

## 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 3
- Halogen Free. "Green" Device (Note 1)
- 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°C/W Junction to Case

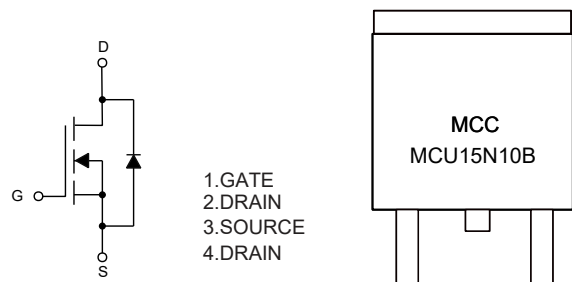
Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	100	V	
Gate-Source Voltage	$V_{GS}$	±20	V	
Continuous Drain Current	$I_D$	$T_C=25^\circ\text{C}$	15	A
		$T_C=100^\circ\text{C}$	9.4	A
Pulsed Drain Current	$I_{DM}$	55	A	
Single Pulse Avalanche Energy <sup>(Note 2)</sup>	$E_{AS}$	4	mJ	
Total Power Dissipation	$P_D$	41	W	

Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

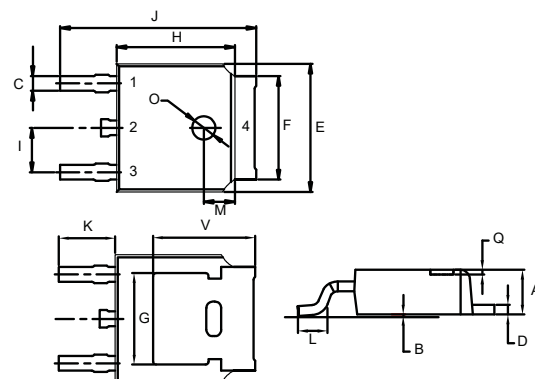
2. EAS Condition:  $T_J=25^\circ\text{C}$ ,  $V_{DD}=25\text{V}$ ,  $V_G=10\text{V}$ ,  $R_g=25\Omega$ .

## Internal Structure and Marking Code



# N-CHANNEL MOSFET

## DPAK



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 3)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2		2.5	V
Drain-Source On-Resistance <sup>(Note 3)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=5A$		65	90	m $\Omega$
		$V_{GS}=4.5V, I_D=3A$		75	110	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=15A$			1.2	V
Continuous Body Diode Current	$I_S$				15	A
<b>Dynamic Characteristics<sup>(Note 4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		1100		pF
Output Capacitance	$C_{oss}$			55		
Reverse Transfer Capacitance	$C_{rss}$			40		
Total Gate Charge	$Q_g$	$V_{DS}=50V, V_{GS}=10V, I_D=5A$		12		nC
Gate-Source Charge	$Q_{gs}$			2.9		
Gate-Drain Charge	$Q_{gd}$			1.8		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DD}=50V, I_D=5A$ $R_{GEN}=3\Omega$		3.9		ns
Turn-On Rise Time	$t_r$			26		
Turn-Off Delay Time	$t_{d(off)}$			16.2		
Turn-Off Fall Time	$t_f$			8.9		

 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

Figure 1. Output Characteristics

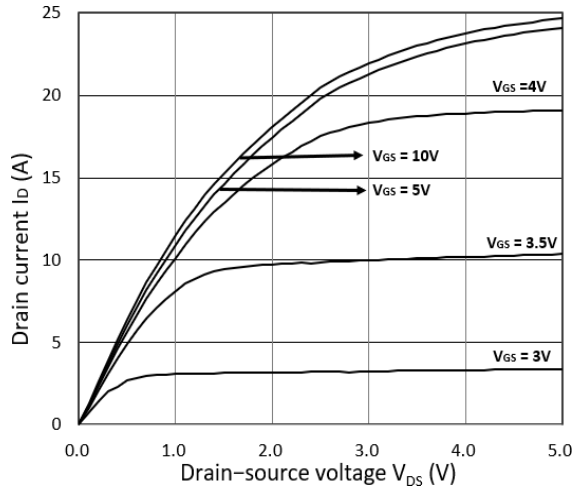


Figure 2. Transfer Characteristics

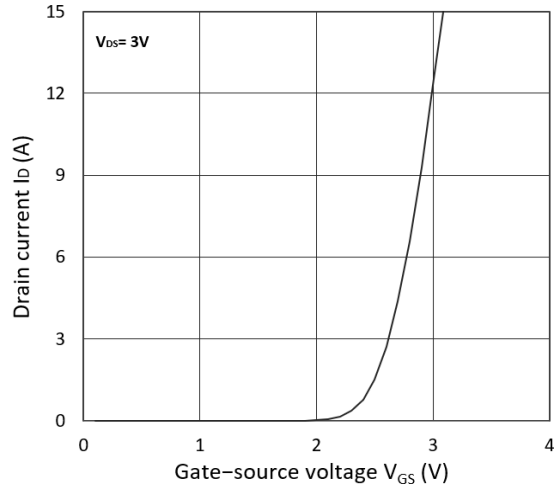


Figure 3. Forward Characteristics of Reverse

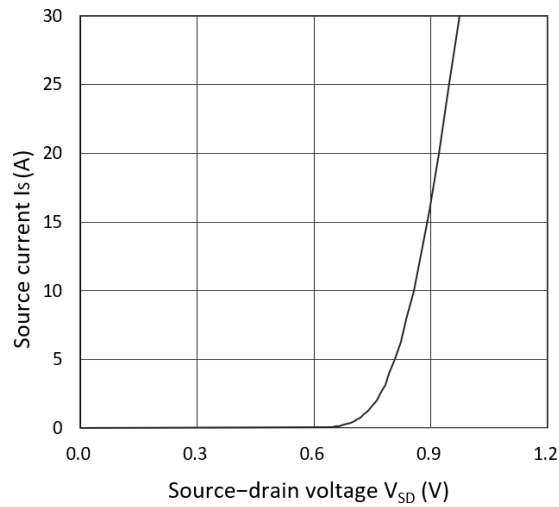


Figure 4. Gate Charge Characteristics

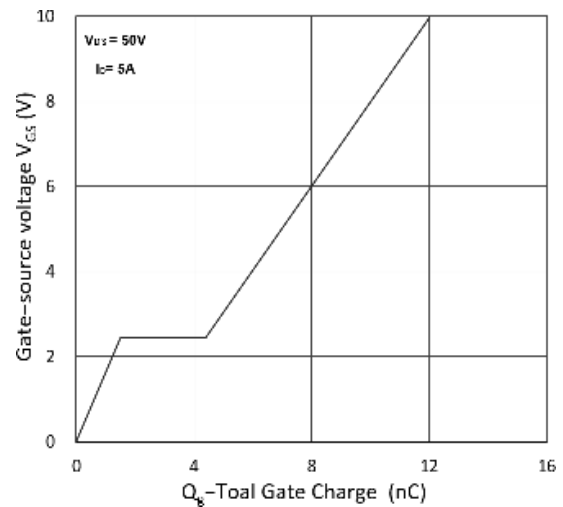


Figure 5.  $R_{DS(on)}$  vs.  $V_{GS}$

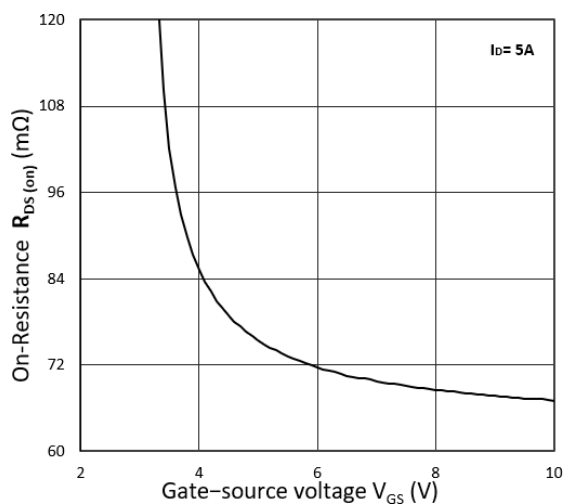
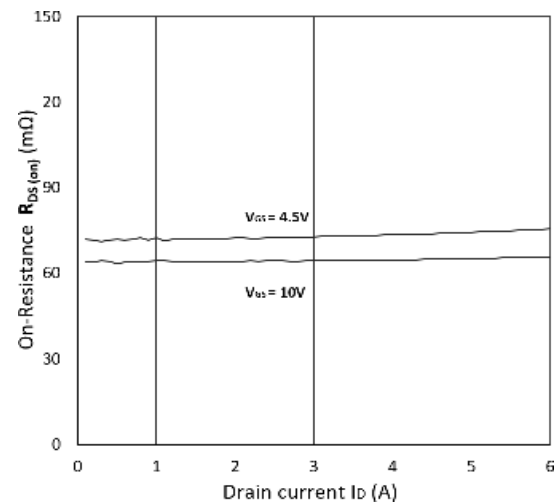


Figure 6.  $R_{DS(on)}$  vs.  $I_D$



Curve Characteristics

Figure 7. Capacitance Characteristics

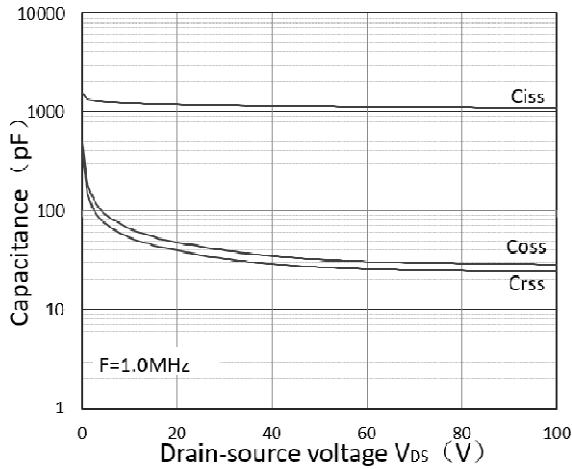


Figure 8. Safe Operating Area

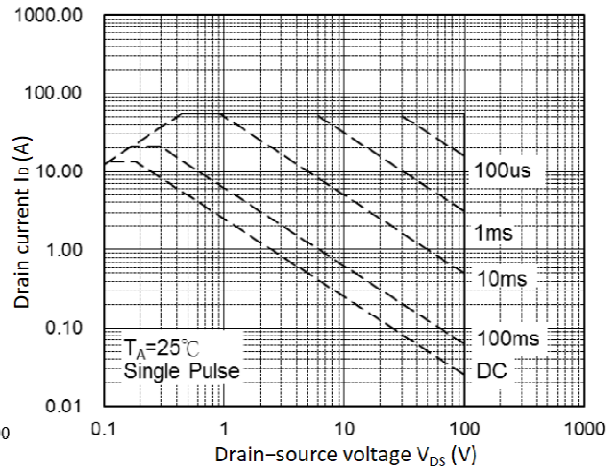
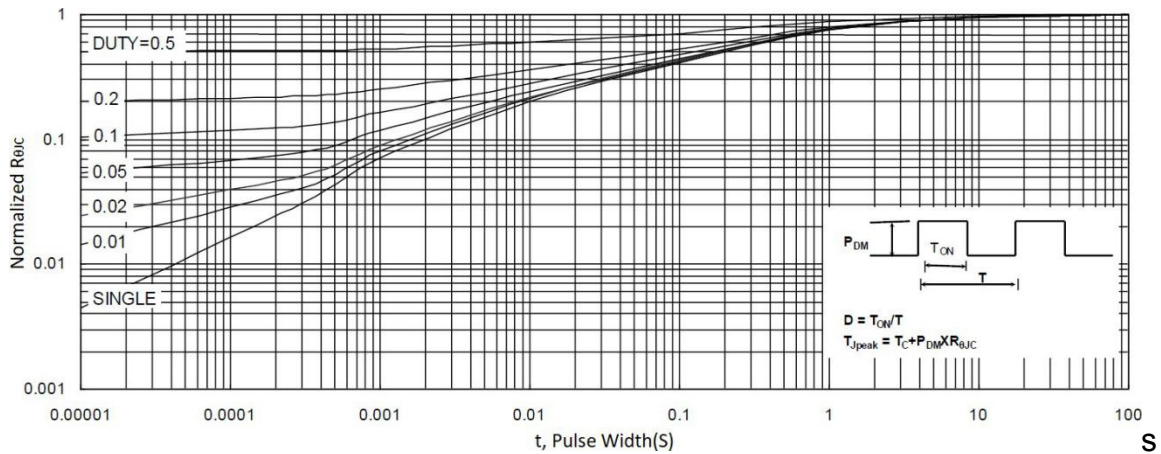


Figure 9. Normalized Maximum Transient Thermal Impedance



## Ordering Information

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

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