

Features

- High Density Cell Desihn for Ultra Low $R_{DS(on)}$
- Fully Characterized Avalanche Voltage and Current
- Good Stability and Uniformity with High E_{AS}
- 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)

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 1.15°C/W Junction to Case^(Note 2)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	-60	V	
Gate-Source Voltlage	V_{GS}	±20	V	
Continuous Drain Current	I_D	$T_C=25^\circ C$	-60	A
		$T_C=100^\circ C$	-42.3	A
Pulsed Drain Current	I_{DM}	-260	A	
Single Pulse Avalanche Energy ^(Note 3)	E_{AS}	722	mJ	
Total Power Dissipation	P_D	130	W	

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. Surface Mounted on FR4 Board, $t \leq 10$ sec.

3. $T_J=25^\circ C, V_{DD}=-30V, V_G=-10V, L=0.5mH, R_g=25\Omega$.

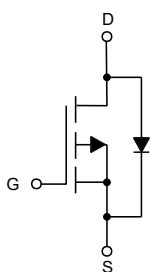
P-CHANNEL MOSFET

TO-220AB(H)

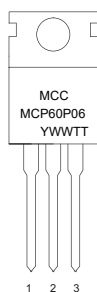
DIMENSIONS

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



YWWTT: 5 codes in total
Y is the year
WW is the cycle
TT is the line type

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-2	-2.6	-3.5	V
Drain-Source On-Resistance ^(Note 4)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-20A$		13	18	m Ω
Forward Transconductance ^(Note 4)	g_{FS}	$V_{DS}=-5V, I_D=-20A$		25		S
Dynamic Characteristics^(Note 5)						
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$		5814		pF
Output Capacitance	C_{oss}			483		
Reverse Transfer Capacitance	C_{rss}			234		
Total Gate Charge	Q_g	$V_{DS}=-30V, V_{GS}=-10V, I_D=-20A$		75		nC
Gate-Source Charge	Q_{gs}			16		
Gate-Drain Charge	Q_{gd}			19		
Reverse Recovery Charge	Q_{rr}	$I_S=-20A, di/dt=-100A/\mu s$		71		
Reverse Recovery Time	t_{rr}			49		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-30V, R_L=1.5\Omega, V_{GS}=-10V, R_G=3\Omega$		18		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			55		
Turn-Off Fall Time	t_f			35		
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I_S	$T_C=25^\circ C$			-60	A
Body Diode Voltage	V_{SD}	$I_{SD}=-20A, V_{GS}=0V$			-1.2	V

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

5. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

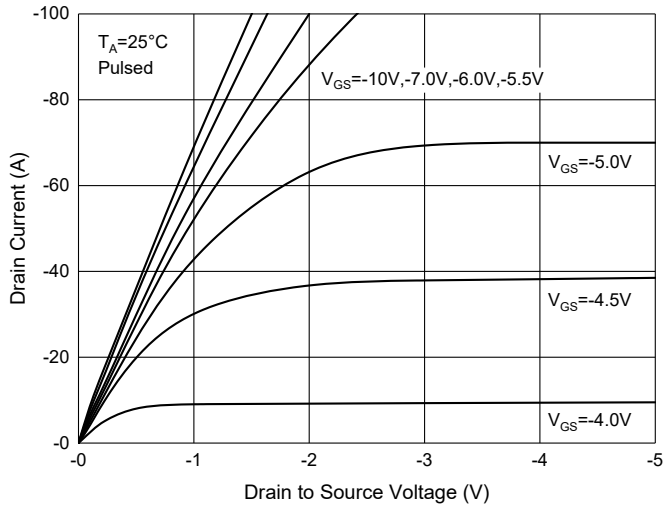


Fig. 2 - Transfer Characteristics

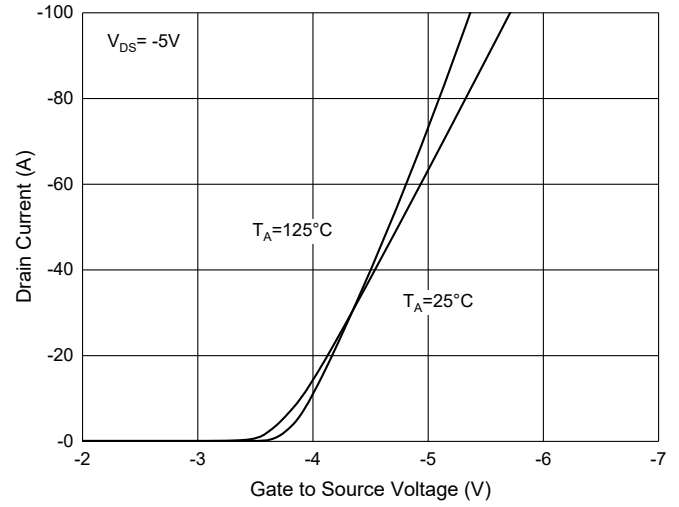


Fig. 3 - $R_{DS(ON)}$ - I_D

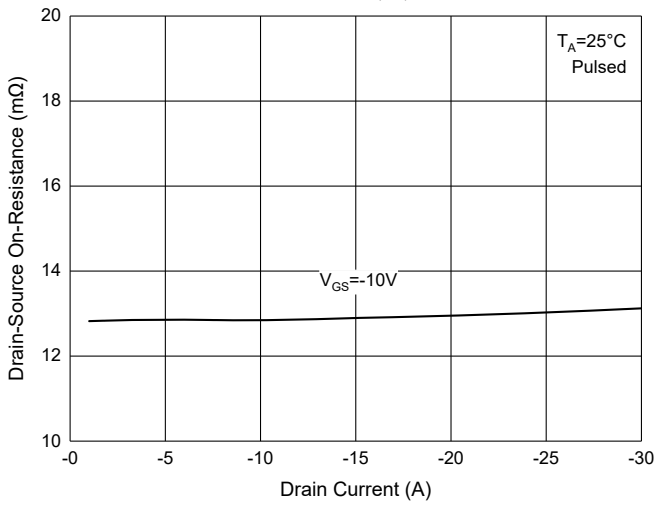


Fig. 4 - $R_{DS(ON)}$ - Temperature

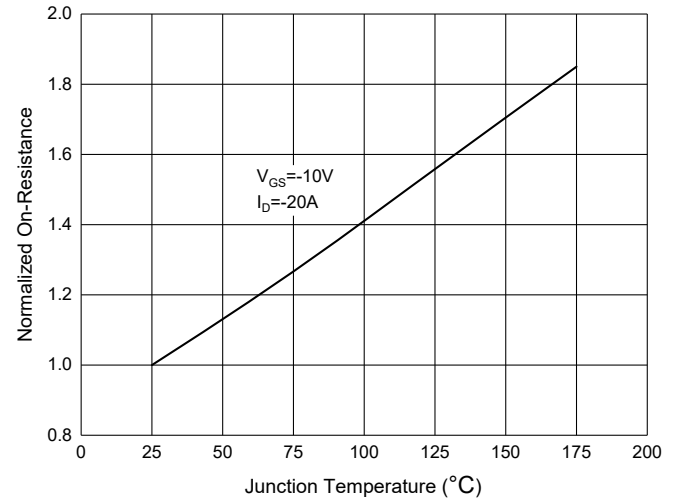
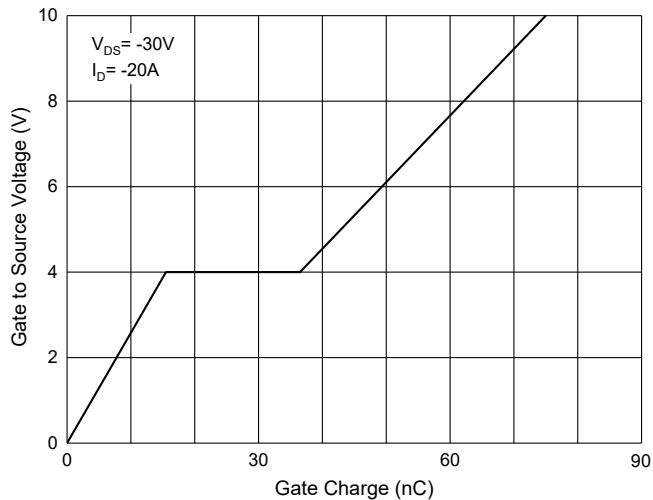


Fig. 5 - Gate Charge



Ordering Information

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

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