

Features

- Fast Switching
- Improved dv/dt Capability
- Excellent Package for Good Heat Dissipation
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

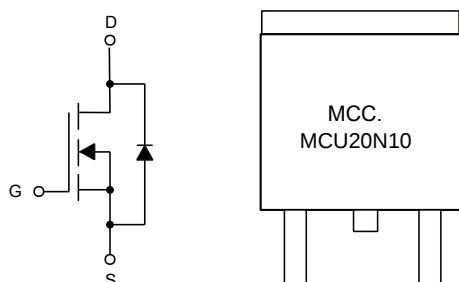
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 2.7°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	20	A
Pulsed Drain Current ⁽¹⁾	I_{DM}	80	A
Total Power Dissipation	P_D	47	W

Note:

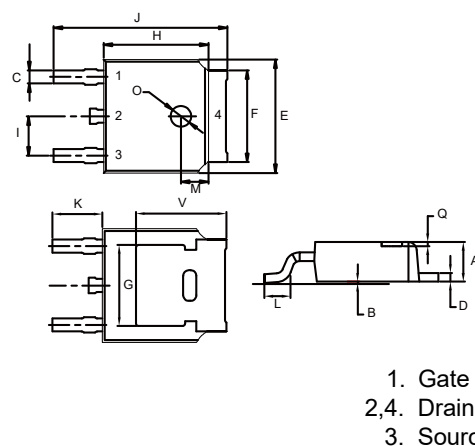
1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

Internal Structure and Marking Code



N-CHANNEL MOSFET

DPAK(TO-252)



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
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	100			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.1	1.8	3.0	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =10A		43	48	mΩ
		V _{GS} =4.5V, I _D =8A		45	53	mΩ
Diode Characteristics						
Continuous Body Diode Current	I _S				20	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =10A			1.2	V
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V,f=1MHz		2014		pF
Output Capacitance	C _{oss}			67		
Reverse Transfer Capacitance	C _{rss}			47		
Total Gate Charge	Q _g	V _{DS} =50V,V _{GS} =10V,I _D =4.5A		53		nC
Gate-Source Charge	Q _{gs}			8.5		
Gate-Drain Charge	Q _{gd}			11		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V, V _{DD} =50V, R _{GEN} =3Ω, R _L =8.6Ω		13		ns
Turn-On Rise Time	t _r			28		
Turn-Off Delay Time	t _{d(off)}			44		
Turn-Off Fall Time	t _f			36		
Drain-Source Body Diode Characteristics						
Reverse Recovery Time	t _{rr}	VGS=0V, IF=20A,di/dt=100A/μs		34		ns
Reverse Recovery Charge	Q _{rr}			29		nC

Curve Characteristics

Fig. 1 - Output Characteristics

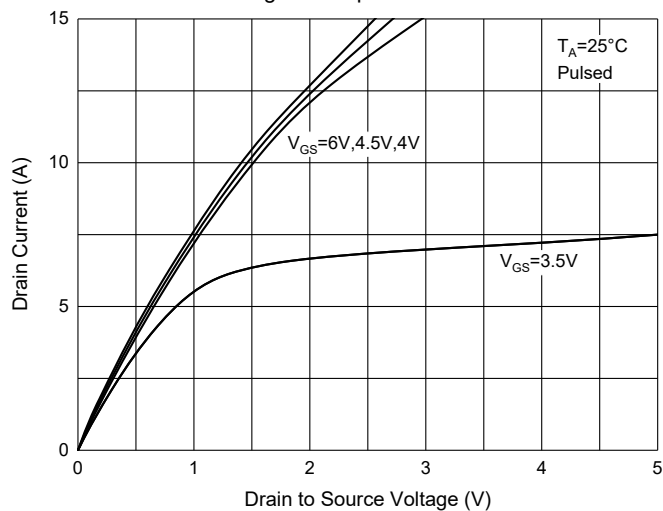


Fig. 2 - Transfer Characteristics

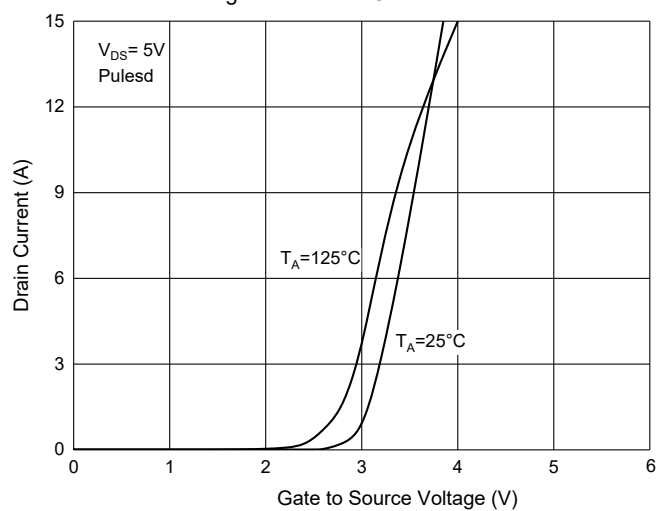


Fig. 3 - $R_{DS(ON)} - I_D$

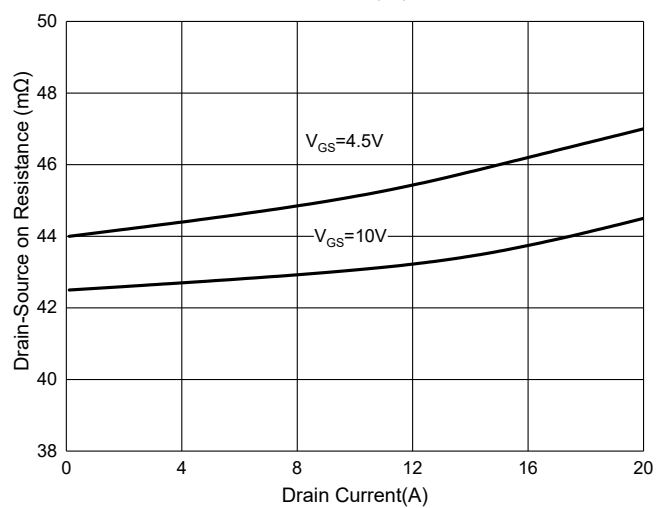


Fig. 4 - Normalized On Resistance Characteristics

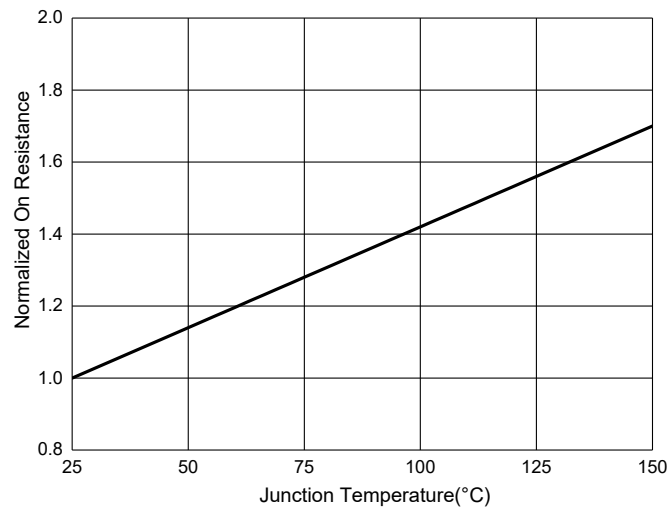


Fig. 5 - Capacitance Characteristics

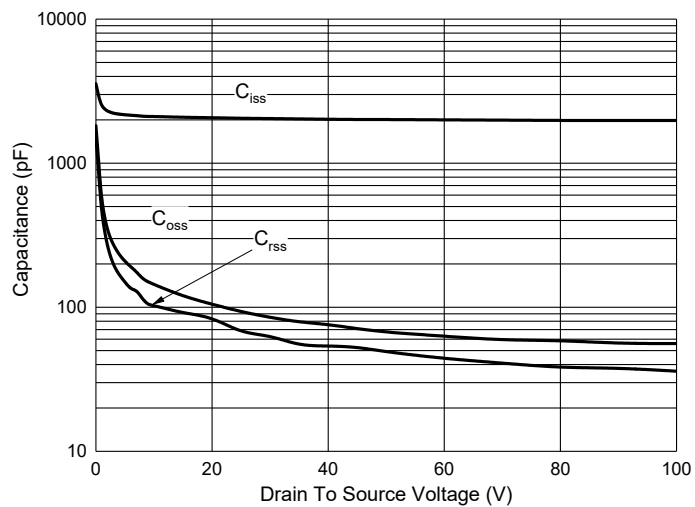
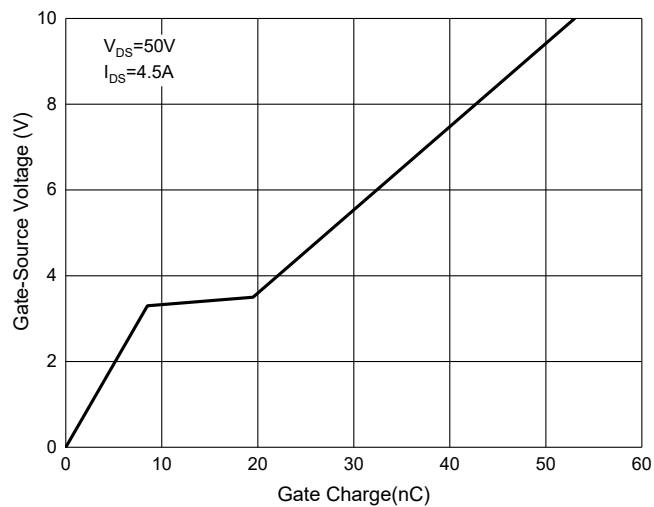
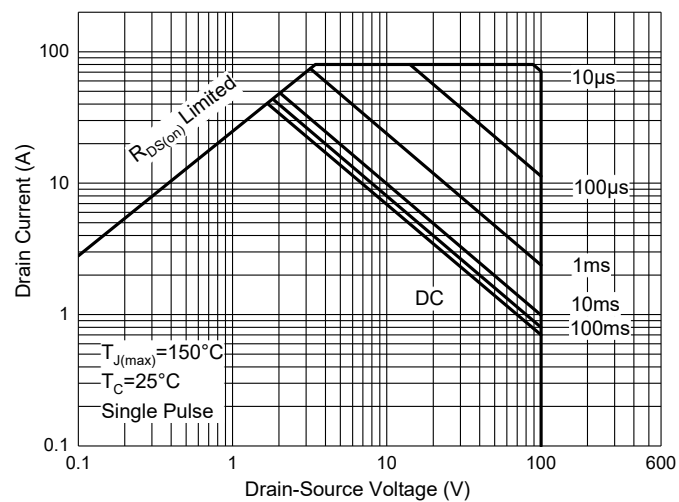


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Safe Operation Area



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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