Features

- Split Gate Trench Mosfet Technology
- Excellent Stability and Uniformity
- 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)

P-CHANNEL MOSFET

Maximum Ratings

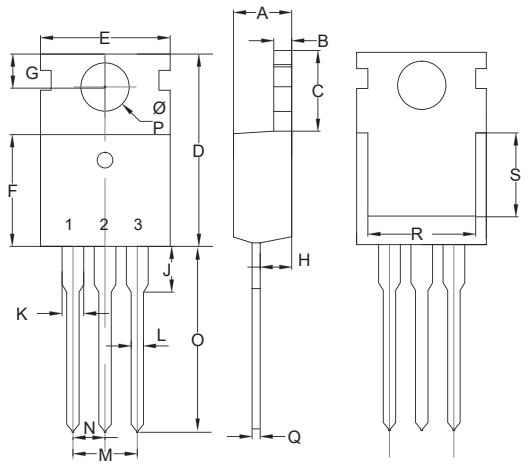
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 40°C/W Junction to Ambient(Note 2)
- Thermal Resistance: 1.4°C/W Junction to Case

Parameter		Symbol	Rating	Unit
Drain -Source Voltage		V_{DS}	-60	V
Gate -Source Volltage		V_{GS}	±20	V
Drain Current-Continuous	T_C=25°C	I_D	-80	A
	T_C=100°C		-50	
Drain Current-Pulse(Note 3)		I_{DM}	-320	A
Power Dissipation(Note 4)		P_D	89	W
Single Pulsed Avalanche Energy(Note 5)		E_{AS}	729	mJ

Note:

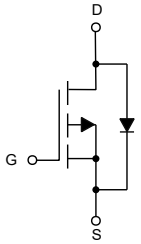
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.
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}=-40V, V_{GS}=-10V, Rg=25Ω, L=2mH.

TO-220AB(H)

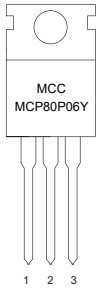


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.172	0.188	4.37	4.77	
B	0.049	0.057	1.25	1.45	
C	0.246	0.270	6.25	6.85	
D	0.594	0.634	15.10	16.10	
E	0.382	0.406	9.70	10.30	
F	0.346	0.370	8.80	9.40	
G	0.102	0.118	2.60	3.00	
H	0.087	0.102	2.20	2.60	
J	-----	0.134	-----	3.40	
K	0.046	0.058	1.17	1.47	
L	0.028	0.037	0.70	0.95	
M	0.200		5.08		TYP.
N	0.100		2.54		TYP.
O	0.502	0.543	12.75	13.80	
P	0.134	0.150	3.40	3.80	Φ
Q	0.016	0.026	0.40	0.65	
R	0.276	-----	7.00	-----	
S	0.217	-----	5.50	-----	

Internal Structure and Marking Code



1.GATE
2.DRAIN
3.SOURCE



Electrical Characteristics @ 25°C (Unless Otherwise Noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-60			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V, V_{GS}=0V			-1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-2	-2.6	-3.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-20A		6.2	8.4	mΩ
		V_{GS}=-4.5V, I_D=-20A		7.4	10	
Gate Resistance	R_g	f=1Mhz,Drain open		8		Ω
Diode Characteristics						
Continuous Body Diode Current	I_S				-80	A
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-20A			-1.2	V
Reverse Recovery Time	t_{rr}	I_S=-30A,di/dt=100A/μs		60		ns
Reverse Recovery Charge	Q_{rr}			85		nC
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-30V,V_{GS}=0V,f=1MHz		5322		pF
Output Capacitance	C_{oss}			1001		
Reverse Transfer Capacitance	C_{rss}			39		
Total Gate Charge	Q_g	V_{DS}=-30V,V_{GS}=-10V,I_D=-20A		83		nC
Gate-Source Charge	Q_{gs}			19.4		
Gate-Drain Charge	Q_{gd}			17		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-30V, V_{GS}=-10V, R_G=1.6Ω, I_D=-20A		13.7		ns
Turn-On Rise Time	t_r			26		
Turn-Off Delay Time	$t_{d(off)}$			139		
Turn-Off Fall Time	t_f			57		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

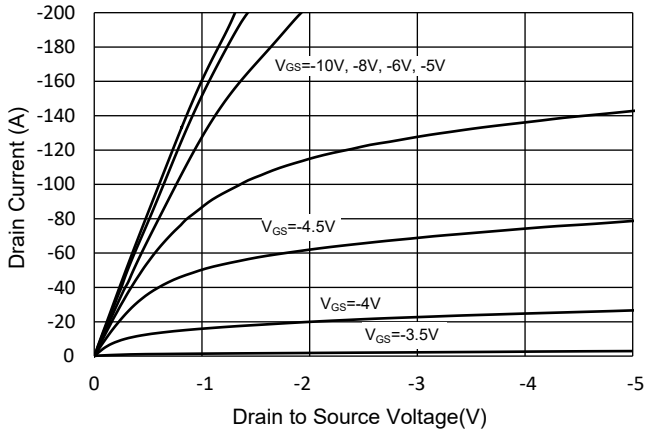


Fig.2 Transfer Characteristic

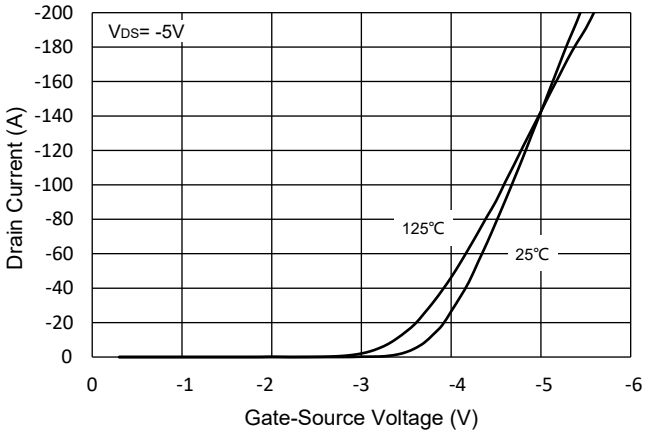


Fig.3 Rdson-Vgs

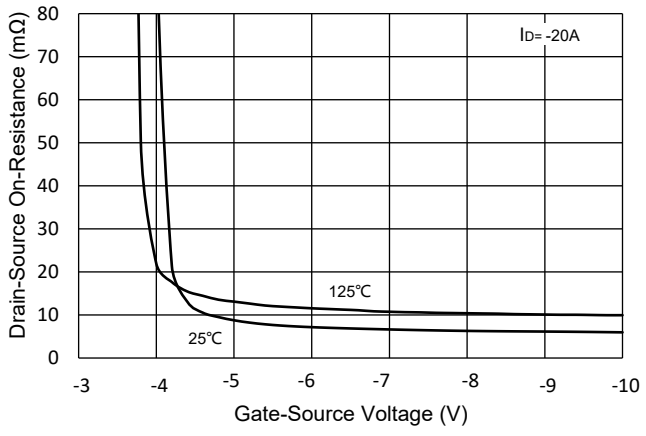


Fig.4 RDS(ON)-ID

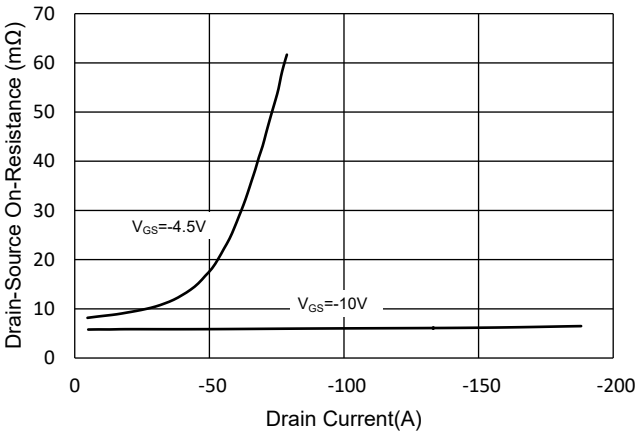


Fig.5 Capacitance Characteristics

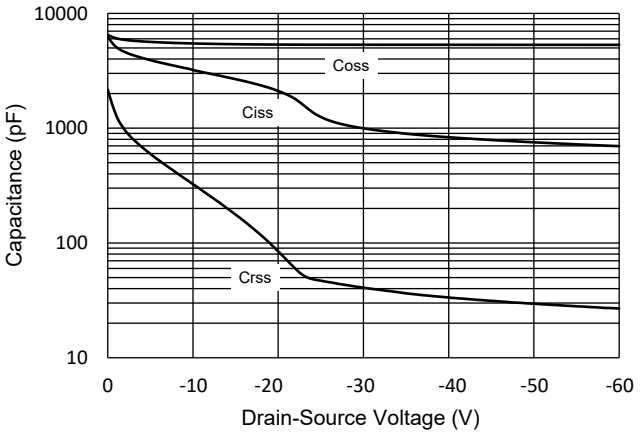
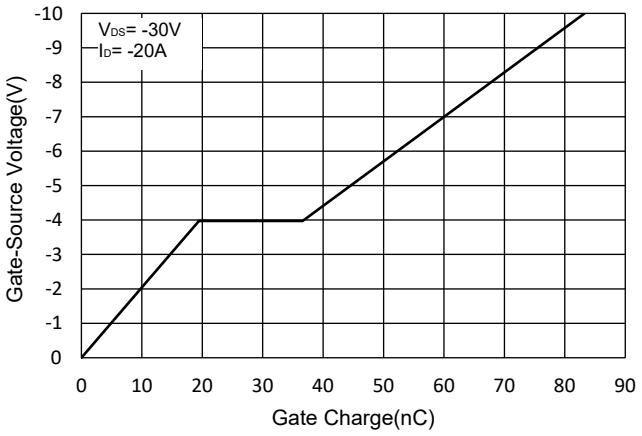


Fig.6 Gate Charge



Curve Characteristics

Fig.7 Normalized Threshold Voltage

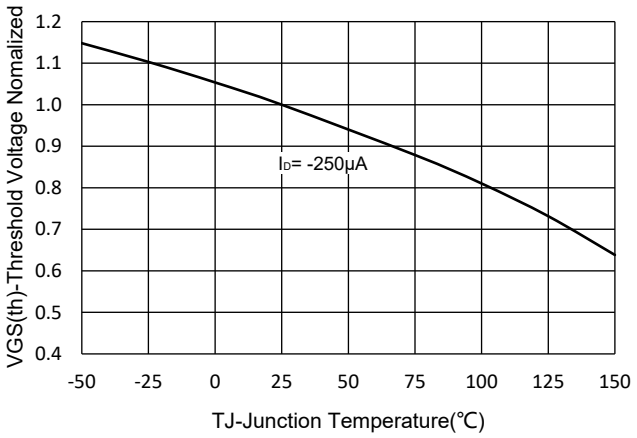


Fig.8 Normalized On Resistance Characteristics

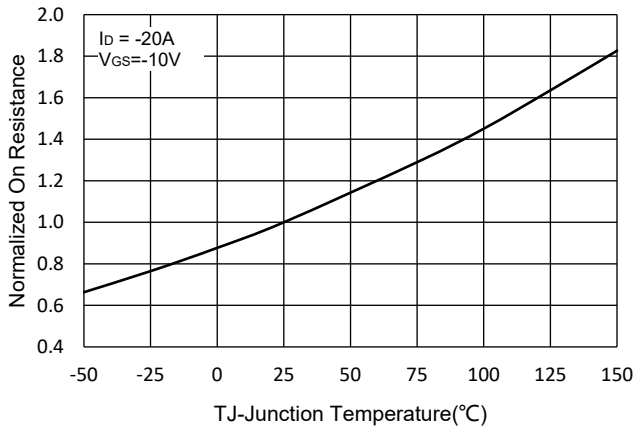


Fig.9 IS-VSD

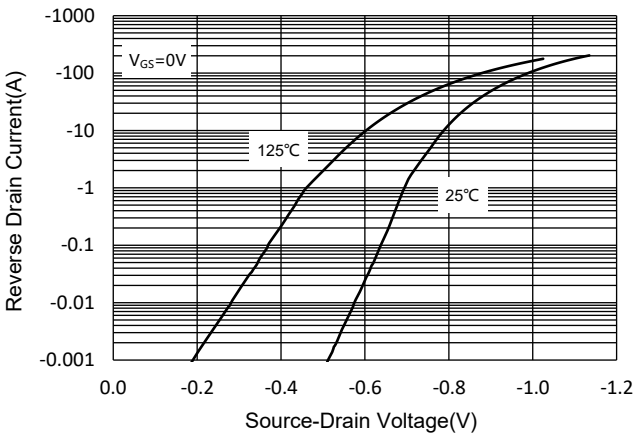


Fig.10 Drain Current

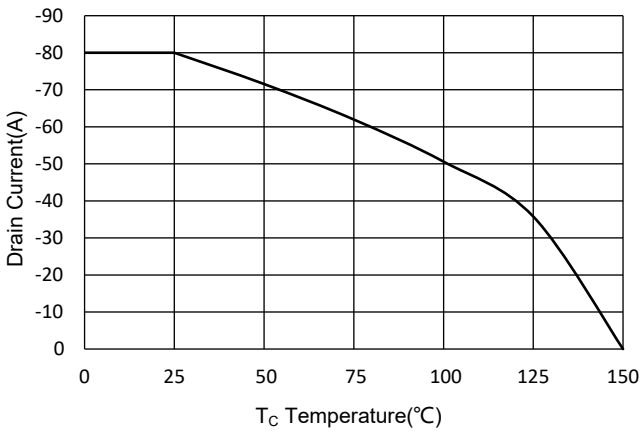
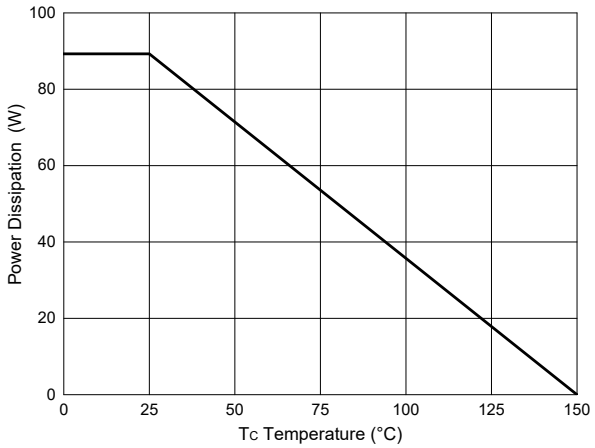


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

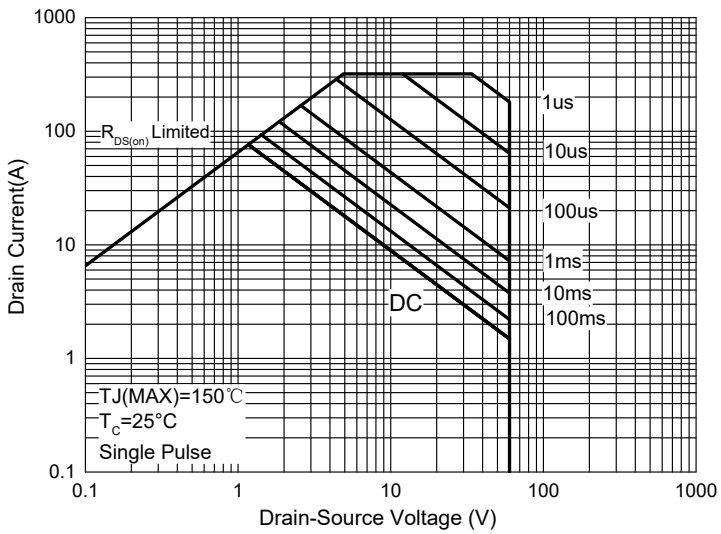
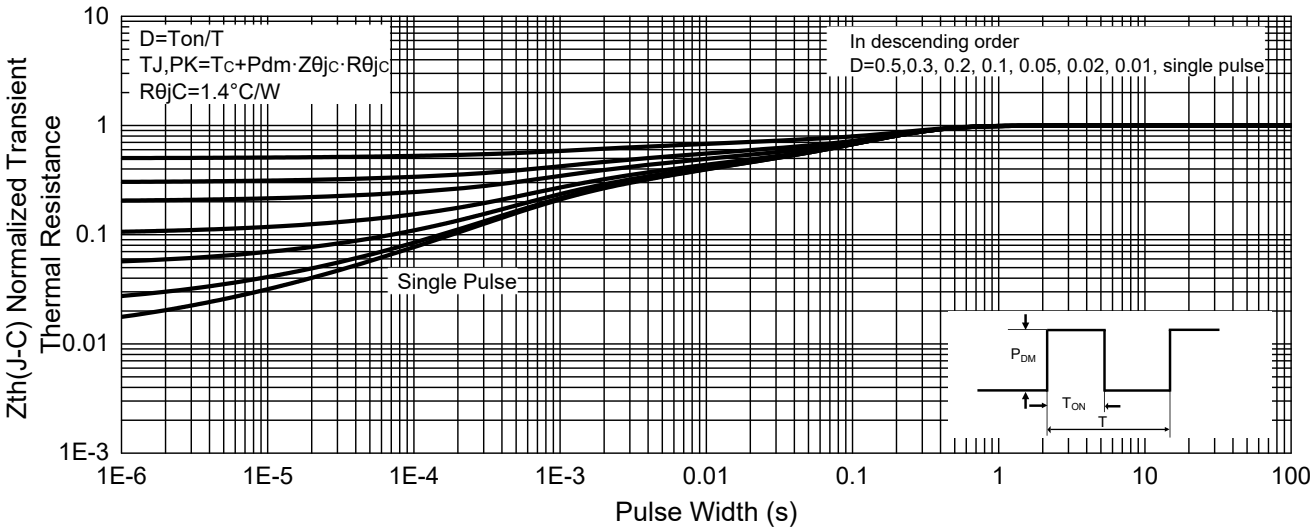


Fig. 13 -Normalized Transient Thermal Impedance



Ordering Information

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

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