

Features

- Advanced Trench Process Technology
- High Density Cell Design for Ultra Low On-Resistance
- Reliable and Rugged
- 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

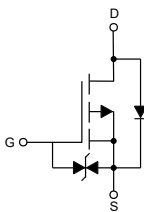
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 3.13°C/W Junction to Case ^(Note 1)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	-100	V	
Gate-Source Voltage	V_{GS}	±20	V	
Continuous Drain Current	I_D	$T_C=25^\circ\text{C}$	-12	A
		$T_C=100^\circ\text{C}$	-9.2	A
Pulsed Drain Current	I_{DM}	-30	A	
Single Pulse Avalanche Energy ^(Note 2)	E_{AS}	110	mJ	
Total Power Dissipation	P_D	40	W	

Note:

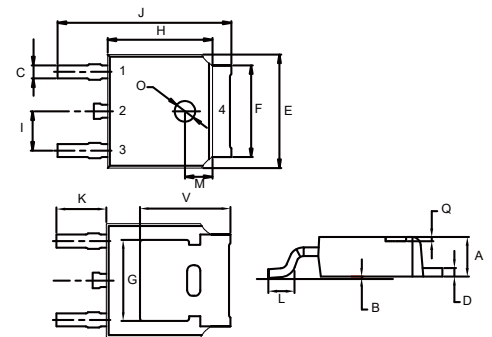
- 1.Surface Mounted on FR4 Board, $t \leq 10$ sec.
- 2.EAS Condition: $T_J=25^\circ\text{C}, V_{DD}=-50\text{V}, V_G=-10\text{V}, L=0.5\text{mH}, R_g=25\Omega$.

Internal Structure



P-CHANNEL MOSFET

DPAK(TO-252)



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

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 @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-100			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-100V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 3)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.9	-3	V
Drain-Source On-Resistance ^(Note 3)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-8A$		170	200	m Ω
Forward Transconductance ^(Note 3)	g_{FS}	$V_{DS}=-15V, I_D=-5A$	12			S
Dynamic Characteristics^(Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		1055		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			41		
Total Gate Charge	Q_g	$V_{DS}=-50V, V_{GS}=-10V, I_D=-10A$		25		nC
Gate-Source Charge	Q_{gs}			5		
Gate-Drain Charge	Q_{gd}			7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-50V, I_D=-10A$ $V_{GS}=-10V, R_{GEN}=9.1\Omega$		14		ns
Turn-On Rise Time	t_r			18		
Turn-Off Delay Time	$t_{d(off)}$			50		
Turn-Off Fall Time	t_f			18		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	$T_C=25^\circ C$			-13	A
Body Diode Voltage	V_{SD}	$I_S=-10A, V_{GS}=0V$			-1.2	V
Reverse Recovery Time	t_{rr}	$I_F=-10A, di/dt=100A/\mu s$		35		ns
Reverse Recovery Charge	Q_{rr}				46	
Forward Turn-on Time	t_{on}	Intrinsic Turn-On Time is Negligible(Turn-On is Dominated by L_S+L_D)				

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

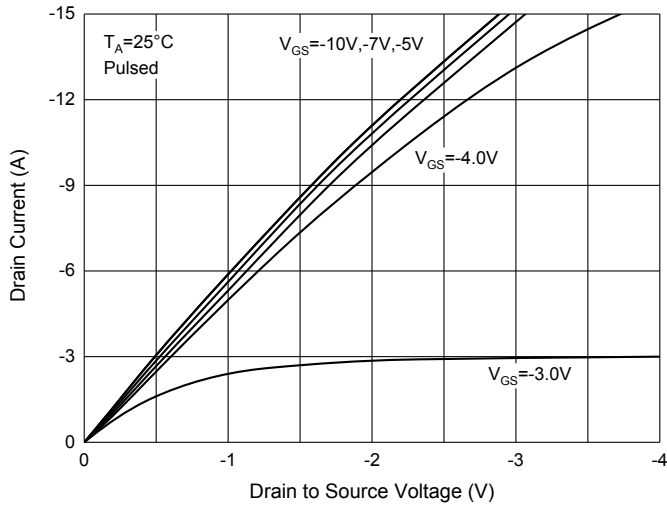


Fig. 2 - $R_{DS(ON)}$ —Temperature

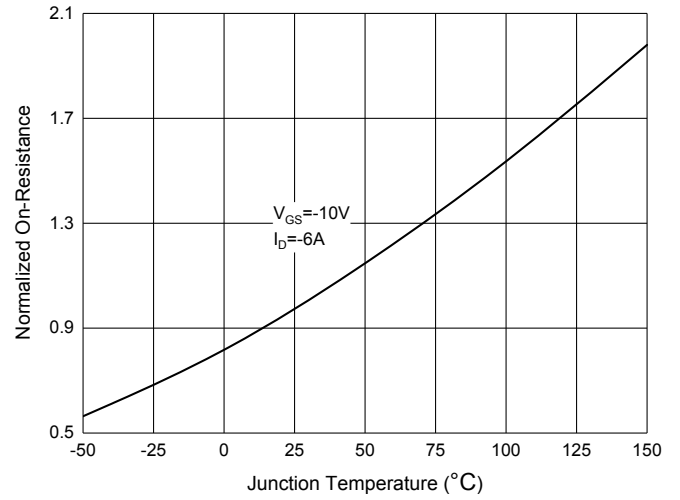


Fig. 3 - Transfer Characteristics

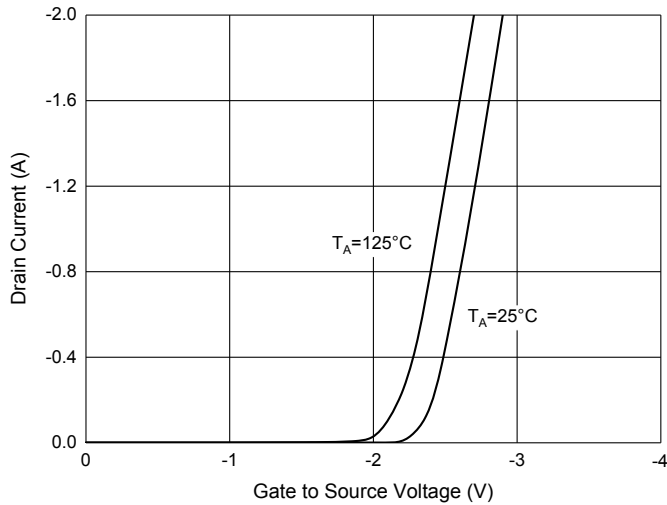


Fig. 4 - Gate Charge

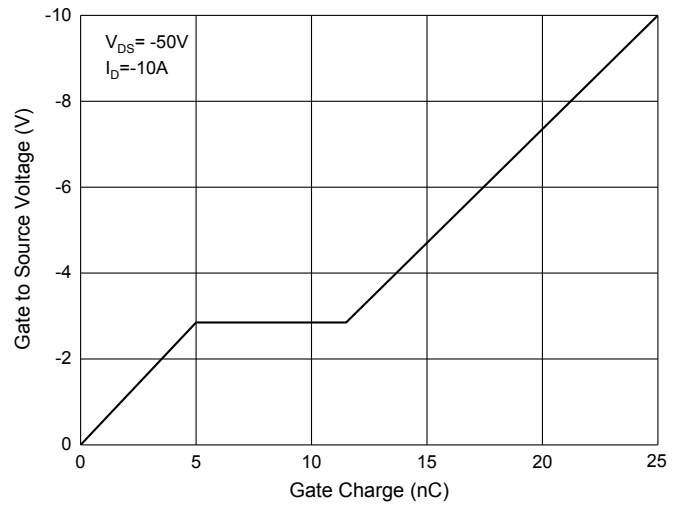


Fig. 5 - $R_{DS(ON)}$ — I_D

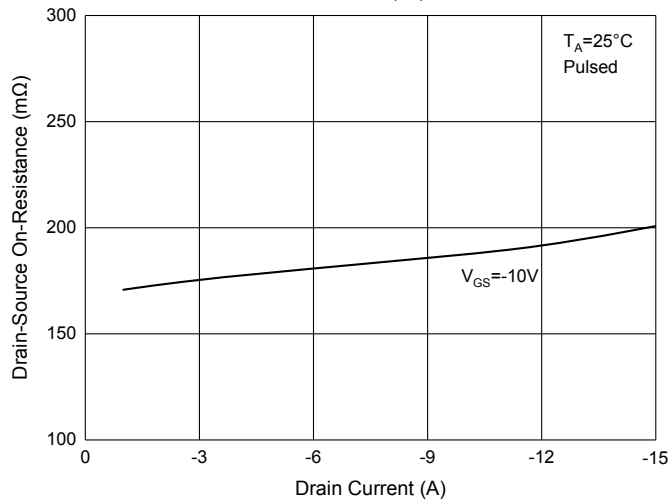
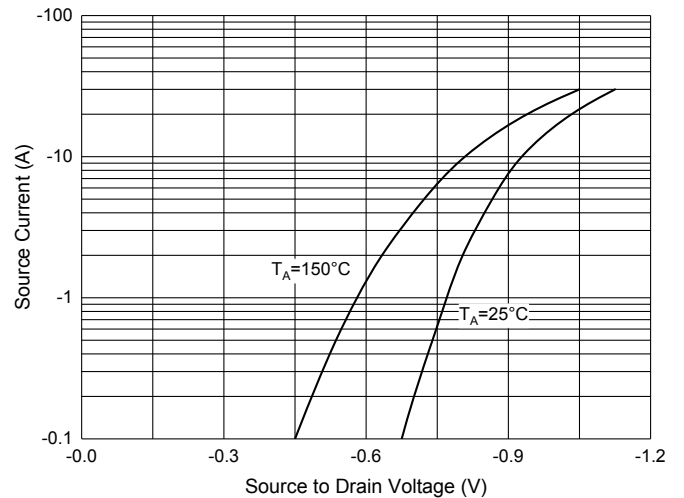


Fig. 6 - I_S — V_{SD}



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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