

Features

- Fast Switching
- Improved dv/dt Capability
- 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

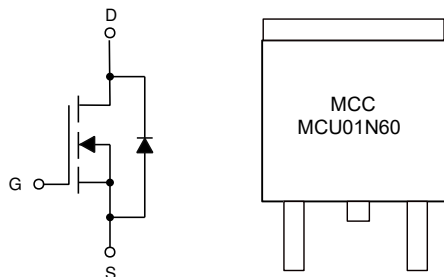
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 60°C/W Junction to Ambient
- Thermal Resistance: 7.3°C/W Junction to Case

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	600	V	
Gate-Source Voltage	V_{GS}	±30	V	
Continuous Drain Current	I_D	1	A	
Pulsed Drain Current ^(Note 1)	I_{DM}	3.6	A	
Single Pulse Avalanche Energy ^(Note 2)	E_{AS}	30	mJ	
Avalanche Current ^(Note 1)	I_{AR}	2.59	A	
Repetitive Avalanche Energy ^(Note 1)	E_{AR}	18	mJ	
Total Power Dissipation	$T_C=25^\circ\text{C}$	P_D	17	W

Note:

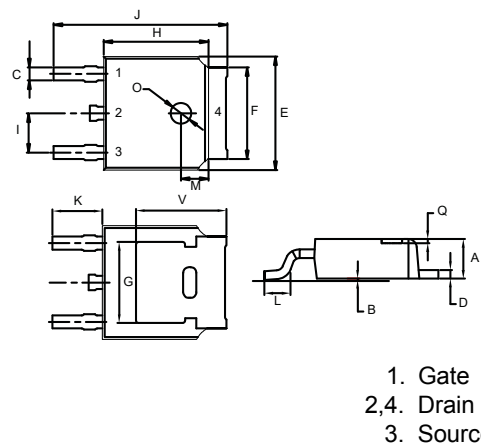
1. Repetitive Rating; Pulse Width Limited by Maximum Junction Temperature.
2. L=10mH, $V_{DD}=50\text{V}$, $R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$.

Internal Structure and Marking Code



N-CHANNEL MOSFET

DPAK(TO-252)



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	600			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 30V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=600V, V_{GS}=0V$			1	μA
Gate-Threshold Voltage ^(Note 3)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	3		4.2	V
Drain-Source On-Resistance ^(Note 3)	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.45A$		8.5	10	Ω
Diode Forward Voltage ^(Note 3)	V_{SD}	$V_{GS}=0V, I_S=0.45A$			1.4	V
Continuous Body Diode Current	I_S				1	A
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		135		pF
Output Capacitance	C_{oss}			13		
Reverse Transfer Capacitance	C_{rss}			1.2		
Total Gate Charge	Q_g	$V_{DD}=480V, V_{GS}=10V, I_D=0.9A$		5		nC
Gate-Source Charge	Q_{gs}			0.9		
Gate-Drain Charge	Q_{gd}			3.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=300V, I_D=0.9A, R_G=25\Omega$		34		ns
Turn-On Rise Time	t_r			6.3		
Turn-Off Delay Time	$t_{d(off)}$			43		
Turn-Off Fall Time	t_f			43.4		
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_S=0.9A, di_f/dt=100A/\mu s$		634		ns
Reverse Recovery Charge	Q_{rr}			338		nC

 Note: 3. Pulse Test: Pulse width $\leq 300\mu s$, Duty Cycle $\leq 1\%$.

Curve Characteristics

Fig. 1 - Typical Output Characteristics

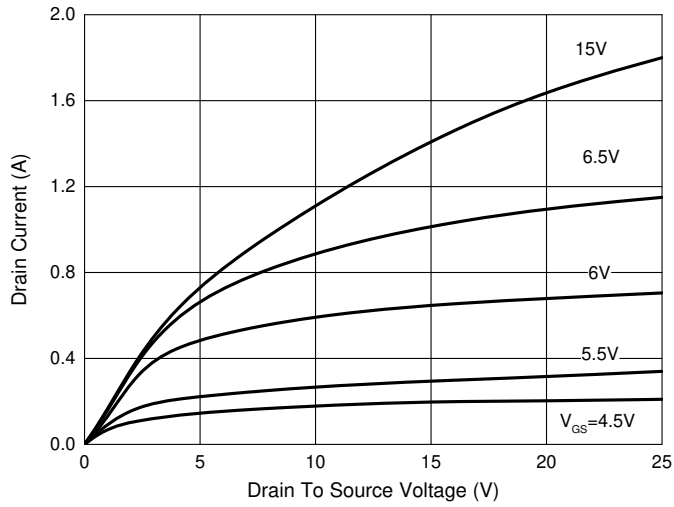


Fig. 2 - Transfer Characteristics

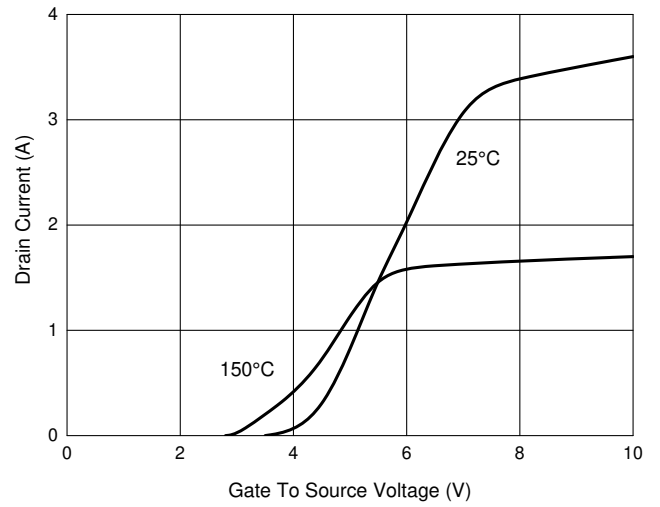


Fig. 3 - $I_S - V_{SD}$

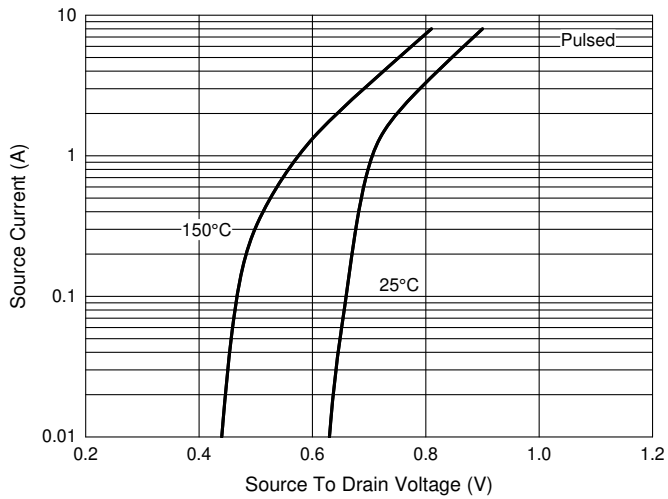


Fig. 4 - Normalized On Resistance Characteristics

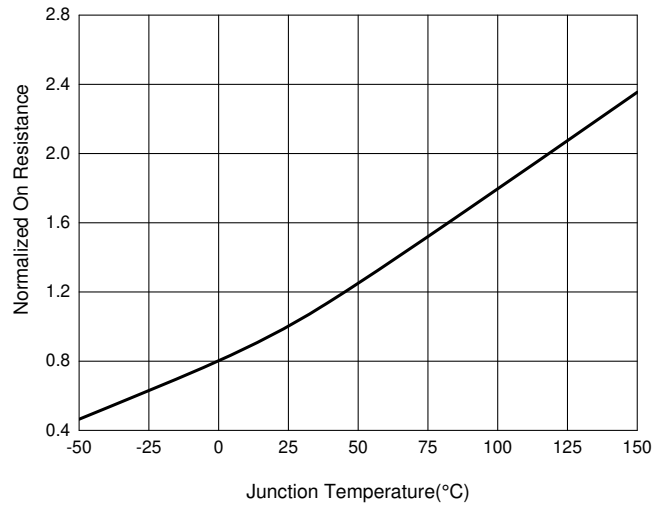


Fig. 5 - Capacitance Characteristics

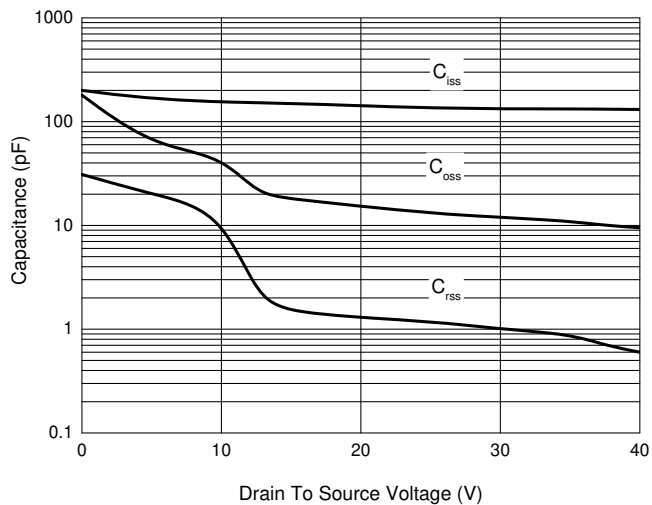
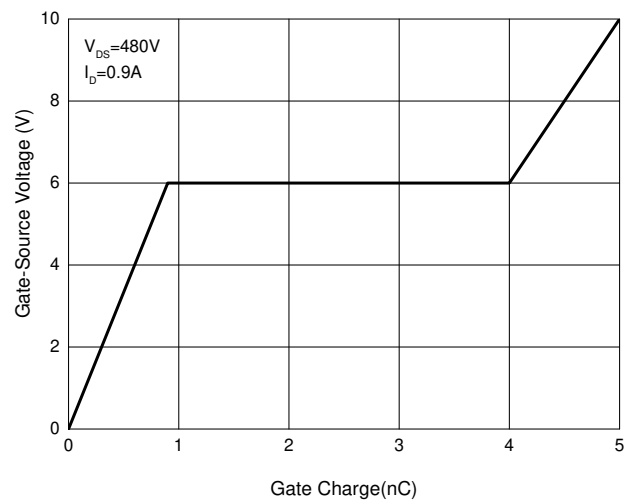


Fig. 6 - Gate Charge



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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