

Features

- Excellent Gate Charge x $R_{DS(on)}$ Product(FOM)
- Very Low On-Resistance $R_{DS(on)}$
- 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

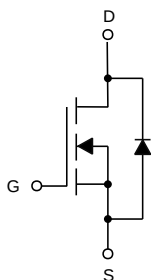
- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 2.2°C/W Junction to Case^(Note 1)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	150	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _C =25°C	I _D	20	A
	T _C =100°C		14	A
Pulsed Drain Current		I _{DM}	80	A
Single Pulse Avalanche Energy ^(Note 2)		E _{AS}	65	mJ
Total Power Dissipation		P _D	68	W

Note: 1. Surface Mounted on FR4 Board, $t \leq 10$ sec.

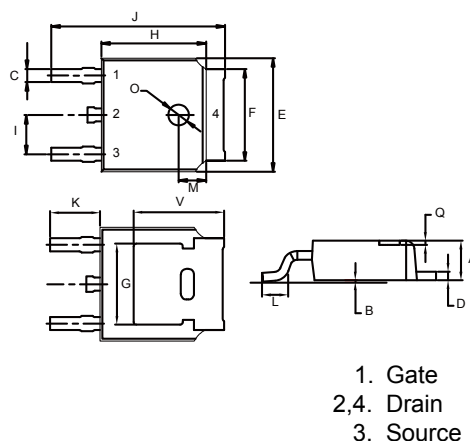
2. EAS Condition : $T_J=25^\circ\text{C}$, $V_{DD}=50\text{V}$, $V_G=10\text{V}$, $L=0.5\text{mH}$, $R_g=25\Omega$.

Internal Structure



N-CHANNEL MOSFET

DPAK(TO-252)



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 @ 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	150			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =150V, V _{GS} =0V			1	μA
Gate-Threshold Voltage ^(Note 3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.5	3.3	4.5	V
Drain-Source On-Resistance ^(Note 3)	R _{DS(on)}	V _{GS} =10V, I _D =10A		59	65	mΩ
Forward tranconductance ^(Note 3)	g _{FS}	V _{DS} =5V, I _D =10A	15			S
Dynamic Characteristics ^(Note 4)						
Input Capacitance	C _{iss}	V _{DS} =75V,V _{GS} =0V,f=1MHz		600		pF
Output Capacitance	C _{oss}			74.7		
Reverse Transfer Capacitance	C _{rss}			10.8		
Total Gate Charge	Q _g	V _{DS} =75V,V _{GS} =10V,I _D =10A		12		nC
Gate-Source Charge	Q _{gs}			5.7		
Gate-Drain Charge	Q _{gd}			2.7		
Turn-On Delay Time	t _{d(on)}	V _{DD} =75V, R _L =7.5Ω V _{GS} =10V,R _G =3Ω		9.5		ns
Turn-On Rise Time	t _r			5.5		
Turn-Off Delay Time	t _{d(off)}			12.5		
Turn-Off Fall Time	t _f			3		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I _S	T _C =25°C			20	A
Body Diode Voltage ^(Note 3)	V _{SD}	I _{SD} =10A, V _{GS} =0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F =I _S ,di/dt=100A/μs		29		ns
Reverse Recovery Charge	Q _{rr}			130		nC

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 - Typical Output Characteristics

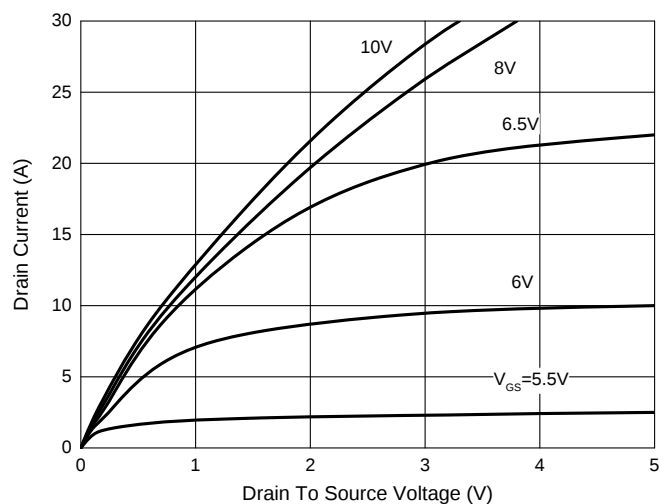


Fig. 2 - Transfer Characteristics

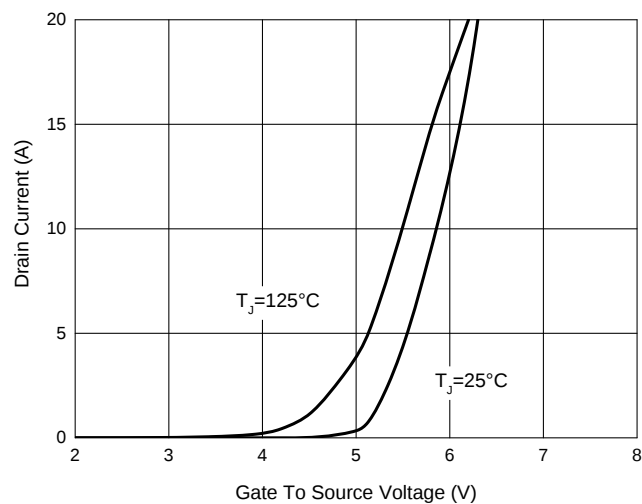


Fig. 3 - Capacitance Characteristics

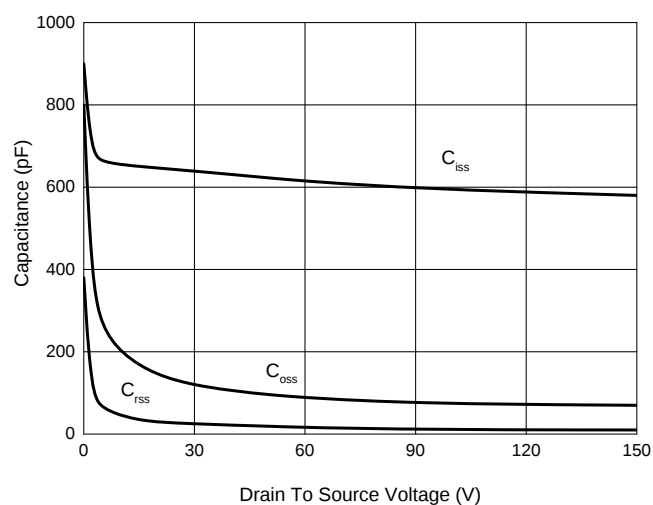


Fig. 4 - Gate Charge Characteristics

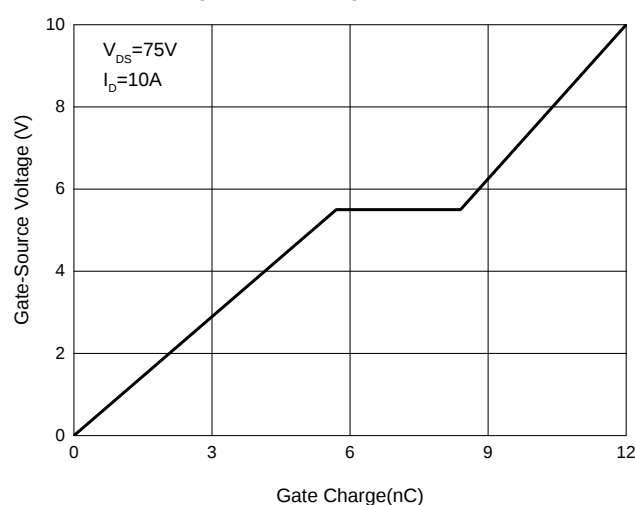


Fig. 5 - $R_{DS(ON)} - I_D$

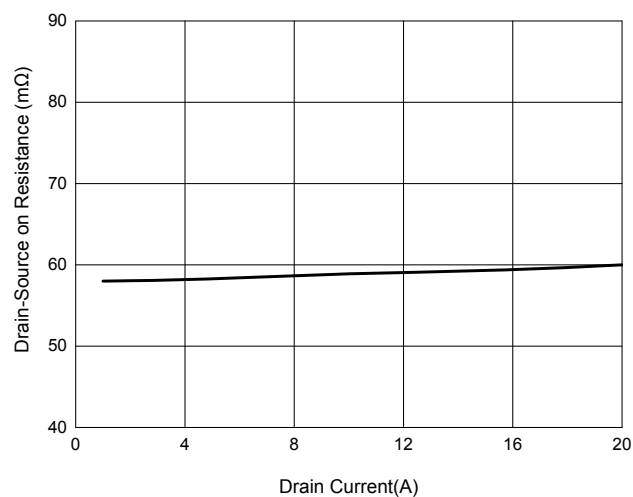
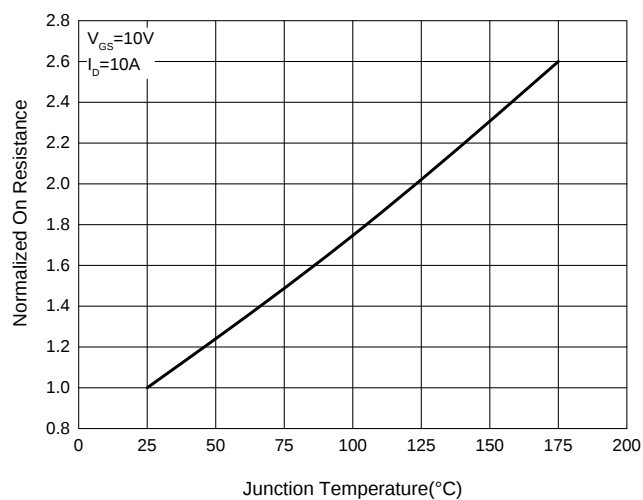


Fig. 6 - Normalized On Resistance Characteristics



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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