

# MBRF2035 - MBRF20100

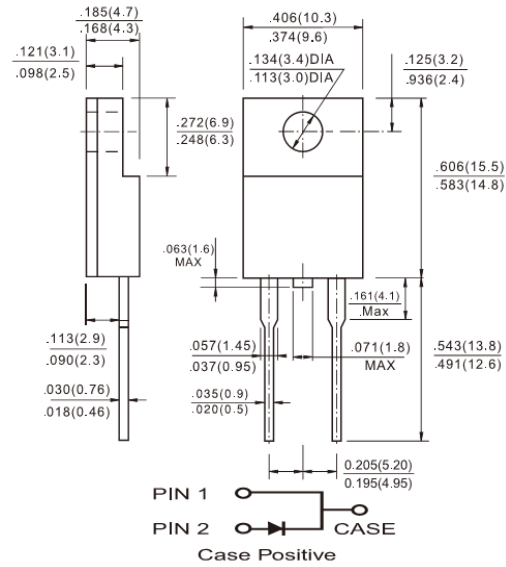
## 20.0 AMPS. Isolated Schottky Barrier Rectifiers

### ITO-220AC



### Features

- ✧ UL Recognized File # E-326243
- ✧ Plastic material used carriers Underwriters Laboratory Classification 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 low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ✧ Guard-ring 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

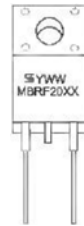


### Mechanical Data

- ✧ Case: ITO-220AC 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: 1.88 grams

### Dimensions in inches and (millimeters)

#### Marking Diagram



- MBRF20XX = 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	MBRF 2035	MBRF 2045	MBRF 2050	MBRF 2060	MBRF 2090	MBRF 20100	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	V
Maximum Average Forward Rectified Current at $T_c=125^\circ\text{C}$	$I_{F(AV)}$	20						A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) at $T_c=125^\circ\text{C}$	$I_{FRM}$	40						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		0.5			A	
Maximum Instantaneous Forward Voltage (Note 2) $I_F=20\text{A}$ , $T_A=25^\circ\text{C}$ $I_F=20\text{A}$ , $T_A=125^\circ\text{C}$	$V_F$	0.75 0.65		0.82 0.72		0.95 0.87		V
Maximum Reverse Current @ Rated VR $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	$I_R$	0.2			0.1		mA	
		15		10		5		
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	10000						V/us
Typical Junction Capacitance	$C_j$	560				420		pF
Typical Thermal Resistance	$R_{\theta JC}$	3						$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	- 65 to + 150						$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	- 65 to + 150						$^\circ\text{C}$

Note 1: 2.0uS Pulse Width,  $f=1.0\text{KHz}$

Note 2: Pulse Test : 300uS Pulse Width, 1% Duty Cycle

## RATINGS AND CHARACTERISTIC CURVES (MBRF2035 THRU MBRF20100)

FIG. 1 FORWARD CURRENT DERATING CURVE

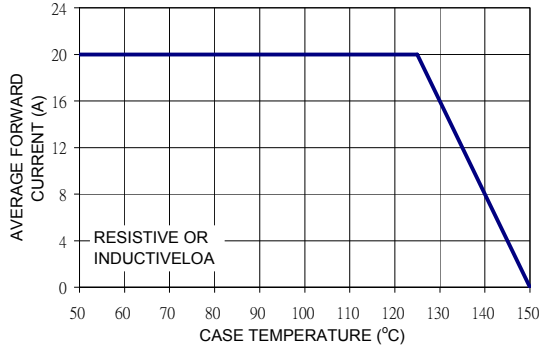


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

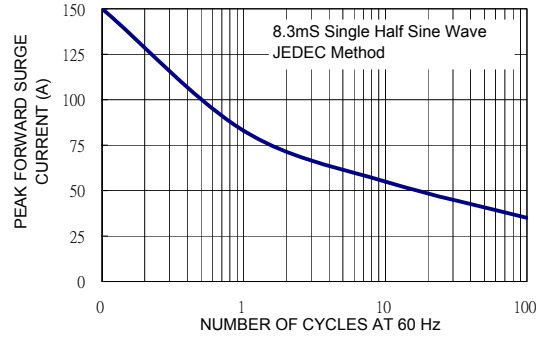


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

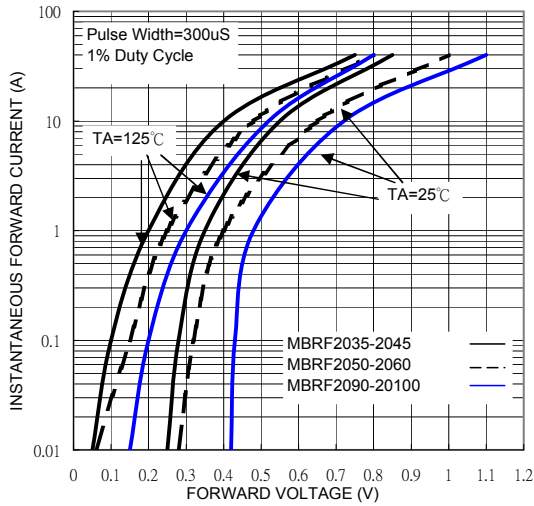


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

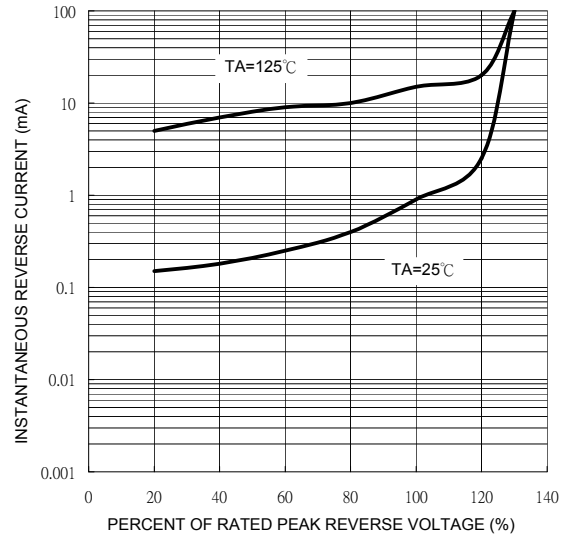


FIG. 5 TYPICAL JUNCTION CAPACITANCE

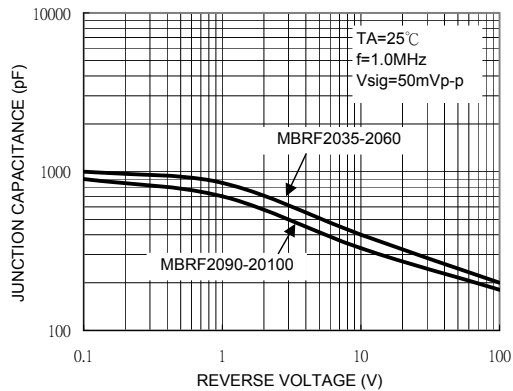


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

