

## Features

- Split Gate 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

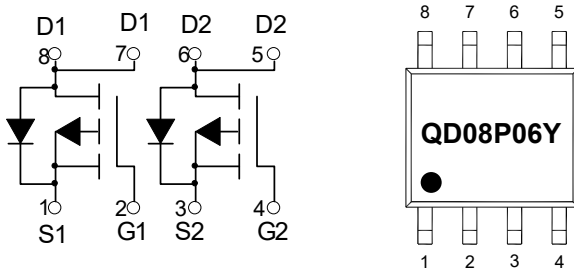
## Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 72°C/W Junction to Ambient<sup>(Note 2)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-60	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	-8.0	A
Pulsed Drain Current	$I_{DM}$	-32	A
Total Power Dissipation	$P_D$	1.7	W

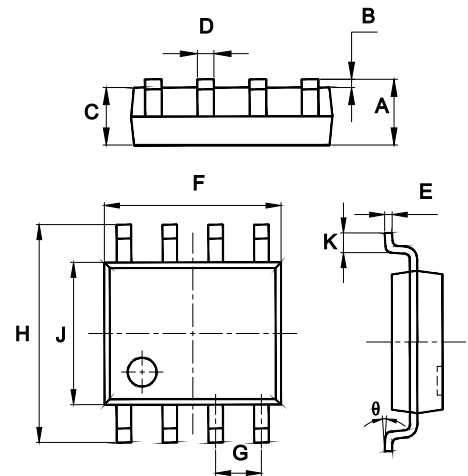
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
2. The value of RθJA is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with TA=25°C.

## Internal Structure and Marking Code



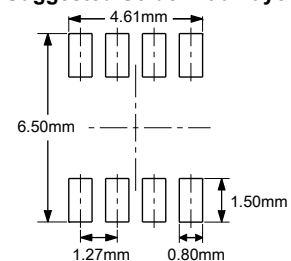
# Dual P-Channel Power MOSFET

## SOP-8



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
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-60V, V_{GS}=0V$			-1	$\mu A$
Gate-Threshold Voltage <sup>(Note 3)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.8	-2.5	V
Drain-Source On-Resistance <sup>(Note 3)</sup>	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.3A$		66	85	m $\Omega$
		$V_{GS}=-4.5V, I_D=-3.8A$		90	120	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=-2.8A$			-1.2	V
<b>Dynamic Characteristics<sup>(Note 4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		505		pF
Output Capacitance	$C_{oss}$			133		
Reverse Transfer Capacitance	$C_{rss}$			23		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DD}=-30V, V_{GS}=-4.5V, I_D=-3.1A$		4.27		nC
Gate-Source Charge	$Q_{gs}$			2.39		
Gate-Drain Charge	$Q_{gd}$			1.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-30V, V_{GEN}=-4.5V, I_D=-2.4A, R_G=1\Omega$		11		ns
Turn-On Rise Time	$t_r$			33.8		
Turn-Off Delay Time	$t_{d(off)}$			12.4		
Turn-Off Fall Time	$t_f$			23.2		

**Notes :**

3.Pulse Test : Pulse Width $\leq 300\mu s$ , Duty Cycle $\leq 2\%$ .

4.Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Typical Output Characteristics

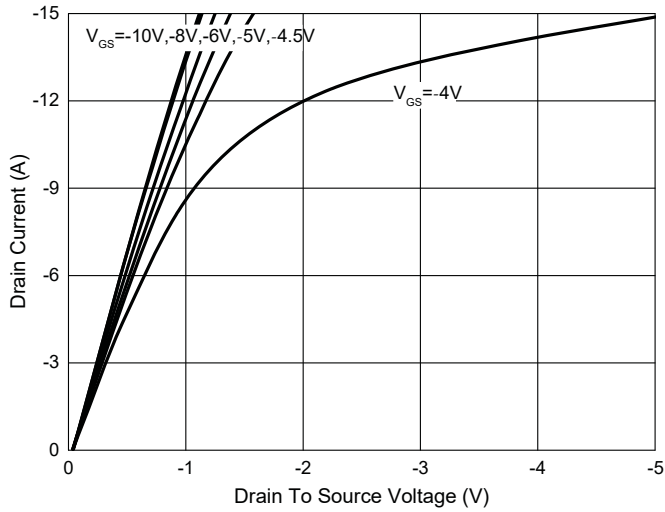


Fig. 2 - Transfer Characteristics

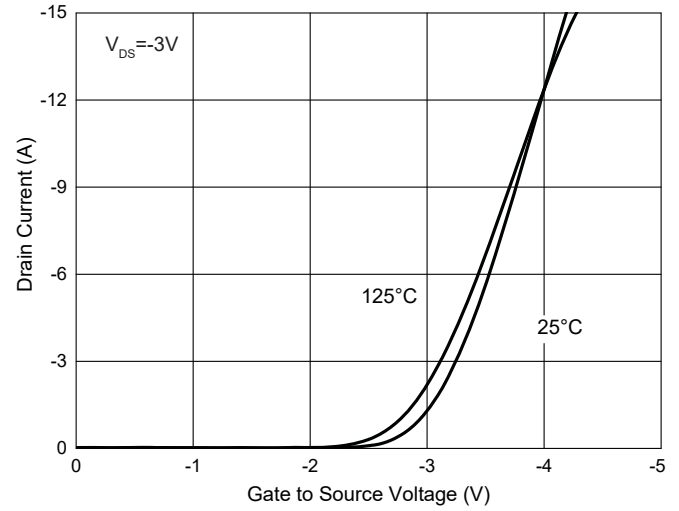


Fig.3- $R_{DS(ON)}-I_D$

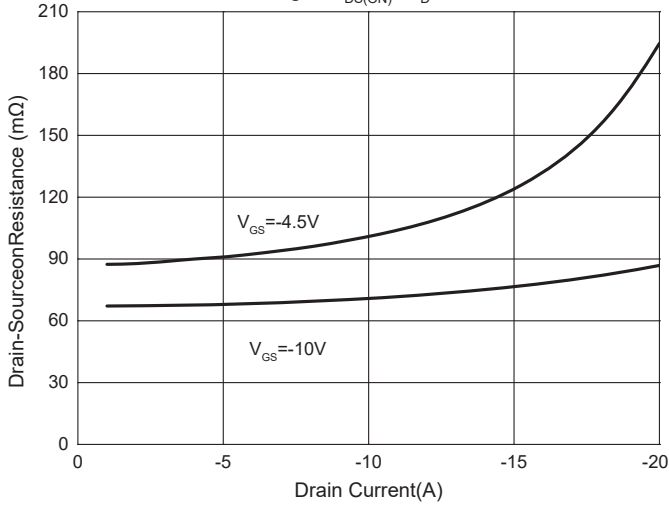


Fig. 4 -  $R_{DS(ON)}-V_{GS}$

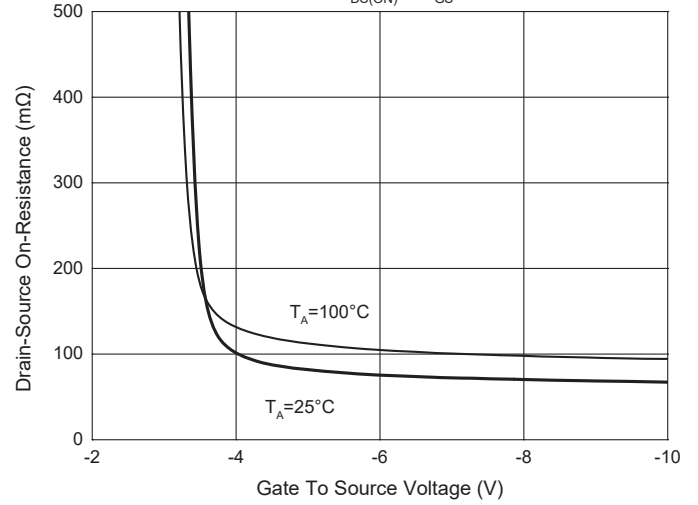


Fig.5-Normalized On Resistance Characteristics

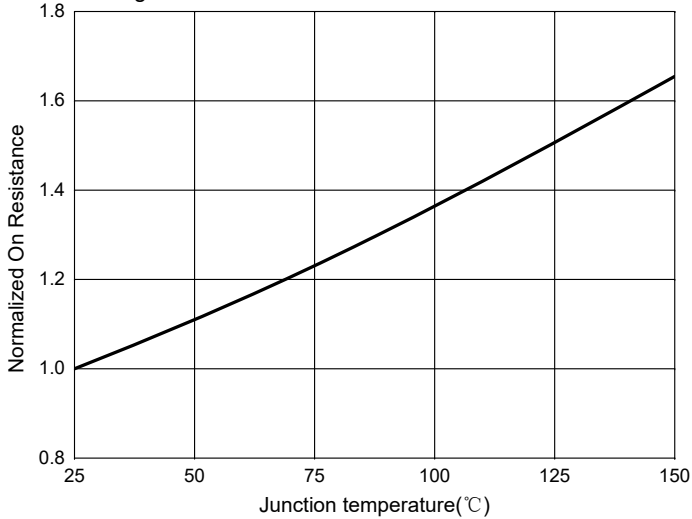
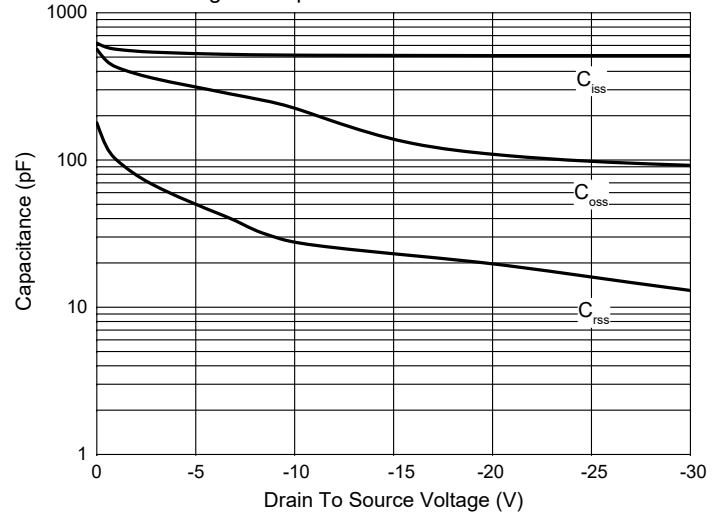


Fig. 6 - Capacitance Characteristics



Curve Characteristics

Fig. 7 - Safe Operation Area

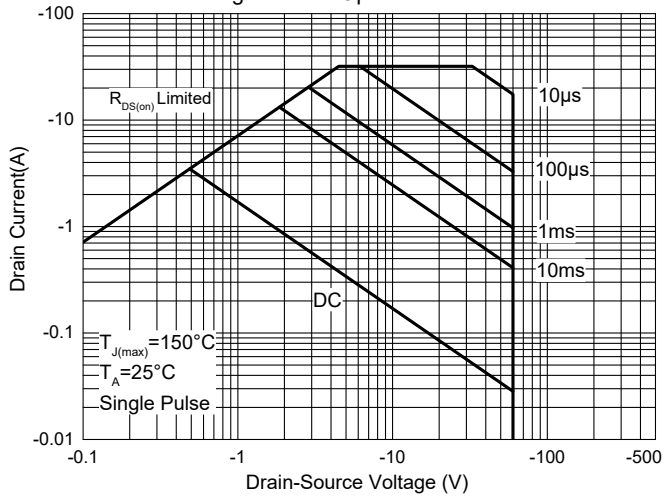
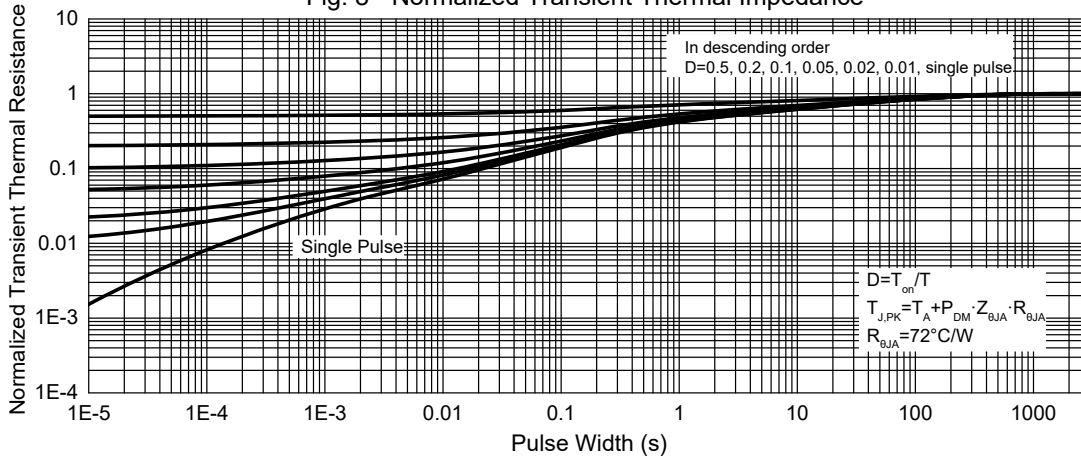


Fig. 8 - Normalized Transient Thermal Impedance



## Ordering Information

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

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