

Features

- Low $R_{DS(on)}$ and FOM
- Extremely Low Switching Loss
- Excellent Stability and Uniformity
- Fast Switching and Soft Recovery
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

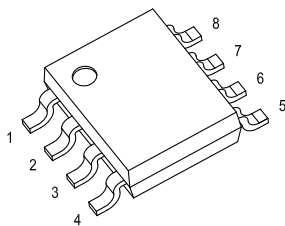
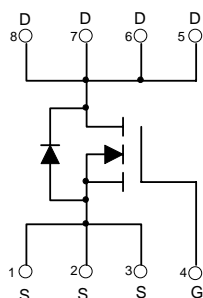
- Operating Junction Temperature Range : -55°C to $+150^{\circ}\text{C}$
- Storage Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Thermal Resistance: 31°C/W Junction to Ambient^(Note1)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ^(Note2)	I_D	15	A
Pulsed Drain Current ^(Note3)	I_{DM}	64	A
Total Power Dissipation ^(Note4)	P_D	4	W
		$T_C=25^{\circ}\text{C}$	
		$T_C=100^{\circ}\text{C}$	
Single Pulsed Avalanche Energy ^(Note5)	E_{AS}	130	mJ

Note:

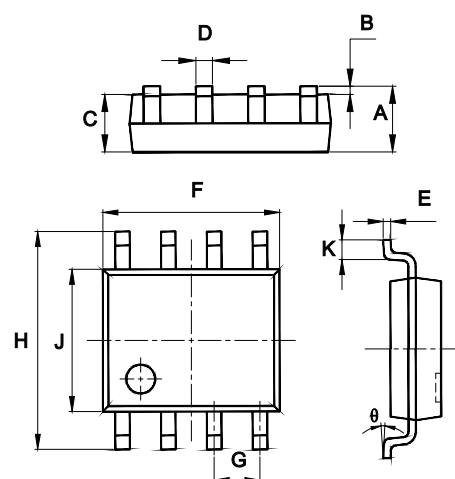
1. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}\text{C}$.
2. Calculated continuous current based on maximum allowable junction temperature.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-case thermal resistance.
5. $V_{DD}=50\text{V}$, $R_G=50\Omega$, $L=0.3\text{mH}$, starting $T_J=25^{\circ}\text{C}$.

Internal Structure:



N-Channel Enhancement Mode Field Effect Transistor

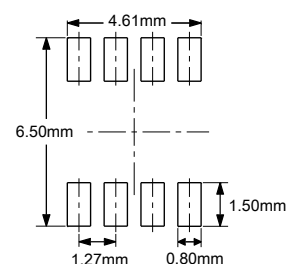
SOP-8



DIMENSIONS

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 BSC		1.270 BSC		
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	1.8	2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =12A		7.7	9.5	mΩ
		V _{GS} =4.5V, I _D =9A		9.2	12.5	
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =15A			1.3	V
Maximum Body-Diode Continuous Current	I _S				15	A
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V,f =1MHz		3530		pF
Output Capacitance	C _{oss}			560		
Reverse Transfer Capacitance	C _{rss}			9		
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} =50V,V _{GS} =10V,I _D =10A		60.7		nC
Gate-Source Charge	Q _{gs}			7.2		
Gate-Drain Charge	Q _{gd}			14.6		
Reverse Recovery Chrage	Q _{rr}	I _F =10A, di/dt=100A/μs		160		ns
Reverse Recovery Time	t _{rr}			67		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V,V _{DD} =50V,I _D =10A		22.5		
Turn-On Rise Time	t _r			8.6		
Turn-Off Delay Time	t _{d(off)}			66.6		
Turn-Off Fall Time	t _f			42.1		

Curve Characteristics

Fig. 1 - Output Characteristics

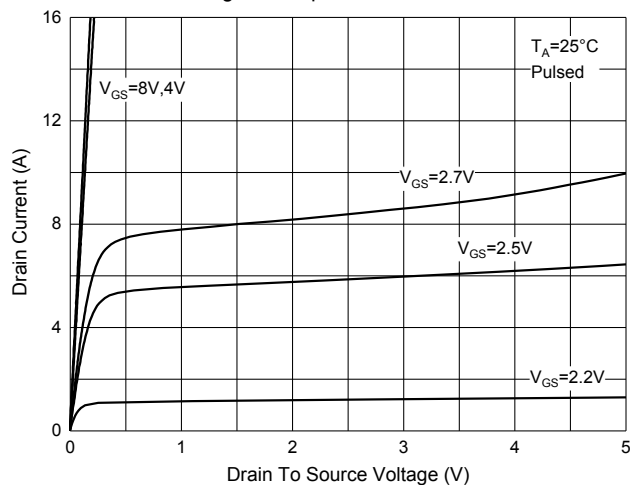


Fig. 2 - Transfer Characteristics

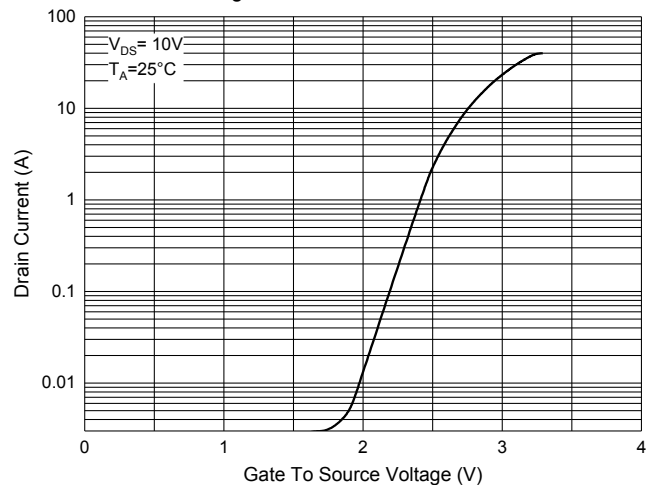


Fig. 3 - $R_{DS(ON)} - I_D$

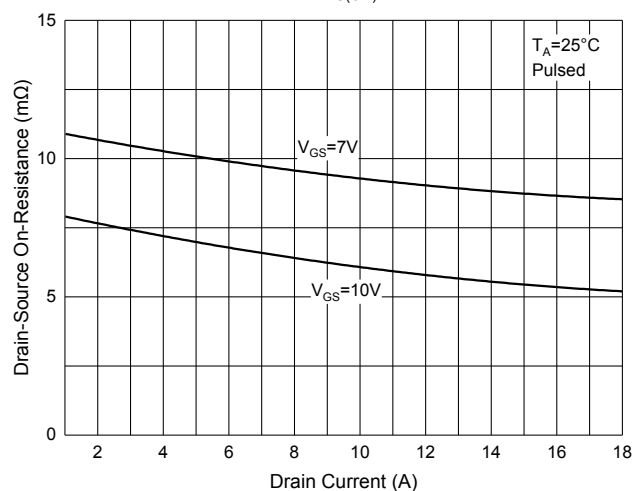


Fig. 4 - Gate charge

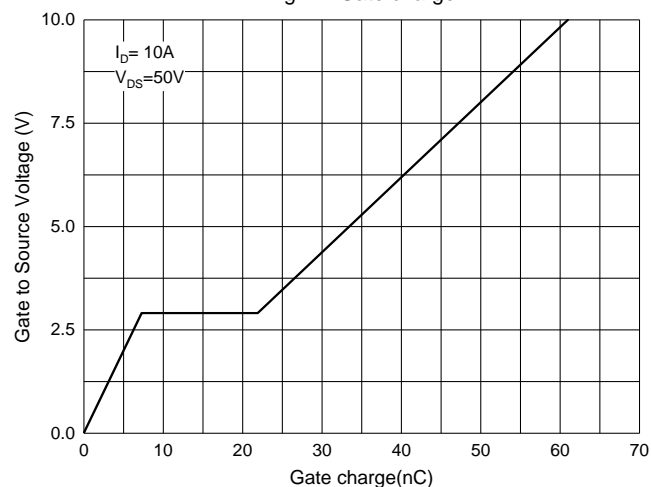


Fig. 5 - $I_S - V_{SD}$

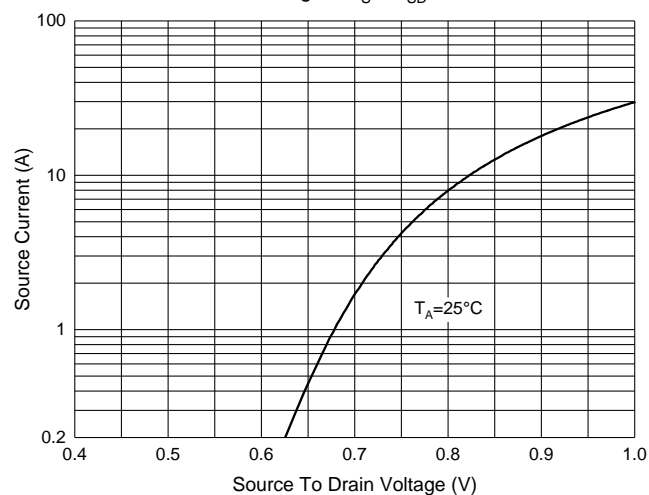
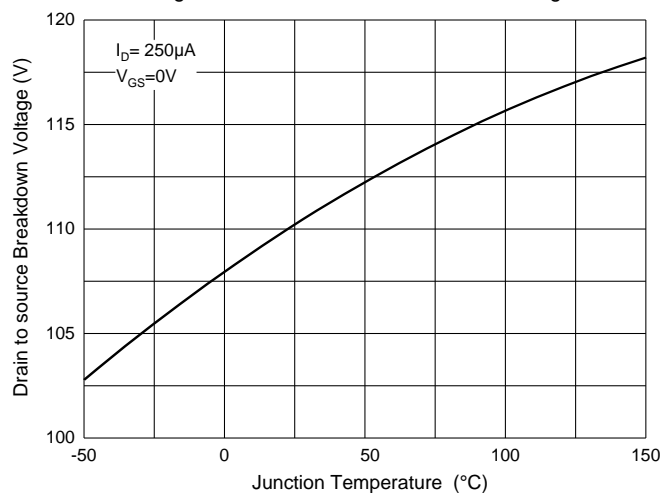


Fig. 6 - Drain to source Breakdown Voltage



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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