

# MBRS20H100CT – MBRS20H200CT

**20.0 AMPS. Surface Mount Schottky Barrier  
Rectifiers Switchmode Power Rectifiers**



## 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: D2PAK molded plastic
- ± 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

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

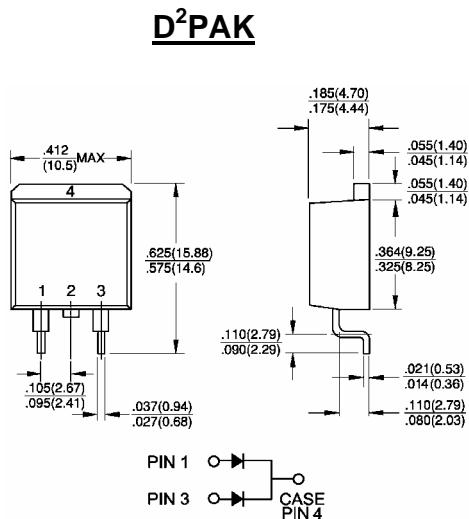
For capacitive load, derate current by 20%

Type Number	Symbol	MBRS 20H100CT	MBRS 20H150CT	MBRS 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 $T_c=125^\circ\text{C}$	$I_{(AV)}$		20		A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=125^\circ\text{C}$	$I_{FRM}$		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) $I_F=10\text{A}, T_c=25^\circ\text{C}$ $I_F=10\text{A}, T_c=125^\circ\text{C}$ $I_F=20\text{A}, T_c=25^\circ\text{C}$ $I_F=20\text{A}, T_c=125^\circ\text{C}$	$V_F$	0.85 0.75 0.95 0.85		0.88 0.75 0.97 0.85	V mA
Maximum Instantaneous Reverse Current @ $T_c = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_c=125^\circ\text{C}$ (Note 2)	$I_R$		5 2.0		uA 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

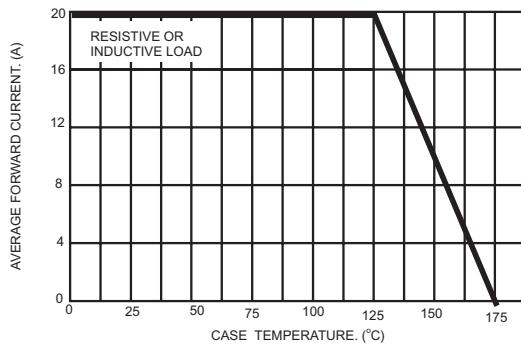
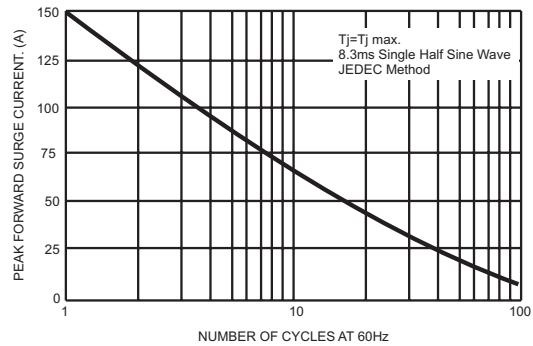
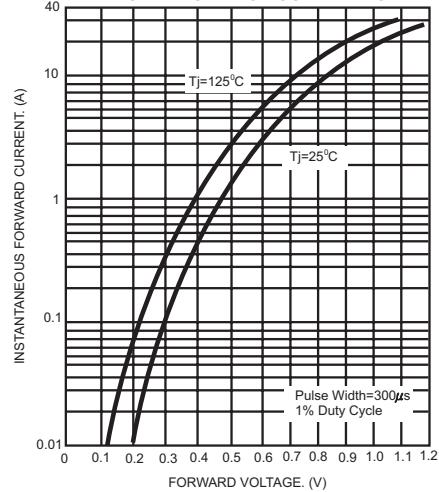
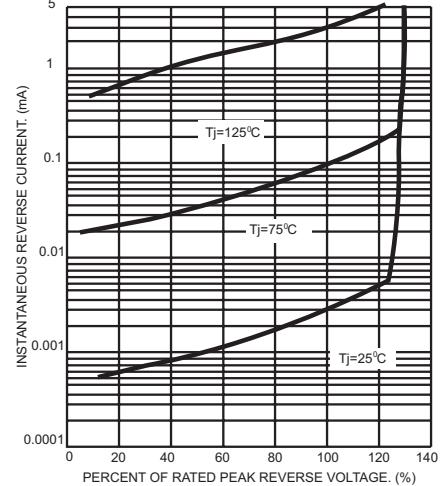
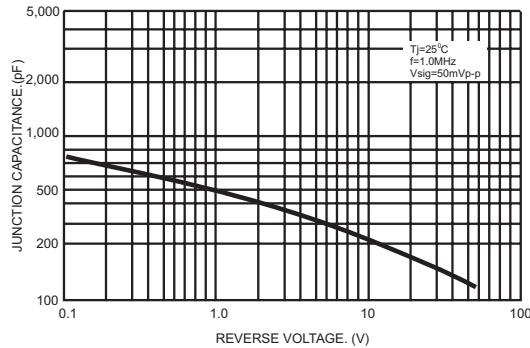
Notes: 1. 2.0us Pulse Width,  $f=1.0\text{ KHz}$

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.



Dimensions in inches and (millimeters)

**RATINGS AND CHARACTERISTIC CURVES (MBRS20H100CT - MBRS20H200CT)**
**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**
