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)

N-CHANNEL MOSFET

Maximum Ratings

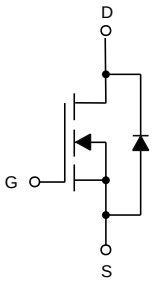
- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 2.2°C/W Junction to Case(Note 1)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Volltage		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

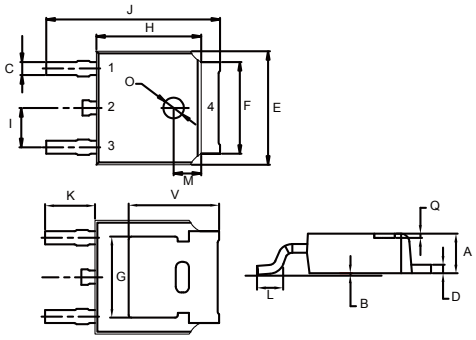
Note: 1. Surface Mounted on FR4 Board, t ≤ 10 sec.

2. EAS Condition : T_J=25°C,V_{DD}=50V,V_G=10V,L=0.5mH,R_g=25Ω.

Internal Structure



DPAK(TO-252)



1. Gate
2,4. Drain
3. Source

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≤300μs, Duty Cycle ≤2%.

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

Curve Characteristics

Fig. 1 - Typical Output Characteristics

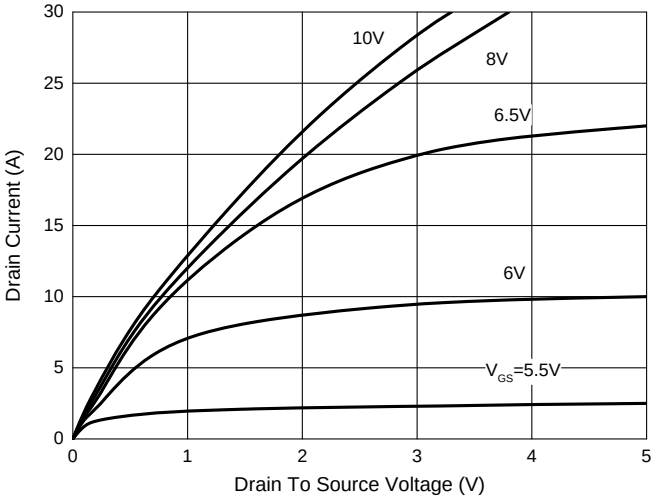


Fig. 2 - Transfer Characteristics

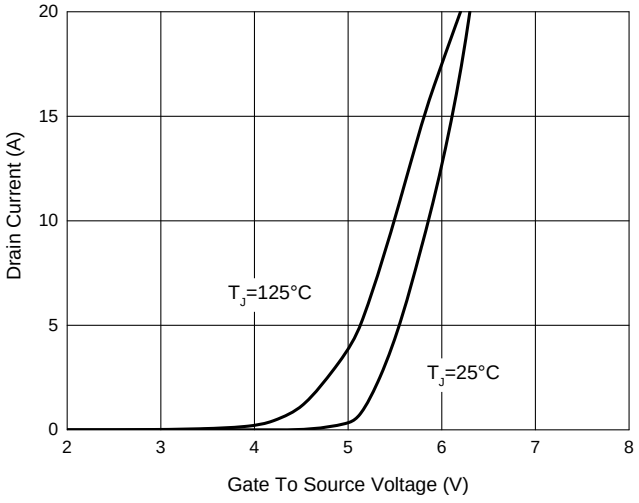


Fig. 3 - Capacitance Characteristics

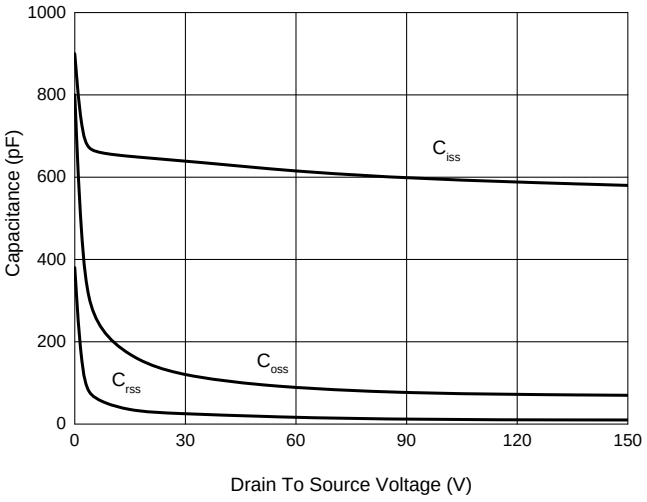


Fig. 4 - Gate Charge Characteristics

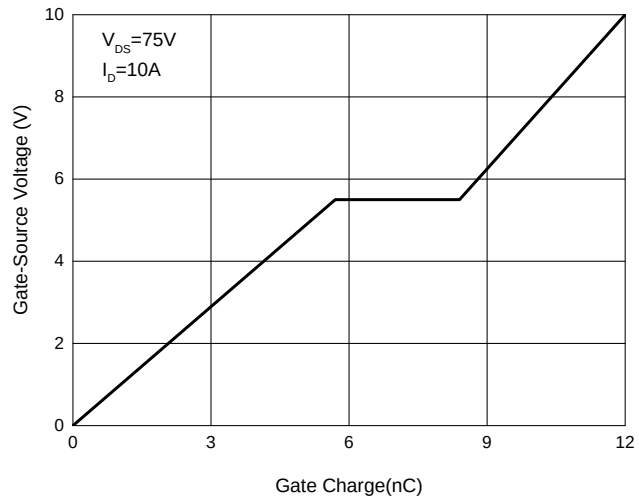


Fig. 5 - $R_{DS(ON)}$—I_D

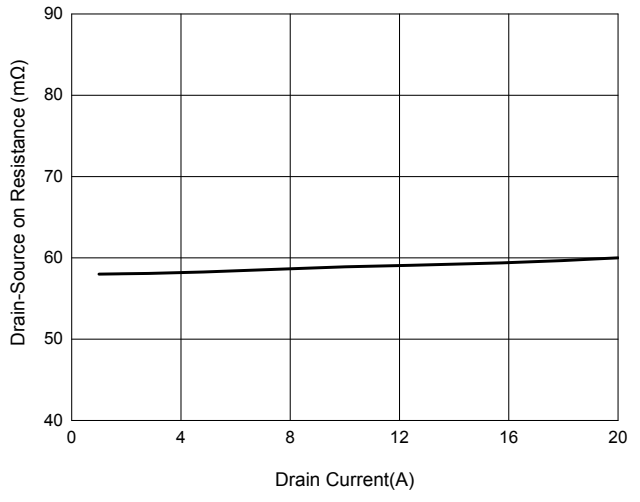
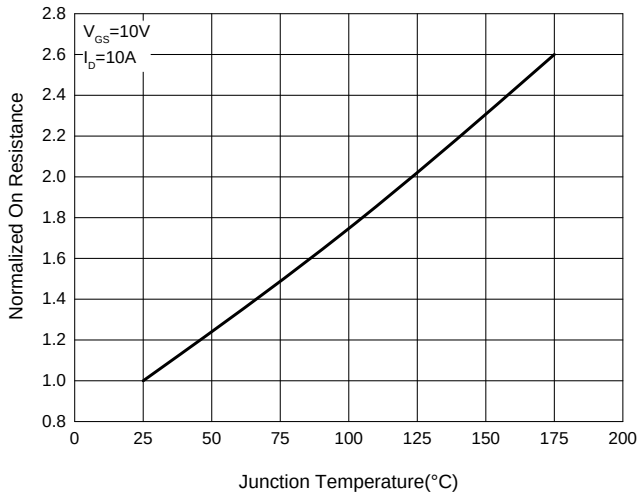


Fig. 6 - Normalized On Resistance Characteristics



Ordering Information

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

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