

Features

- Trench Power LV MOSFET Technology
- 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

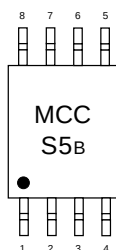
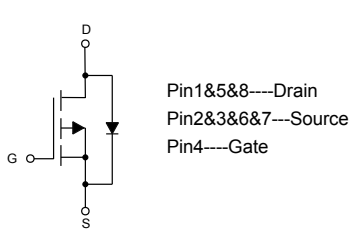
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 120°C/W Junction to Ambient^(Note 1)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-20	V
Gate-Source Voltage		V _{GS}	±8	V
Continuous Drain Current	T _A =25°C	I _D	-8.2	A
	T _A =70°C		-6.5	
Pulsed Drain Current ^(Note 2)		I _{DM}	-32	A
Total Power Dissipation ^(Note3)		P _D	1.04	W
Single Pulsed Avalanche Energy ^(Note 4)		E _{AS}	50	mJ

Note:

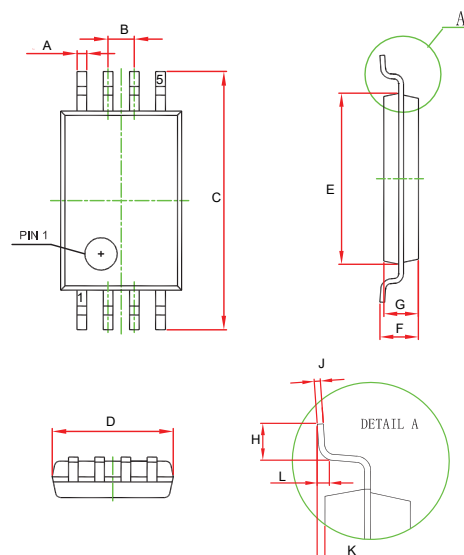
1. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$.
2. Repetitive rating; pulse width limited by max. junction temperature.
3. P_D is based on max. junction temperature, using junction-ambient thermal resistance.
4. $T_J=25^\circ\text{C}$, $V_{DD}=-15\text{V}$, $V_{GS}=-4.5\text{V}$, $R_G=25\Omega$, $L=0.5\text{mH}$.

Internal Structure and Marking Code



P-Channel MOSFET

TSSOP-8



Dimensions					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.007	.011	0.170	0.270	
B	0.026BSC.		0.650BSC.		
C	0.244	0.260	6.200	6.600	
D	0.112	0.120	2.850	3.050	
E	0.169	0.177	4.300	4.500	
F	0.039	0.047	1.000	1.200	
G	0.035	0.043	0.900	1.100	
H	0.016	0.031	0.400	0.800	
J	0.003	0.008	0.077	0.200	
K	0.001	0.007	0.020	0.180	
L	0.010TYP		0.250TYP.		

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 =-250μA	-20			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.55	-0.73	-0.9	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-4.2A		7	8.5	mΩ
		V _{GS} =-2.5V, I _D =-3.2A		9	11	
		V _{GS} =-1.8V, I _D =-2.2A		12	14	
Gate Resistance	R _G	f=1MHz, Open drain		6		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				-8.2	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-8.2A			-1.2	V
Reverse Recovery Time	t _{rr}	I _F =-4A, dI _F /dt=-100A/μs		93		ns
Reverse Recovery Charge	Q _{rr}			127		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz		5592		pF
Output Capacitance	C _{oss}			854		
Reverse Transfer Capacitance	C _{rss}			713		
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-8A		55		nC
Gate-Source Charge	Q _{gs}			7		
Gate-Drain Charge	Q _{gd}			14		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-10V, V _{GS} =-4.5V, R _G =2.5Ω, I _D =-4A		22		ns
Turn-On Rise Time	t _r			54		
Turn-Off Delay Time	t _{d(off)}			280		
Turn-Off Fall Time	t _f			150		

Curve Characteristics

Fig.1 - Typical Output Characteristics

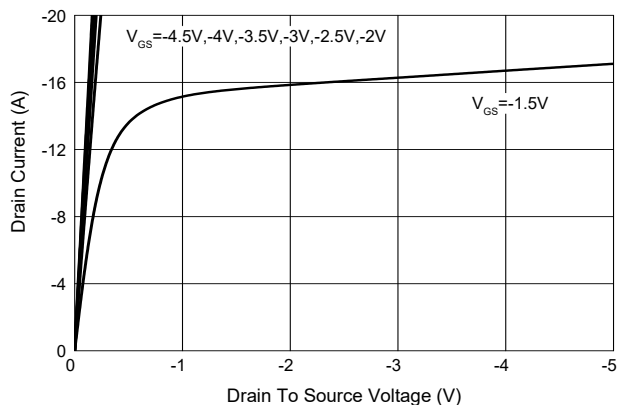


Fig.2 - Transfer Characteristic

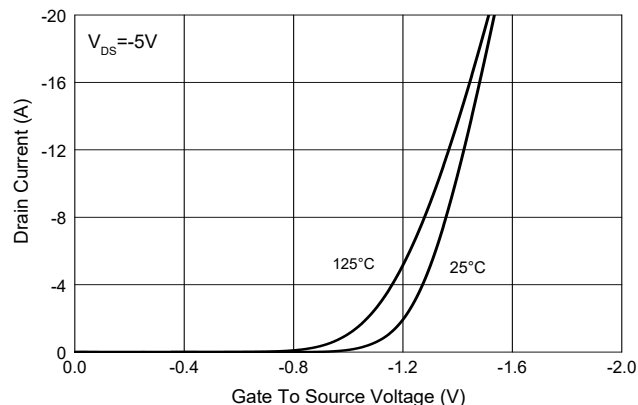


Fig.3 - $R_{DS(ON)}$ - V_{GS}

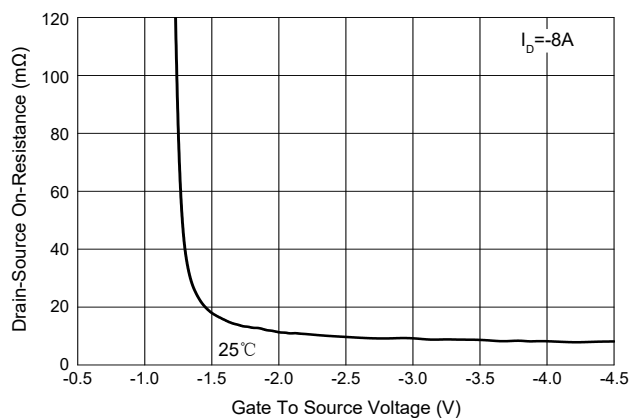


Fig.4 - $R_{DS(ON)}$ - I_D

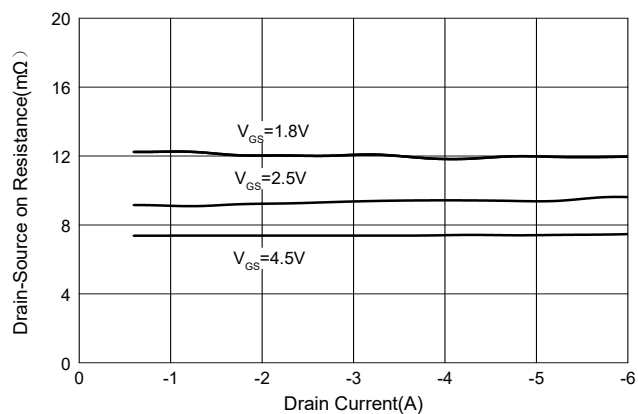


Fig.5 - Capacitance Characteristics

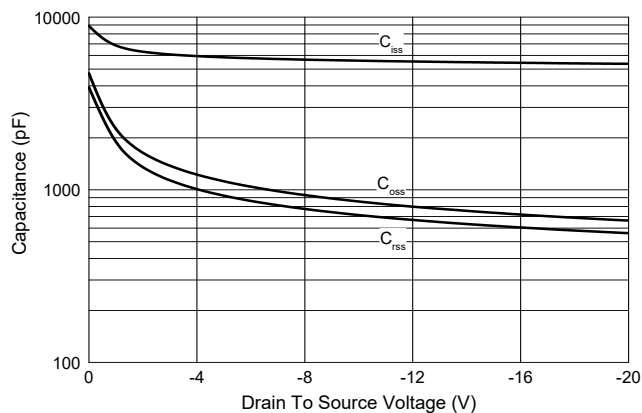
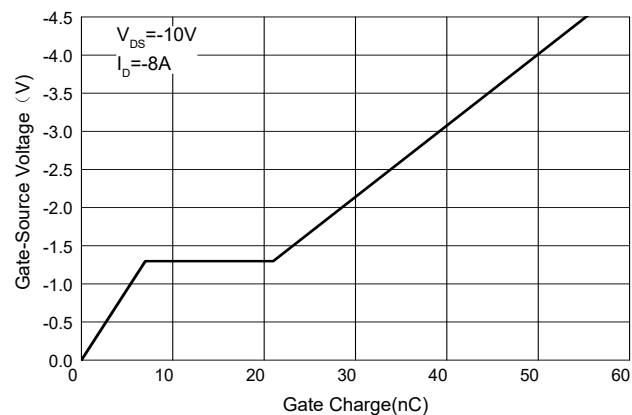


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

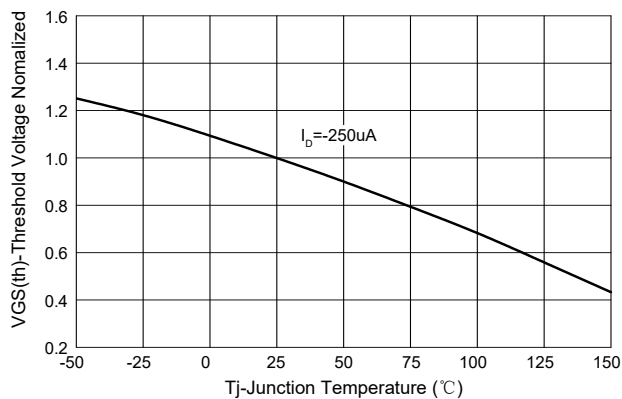


Fig.8 - Normalized On Resistance Characteristics

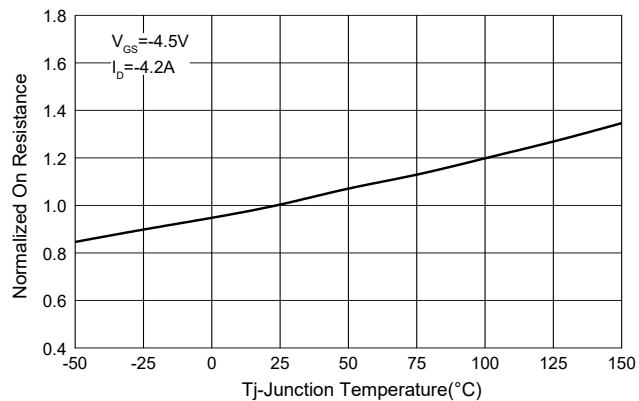


Fig.9 - $I_S - V_{SD}$

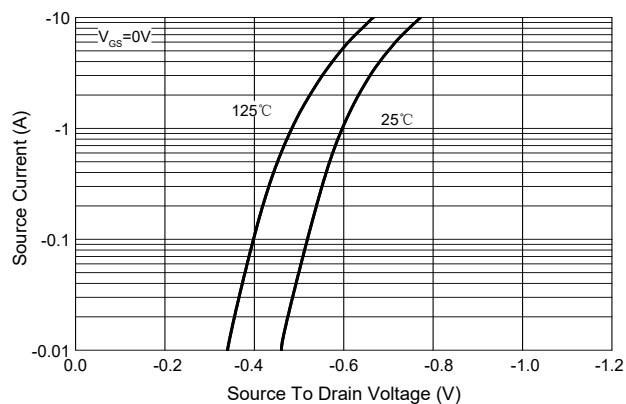


Fig.10 - Drain Current

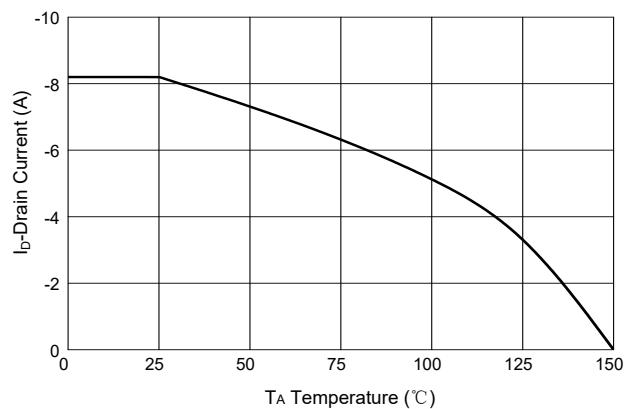
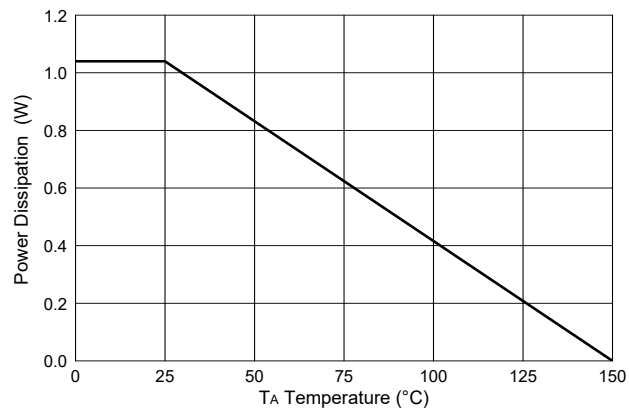


Fig.11 - PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

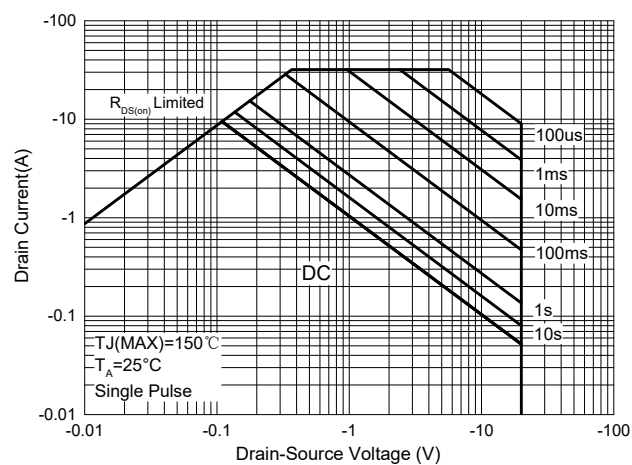
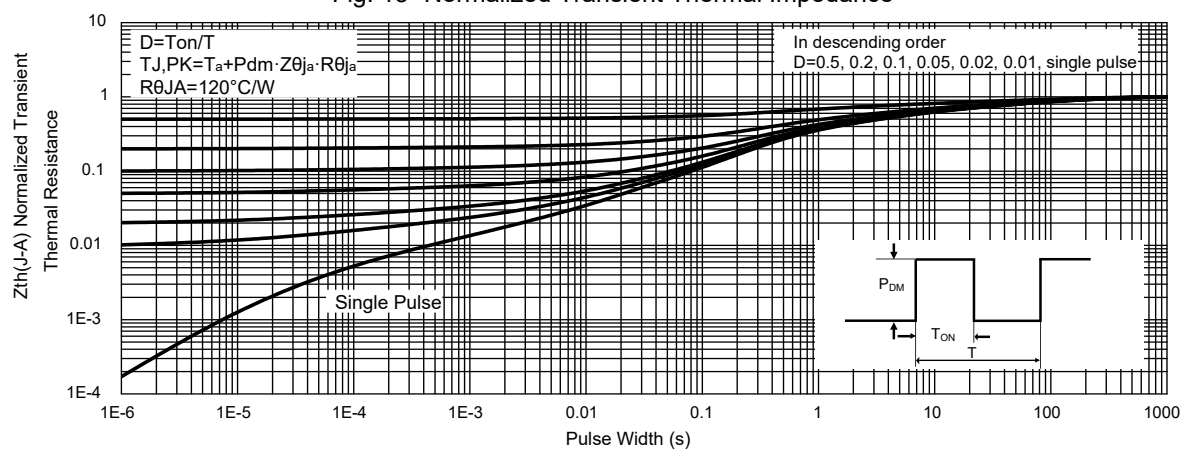


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:5Kpcs/Reel

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

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