

### Features

- Trench MOSFET Technology
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device<sup>(Note 1)</sup>
- Moisture Sensitivity Level 3

### Maximum Ratings

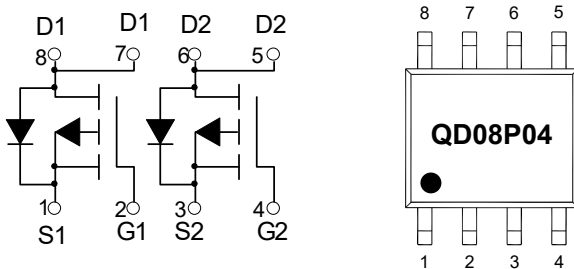
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 52°C/W Junction to Ambient<sup>(Note 2)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-40	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	-8.0	A
Pulsed Drain Current <sup>(Note 3)</sup>	$I_{DM}$	-31	A
Total Power Dissipation	$P_D$	2.4	W
Single Pulsed Avalanche Energy <sup>(Note4)</sup>	$E_{AS}$	36	mJ

Note:

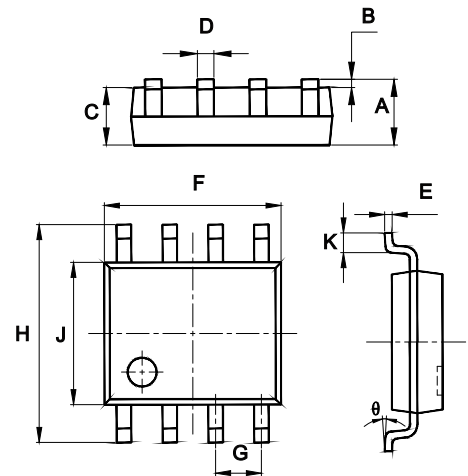
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The Value of  $R_{\theta JA}$  is Measured with the Device Mounted on 1in2 FR-4 Board with 2oz. Copper, in a Still Air Environment with  $T_A=25^\circ C$ . The Value in Any Given Application Depends on the User's Specific Board Design.
3. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.
4.  $V_{DS}=-30V$ ,  $V_{GS}=-10V$ ,  $L=0.5mH$ ,  $I_{AS}=-12A$ .

### Internal Structure and Marking Code



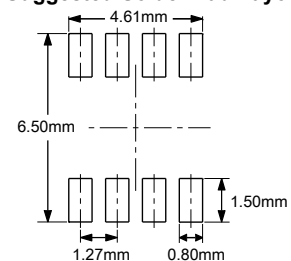
## Dual P-Channel Power MOSFET

### SOP-8



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-40			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-40V, V_{GS}=0V$			-1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.6	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.3A$		39	50	m $\Omega$
		$V_{GS}=-4.5V, I_D=-3.8A$		48	60	
Diode Forward Voltage <sup>(Note 3)</sup>	$V_{SD}$	$V_{GS}=0V, I_S=-2.8A$			-1.2	V
Continuous Body Diode Current	$I_S$				-8	A
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-30V, V_{GS}=0V, f=1MHz$		1045		pF
Output Capacitance	$C_{oss}$			145		
Reverse Transfer Capacitance	$C_{rss}$			67		
Total Gate Charge	$Q_g$	$V_{DS}=-30V, V_{GS}=-10V, I_D=-5A$		23.98		nC
Gate-Source Charge	$Q_{gs}$			2.76		
Gate-Drain Charge	$Q_{gd}$			5.34		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V,$ $V_{DS}=-30V, R_G=3\Omega,$ $I_D=-5A$		4.17		ns
Turn-On Rise Time	$t_r$			4.53		
Turn-Off Delay Time	$t_{d(off)}$			65.6		
Turn-Off Fall Time	$t_f$			28.7		
Reverse Recovery Time	$t_{rr}$	$I_F=-10A, di/dt=-100A/\mu s$		39		ns
Reverse Recovery Charge	$Q_{rr}$			24.2		nC

## Curve Characteristics

Fig. 1 - Typical Output Characteristics

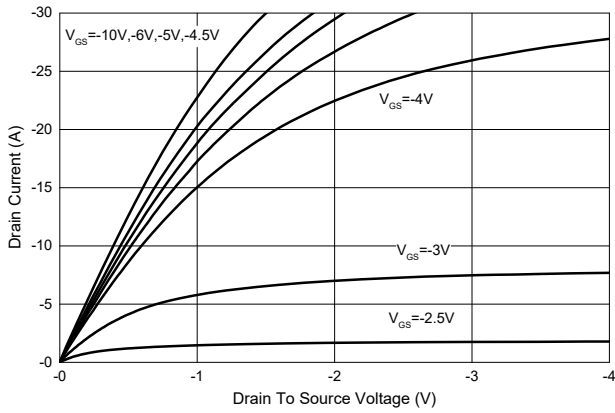


Fig. 2 - Transfer Characteristics

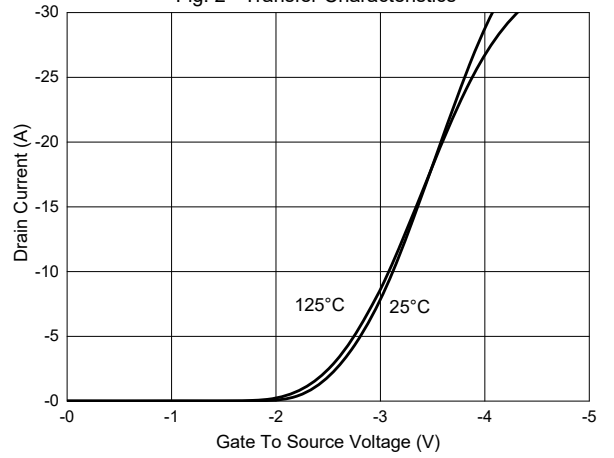


Fig. 3 -  $R_{DS(ON)} - V_{GS}$

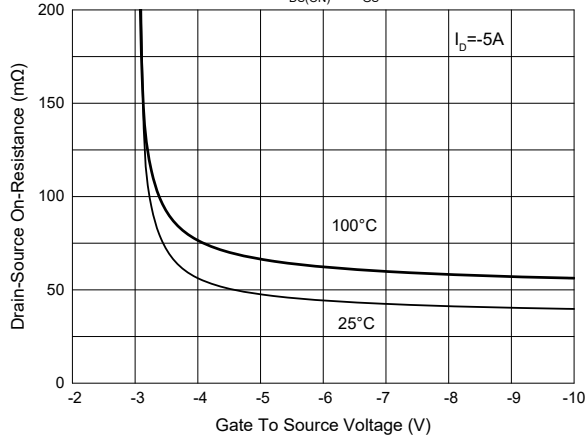


Fig. 4 - Normalized Threshold Voltage

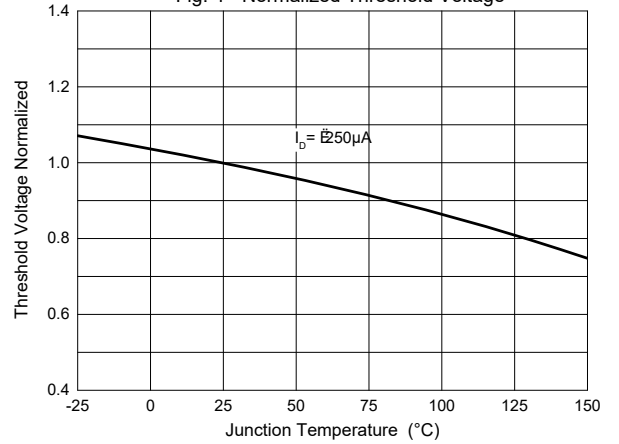


Fig. 5 - Normalized On Resistance Characteristics

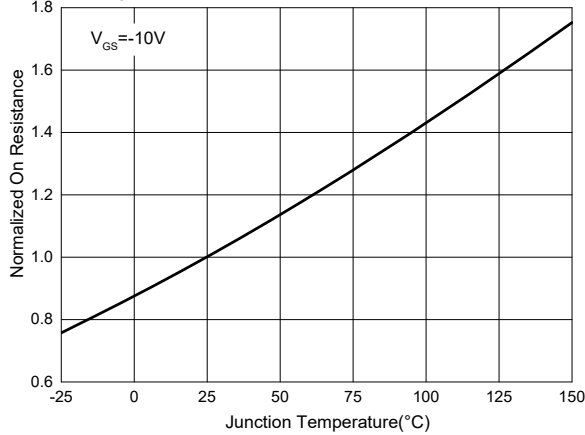
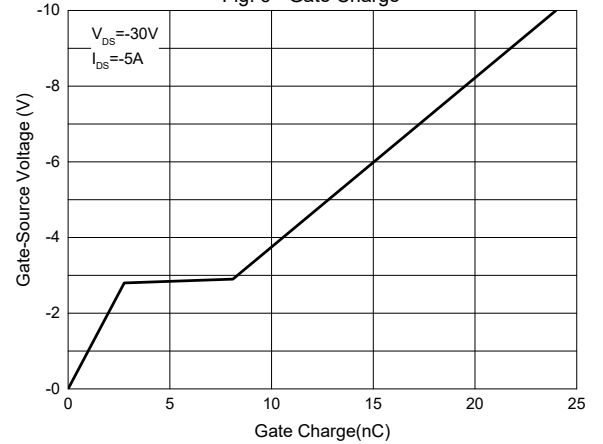
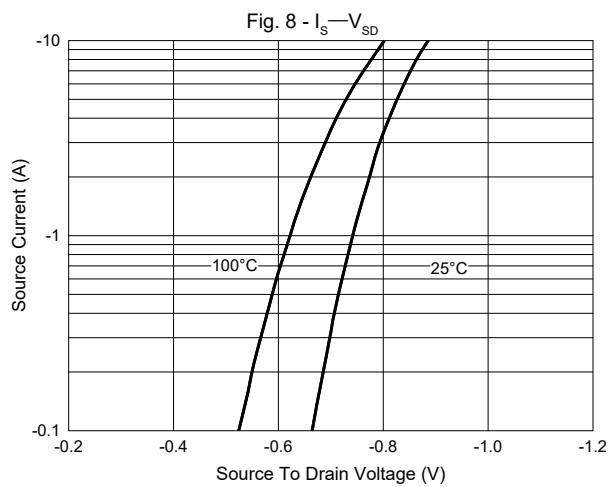
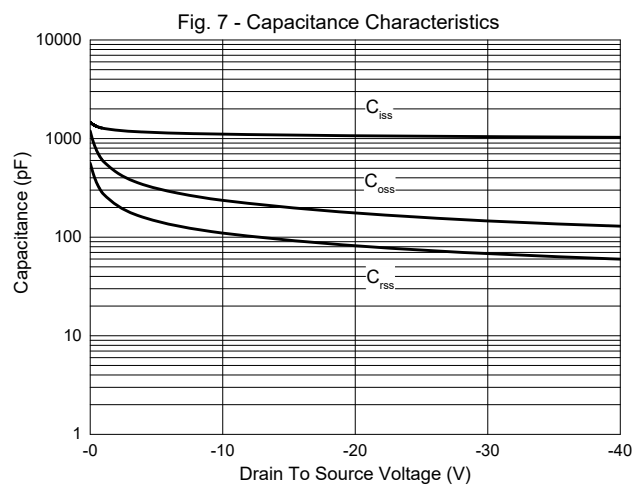


Fig. 6 - Gate Charge



## Curve Characteristics



## Ordering Information

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

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