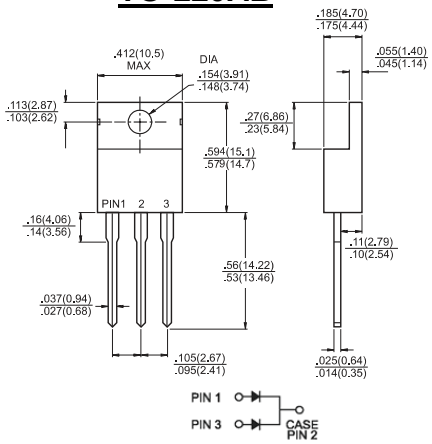
TAIWAN SEMICONDUCTOR

MBR20H100CT – MBR20H200CT

20.0 AMPS. Schottky Barrier Rectifiers

RoHS COMPLIANCE

TO-220AB



Dimensions in inches and (millimeters)

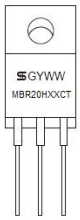
Features

- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ Metal silicon junction, majority carrier conduction
- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ High surge capability
- ✧ For use in power supply – output rectification, power management, instrumentation
- ✧ Guardring for overvoltage protection
- ✧ High temperature soldering guaranteed: 260°C/10 seconds,0.25"(6.35mm)from case

Mechanical Data

- ✧ Cases: JEDEC TO-220AB molded plastic body
- ✧ Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Mounting torque: 5 in. - lbs. max
- ✧ Weight: 0.08 ounce, 2.24 grams

Marking Diagram



MBR20HXXCT = Specific Device Code
G = Green Compound
Y = Year
WW = Work Week

Maximum Ratings and Electrical Characteristics

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 20H100CT	MBR 20H150CT	MBR 20H200CT	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	100	150	200	V
Maximum RMS Voltage	V_{RMS}	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	100	150	200	V
Maximum Average Forward Rectified Current at Tc=125°C	$I_{(AV)}$	20			A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20KHz) at Tc=125°C	I_{FRM}	20			A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	150			A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1.0		0.5	A
Maximum Instantaneous Forward Voltage at: (Note 2) I_F=10A, T_C=25°C I_F=10A, T_C=125°C I_F=20A, T_C=25°C I_F=20A, T_C=125°C	V_F	0.85 0.75 0.95 0.85	0.88 0.75 0.97 0.85		V
Maximum Instantaneous Reverse Current @ Tc =25 °C at Rated DC Blocking Voltage	I_R	5			uA
@ Tc=125 °C (Note 2)		2.0			mA
Voltage Rate of Change (Rated V_R)	dV/dt	10,000			V/uS
Maximum Typical Thermal Resistance (Note 3)	$R_{\theta JC}$	1.5			°C/W
Operating Junction Temperature Range	T_J	-65 to +175			°C
Storage Temperature Range	T_{STG}	-65 to +175			°C

Notes:
1. 2.0us Pulse Width, f=1.0 KHz
2. Pulse Test: 300us Pulse Width, 1% Duty Cycle
3. Thermal Resistance from Junction to Case Per Leg, Mount on Heatsink Size of 2 in x 3 in x 0.25in Al-Plate.

RATINGS AND CHARACTERISTIC CURVES (MBR20H100CT - MBR20H200CT)

FIG.1- FORWARD CURRENT DERATING CURVE

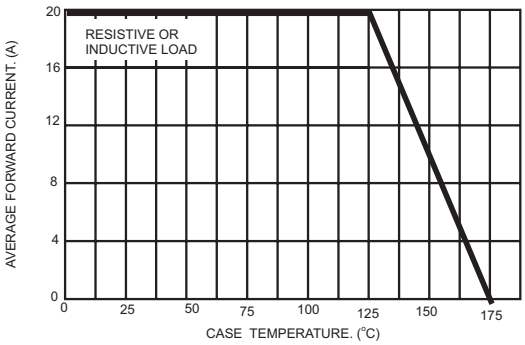


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

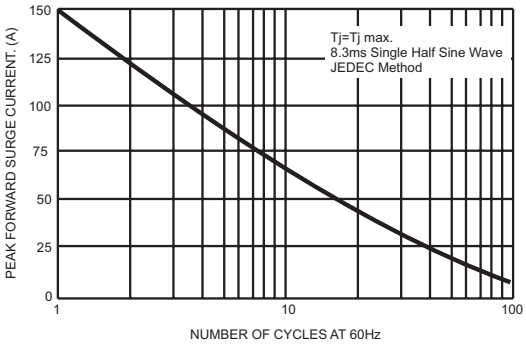


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

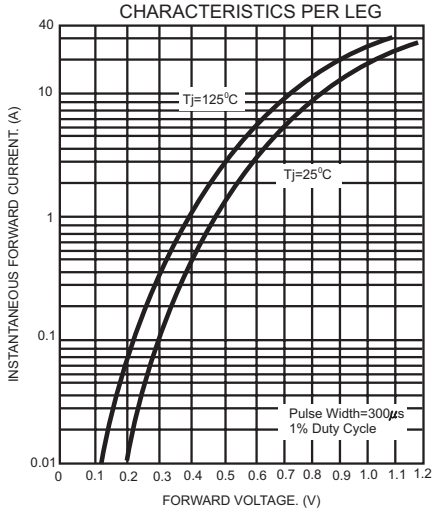


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

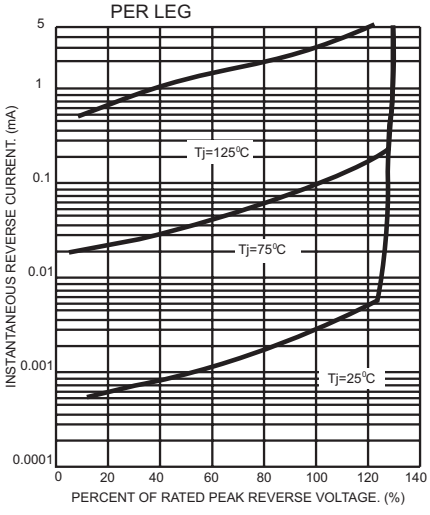


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

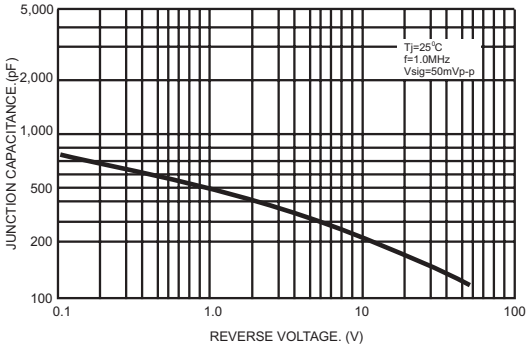


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG