

**Features**

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

**Maximum Ratings**

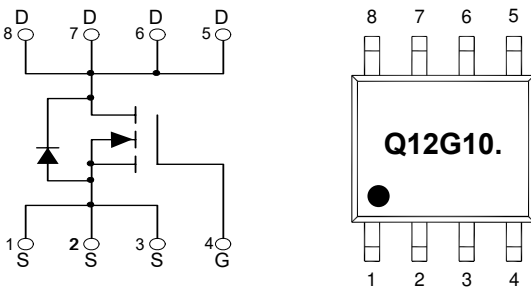
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 60°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain -source Voltage	$V_{DS}$	100	V
Gate -Source Voltage	$V_{GS}$	±20	V
Drain Current-Continuous	$I_D$	12	A
Drain Current-Pulse <sup>(Note 1)</sup>	$I_{DM}$	70	A
Power Dissipation <sup>(Note 2)</sup>	$P_D$	3.1	W

Notes :

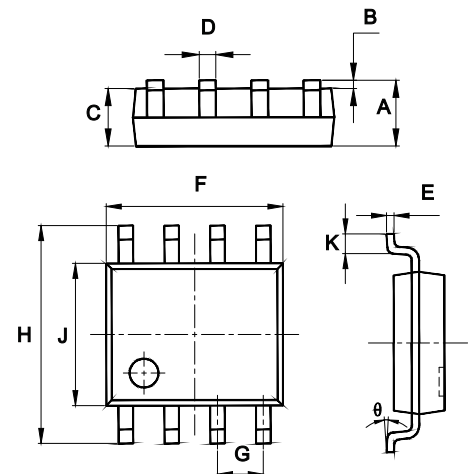
1. Pulse Width Limited By Junction Temperature.
2. Surface Mounted on 1"x1" FR4 Board,  $t \leq 10s$ .

**Internal Structure and Marking Code**



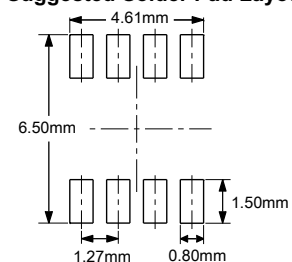
**N-Channel Power MOSFET**

**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	
$\theta$	0°	8°	0°	8°	

**Suggested Solder Pad Layout**



**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	2.8	4.0	V
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 100V, V_{GS} = 0V$			1	$\mu A$
Drain-Source On-Resistance <sup>(Note 3)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$		14.5	17	m $\Omega$
Diode Forward Voltage <sup>(Note 3)</sup>	$V_{SD}$	$V_{GS}=0V, I_S=12A$			1.3	V
Maximum Body-Diode Continuous Current	$I_S$				12	A
<b>Dynamic Characteristics<sup>(Note 4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		1135		pF
Output Capacitance	$C_{oss}$			399		
Reverse Transfer Capacitance	$C_{rss}$			18		
Gate Resistance	$R_g$	$V_{DS}=0V, V_{GS}=0V, f=1MHz$		1		$\Omega$
<b>Switching Characteristics<sup>(Note 4)</sup></b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=50V, R_{GEN}=2.2\Omega, I_D=10A$		39.2		ns
Turn-On Rise Time	$t_r$			11		
Turn-Off Delay Time	$t_{d(off)}$			53.2		
Turn-Off Fall Time	$t_f$			15.8		
Total Gate Charge(10V)	$Q_g$	$V_{GS}=10V, V_{DS}=50V, I_D=10A$		16		nC
Gate-Source Chage	$Q_{gs}$			5.6		
Gage-Drain Charge	$Q_{gd}$			2.4		
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F=10A, di/dt=100A/\mu s$		39.8		ns
Body Diode Reverse Recovery charge	$Q_{rr}$			42		nC

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

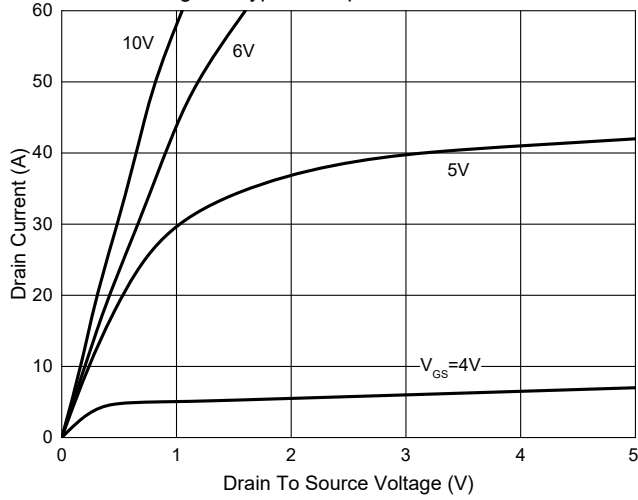


Fig. 2 - Transfer Characteristics

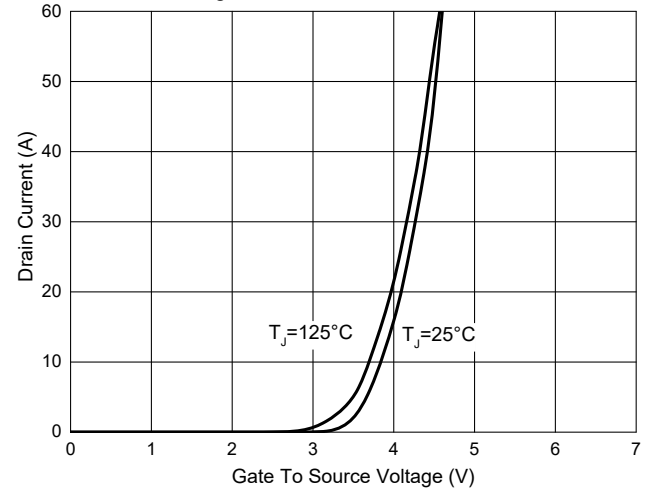


Fig. 3 -  $R_{DS(ON)} - V_{GS}$

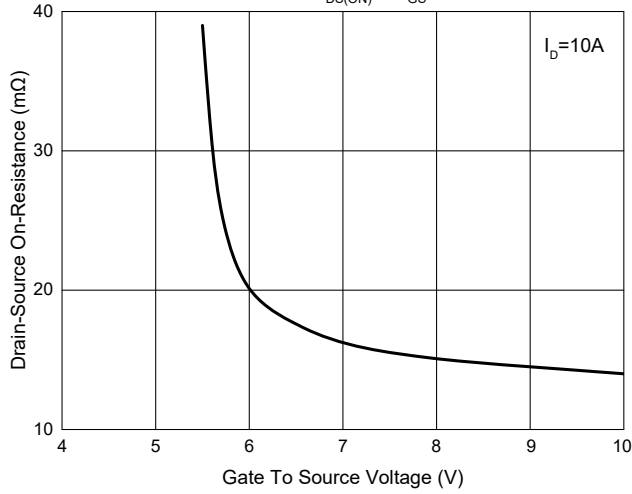


Fig. 4 - Drain-Source on Resistance

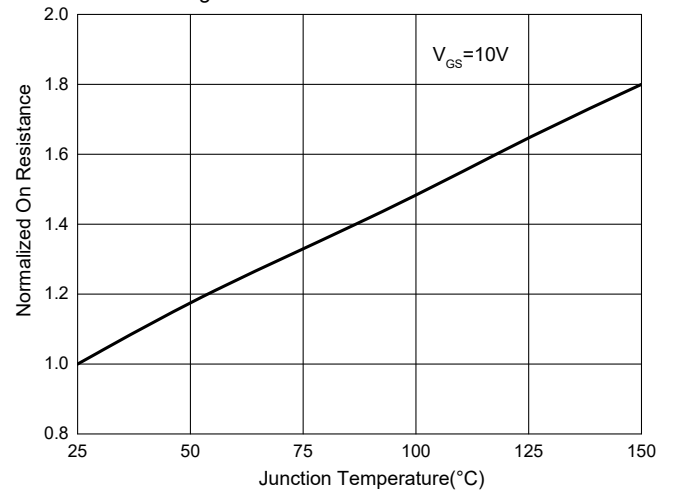


Fig. 5 - Capacitance Characteristics

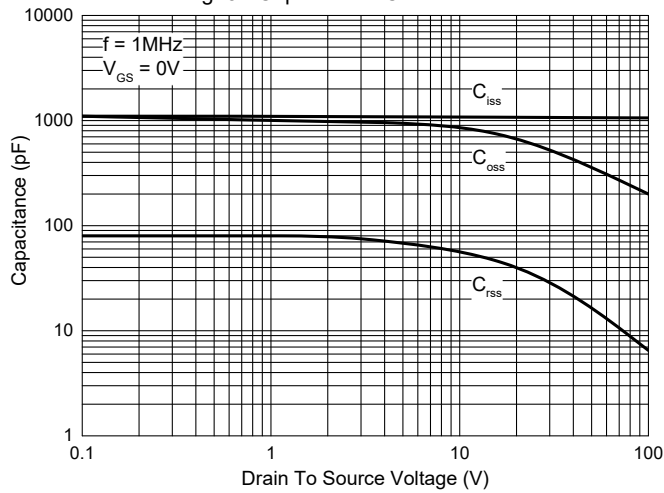
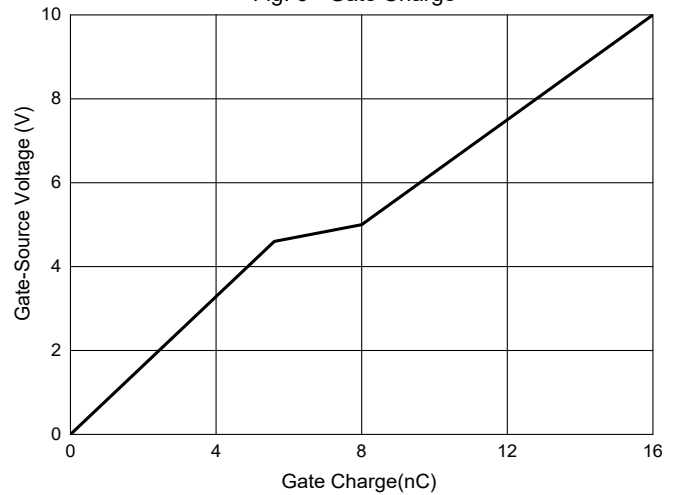


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

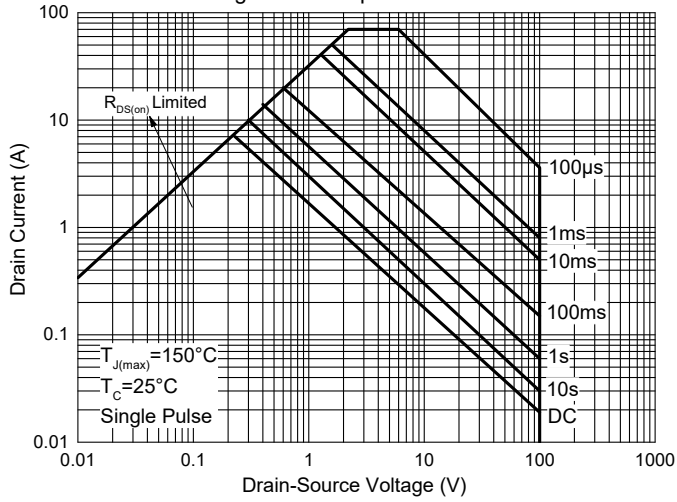
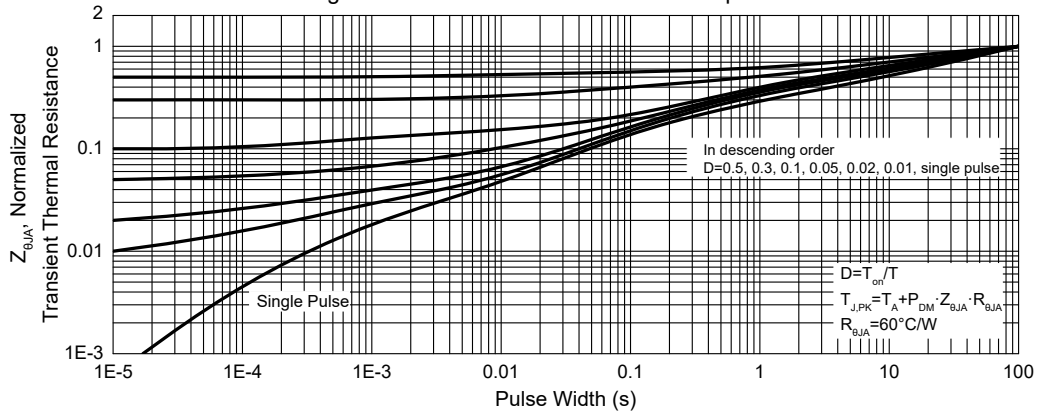


Fig. 8 - Normalized Transient Thermal Impedance



## Ordering Information

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

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