

## Features

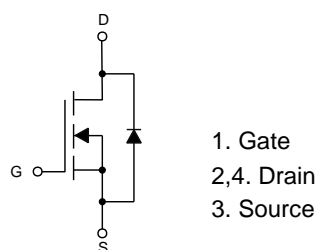
- Trench Power MV MOSFET Technology
- Excellent Package for Heat Dissipation
- High Density Cell Design for Low  $R_{DS(on)}$
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" 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: 1.3°C/W Junction to Case

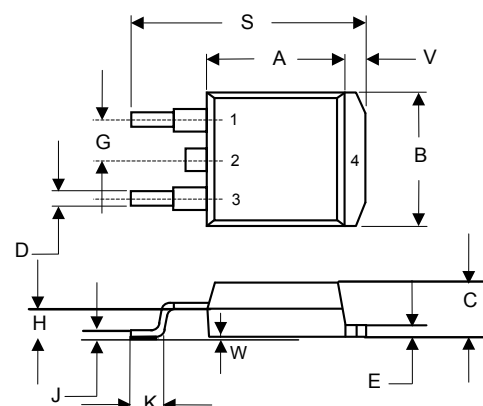
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V <sub>DS</sub>	100	V
Gate-Source Voltage		V <sub>GS</sub>	±25	V
Continuous Drain Current	T <sub>C</sub> =25°C	I <sub>D</sub>	70	A
	T <sub>C</sub> =100°C		49	A
Pulsed Drain Current		I <sub>DM</sub>	240	A
Single Pulse Avalanche Energy		E <sub>AS</sub>	530	mJ
Total Power Dissipation		P <sub>D</sub>	115	W

## Internal Structure



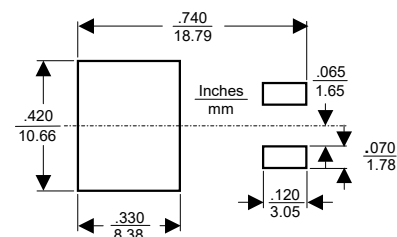
# N-CHANNEL MOSFET

## D2-PAK



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.320	0.359	8.13	9.14	
B	0.380	0.411	9.65	10.45	
C	0.160	0.190	4.06	4.83	
D	0.020	0.035	0.51	0.89	
E	0.045	0.055	1.14	1.40	
G	0.083	0.105	2.10	2.67	
H	0.096	0.134	2.43	3.40	
J	0.014	0.021	0.35	0.53	
K	0.090	0.131	2.29	3.32	
S	0.575	0.625	14.22	16.22	
V	0.045	0.055	1.14	1.40	
W	0.000	0.006	0.00	0.15	

## Suggested Solder Pad Layout



**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	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 25V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Threshold Voltage <sup>(Note 1)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	3	4	V
Drain-Source On-Resistance <sup>(Note 1)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=12A$		14.5	18	m $\Omega$
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=12A$		0.8	1.2	V
Continuous Body Diode Current	$I_S$				70	A
<b>Dynamic Characteristics<sup>(Note 2)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		2960		pF
Output Capacitance	$C_{oss}$			142		
Reverse Transfer Capacitance	$C_{rss}$			120		
Total Gate Charge	$Q_g$	$V_{DD}=50V, V_{GS}=10V, I_D=12A$		80		nC
Gate-Source Charge	$Q_{gs}$			12		
Gate-Drain Charge	$Q_{gd}$			25		
Reverse Recovery Charge	$Q_{rr}$	$V_R=50V, I_F=12A, dI_F/dt=100A/\mu s$		33		ns
Reverse Recovery Time	$t_{rr}$			54		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DD}=50V, I_D=12A, R_{GEN}=1\Omega$		13		
Turn-On Rise Time	$t_r$			14		
Turn-Off Delay Time	$t_{d(off)}$			25		
Turn-Off Fall Time	$t_f$			10		

Note 1. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

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

## Curve Characteristics

Fig. 1 - Typical Output Characteristics

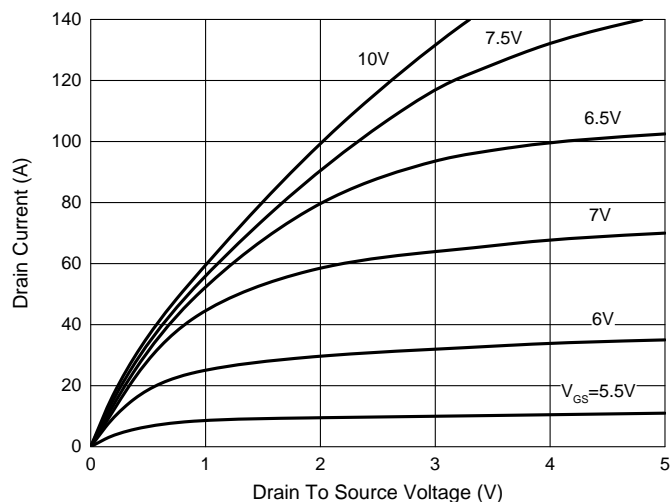


Fig. 2 - Transfer Characteristics

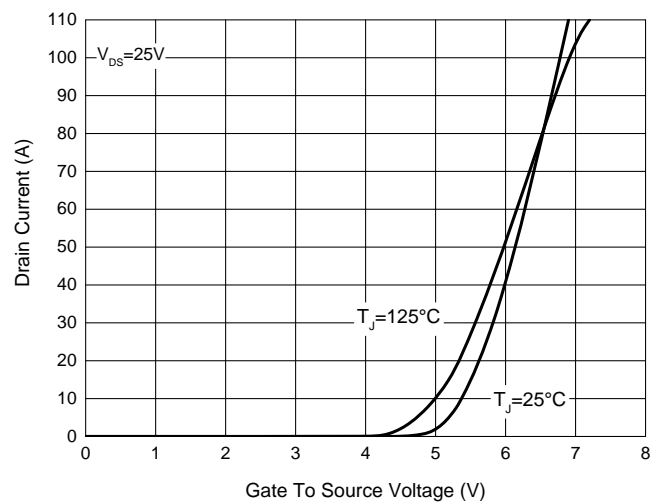


Fig. 3 - Capacitance Characteristics

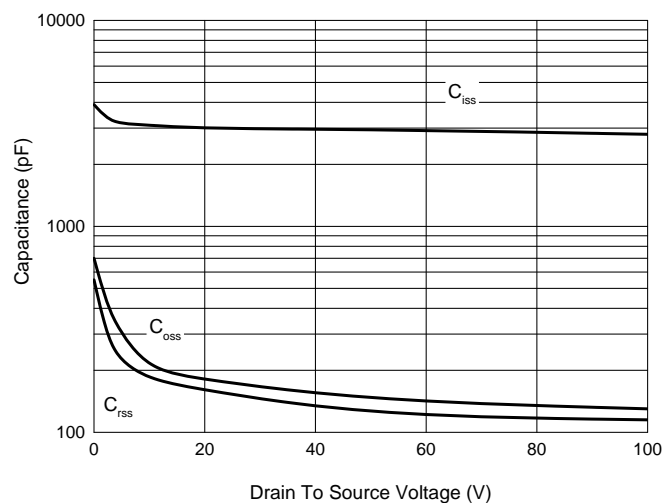


Fig. 4 - Total Gate Charge Characteristics

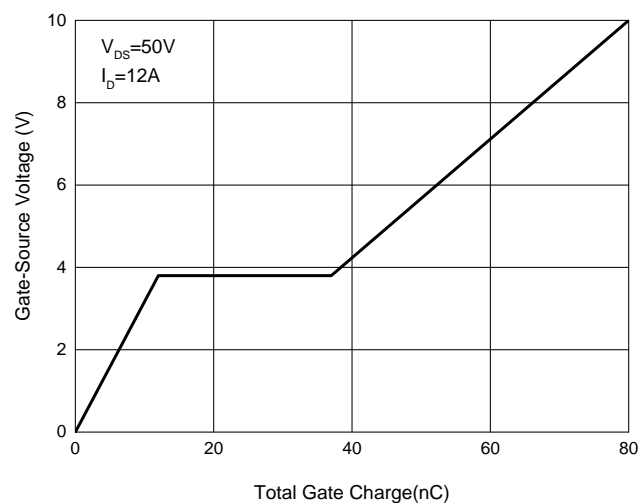


Fig. 5 -  $R_{DS(ON)} - I_D$

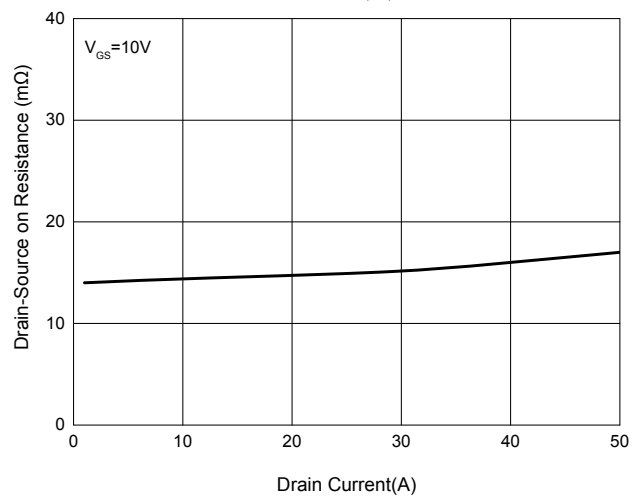
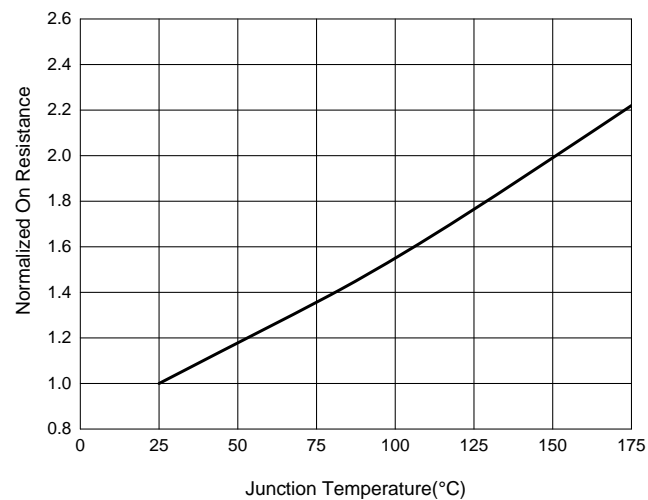


Fig. 6 - Normalized On Resistance Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 800pcs/Reel

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

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