

## Schottky Barrier Rectifiers

Using the Schottky Barrier principle with a Refractory metal capable of high temperature operation metal. The proprietary barrier technology allows for reliable operation up to 175°C junction temperature. Typical application are in switching Mode Power Supplies such as adaptors, DC/DC converters, free-wheeling and polarity protection diodes.

### Features

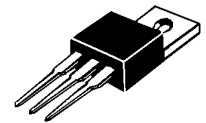
- \* Low Forward Voltage.
- \* Low Switching noise.
- \* High Current Capacity
- \* Guarantee Reverse Avalanche.
- \* Guard-Ring for Stress Protection.
- \* Low Power Loss & High efficiency.
- \* 175°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction.
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O



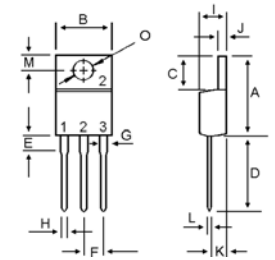
\* In compliance with EU RoHS 2002/95/EC directives

### SCHOTTKY BARRIER RECTIFIERS

**30 AMPERES  
100 VOLTS**



TO-220AB



DIM	MILLIMETERS	
	MIN	MAX
A	14.68	16
B	9.78	10.42
C	5.02	6.6
D	13	14.62
E	3.1	4.19
F	2.41	2.67
G	1.1	1.67
H	0.69	1.01
I	4.22	4.98
J	1.14	1.4
K	2.2	3.3
L	0.279	0.61
M	2.48	3
O	3.5	4

### MAXIMUM RATINGS

Characteristic	Symbol	MBR30100CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	V
Average Rectifier Forward Current (per diode) Total Device (Rated $V_R$ , $T_C=100^\circ\text{C}$ )	$I_{F(AV)}$	15 30	A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz)	$I_{FM}$	30	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	$I_{FSM}$	250	A
Junction Operating Temperature Range Storage Temperature (1)	$T_J$ $T_{stg}$	-65 to +175 20~35 °C · 30%~60% RH	°C

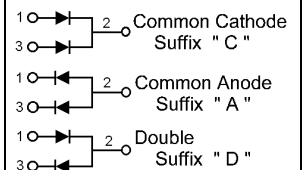
(1)expired date : 1 year

### THERMAL RESISTANCES

Typical Thermal Resistance junction to case	$R_{\theta jc}$	3.0	°C/w
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### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	MBR30100CT	Unit
Maximum Instantaneous Forward Voltage (per diode) ( $I_F=15\text{ Amp } T_C=25^\circ\text{C}$ ) ( $I_F=15\text{ Amp } T_C=125^\circ\text{C}$ )	$V_F$	0.85 0.78	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25^\circ\text{C}$ ) (Rated DC Voltage, $T_C=125^\circ\text{C}$ )	$I_R$	0.01 15	mA



# MBR30100CT

FIG-1 FORWARD CURRENT DERATING CURVE

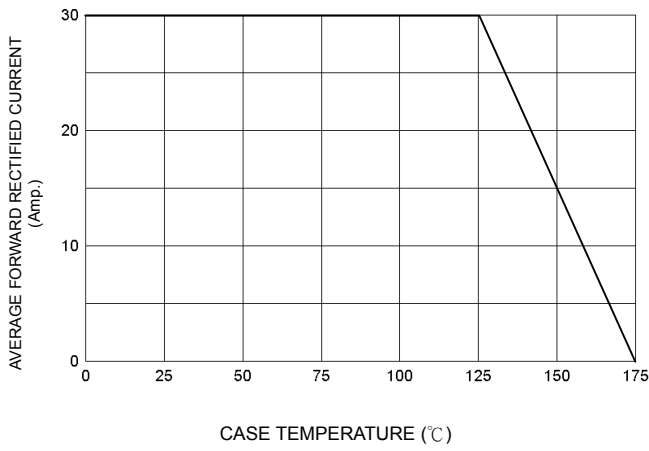


FIG-2 TYPICAL FORWARD CHARACTERISTICS

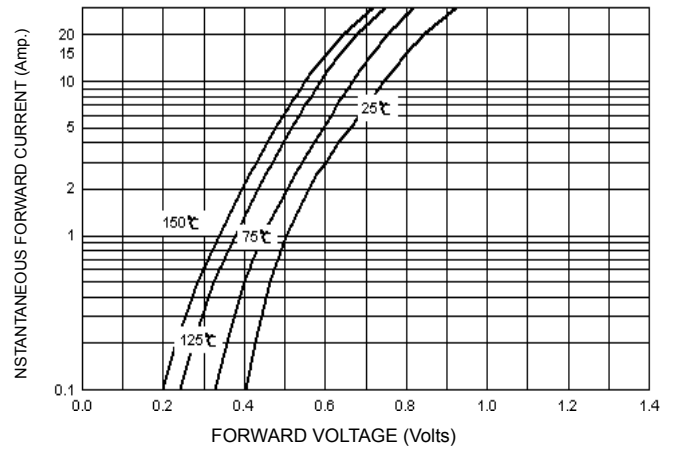


FIG-3 TYPICAL REVERSE CHARACTERISTICS

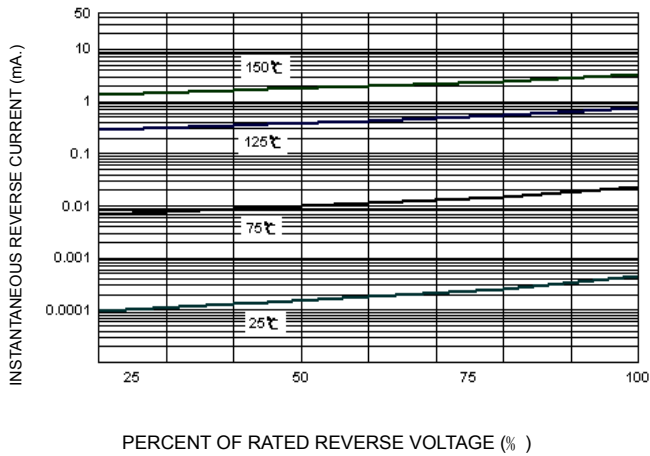


FIG-4 TYPICAL JUNCTION CAPACITANCE

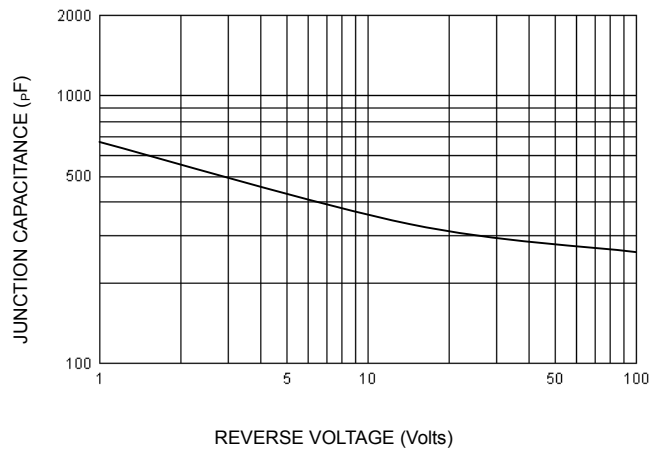
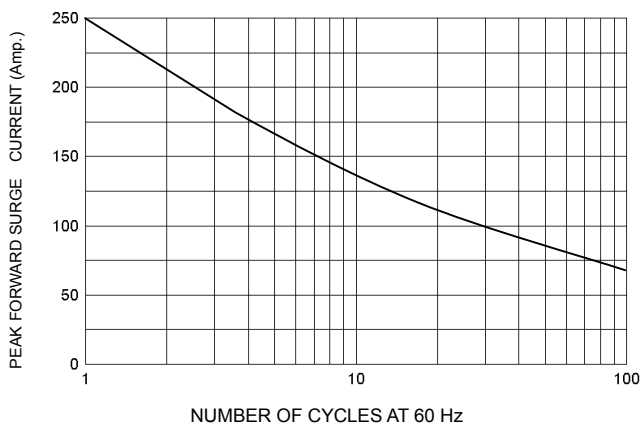


FIG-5 PEAK FORWARD SURGE CURRENT



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