

Features

- Advanced Trench MOSFET Process Technology
- 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)

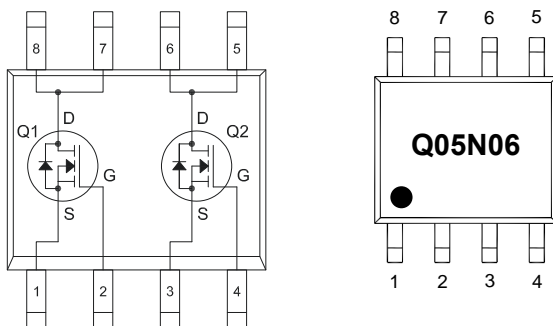
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 73.5°C/W Junction to Ambient(Notes2)

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V _{DS}	60	V
Gate -Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	I _D	5	A
Pulsed Drain Current(Notes3)	I _{DM}	30	A
Power Dissipation	P _D	1.7	W

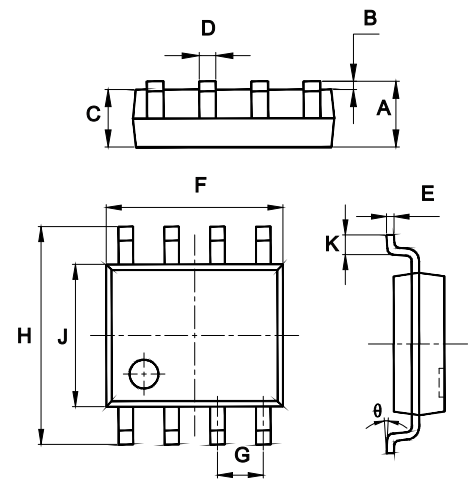
- Note:
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 2. The value of R_{θJA} is measured with the device mounted on 1 in2 FR-4 board with 2oz.
 3. Repetitive Rating: Pulse width limited by maximum junction temperature.

Internal Structure and Marking Code



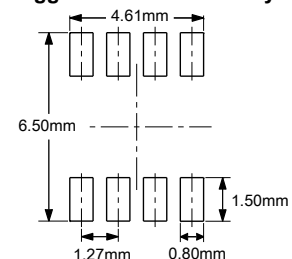
Dual N-Channel Power MOSFET

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 (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Threshold Voltage ^(Note4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		3.0	V
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Drain-Source On-Resistance ^(Note4)	$R_{DS(on)}$	$V_{GS}=10V, I_D=5A$		37	45	m Ω
Forward Transconductance ^(Note4)	g_{fs}	$V_{DS}=5V, I_D=4.5A$	11			S
Dynamic Characteristics^(Note5)						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$		500		pF
Output Capacitance	C_{oss}			60		
Reverse Transfer Capacitance	C_{rss}			25		
Switching Characteristics^(Note5)						
Total Gate Charge	Q_g	$V_{DS}=48V, V_{GS}=10V, I_D=15A$		12		nC
Gate-Source Charge	Q_{gs}			4.1		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, V_{GS}=10V, I_D=2A, R_G=3\Omega, R_L=6.7\Omega$		5.0		ns
Turn-on Rise Time	t_r			2.6		
Turn-off Delay Time	$t_{d(off)}$			16.1		
Turn-off Fall Time	t_f			2.3		
Drain-Source Diode Characteristics						
Diode Forward Voltage ^(Note4)	V_{SD}	$V_{GS}=0V, I_s=20A$			1.2	V
Diode Forward Current ^(Note3)	I_s				20	A
Reverse Recovery Time	t_{rr}	$I_F=20A, di/dt=100A/us$ ^(Note4)		35		nS
Reverse Recovery Charge	Q_{rr}				53	
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Note: 4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

5. Guaranteed by design, not subject to production.

Curve Characteristics

Fig. 1 - $R_{DS(ON)} - I_D$

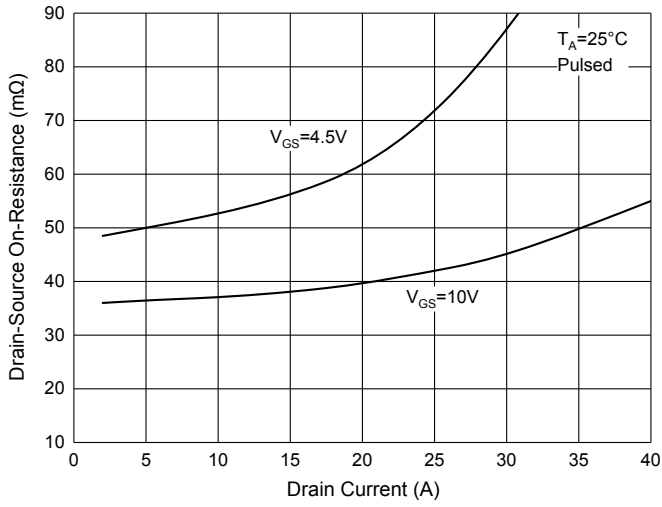


Fig. 2 - Gate Charge

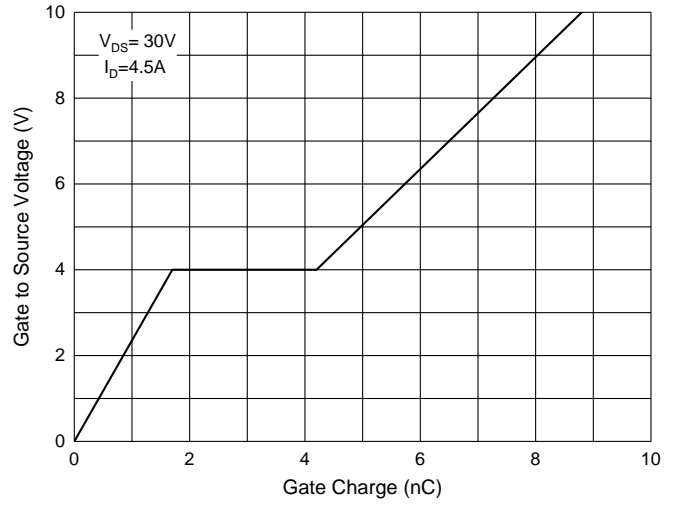


Fig. 3 - Capacitance Characteristics

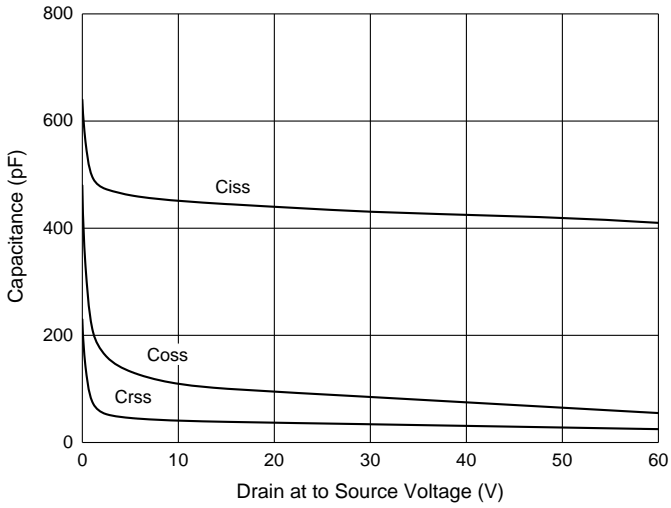
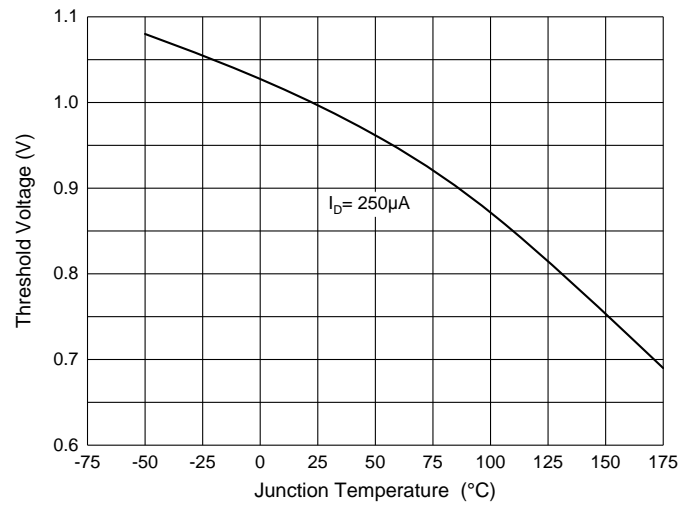


Fig. 4 - Threshold Voltage



Ordering Information

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

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