

## Features

- Trench Power MV MOSFET Technology
- Excellent Package for Heat Dissipation
- High Density Cell Design for Low  $R_{DS(on)}$
- 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

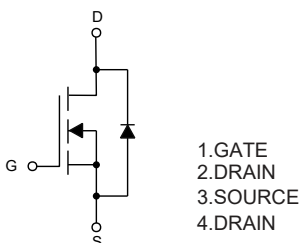
- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 4.4°C/W Junction to Case

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	100	V	
Gate-Source Voltage	$V_{GS}$	±20	V	
Continuous Drain Current	$I_D$	$T_C=25^\circ\text{C}$	15	A
		$T_C=100^\circ\text{C}$	10.5	A
Pulsed Drain Current	$I_{DM}$	60	A	
Single Pulse Avalanche Energy <sup>(Note 1)</sup>	$E_{AS}$	9	mJ	
Total Power Dissipation	$P_D$	34	W	

Note:

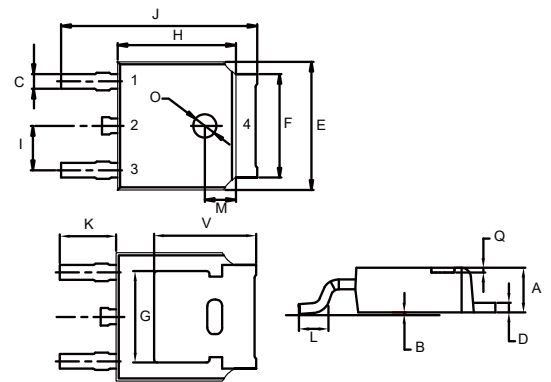
1.EAS Condition: $T_J=25^\circ\text{C}, V_{DD}=50\text{V}, V_G=10\text{V}, R_g=25\Omega$ .

## Internal Structure



# N-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 @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage <sup>(Note 2)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.1	1.8	3	V
Drain-Source On-Resistance <sup>(Note 2)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=8A$		95	110	m $\Omega$
		$V_{GS}=4.5V, I_D=8A$		100	120	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=15A$		0.8	1.2	V
Continuous Body Diode Current	$I_S$				15	A
<b>Dynamic Characteristics<sup>(Note 3)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		800		pF
Output Capacitance	$C_{oss}$			39		
Reverse Transfer Capacitance	$C_{rss}$			32		
Total Gate Charge	$Q_g$	$V_{DS}=50V, V_{GS}=10V, I_D=10A$		16		nC
Gate-Source Charge	$Q_{gs}$			2.5		
Gate-Drain Charge	$Q_{gd}$			2.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DD}=50V, R_L=6.4\Omega$ $R_{GEN}=3\Omega$		5		ns
Turn-On Rise Time	$t_r$			40		
Turn-Off Delay Time	$t_{d(off)}$			20		
Turn-Off Fall Time	$t_f$			7		

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

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

Curve Characteristics

Fig. 1 - Typical Output Characteristics

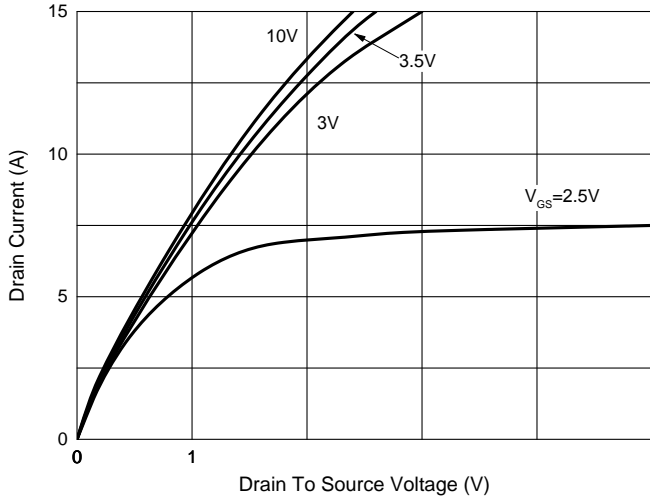


Fig. 2 - Transfer Characteristics

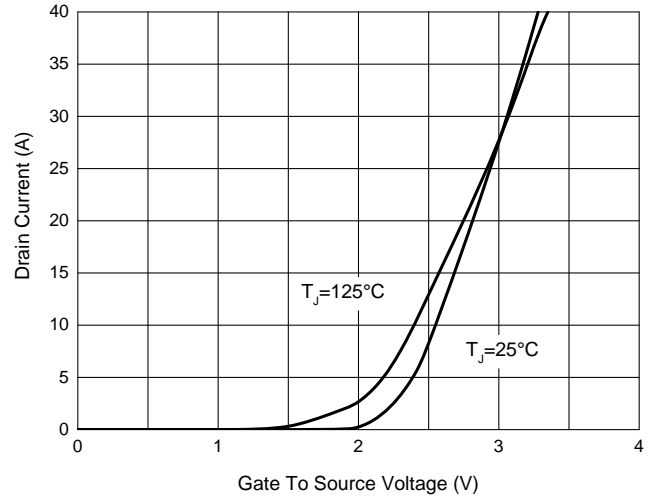


Fig. 3 - Capacitance Characteristics

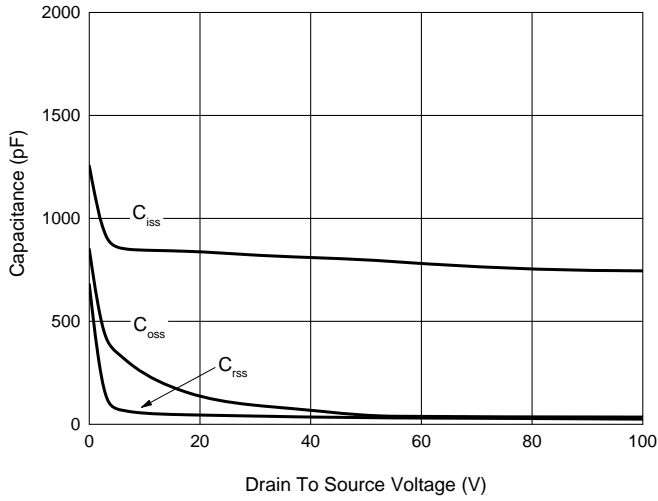


Fig. 4 - Total Gate Charge Characteristics

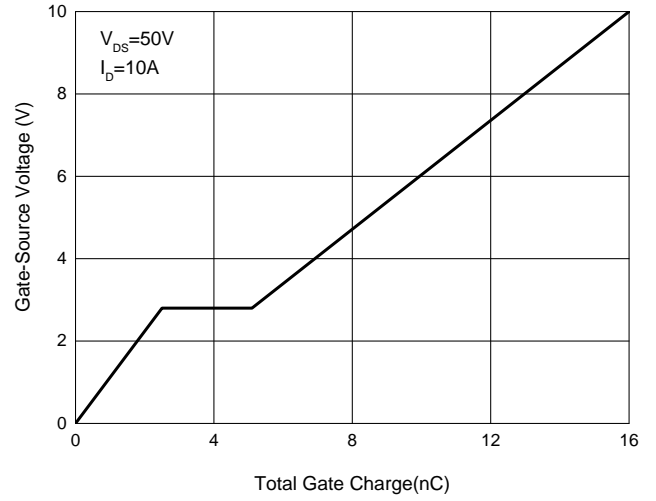


Fig. 5 -  $R_{DS(ON)} - I_D$

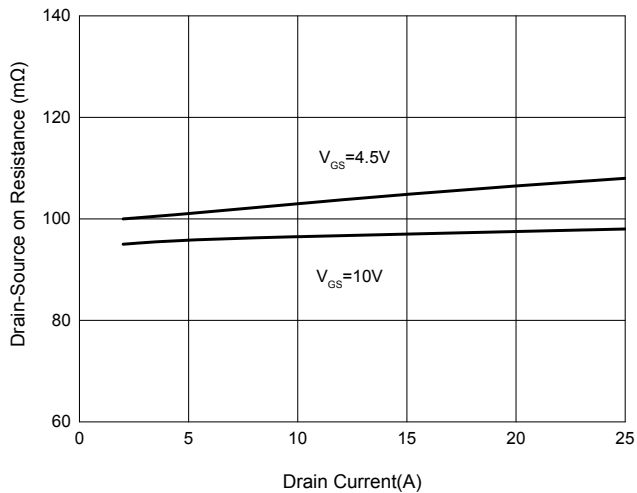
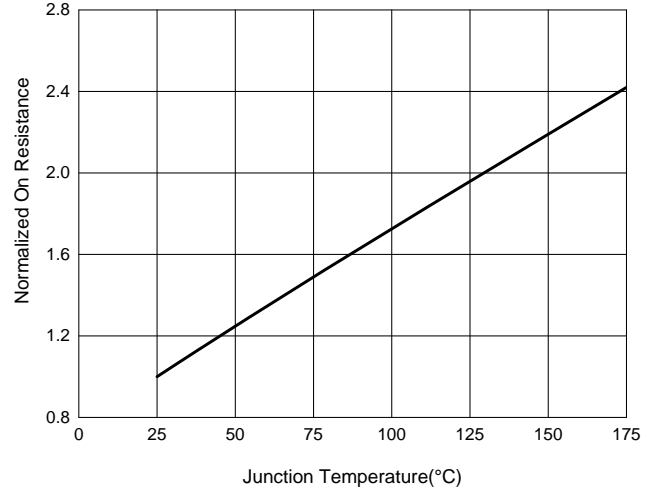


Fig. 6 - Normalized On Resistance Characteristics



## 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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