

Features

- Split Gate Trench MOSFET Technology
- Low Thermal Resistance
- 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)

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

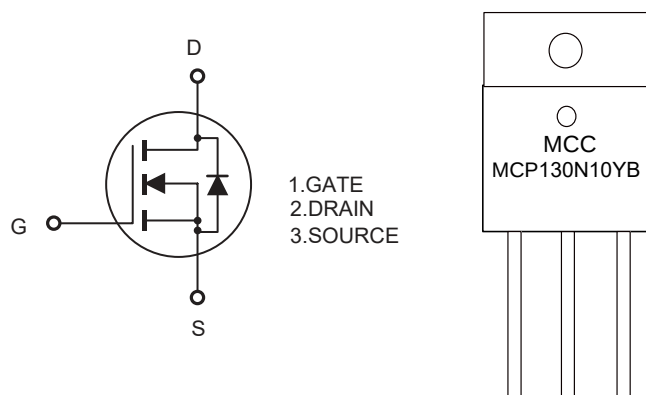
Parameter		Symbol	Rating	Unit
Drain -Source Voltage		V _{DS}	100	V
Gate -Source Volltage		V _{GS}	±20	V
Drain Current-Continuous	T _C =25°C	I _D	130	A
	T _C =100°C		82	
Drain Current-Pulse ^(Note2)		I _{DM}	520	A
Power Dissipation		P _D	310	W
Single Pulsed Avalanche Energy ^(Note3)		E _{AS}	340	mJ

1.Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2.Pulse Width Limited by Maximum Junction Temperature.

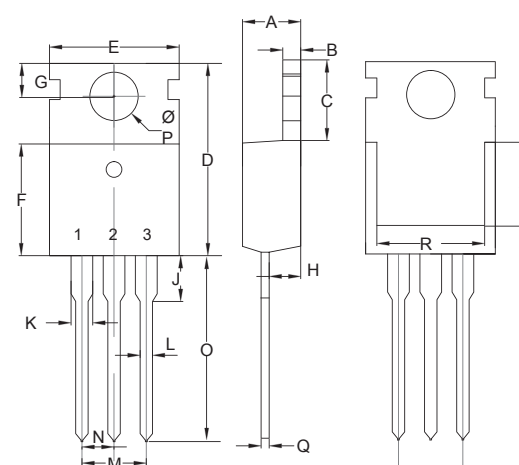
3.L=0.5mH, $I_{AS}=37\text{A}$, $V_{DD}=50\text{V}$, $V_{GS}=10\text{V}$, $R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$

Internal Structure and Marking Code



N-Channel Enhancement Mode Field Effect Transistor

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	-----	

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	100			V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V,T _J =25°C			1	μA
		V _{DS} =100V, V _{GS} =0V,T _J =150°C			100	
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.8	2.5	V
Drain-Source On-Resistance ^(Note4)	R _{DS(on)}	V _{GS} =10V, I _D =65A		4	5.5	mΩ
		V _{DS} =4.5V, I _D =20A		5	6.5	
Gate resistance	R _G	f=1MHz,Open drain		0.8		Ω
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V,f=1MHz		4450		pF
Output Capacitance	C _{oss}			1500		
Reverse Transfer Capacitance	C _{rss}			90		
Total Gate Charge	Q _g	V _{DD} =50V,V _{GS} =10V,I _D =65A		68		nC
Gate-Source Charge	Q _{gs}			11		
Gate-Drain Charge	Q _{gd}			16		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V,V _{DD} =50V, I _D =65A, R _G =2.2Ω		18		ns
Turn-On Rise Time	t _r			79		
Turn-Off Delay Time	t _{d(off)}			33		
Turn-Off Fall Time	t _f			7		
Drain-Source Body Diode Characteristics						
Body Diode Voltage	V _{SD}	T _J =25°C,I _{SD} =65A, V _{GS} =0V		0.9	1.2	V
Reverse Recovery Time	t _{rr}	I _F =65A, di/dt=600A/μs		35		ns
Reverse Recovery Charge	Q _{rr}			160		μC
Diode Forward Current	I _s	V _{GS} < V _{th}			130	A
Pulsed Source Current	I _{sp}				440	

Notes:

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

Curve Characteristics

Fig. 1 - Typical Output Characteristics

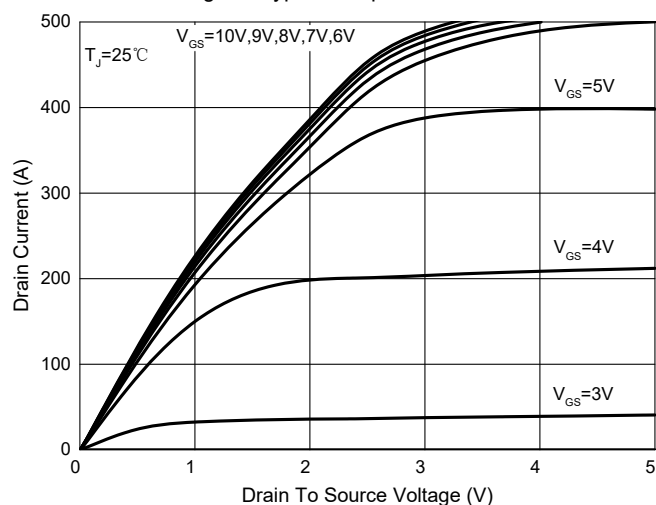


Fig. 2 - Transfer Characteristics

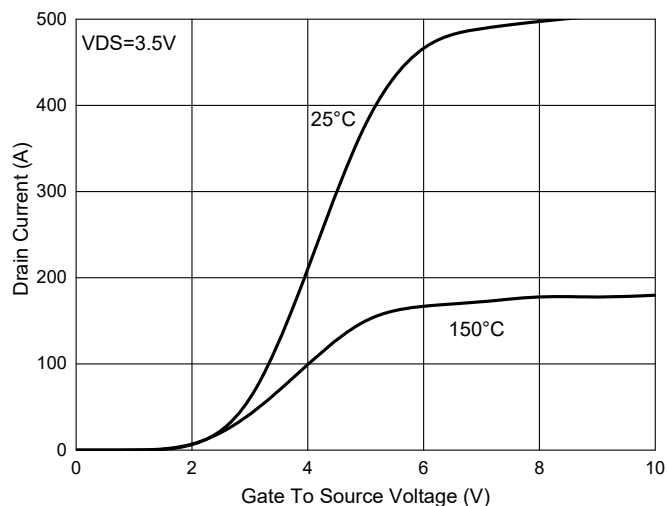


Fig. 3 - $R_{DS(ON)} - I_D$

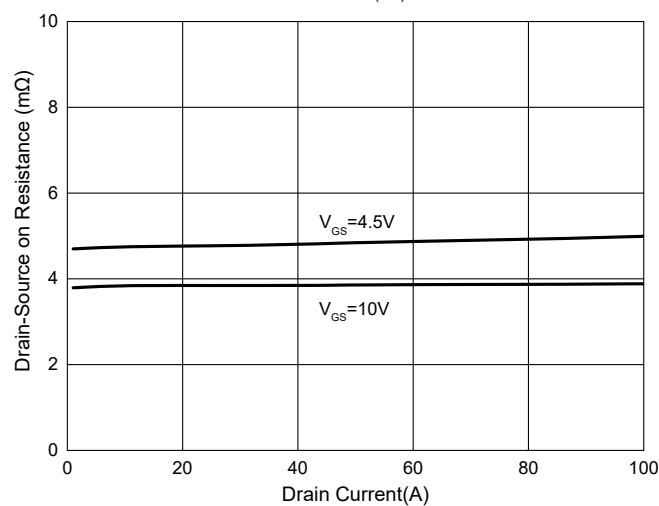


Fig. 4- $I_S - V_{SD}$

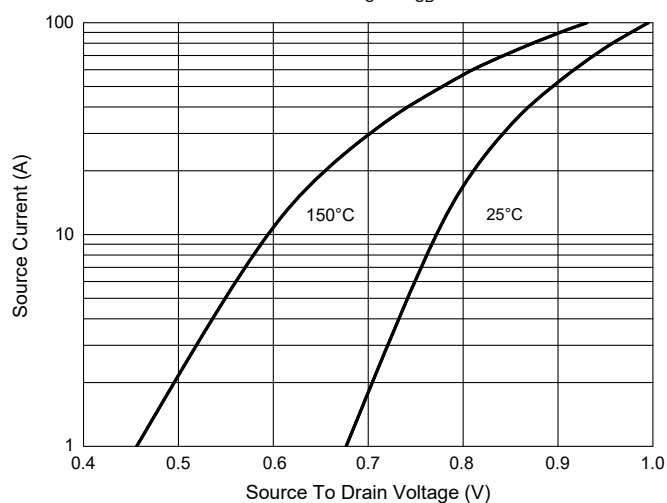


Fig. 5 - Normalized On Resistance Characteristics

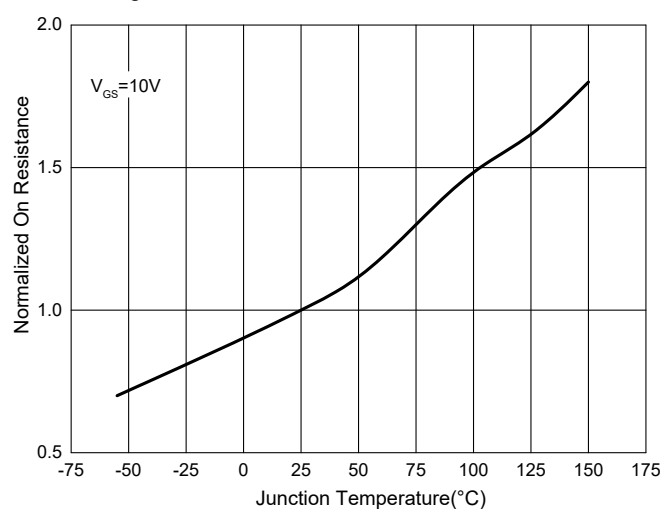
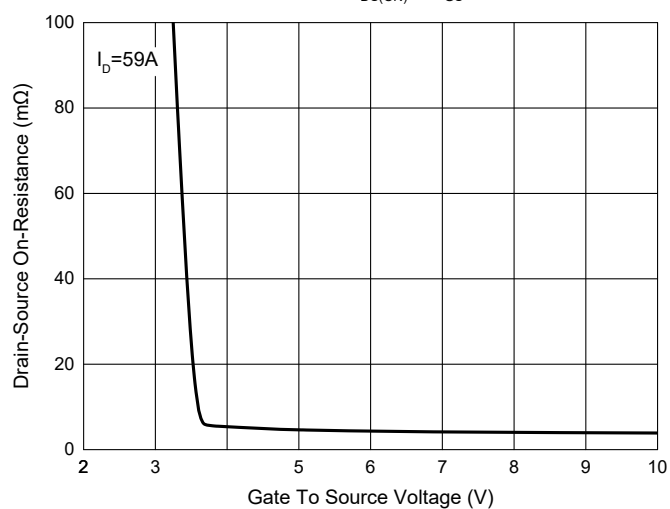


Fig. 6- $R_{DS(ON)} - V_{GS}$



Curve Characteristics

Fig. 7 - Gate Charge

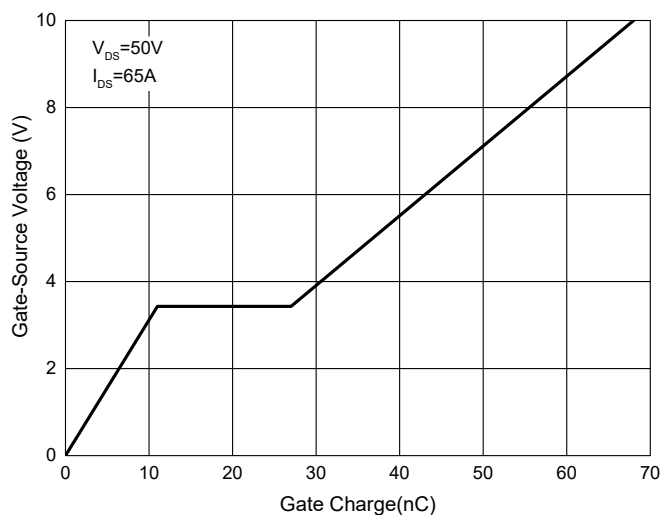


Fig. 8 - Capacitance Characteristics

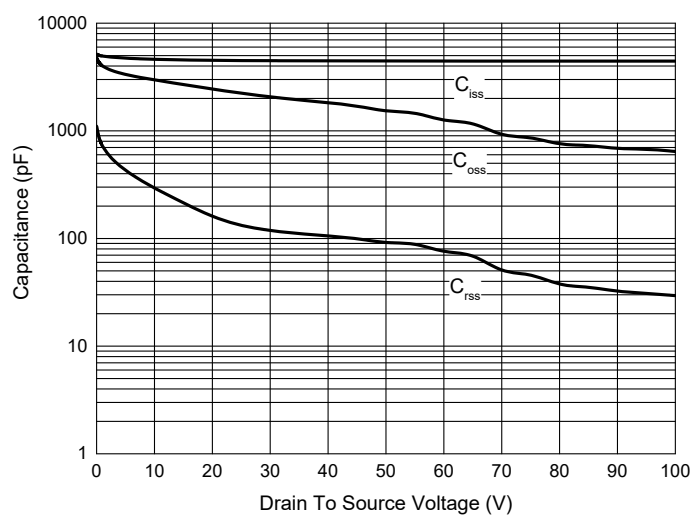


Fig. 9 - Safe Operation Area

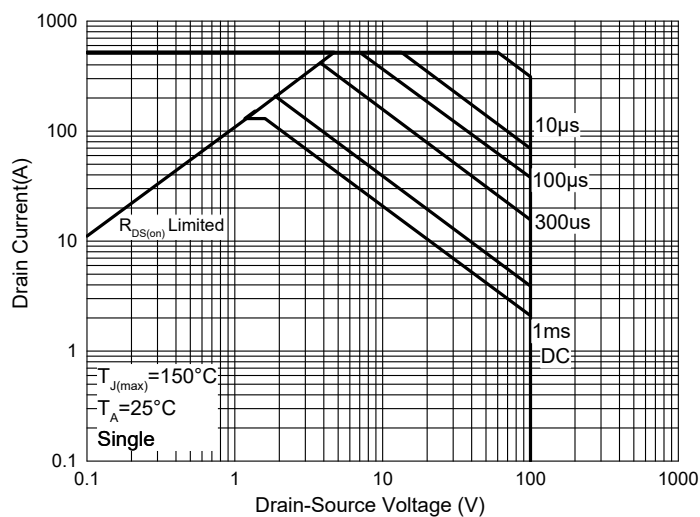
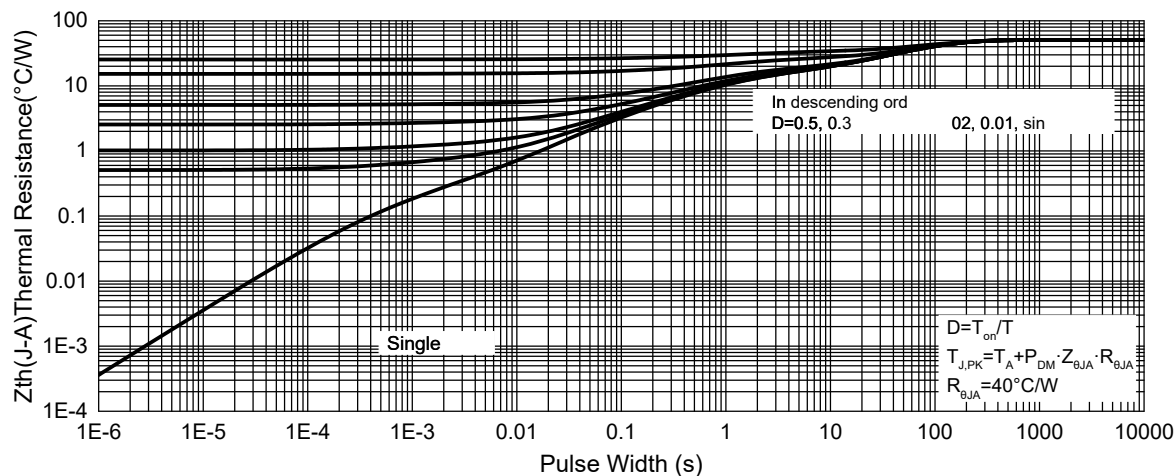


Fig. 10 - Maximum Transient Thermal Impedance



Ordering Information

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

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