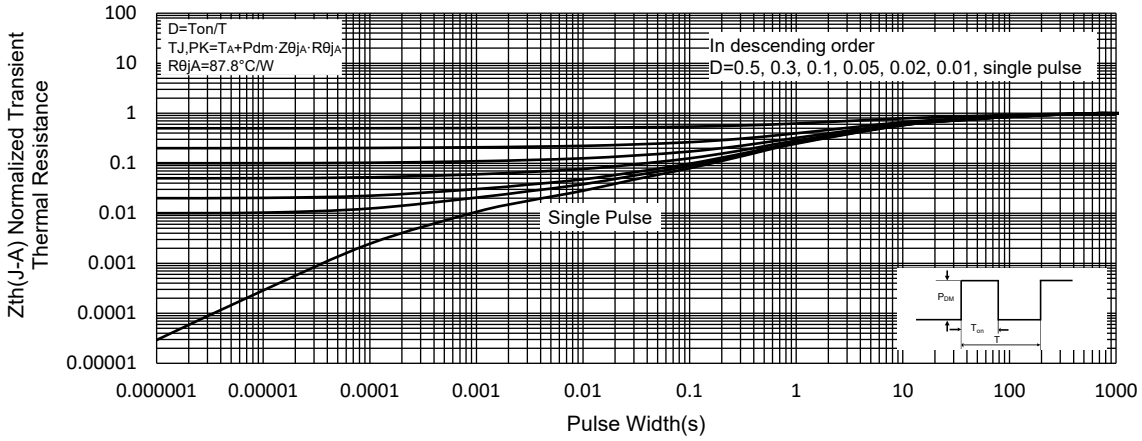


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel

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