

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

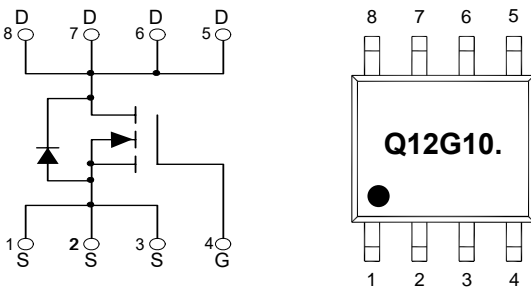
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 60°C/W Junction to Ambient

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 ^(Note 1)	I_{DM}	70	A
Power Dissipation ^(Note 2)	P_D	3.1	W

Notes :

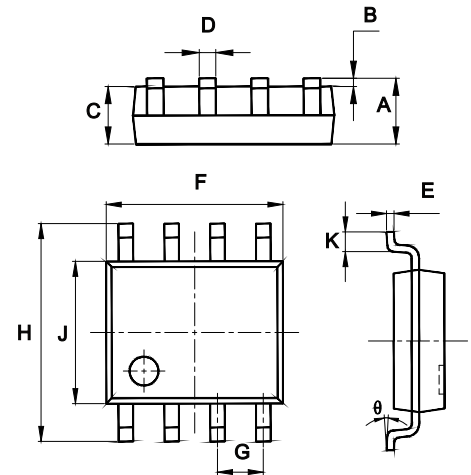
1. Pulse Width Limited By Junction Temperature.
2. Surface Mounted on 1"x1" FR4 Board, $t \leq 10s$.

Internal Structure and Marking Code



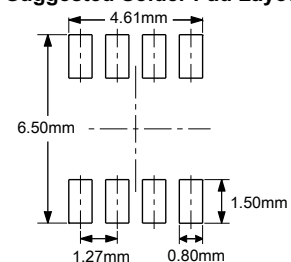
N-Channel Power MOSFET

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	
θ	0°	8°	0°	8°	

Suggested Solder Pad Layout



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	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}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Drain-Source On-Resistance ^(Note 3)	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$		14.5	17	m Ω
Diode Forward Voltage ^(Note 3)	V_{SD}	$V_{GS}=0V, I_S=12A$			1.3	V
Maximum Body-Diode Continuous Current	I_S				12	A
Dynamic Characteristics^(Note 4)						
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		Ω
Switching Characteristics^(Note 4)						
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 Charge	Q_{gs}			5.6		
Gate-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

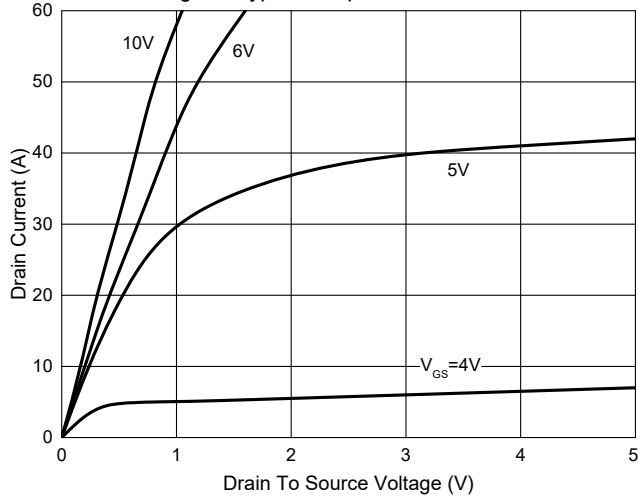


Fig. 2 - Transfer Characteristics

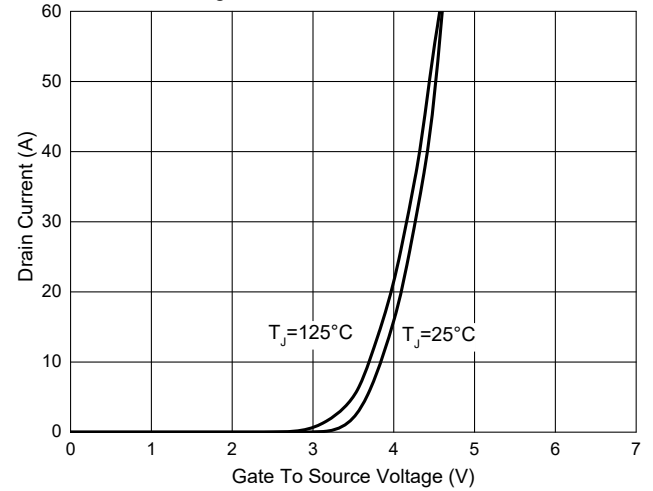


Fig. 3 - $R_{DS(ON)} - V_{GS}$

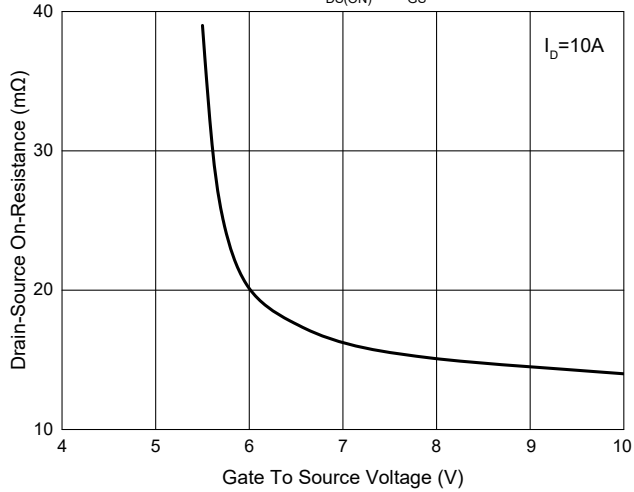


Fig. 4 - Drain-Source on Resistance

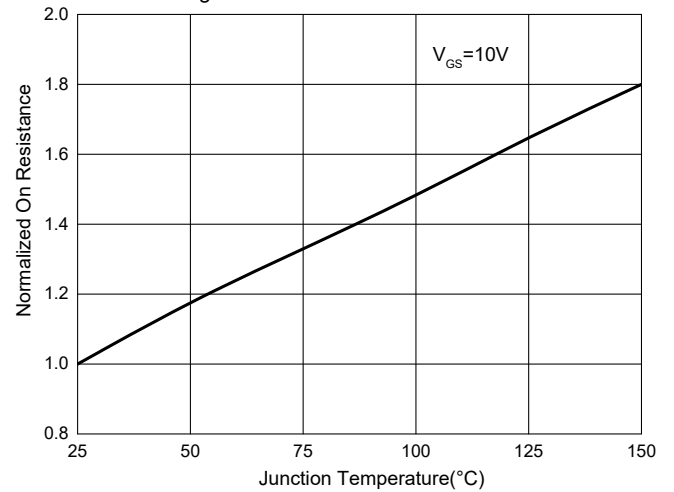


Fig. 5 - Capacitance Characteristics

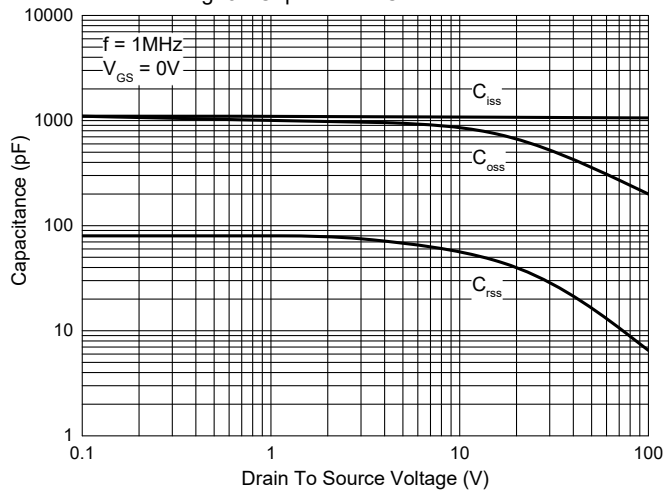
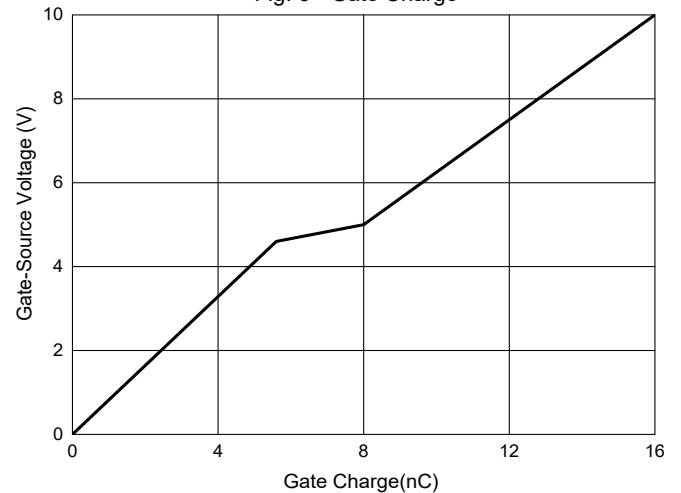


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

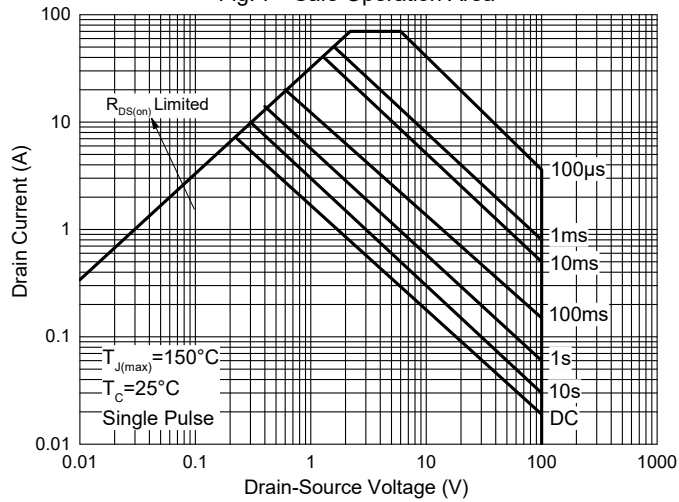
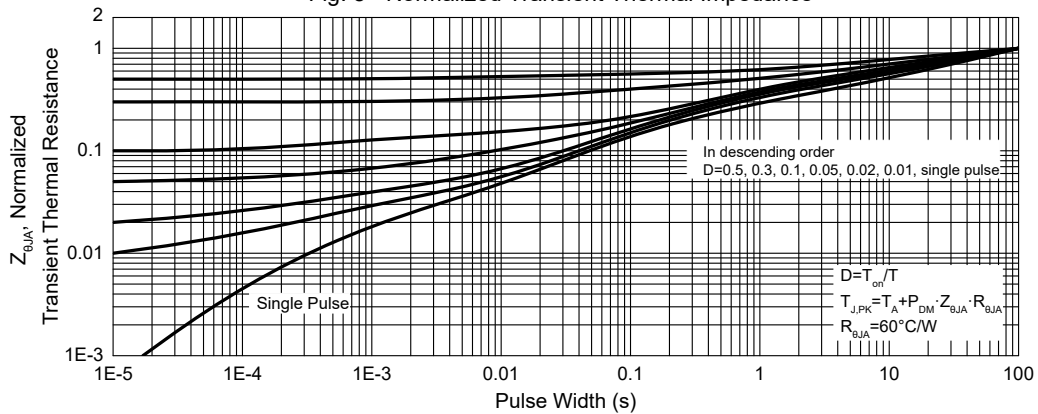


Fig. 8 - Normalized Transient Thermal Impedance



Ordering Information

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

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