Features

- Low On-resistance and Low Conduction Losses
- ESD Protected up to 2KV(HBM)
- Ultra Low Gate Charge Cause Lower Driving Requirement
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. “Green” Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-CHANNEL Super-Junction Power MOSFET

Maximum Ratings

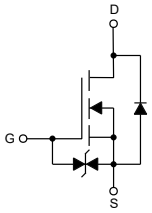
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 62.5°C/W Junction to Ambient(Note 2)
- Thermal Resistance: 0.5°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	800	V
Gate-Source Volltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25°C	I_D	11	A
	T_C=100°C		6.9	
Pulsed Drain Current (Note 3)		I_{DM}	44	A
Total Power Dissipation(Note 4)		P_D	250	W
Single Pulse Avalanche Energy (Note 5)		E_{AS}	142	mJ

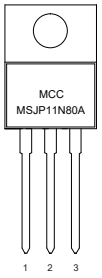
Note:

1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The Power dissipation P_{DSM} is based on $R_{\theta JA}$ t≤ 10s and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-case thermal resistance.
5. T_J=25°C, V_{DD}=50V, V_{GS}= 10V, L= 79mH.

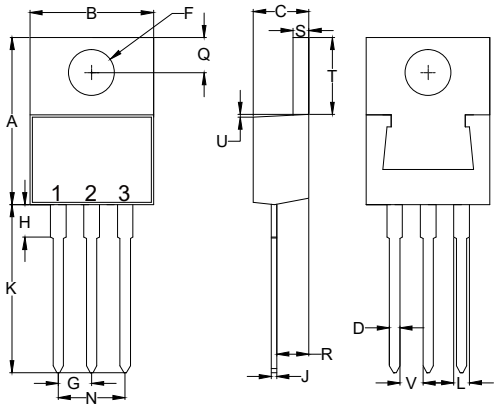
Internal Structure and Marking Code



1. Gate
2. Drain
3. Source



TO-220



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.560	0.625	14.22	15.88	
B	0.380	0.420	9.65	10.67	
C	0.140	0.190	3.56	4.82	
D	0.020	0.045	0.51	1.14	
F	0.139	0.161	3.53	4.09	Φ
G	0.090	0.110	2.29	2.79	
H	-----	0.250	-----	6.35	
J	0.012	0.025	0.30	0.64	
K	0.500	0.580	12.70	14.73	
L	0.045	0.060	1.14	1.52	
N	0.190	0.210	4.83	5.33	
Q	0.100	0.135	2.54	3.43	
R	0.080	0.115	2.04	2.92	
S	0.045	0.055	1.14	1.39	
T	0.230	0.270	5.84	6.86	
U	-----	0.050	-----	1.27	
V	0.045	-----	1.15	-----	

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	800			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=800V, V_{GS}=0V			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.5	3.5	4.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=7.1 A		362	470	mΩ
Gate Resistance	R_g	f=1 MHz, Open drain		25		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				11	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=11A			1.4	V
Reverse Recovery Time	t_{rr}	I_F=5.5A, dI_F/dt=100A/μs		200		ns
Reverse Recovery Charge	Q_{rr}			1825		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=400V,V_{GS}=0V,f=1MHz		918		pF
Output Capacitance	C_{oss}			21		
Reverse Transfer Capacitance	C_{rss}			1.5		
Total Gate Charge	Q_g	V_{DS}=400V,V_{GS}= 10V,I_D=5.5A		24		nC
Gate-Source Charge	Q_{gs}			4.9		
Gate-Drain Charge	Q_{gd}			10		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=400V, V_{GS}=10V, R_{GEN}=6Ω, I_{DS}=5.5A		12.4		ns
Turn-On Rise Time	t_r			16.3		
Turn-Off Delay Time	$t_{d(off)}$			14		
Turn-Off Fall Time	t_f			6		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

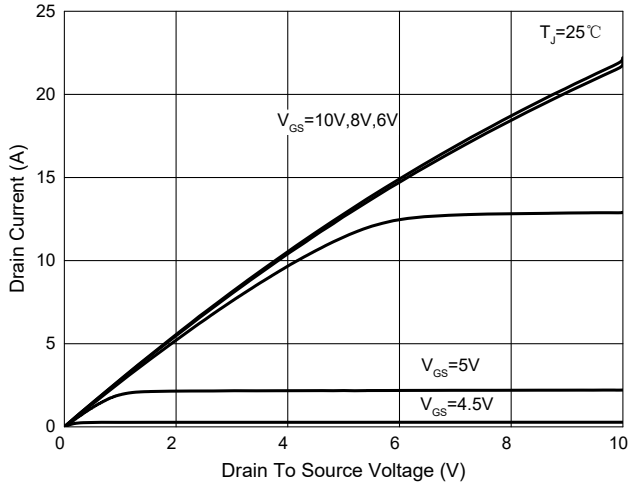


Fig. 2 - Transfer Characteristics

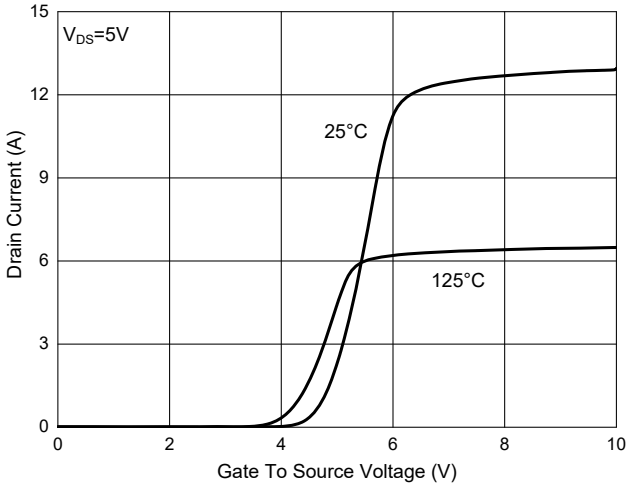


Fig. 3 - $R_{DS(ON)}$—V_{GS}

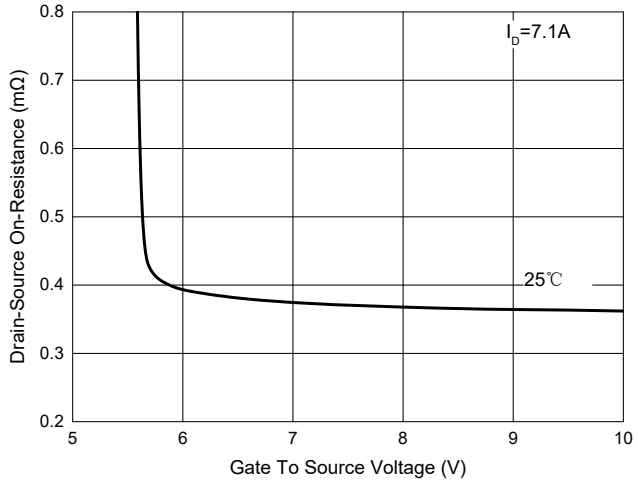


Fig. 4 - Normalized On Resistance Characteristics

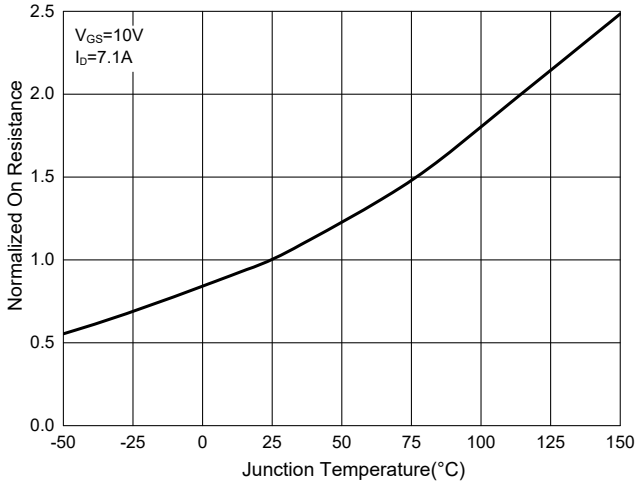


Fig. 5 - Capacitance Characteristics

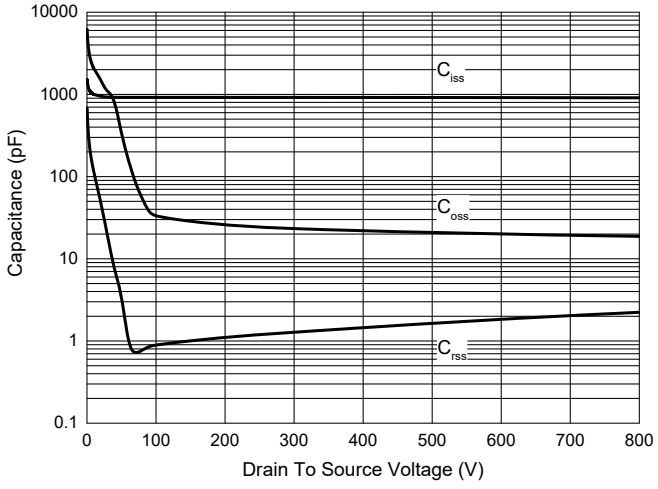
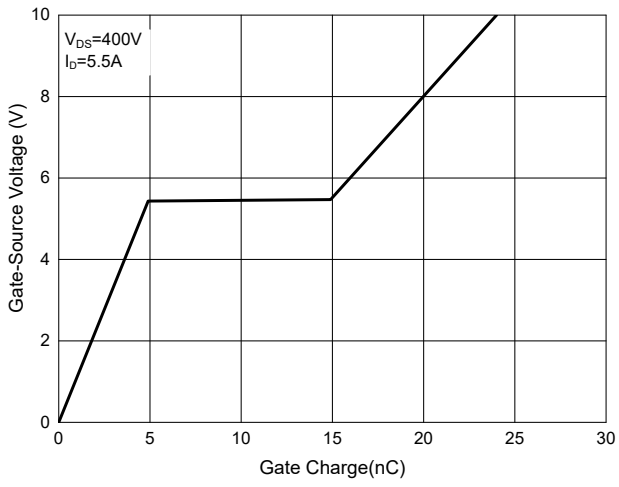


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - $R_{DS(ON)}$—I_D

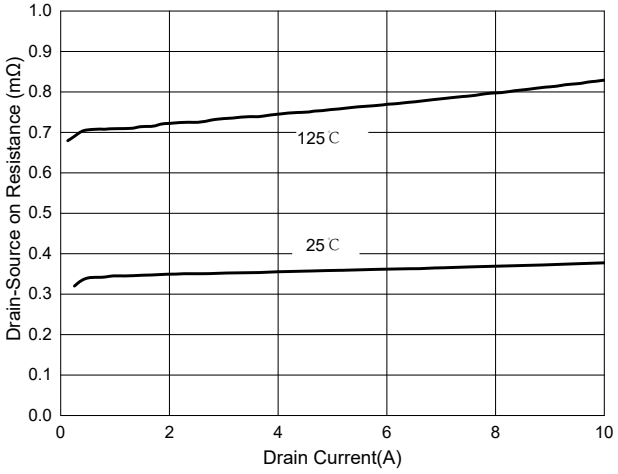


Fig. 8 - Nomalized Threshold voltage

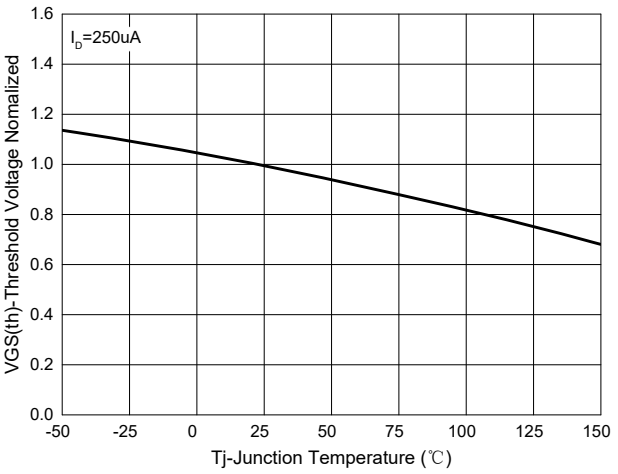


Fig. 9 - I_S—V_{SD}

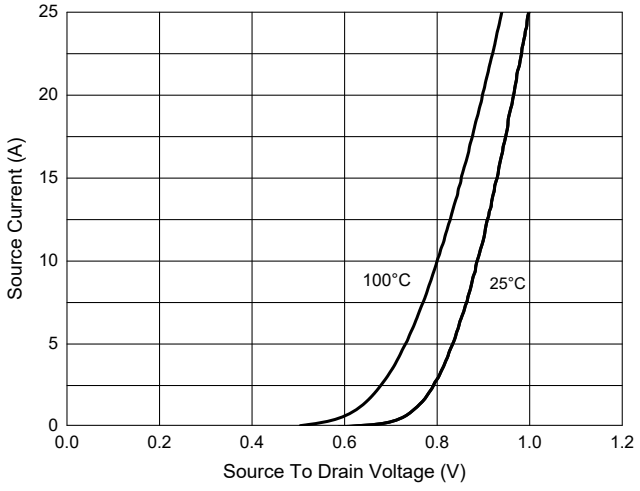


Fig. 10 - Drain Current

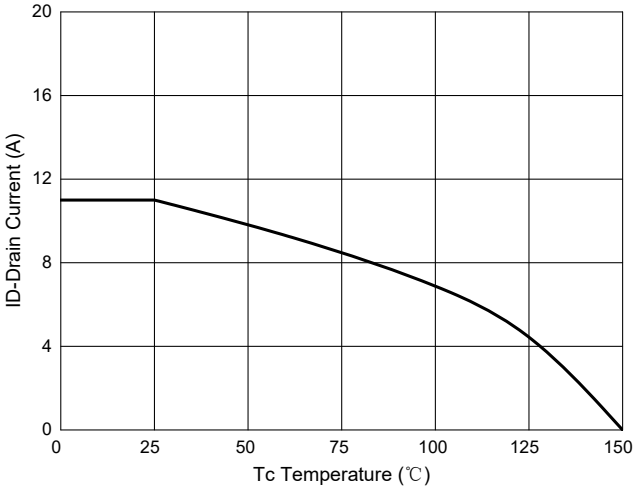
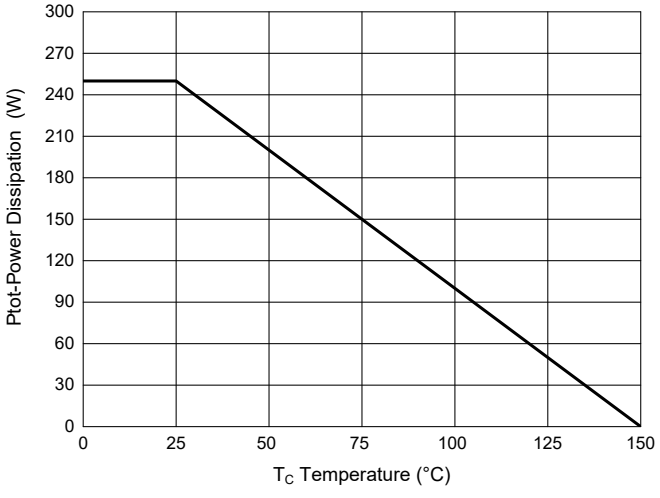


Fig. 11 - PD—TJ



Curve Characteristics

Fig. 12 - Safe Operation Area

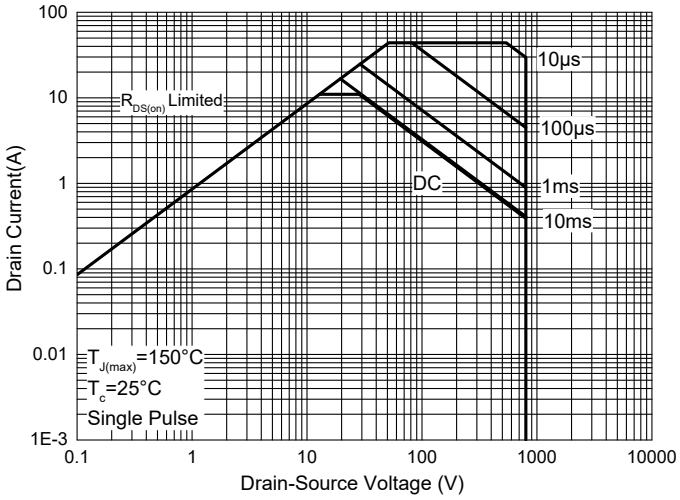
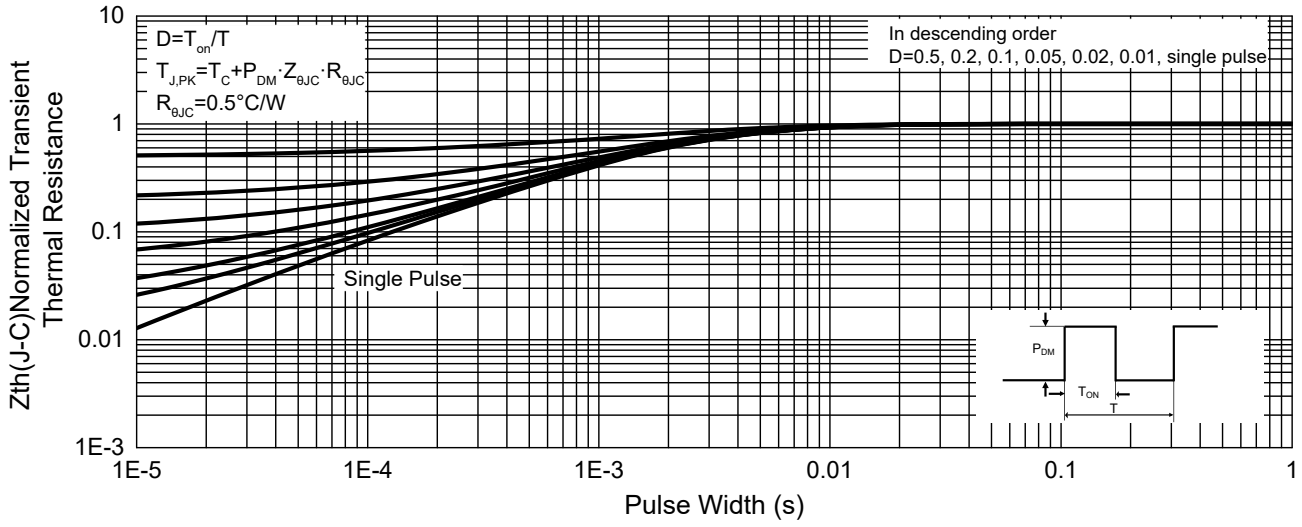


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-BP	Bulk:50pcs/Tube,1Kpcs/Box,5Kpcs/Carton

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