Features

- Very Low FOM RDS(on)×Qg
- Halogen Free. “Green” Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-CHANNEL Super-Junction Power MOSFET

Maximum Ratings

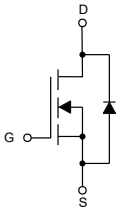
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 34°C/W Junction to Ambient(Note 2)
- Thermal Resistance: 1.1°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	900	V
Gate-Source Volltage		V_{GS}	±30	V
Continuous Drain Current	T_C=25°C	I_D	8	A
	T_C=100°C		5	
Pulsed Drain Current(Note 3)		I_{DM}	32	A
Total Power Dissipation(Note 4)		P_D	114	W
Single Pulsed Avalanche Energy(Note 5)		E_{AS}	81	mJ

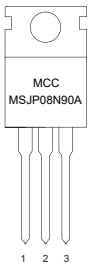
Note:

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_C=25°C.
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_G=10V, R_G=25Ω, L =50mH

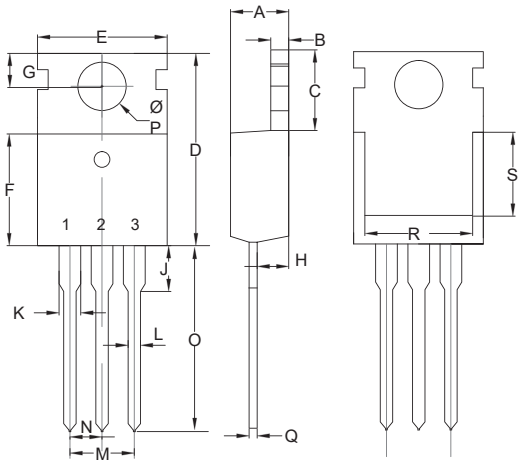
Internal Structure and Marking Code



1. Gate
2. Drain
3. Source



TO-220AB(H)



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.049	0.055	1.25	1.40	
C	0.244	0.268	6.20	6.80	
D	0.598	0.638	15.20	16.20	
E	0.382	0.398	9.70	10.10	
F	0.354	0.370	9.00	9.40	
G	0.102	0.118	2.60	3.00	
H	0.087	0.102	2.20	2.60	
J	0.110	0.126	2.80	3.20	
K	0.048	0.055	1.22	1.40	
L	0.028	0.037	0.70	0.95	
M	0.188	0.212	4.78	5.38	
N	0.094	0.106	2.39	2.69	
O	0.496	0.535	12.60	13.60	
P	0.138	0.150	3.50	3.80	Φ
Q	0.016	0.024	0.40	0.60	
R	0.276	-----	7.00	-----	
S	0.217	-----	5.50	-----	

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	900			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±30V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=900V, V_{GS}=0V			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2	3	4	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=2.5A		1.1	1.62	Ω
Gate Resistance	R_g	f=1 MHz, Open drain		1.8		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				8	A
Body Diode Voltage	V_{SD}	I_S=11A, V_{GS}=0V			1.4	V
Reverse Recovery Time	t_{rr}	I_F=5A di/dt=100A/μs		304		ns
Reverse Recovery Charge	Q_{rr}			2246		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V,f=1MHz		476		pF
Output Capacitance	C_{oss}			451		
Reverse Transfer Capacitance	C_{rss}			14		
Total Gate Charge	Q_g	V_{DS}=720V,I_D=5A V_{GS}=10V		16		nC
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			7.5		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=450V,V_{GS}=10V,I_D=5A R_G=25Ω		11		ns
Turn-On Rise Time	t_r			22		
Turn-Off Delay Time	$t_{d(off)}$			48		
Turn-Off Fall Time	t_f			23		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

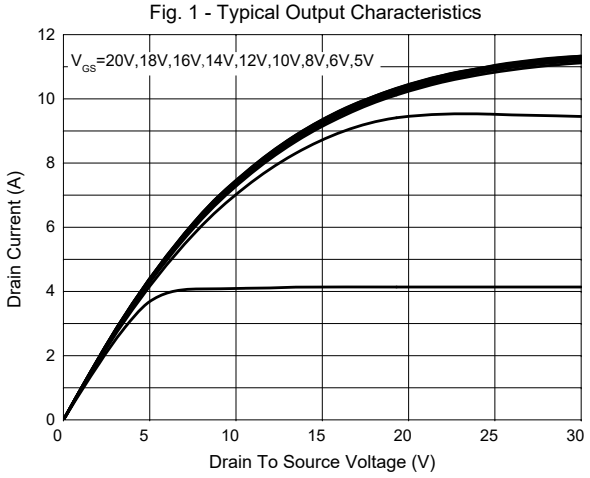


Fig.2 - Transfer Characteristic

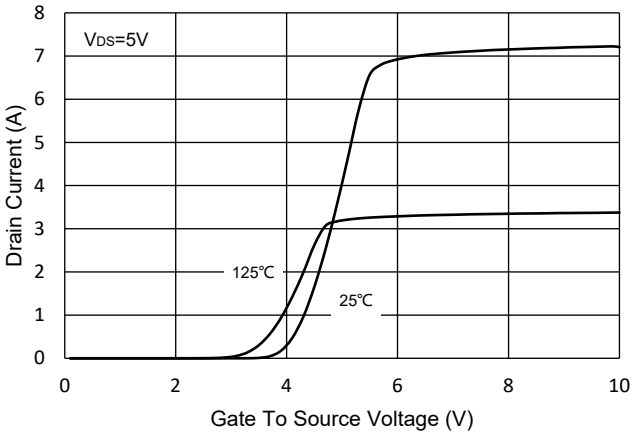


Fig.3 - $R_{DS(ON)}$ - V_{GS}

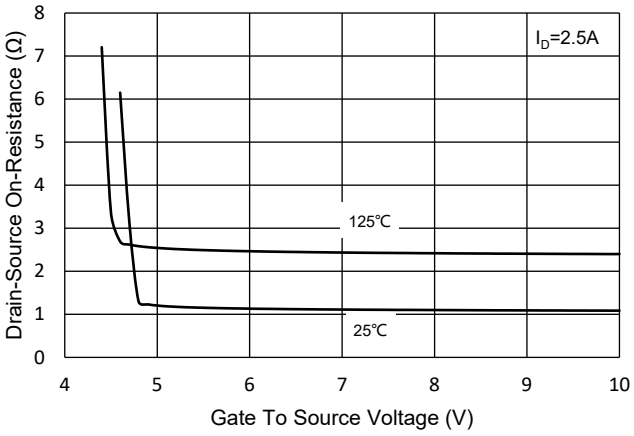


Fig. 4 - $R_{DS(ON)}$—I_D

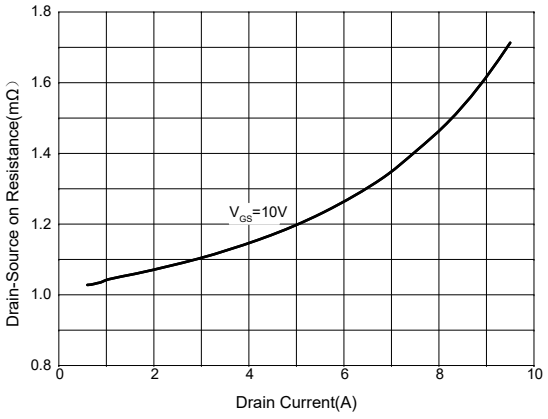


Fig.5 - Capacitance Characteristics

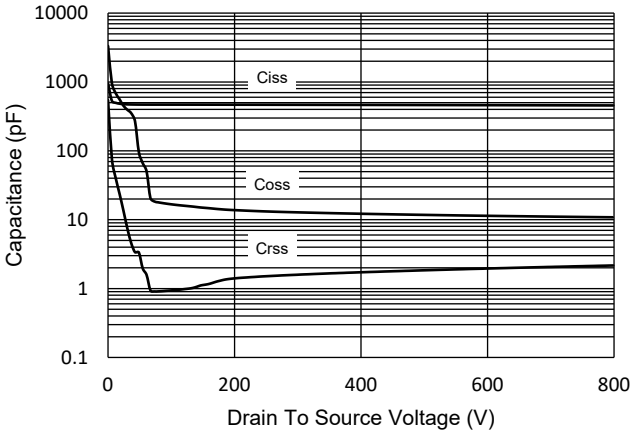
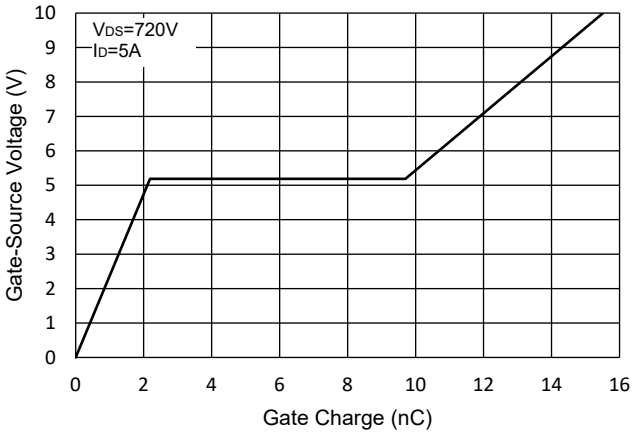


Fig.6 - Gate Charge



Curve Characteristics

Fig.7 - Normalized Threshold Voltage

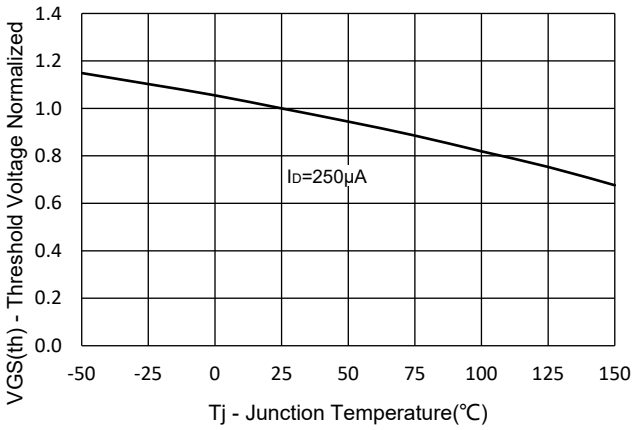


Fig.8 - Normalized On Resistance Characteristics

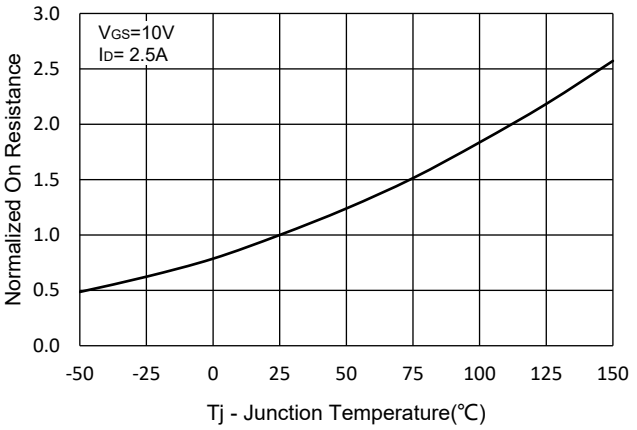


Fig.9 - I_S - V_{SD}

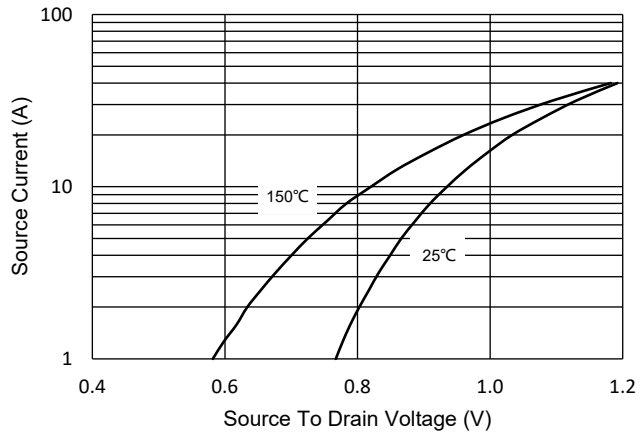


Fig.10 - Drain Current

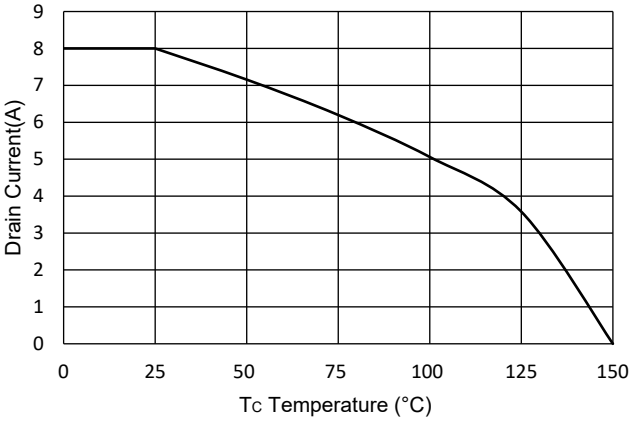
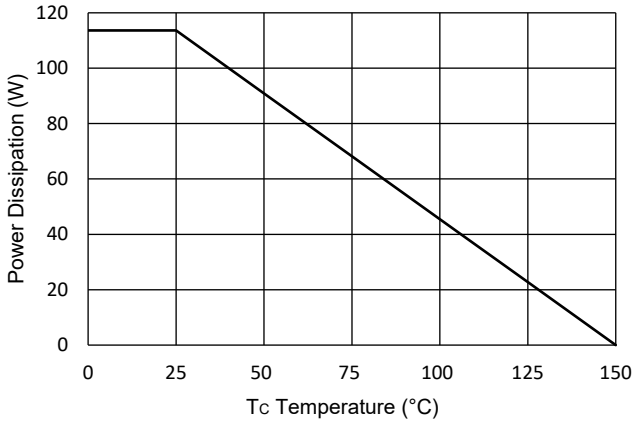


Fig.11 - PD Dissipation



Curve Characteristics

Fig.12 - Safe Operation Area

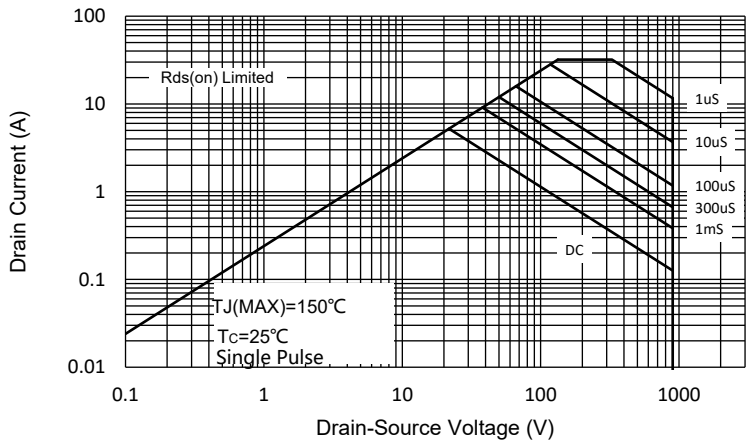
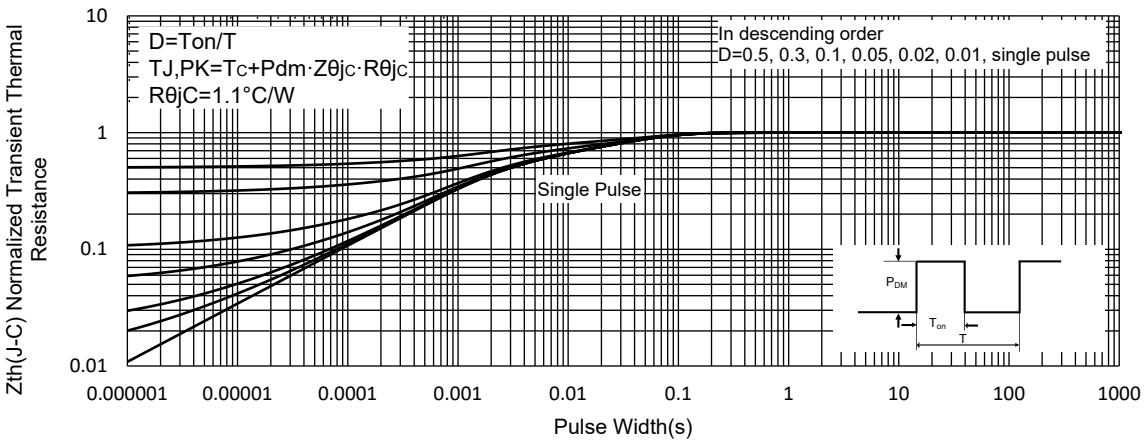


Fig.13 - Normalized Transient Thermal Impedance



Ordering Information

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

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