

Features

- Split gate trench MOSFET Technology
- High Density Cell Design for Low $R_{DS(ON)}$
- Low C_{rss}
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- 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: 40°C/W Junction to Ambient($t \leq 10s$)⁽¹⁾
- Thermal Resistance: 75°C/W Junction to Ambient(Steady-State)⁽¹⁾
- Thermal Resistance: 24°C/W Junction to Lead(Steady-State)

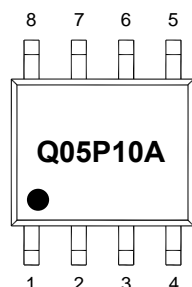
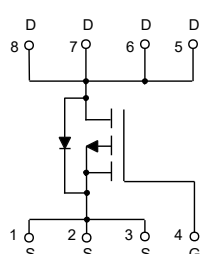
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	$T_C=25^\circ\text{C}$	A
		$T_C=85^\circ\text{C}$	
Pulsed Drain Current ⁽²⁾	I_{DM}	-18	A
Total Power Dissipation	P_D	3.1	W
Single Pulsed Avalanche Energy	E_{AS}	56	mJ

Note:

1. 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 $T_A=25^\circ\text{C}$. The value in any given application depends on the user's specific board design.

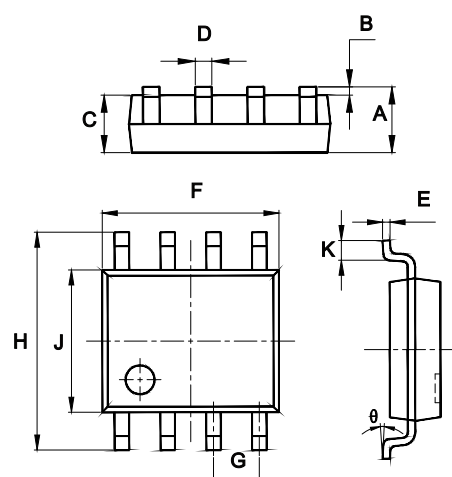
2. Repetitive rating; pulse width limited by max. junction temperature.

Internal Structure and Marking Code



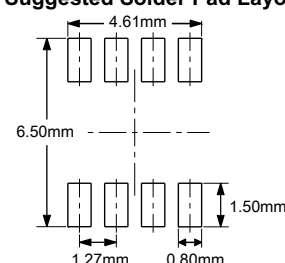
P-CHANNEL MOSFET

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
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-100			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-100V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.8	-2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-3A		83	110	mΩ
		V _{GS} =-4.5V, I _D =-2A		95	120	
Diode Characteristics						
Continuous Body Diode Current	I _S				-4.5	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-3A			-1.3	V
Reverse Recovery Time	t _{rr}	I _S =-5A, dI _F /dt=100A/μs		80		ns
Reverse Recovery Charge	Q _{rr}			140		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-50V, V _{GS} =0V, f=1MHz		1051		pF
Output Capacitance	C _{oss}			119		
Reverse Transfer Capacitance	C _{rss}			25		
Total Gate Charge	Q _g	V _{DS} =-50V, V _{GS} =10V, I _D =-5A		20		nC
Gate-Source Charge	Q _{gs}			3.9		
Gate-Drain Charge	Q _{gd}			4.3		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-50V, V _{GS} =-10V, R _{GEN} =6Ω, I _D =-5A		10		ns
Turn-On Rise Time	t _r			30		
Turn-Off Delay Time	t _{d(off)}			77		
Turn-Off Fall Time	t _f			81		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

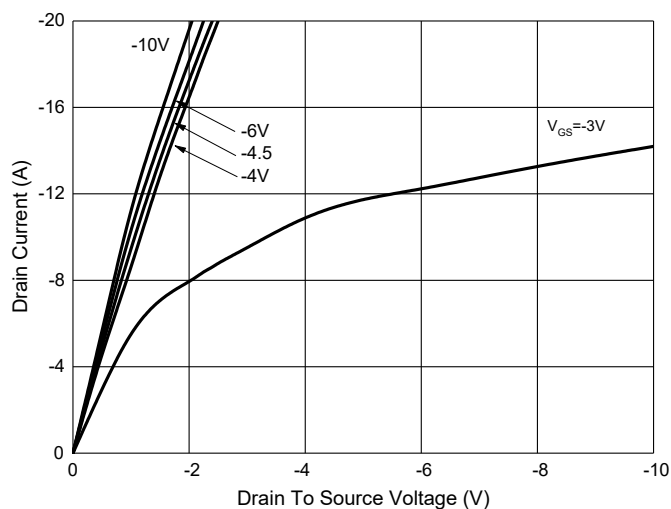


Fig. 2 - Transfer Characteristics

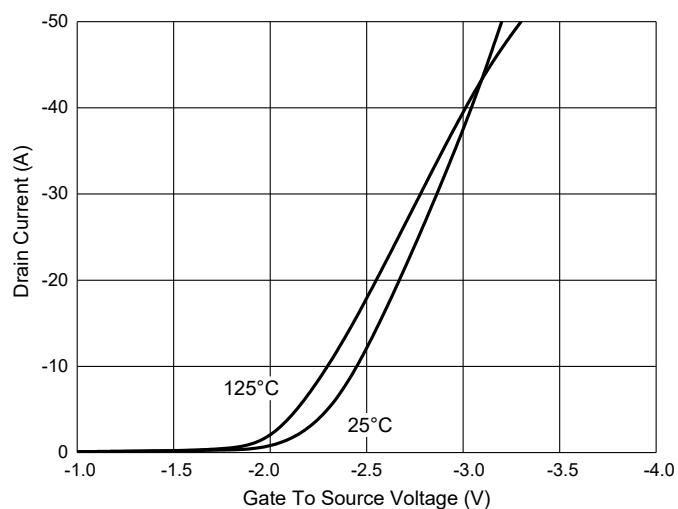


Fig. 3 - $R_{DS(ON)}$ — V_{GS}

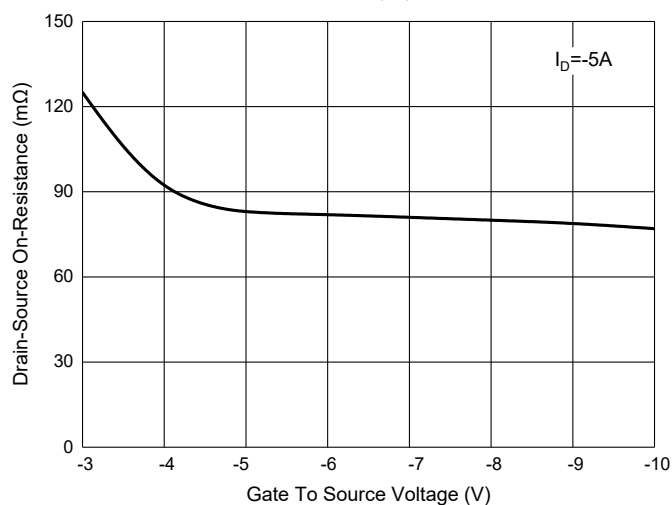


Fig. 4 - Normalized On Resistance Characteristics

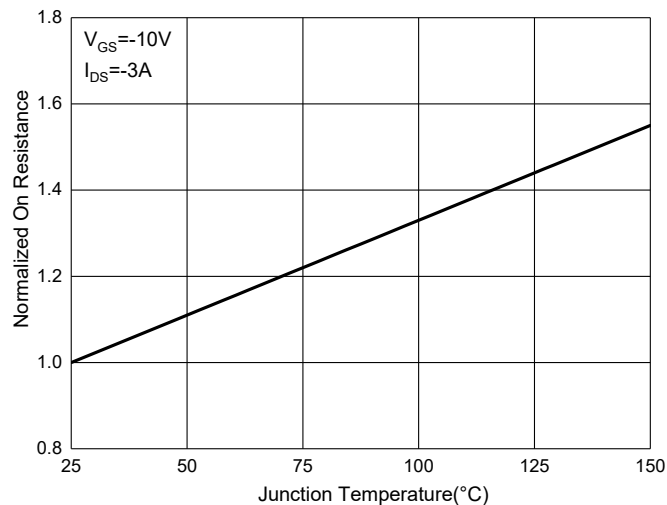


Fig. 5 - Capacitance Characteristics

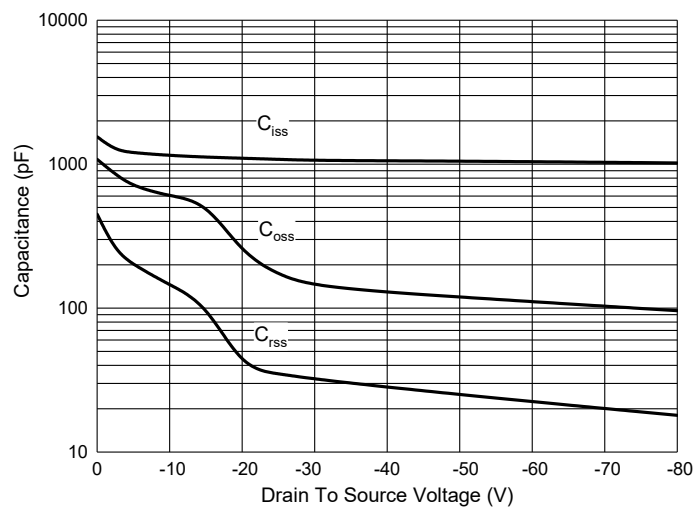
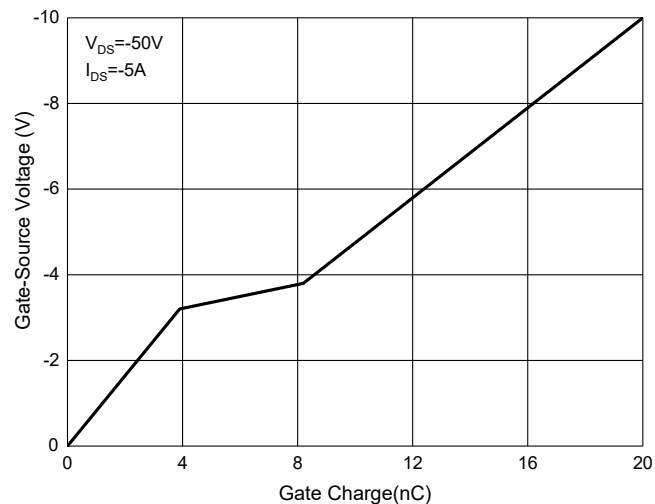


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area

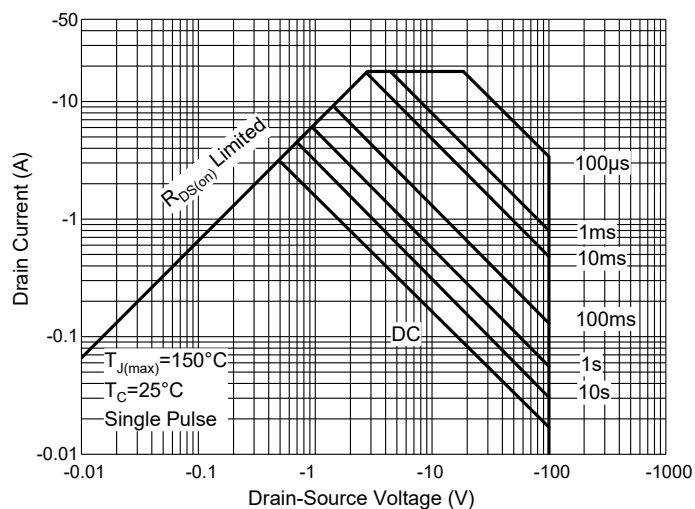
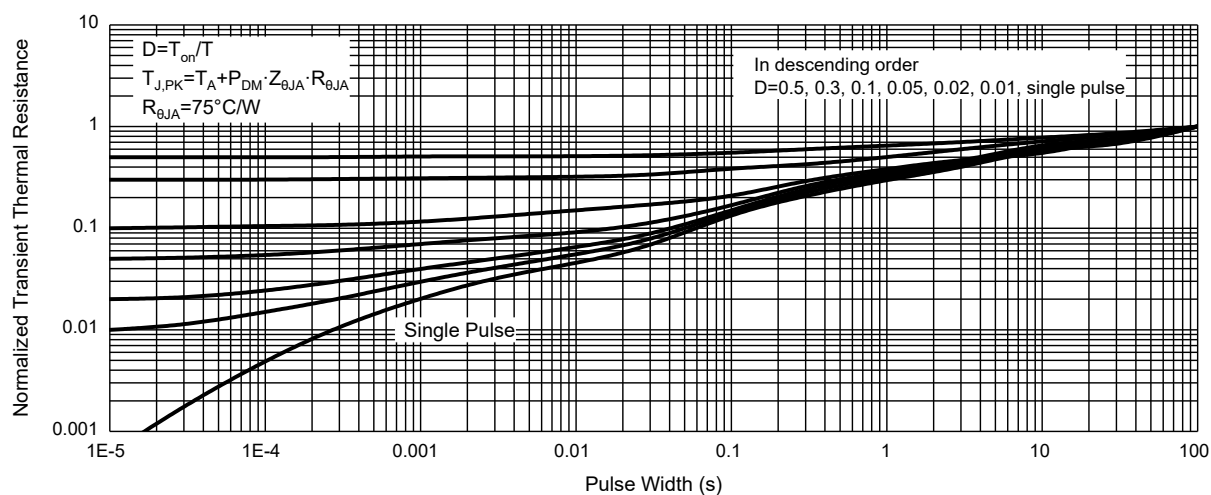


Fig. 8 - Normalized Maximum Transient Thermal Impedance



Ordering Information

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

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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