Features

- Low $R_{DS(on)}$ & FOM
- Extremely Low Switching Loss
- Excellent Stability and Uniformity
- Fast Switching and Soft Recovery
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

N-Channel MOSFET

Maximum Ratings

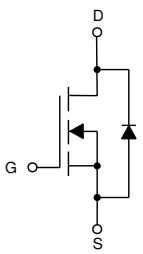
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 62°C/W Junction to Ambient(1)
- Thermal Resistance: 0.65°C/W Junction to Case

Parameter	Symbol	Value
Drain-Source Voltage	V_{DS}	100V
Gate-Source Volltage	V_{GS}	±20V
Continuous Drain Current(2),T_C=25°C	I_D	130A
Pulsed Drain Current(3), T_C=25°C	$I_{D,pluse}$	390A
Power Dissipation(4), T_C=25°C	P_D	192W
Single Pulsed Avalanche Energy(5)	E_{AS}	500mJ

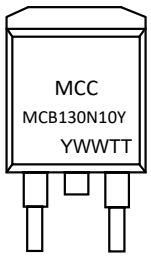
Note:

1. The Value of $R_{\theta JA}$ is Measured with the Device Mounted on 1 in^2 FR-4 Board with 2oz. Copper, In a Still Air Environment with T_A=25°C.
2. Calculated Continuous Current Based on Maximum Allowable Junction Temperature.
3. Repetitive Rating: Pulse Width Limited By Max. Junction Temperature.
4. Pd is Based on Max. Junction Temperature, Using Junction-Case Thermal Resistance.
5. V_{DD}=50V, R_G=25Ω, L=0.5mH, Starting T_J=25°C.

Internal Structure and Marking Code

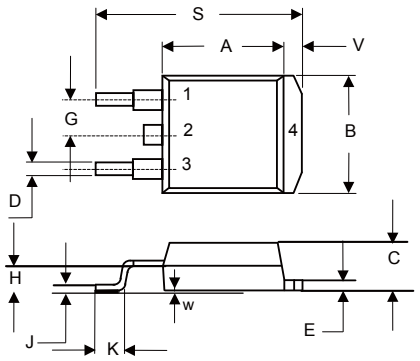


1. Gate
2,4. Drain
3. Source



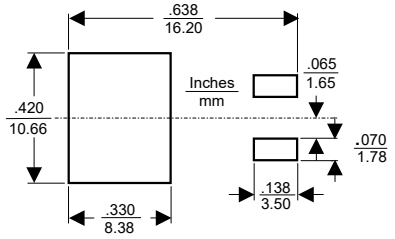
YWWTT: 5 codes in total
Y is the year
WW is the cycle
TT is the line type

D2-PAK



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.331	0.370	8.40	9.40	
B	0.378	0.417	9.60	10.60	
C	0.165	0.189	4.20	4.80	
D	0.027	0.037	0.68	0.94	
E	0.045	0.055	1.14	1.40	
G	0.010		2.54		TYP.
H	0.096	0.134	2.43	3.40	
J	0.011	0.025	0.28	0.64	
K	0.071	0.131	1.80	3.32	
S	0.575	0.625	14.60	15.87	
V	0.042	0.058	1.07	1.47	
W	0.000	0.010	0.00	0.25	

Suggested Solder Pad Layout



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-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.2	2	4	V
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=60A		4.0	4.6	mΩ
Dynamic Characteristics						
Drain-Source On-Voltage	C_{iss}	V_{GS}=0V,V_{DS}=50V,f=1MHz		6124.6		pF
Output Capacitance	C_{oss}			792.3		pF
Reverse Transfer Capacitance	C_{rss}			15.1		pF
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=50V,R_G=2.2Ω, I_D=22 A		28.2		ns
Rise Time	t_r			7.5		ns
Turn-Off Delay Time	$t_{d(off)}$			81.9		ns
Fall Time	t_f			20.1		ns
Gate Charge Characteristics						
Total Gate Charge	Q_g	I_D=22A,V_{DS}=50V,V_{GS}=10V		101.6		nC
Gate-Source Charge	Q_{gs}			20.6		nC
Gate-Drain Charge	Q_{gd}			28.7		nC
Gate Plateau Voltage	$V_{plateau}$			4.2		V
Body Diode Characteristics						
Diode Forward Current	I_S	V_{GS}<V_{th}			130	A
Pulsed Source Current	I_{SP}				390	A
Diode Forward Voltage	V_{SD}	I_S=20A, V_{GS}=0V			1.3	V
Reverse Recovery Time	t_{rr}	I_S=10A,di/dt=100A/μs		82.1		ns
Reverse Recovery Charge	Q_{rr}			248.4		nC
Peak Reverse Recovery Current	I_{rrm}			4.9		A

Curve Characteristics

Fig. 1 - Typical Output Characteristics

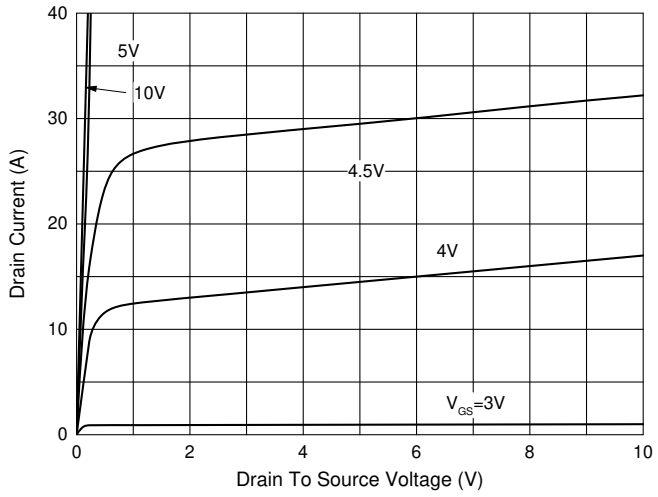


Fig. 2 - Transfer Characteristics

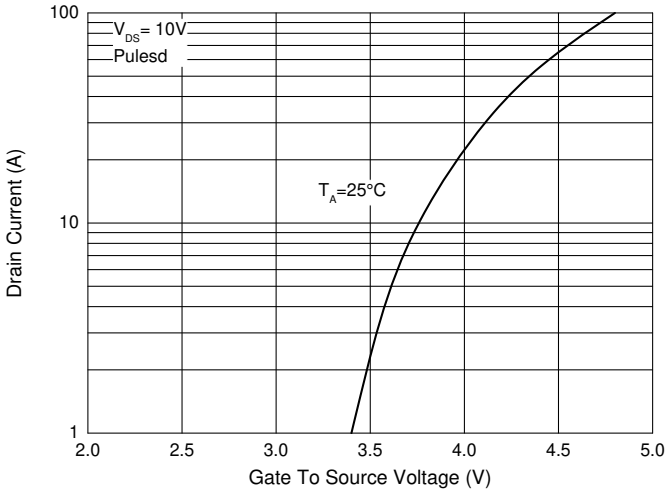


Fig. 3 - Capacitance Characteristics

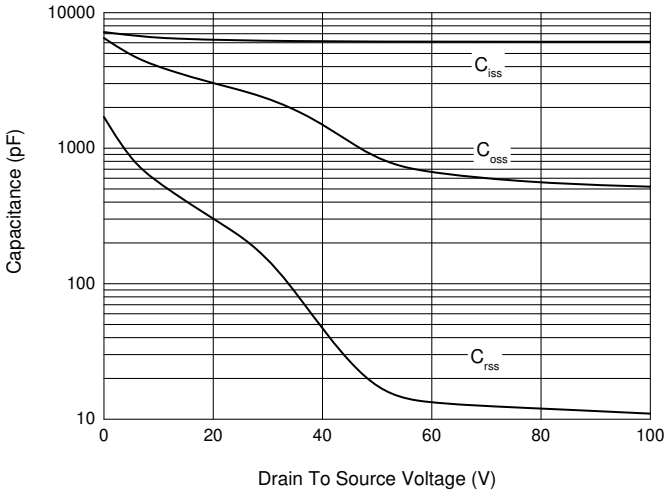


Fig. 4 - Total Gate Charge Characteristics

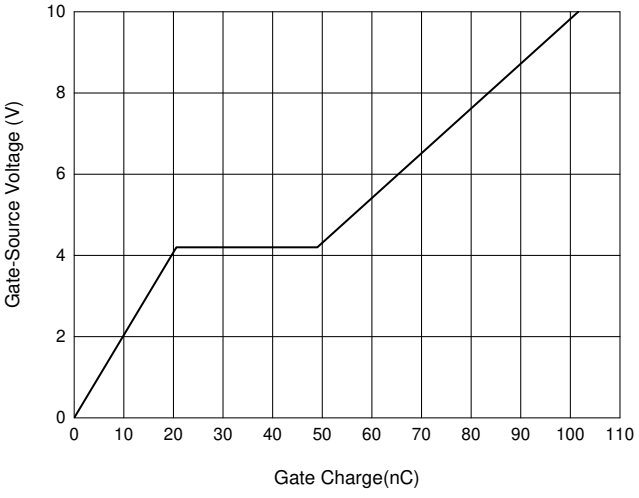


Fig. 5 - I_S—V_{SD}

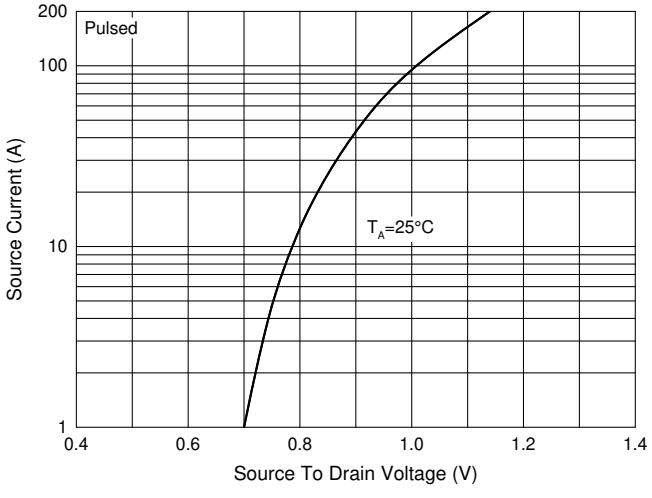
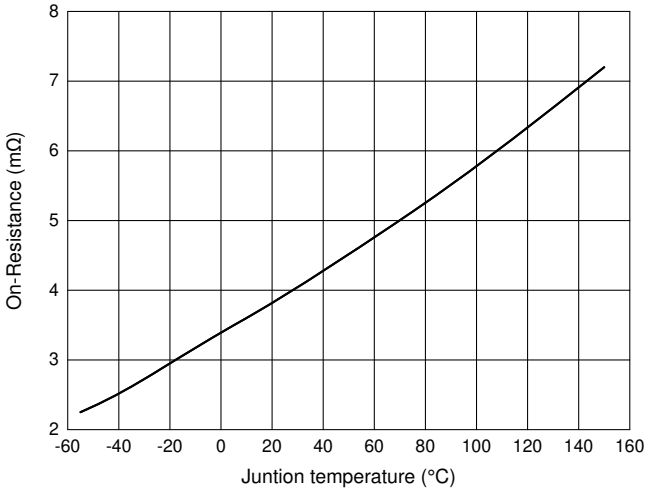


Fig. 6 - On-Resistance Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 800pcs/Reel
Part Number-BP	Tube: 5Kpcs/Ctn

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF