

Features

- High Current Rating
- Lower $R_{DS(ON)}$
- Lower Capacitance
- Lower Total Gate Charge
- Tighter V_{SD} Specifications
- Avalanche Energy Specified
- 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)

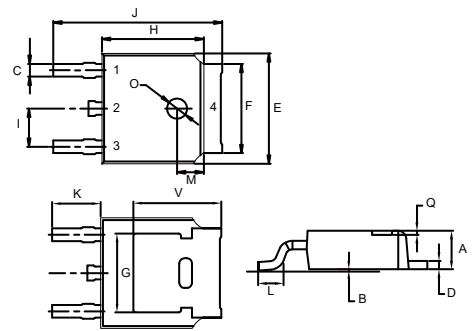
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 100°C/W Junction to Ambient

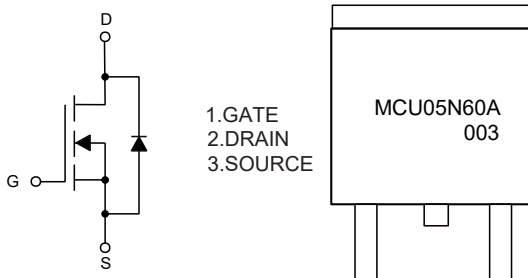
Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	600	V
Gate -Source Voltage	V_{GS}	±30	V
Drain Current-Continuous	I_D	4.5	A
Power Dissipation@ $T_C=25^\circ\text{C}$ (Note 2)	P_D	1.25	W
Maximum Power Dissipation@ $T_C=25^\circ\text{C}$ (Note 3)		120	W
Single Pulsed Avalanche Energy ^(Note1)	E_{AS}	210	mJ

**N-CHANNEL
MOSFET**

DPAK



Pinout diagram showing connections for GATE (1), DRAIN (2), and SOURCE (3).



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 (Ta=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-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0		4.0	V
Gate-Body Leakage Current ^(Note4)	I_{GSS}	$V_{GS} = \pm 30V, V_{DS} = 0V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V$			1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.25A$			2.5	Ω
Drain- Source Diode Forward Voltage ^(Note4)	V_{SD}	$V_{GS} = 0V, I_S = 4.5A$			1.4	V
Forward Transconductance ^(Note4)	g_{fs}	$V_{DS}=40V, I_D=2.25A$	2.9			S
Dynamic Characteristics						
Input Capacitance ^(Note4)	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$			670	pF
Output Capacitance ^(Note4)	C_{oss}				72	
Reverse Transfer Capacitance ^(Note4)	C_{rss}				8.5	
Switching Characteristics						
Turn-on Delay Time ^(Note4)	$t_{d(on)}$	$V_{DD}=300V, R_G=25\Omega, I_D=4.5A$			30	ns
Turn-on Rise Time ^(Note4)	t_r				90	
Turn-off Delay Time ^(Note4)	$t_{d(off)}$				85	
Turn-off Fall Time ^(Note4)	t_f				100	

Note: 1. EAS Condition: $L=20mH, I_{AS}=4.5A, V_{DD}=50V, R_G=25\Omega, T_J=25^\circ C$

2. This Test is Performed With No Heat Sink at $T_A=25^\circ C$

3. This Test is Performed With Infinite Heat Sink at $T_C=25^\circ C$

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

Curve Characteristics

Fig. 1 - Output Characteristics

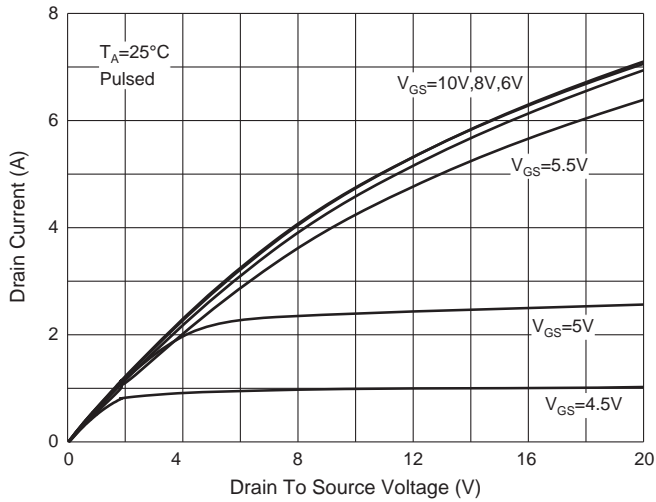


Fig. 2 - Transfer Characteristics

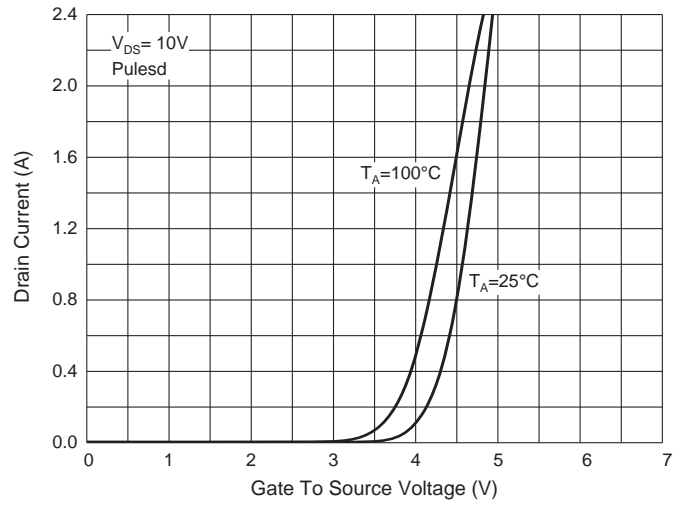


Fig. 3 - $R_{DS(ON)} - I_D$

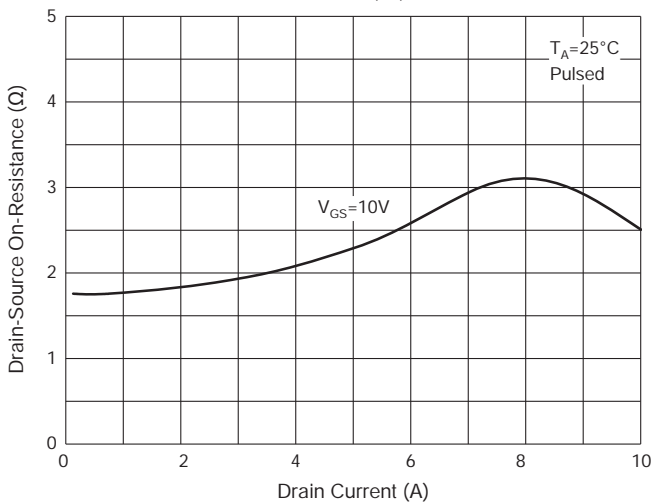


Fig. 4 - $R_{DS(ON)} - V_{GS}$

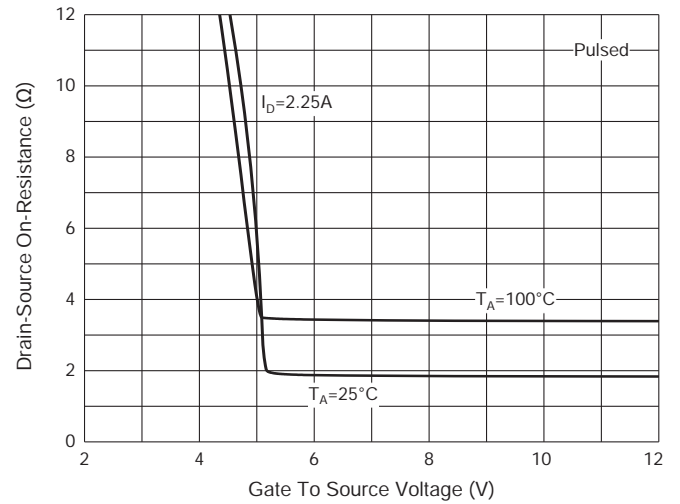


Fig. 5 - $I_S - V_{SD}$

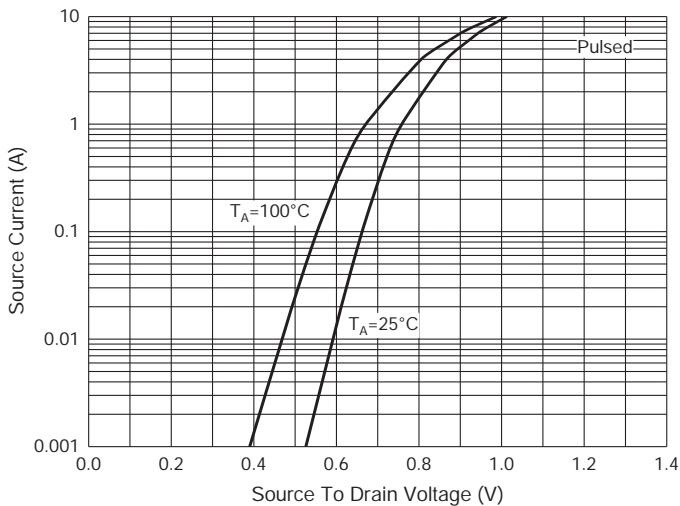
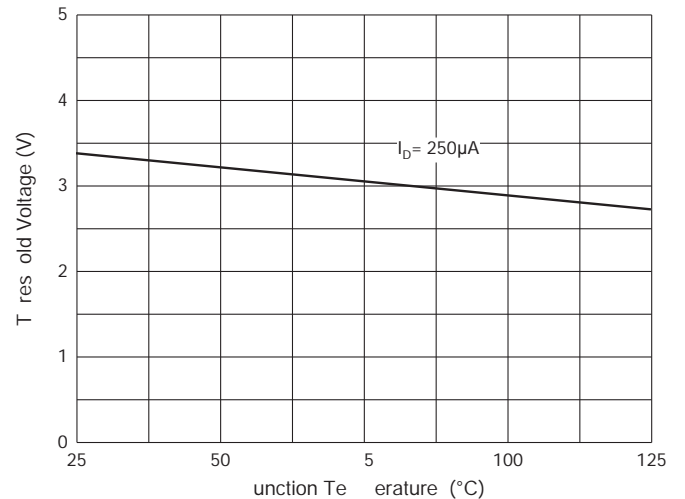


Fig. 6 - Thermal Resistance



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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