

Features

- High Density Cell Desihn for Ultra Low $R_{DS(on)}$
- Fully Characterized Avalanche Voltage and Current
- Good Stability and Uniformity with High E_{AS}
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

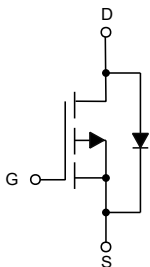
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 0.847°C/W Junction to Case^(Note 1)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	-60	V	
Gate-Source Voltlage	V_{GS}	±20	V	
Continuous Drain Current	I_D	$T_C=25^\circ C$	-60	A
		$T_C=100^\circ C$	-42.3	A
Pulsed Drain Current	I_{DM}	-260	A	
Single Pulse Avalanche Energy ^(Note 2)	E_{AS}	722	mJ	
Total Power Dissipation	P_D	177	W	

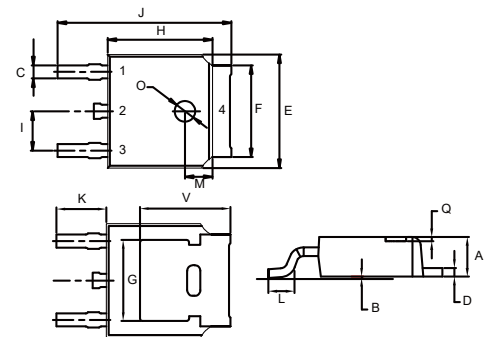
Note: 1.Surface Mounted on FR4 Board, $t \leq 10$ sec.
2. $T_J=25^\circ C, V_{DD}=-30V, V_G=-10V, L=0.5mH, R_g=25\Omega$.

Internal Structure



**P-CHANNEL
MOSFET**

DPAK(TO-252)



- 1. Gate
- 2,4. Drain
- 3. Source

DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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 @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 3)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-2	-2.6	-3.5	V
Drain-Source On-Resistance ^(Note 3)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-20A$		13	18	m Ω
Forward Transconductance ^(Note 3)	g_{FS}	$V_{DS}=-5V, I_D=-20A$		25		S
Dynamic Characteristics^(Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		5814		pF
Output Capacitance	C_{oss}			483		
Reverse Transfer Capacitance	C_{rss}			234		
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-10V, I_D=-20A$		75		nC
Gate-Source Charge	Q_{gs}			16		
Gate-Drain Charge	Q_{gd}			19		
Reverse Recovery Charge	Q_{rr}	$I_S=-20A, di/dt=-100A/\mu s$		71		
Reverse Recovery Time	t_{rr}			49		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-30V, R_L=1.5\Omega,$ $V_{GS}=-10V, R_G=3\Omega$		18		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			55		
Turn-Off Fall Time	t_f			35		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	$T_C=25^\circ C$			-60	A
Body Diode Voltage	V_{SD}	$I_{SD}=-20A, V_{GS}=0V$			-1.2	V

 Note 3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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

Curve Characteristics

Fig. 1 - Output Characteristics

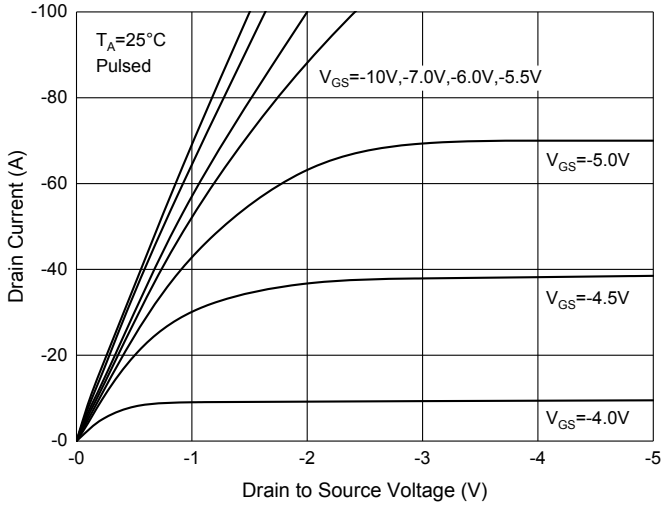


Fig. 2 - Transfer Characteristics

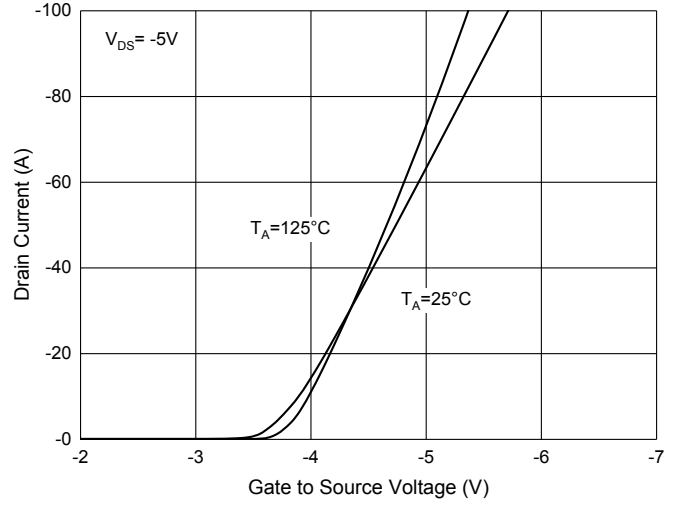


Fig. 3 - $R_{DS(ON)} - I_D$

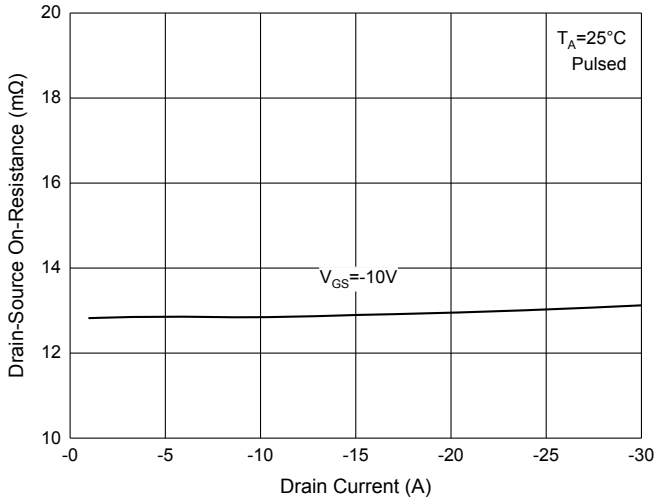


Fig. 4 - $R_{DS(ON)} - \text{Temperature}$

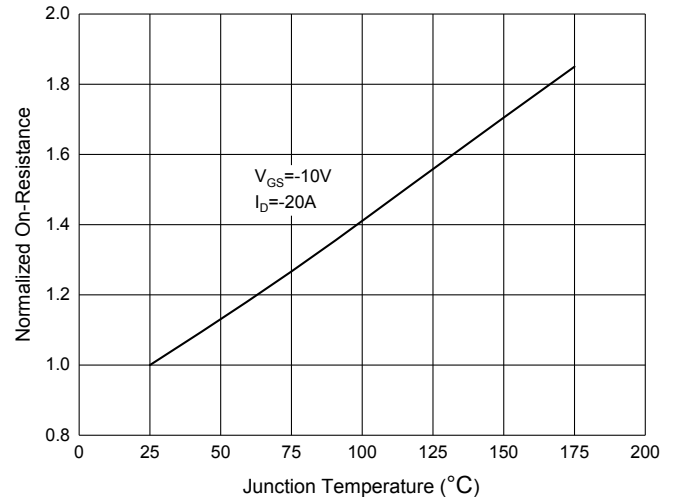


Fig. 5 - Gate Charge

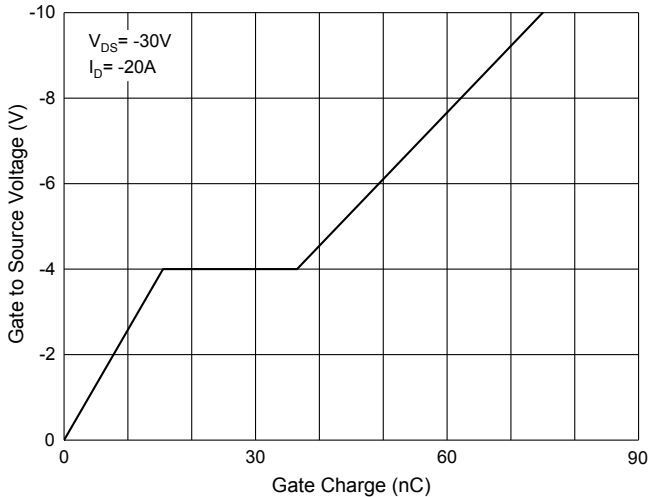
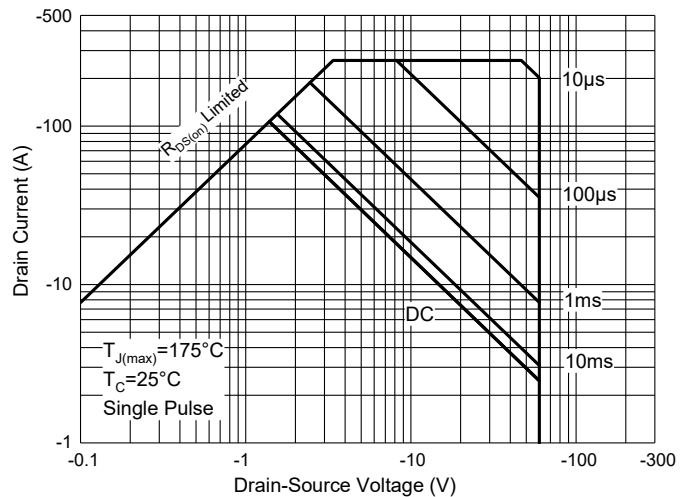
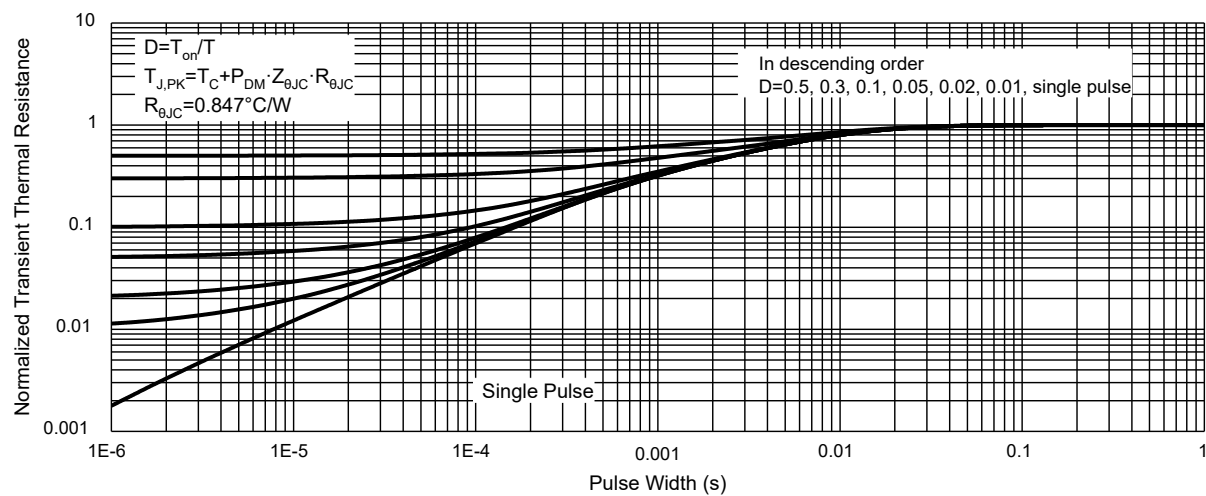


Fig. 6 - Safe Operation Area



Curve Characteristics

Fig. 7 - Normalized Transient Thermal Impedance



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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