

Schottky Barrier Rectifiers

Using the Schottky Barrier principle with a Molybdenum barrier metal. These state-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes.

Features

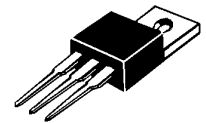
- * Low Forward Voltage.
- * Low Switching noise.
- * High Current Capacity
- * Guarantee Reverse Avalanche.
- * Guard-Ring for Stress Protection.
- * Low Power Loss & High efficiency.
- * 175°C Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction.
- * Plastic Material used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



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

SCHOTTKY BARRIER RECTIFIERS

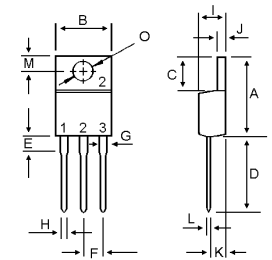
**20 AMPERES
30-60 VOLTS**



TO-220AB

MAXIMUM RATINGS

Characteristic	Symbol	MBR20						Unit
		30CT	35CT	40CT	45CT	50CT	60CT	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	35	40	45	50	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	25	28	32	35	42	V
Average Rectifier Forward Current (per diode) Total Device (Rated V_R), $T_C=100^\circ\text{C}$	$I_{F(AV)}$	10 20						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 +175						°C



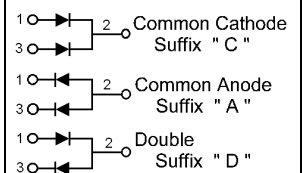
DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.32
B	9.78	10.42
C	5.02	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	2.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.98
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

THERMAL RESISTANCES

Typical Thermal Resistance junction to case (per diode)	$R_{\theta j-c}$	3.2	°C/w
---	------------------	-----	------

ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	MBR20						Unit
		30CT	35CT	40CT	45CT	50CT	60CT	
Maximum Instantaneous Forward Voltage ($I_F=10$ Amp $T_C=25^\circ\text{C}$) (per diode) ($I_F=10$ Amp $T_C=125^\circ\text{C}$)	V_F	0.75 0.66			0.80 0.72			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 20						mA



MBR2030CT Thru MBR2060CT

FIG-1 FORWARD CURRENT DERATING CURVE

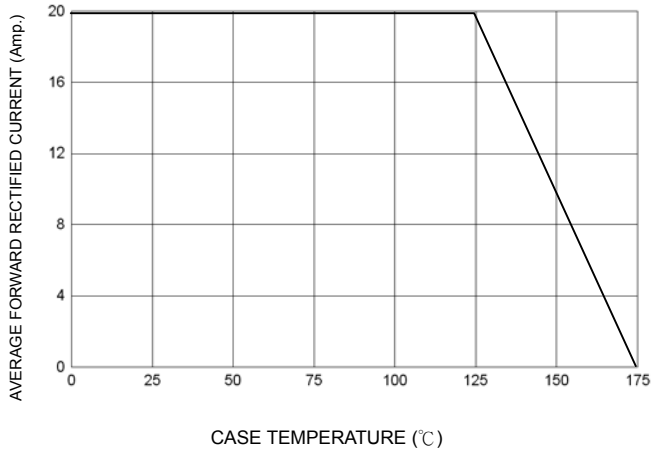


FIG-2 TYPICAL FORWARD CHARACTERISTICS

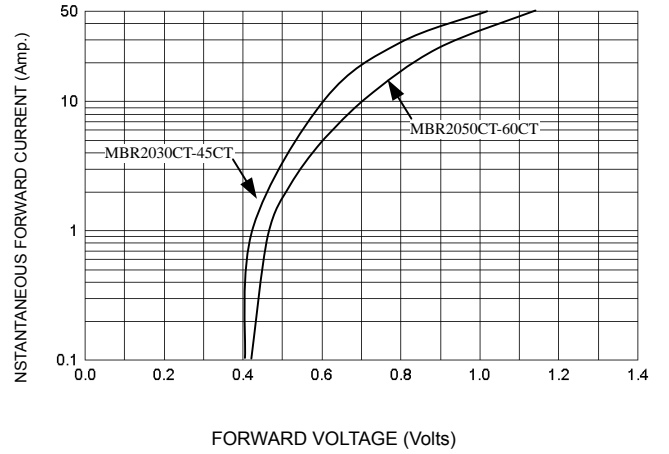


FIG-3 TYPICAL REVERSE CHARACTERISTICS

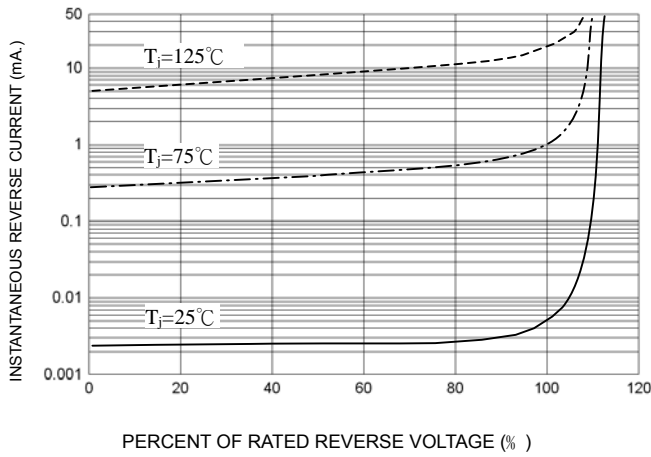


FIG-4 TYPICAL JUNCTION CAPACITANCE

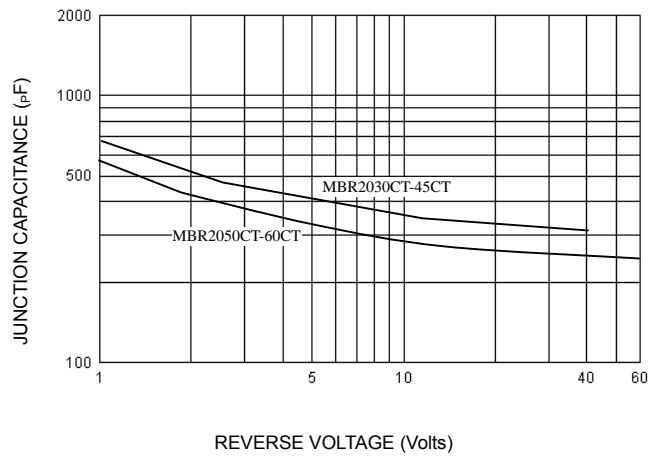


FIG-5 PEAK FORWARD SURGE CURRENT

