

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.

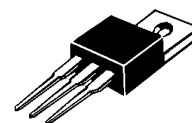
Features

- * 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
- * ESD: 4KV(Min.) Human-Body Model



**SCHOTTKY BARRIER
RECTIFIERS**

**10 AMPERES
100 VOLTS**



TO-220AB

* In compliance with EU RoHs 2002/95/EC directives

MAXIMUM RATINGS

Characteristic	Symbol	MBR10100CL	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 , $T_C=125$ °C)	$I_{F(AV)}$	5 10	A
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz)	I_{FM}	20	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	I_{FSM}	150	A
Operating and Storage Junction Temperature Range	T_J , T_{stg}	-65 to +150	

THERMAL RESISTANCES

Typical Thermal Resistance junction to case (per device)	$R_{\theta j-c}$	3.4	/w
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ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage (per diode) ($I_F=0.1$ Amp $T_C=25$ °C) ($I_F=2.5$ Amp $T_C=25$ °C) ($I_F=5.0$ Amp $T_C=25$ °C)		---	0.29 0.62 0.80	0.35 0.71 0.85	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25$ °C) (Rated DC Voltage, $T_C=125$ °C)	I_R	---	0.08 15	0.1 30	mA

MBR10100CL

FIG-1 FORWARD CURRENT DERATING CURVE

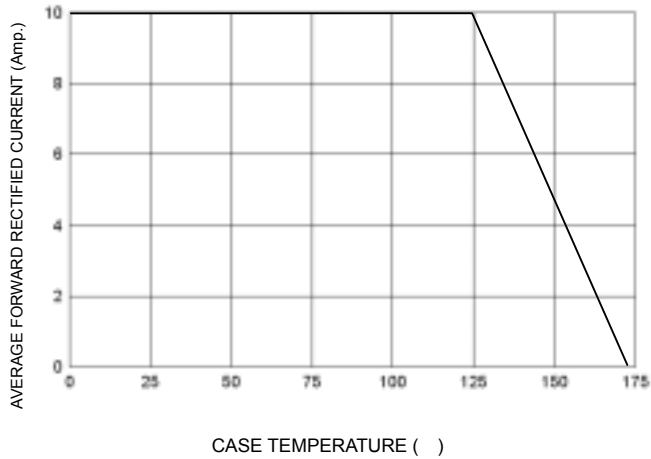


FIG-2 TYPICAL FORWARD CHARACTERISTICS

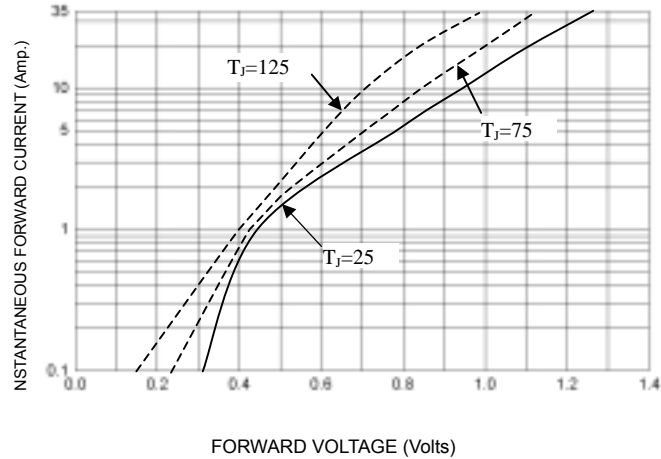


FIG-3 TYPICAL REVERSE CHARACTERISTICS

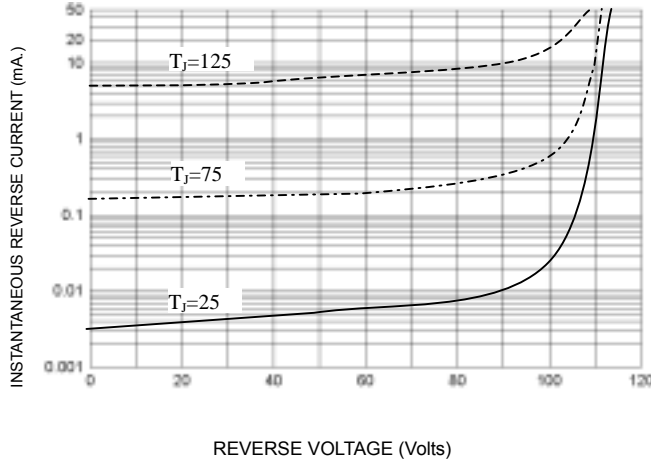


FIG-4 TYPICAL JUNCTION CAPACITANCE

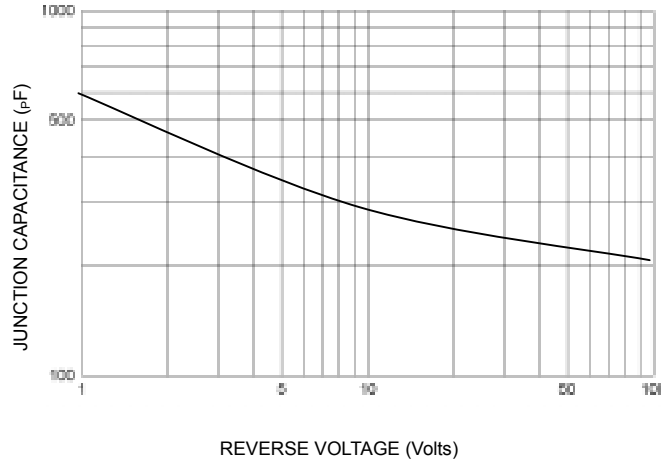


FIG-5 PEAK FORWARD SURGE CURRENT

