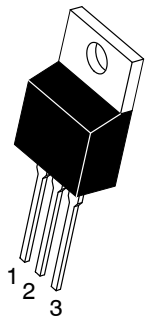
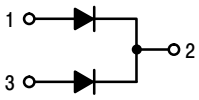
MBR3040CTG THRU MBR30200CTG

30.0 AMPS. Schottky Barrier Rectifiers

TO- 220AB





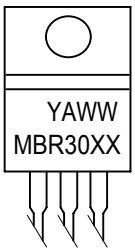
Features

- Metal silicon junction, majority carrier conduction
- Plastic material used carries Underwriters Laboratory Classifications 94V-0
- High surge capability
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Guardring for overvoltage protection
- High temperature soldering guaranteed: 260°C/10 seconds,0.25"(6.35mm)from case
- Green compound with suffix "G" on packing code & prefix "G" on datecode.

Mechanical Data

- Cases: JEDEC TO-220AB molded plastic
- Polarity: As marked
- Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026
- Mounting position: Any
- Weight:1.90grams
- Mounting torque: 5 in. - lbs. max

Marking Diagram



Y = Year
A = Assembly Location
WW = Work Week
MBR30XX = Specific Device Code

Maximum Ratings and Electrica

Rating at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	MBR 3040 CTG	MBR 3045 CTG	MBR 3050 CTG	MBR 3060 CTG	MBR 3080 CTG	MBR 30100 CTG	MBR 30150 CTG	MBR 30200 CTG	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	40	45	50	60	80	100	150	200	V
Maximum RMS Voltage	V_{RMS}	28	31	35	42	56	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	40	45	50	60	80	100	150	200	V
Maximum Average Forward Rectified Current at T_C=130°C	$I_{F(AV)}$	30								A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20KHz) at Tc=130°C	I_{FRM}	30								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	200								A
Peak Repetitive Reverse Surge Current (Note 2)	I_{RRM}	1.0				0.5				A
Maximum Instantaneous Forward Voltage at I_F=15A, T_A=25°C I_F=15A, T_A=125°C I_F=30A, T_A=25°C I_F=30A, T_A=125°C	V_F	0.7 0.6 0.82 0.73		0.77 0.67 — —		0.84 0.70 0.94 0.82		0.95 0.92 1.02 0.98		V
Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage Per Leg (Note 1) @ T_A=25 °C @ T_A=125 °C	I_R	0.2 15		0.2 10		0.2 7.5		0.1 5.0		mA mA
Voltage Rate of Change, (Rated V_R)	dV/dt	,10 000								V/uS
Typical Junction Capacitance @4V 1.0 MHz	Cj	600		460		320				pF
Maximum Thermal Resistance Per Leg (Note 3)	$R_{\theta JC}$	1.0				1.5				°C/W
Operating Junction Temperature Range	T_J	-65 to +150								°C
Storage Temperature Range	TSTG	-65 to +175								°C

Notes: 1. Pulse Test: 300us Pulse Width, 1% Duty Cycle
2. 2.0us Pulse Width, f=1.0 KHz
3. Mount on Heatsink Size of (4"x6"x0.25") Al-Plate

RATINGS AND CHARACTERISTIC CURVES

FIG.1- FORWARD CURRENT DERATING CURVE

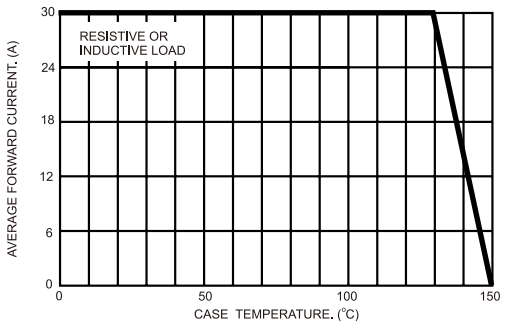


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

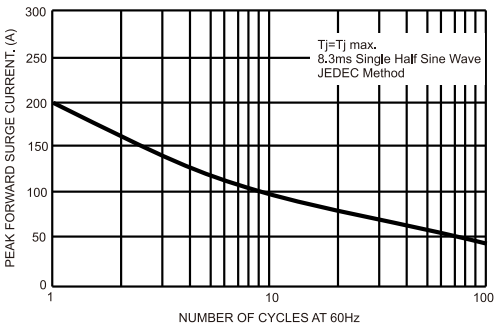


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

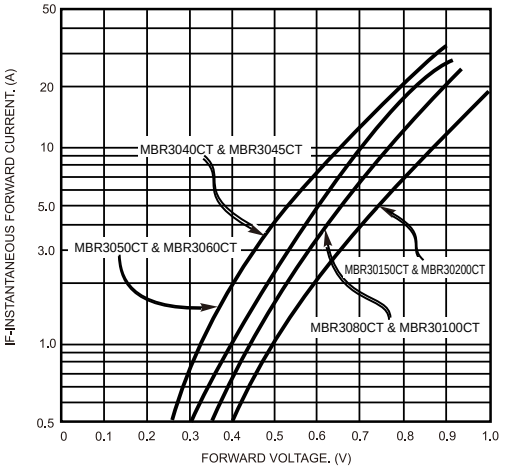


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

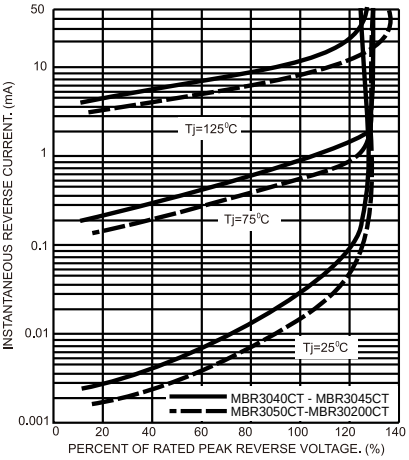


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

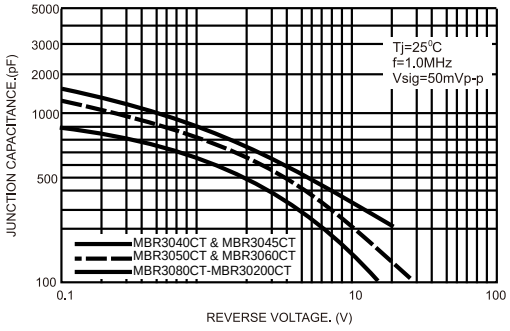
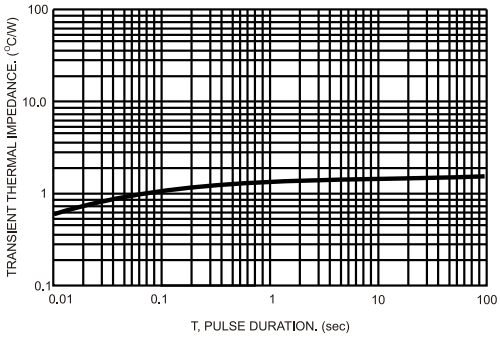
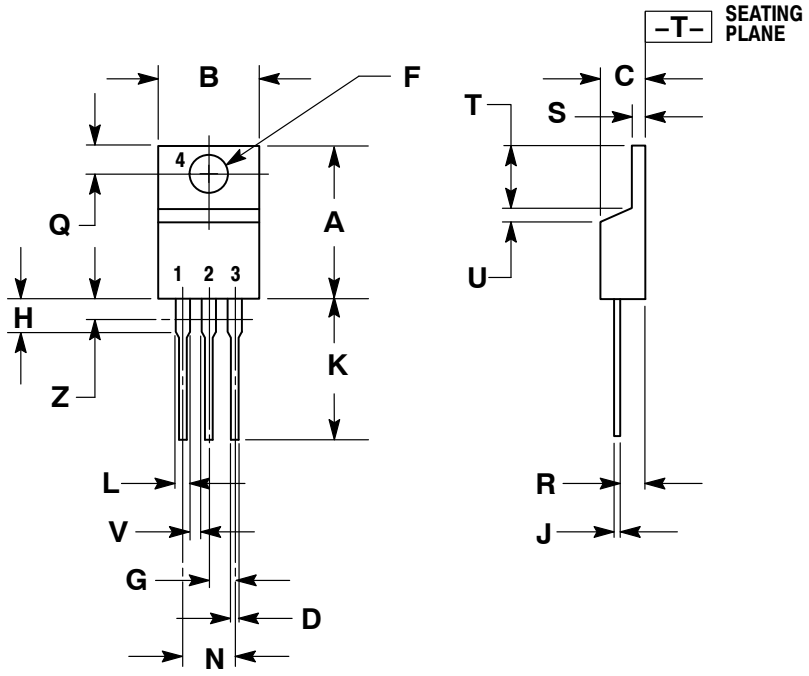


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



TO–220AB



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.161	3.61	4.09
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.014	0.025	0.36	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

STYLE 6:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE