Features

- High Density Cell Desihn for Ultra Low $R_{DS(on)}$
- Fully Characterized Avalanche Voltage and Current
- 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)

N-CHANNEL MOSFET

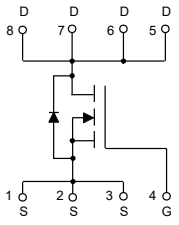
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 5°C/W Junction to Case(Note 1)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	30	A
	T_C=100°C		21	A
Pulsed Drain Current (Note 2)		I_{DM}	60	A
Single Pulse Avalanche Energy (Note 3)		E_{AS}	70	mJ
Total Power Dissipation		P_D	25	W

Note:
1.Surface Mounted on FR4 Board, t≤10 sec.
2.Pulse Width Limited by Maximum Junction Temperature.
3.EAS Condition:T_J=25°C,V_{DD}=15V,V_G=10V,L=0.1mH,R_g=25Ω.

Internal Structure



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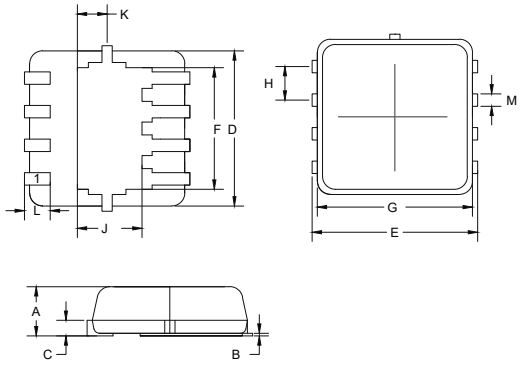


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.028	0.035	0.70	0.90	
B	0.000	0.002	0.00	0.05	
C	0.004	0.010	0.10	0.25	
D	0.118		3.00		TYP.
E	0.126		3.20		TYP.
F	0.093		2.35		TYP.
G	0.118		3.00		TYP.
H	0.026		0.65		TYP.
J	0.069		1.75		TYP.
K	0.023		0.575		TYP.
L	0.012	0.020	0.30	0.50	
M	0.009	0.014	0.24	0.35	

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	30	33		V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	μA
Gate-Threshold Voltage(Note 4)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1	1.5	2.3	V
Drain-Source On-Resistance(Note 4)	$R_{DS(on)}$	V_{GS}=10V, I_D=10A		6.3	9	mΩ
		V_{GS}=4.5V, I_D=10A		9.2	13	
Forward Tranconductance(Note 4)	g_{FS}	V_{DS}=5V, I_D=20A	15			S
Dynamic Characteristics(Note 5)						
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V,f=1MHz		1490		pF
Output Capacitance	C_{oss}			220		
Reverse Transfer Capacitance	C_{rss}			135		
Total Gate Charge	Q_g	V_{DS}=15V,V_{GS}=10V,I_D=9A		15		nC
Gate-Source Charge	Q_{gs}			3		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=15V,I_D=10A V_{GS}=10V,R_{GEN}=1.8Ω		10		ns
Turn-On Rise Time	t_r			8		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	t_f			5		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S				25	A
Body Diode Voltage	V_{SD}	I_{SD}=10A, V_{GS}=0V		0.85	1.2	V
Reverse Recovery Time	t_{rr}	T_J=25°C, I_F=10A,di/dt=100A/μs		22	35	ns
Reverse Recovery Charge	Q_{rr}			12	20	nC
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≤300μs, Duty Cycle ≤2%.

5. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

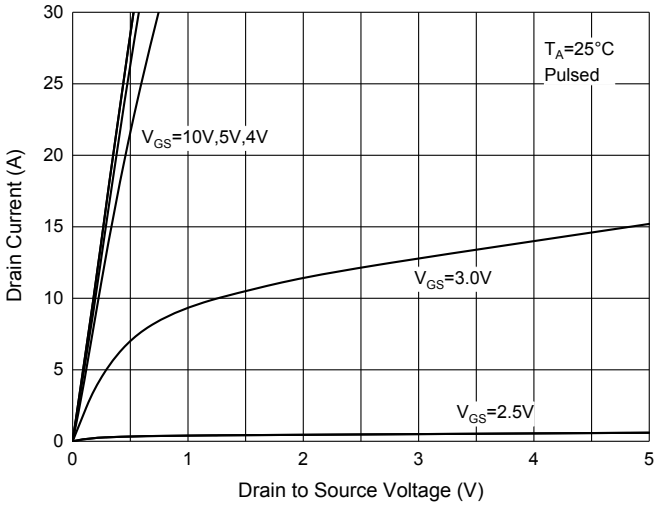


Fig. 2 - Transfer Characteristics

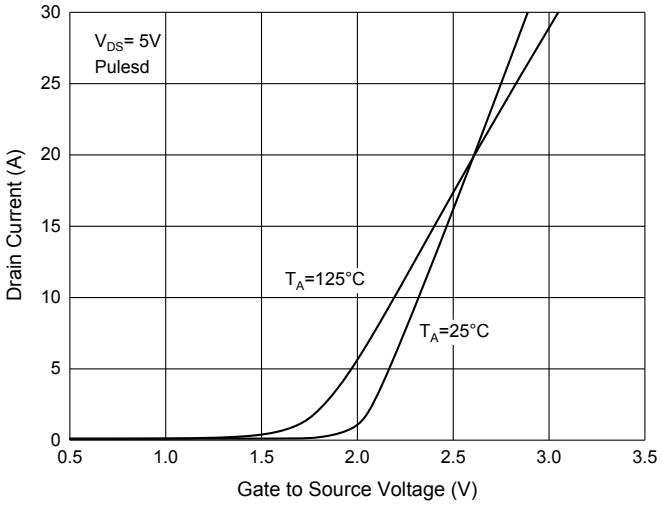


Fig. 3 - $R_{DS(ON)}$—I_D

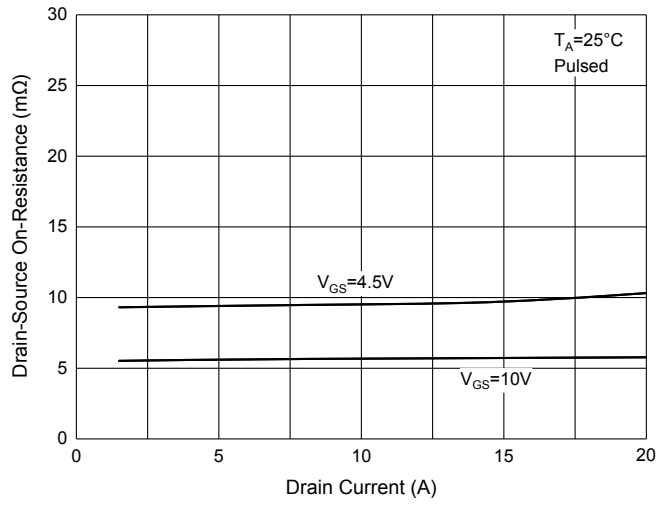


Fig. 4 - I_S—V_{SD}

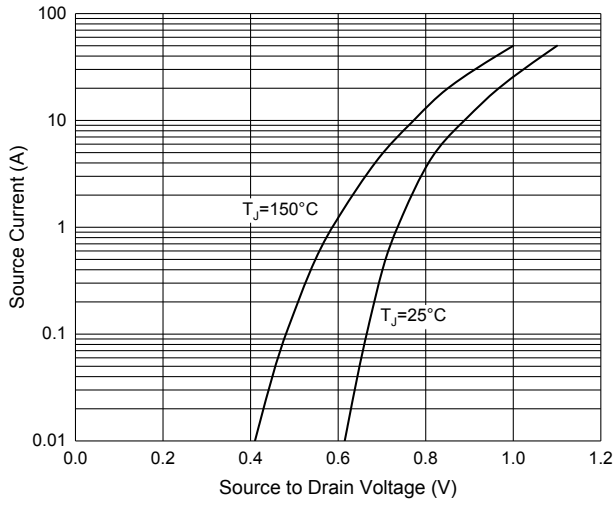


Fig. 5 - $R_{DS(ON)}$—Temperature

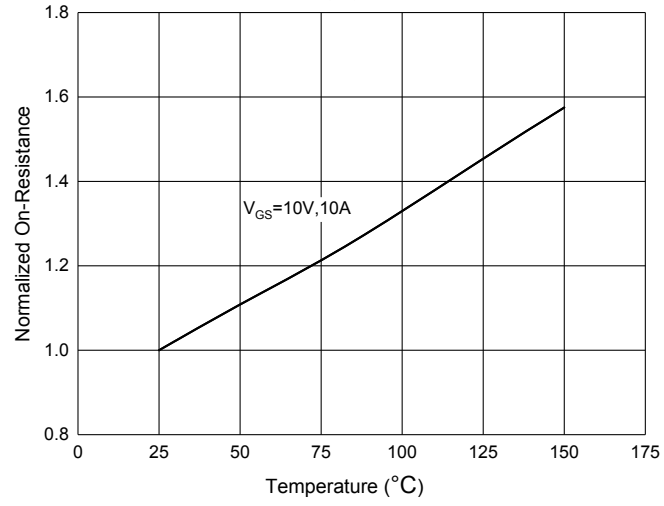
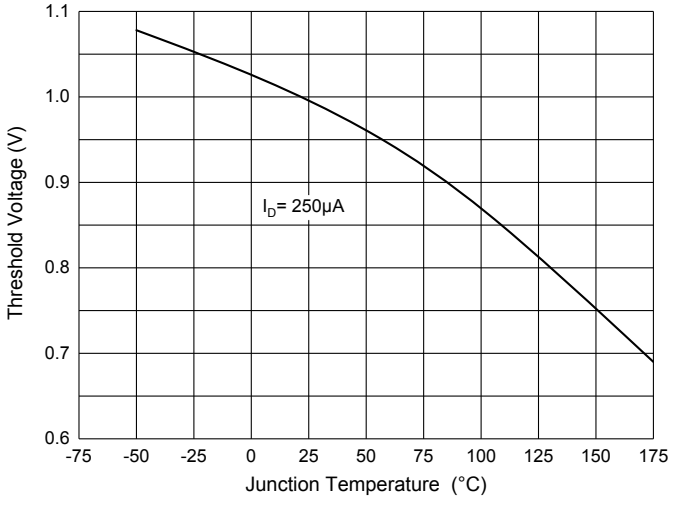


Fig. 6 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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