

Features

- High Density Cell Design 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)

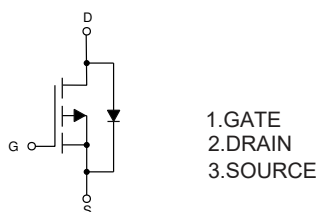
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 100°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	-40	V
Gate -Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	-40	A
Drain Current-Pulsed	I_{DM}	-160	A
Single Pulsed Avalanche Energy ^(Note1)	E_{AS}	544	mJ
Power Dissipation	P_D	1.25	W

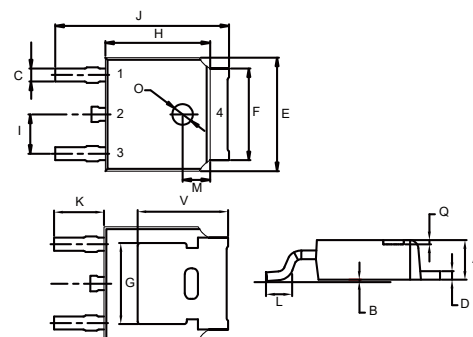
Note: 1. E_{AS} condition: $V_{DD} = -20V$, $L = 1mH$, $R_G = 25\Omega$, Starting $T_J = 25^\circ C$

Internal Structure



P-Channel MOSFET

DPAK



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		TYP.
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		TYP.
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		TYP.
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		TYP.

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	-40			V
Gate-Threshold Voltage ^(Note2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.5	-1.85	-3.0	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =± 20V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V, V _{GS} =0V			-1	μA
Drain-Source On-Resistance ^(Note2)	R _{DS(on)}	V _{GS} =-10V, I _D =-12A		12	14	mΩ
Forward Transconductance ^(Note2)	g _{FS}	V _{DS} =-5V, I _D =-12A	34			S
Dynamic Characteristics ^(Note3)						
Input Capacitance	C _{iss}	V _{DS} =-20V,V _{GS} =0V, f=1MHz		2960		pF
Output Capacitance	C _{oss}			370		
Reverse Transfer Capacitance	C _{rss}			310		
Switching Characteristics ^(Note3)						
Total Gate Charge	Q _g	V _{DS} =-20V,V _{GS} =-10V,I _D =-12A		72		Nc
Gate-Source Charge	Q _{gs}			14		
Gate-Drain Charge	Q _{gd}			15		
Turn-on Delay Time	t _{d(on)}	V _{DD} =-20V,V _{GS} =-10V,R _G =3Ω, I _D =-20A		10		ns
Turn-on Rise Time	t _r			18		
Turn-off Delay Time	t _{d(off)}			38		
Turn-off Fall Time	t _f			24		
Drain-Source Diode Characteristics						
Drain-Source Diode Forward Voltage ^(Note 2)	V _{SD}	V _{GS} =0V,I _S =-20A			-1.2	V
Continuous Drain-Source Diode Forward Current ^(Note 4)	I _S				-40	A
Pulsed Drain-Source Diode Forward Current	I _{SM}				-160	A

Notes:

1. EAS Condition: $V_{DD}=-20V, L=1mH, R_G=25\Omega$, Starting $T_J = 25^\circ C$
2. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
3. Guaranteed by Design, Not Subject to Production.
4. Surface Mounted on FR4 Board, $t \leq 10$ sec.

Curve Characteristics

Fig. 1 - Output Characteristics

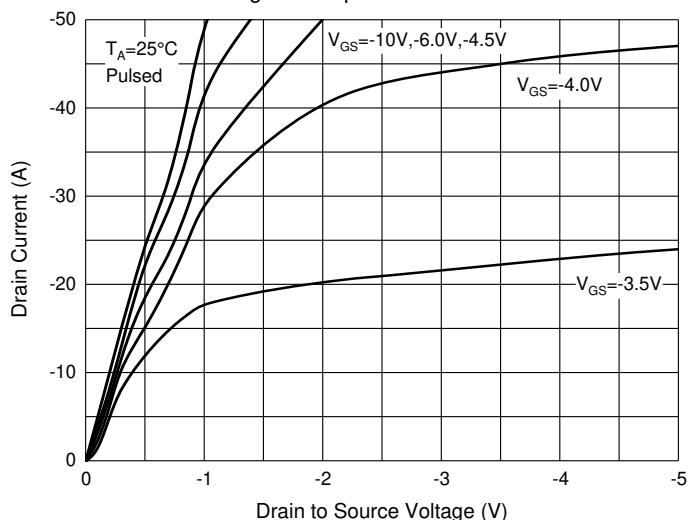


Fig. 2 - Transfer Characteristics

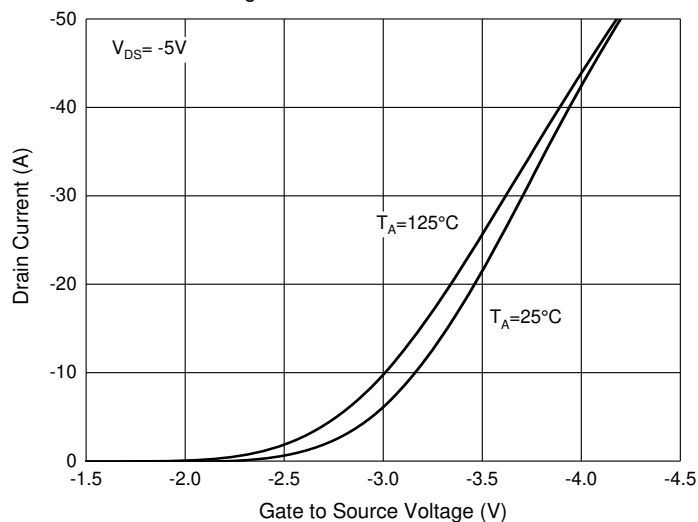


Fig. 3 - $R_{DS(ON)} - I_D$

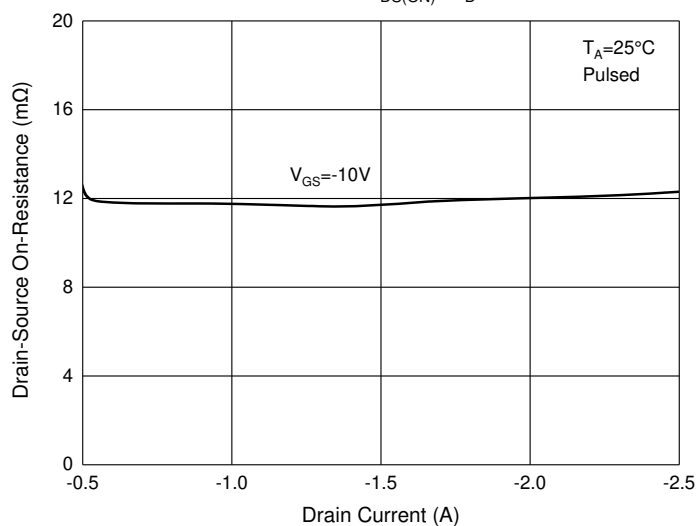


Fig. 4 - $R_{DS(ON)} - V_{GS}$

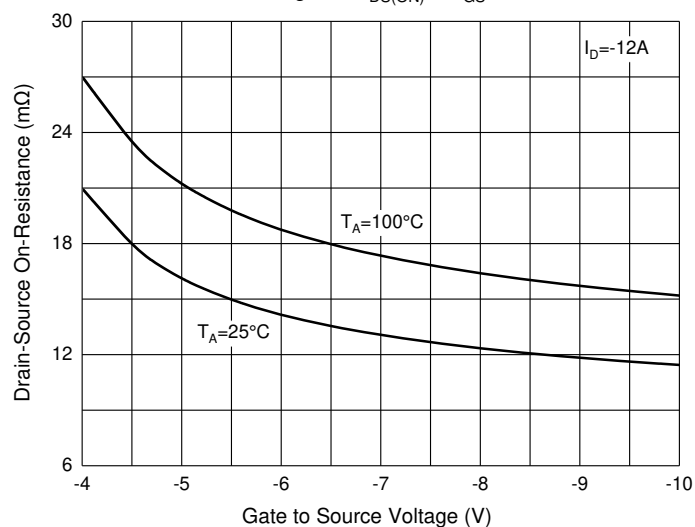


Fig. 5 - $I_S - V_{SD}$

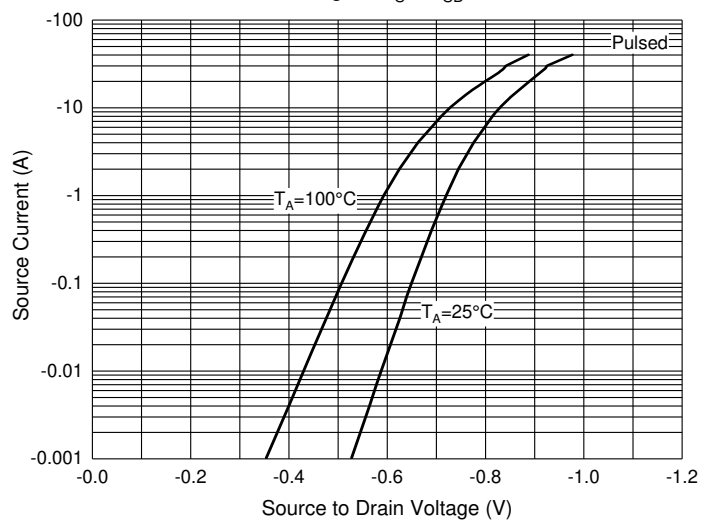
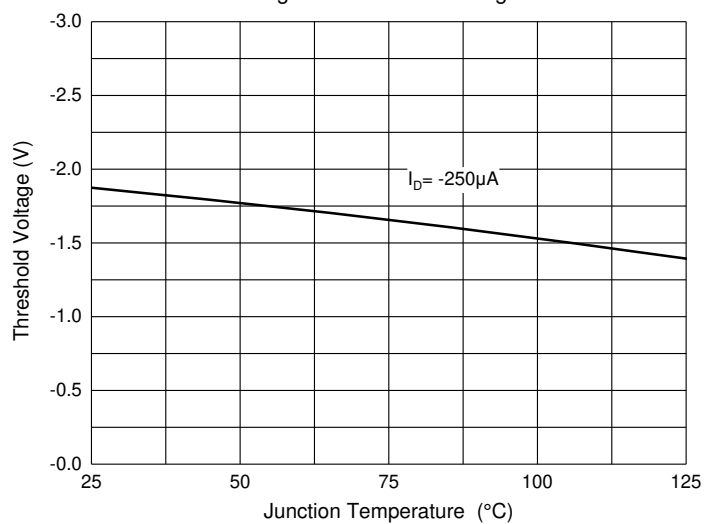


Fig. 6 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:2.5Kpcs/Reel

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

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