

MOTOROLA
SEMICONDUCTOR
 TECHNICAL DATA

MBR12035CT
MBR12045CT
MBR12050CT
MBR12060CT

MBR12045CT and MBR12060CT
 are Motorola Preferred Devices

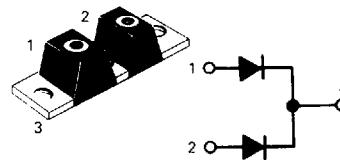
**SCHOTTKY BARRIER
 RECTIFIERS**

120 AMPERES
35 to 60 VOLTS

SWITCHMODE POWER RECTIFIERS

... using the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Dual Diode Construction — May Be Paralleled For Higher Current Output
- Guardring For Stress Protection
- Low Forward Voltage
- 175°C Operating Junction Temperature
- Guaranteed Reverse Avalanche



CASE 357C-03
 POWERTAP

Terminal Penetration: 0.280 max
 Terminal Torque: 25-40 in-lb max
 Mounting Torque — 30-40 in-lb max
 Outside Holes: *
 *Center Hole Must be 8-10 in-lb max
 Torqued First:

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage	MBR12035CT MBR12045CT V _{RRM}	35 45	Volts
Working Peak Reverse Voltage	MBR12050CT V _{RWM}	50	
DC Blocking Voltage	MBR12060CT V _R	60	
Average Rectified Forward Current Per Device (Rated V _R) T _C = 140°C	I _{F(AV)}	120 60	Amps
Peak Repetitive Forward Current, Per Leg (Rated V _R , Square Wave, 20 kHz), T _C = 140°C	I _{FRM}	120	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I _{FSM}	800	Amps
Peak Repetitive Reverse Current, Per Leg (2.0 μs, 1.0 kHz) See Figure 6	I _{RRM}	2.0	Amps
Operating Junction and Storage Temperature	T _J , T _{stg}	-65 to +175	°C
Voltage Rate of Change (Rated V _R)	dv/dt	1000	V/μs

THERMAL CHARACTERISTICS PER LEG

Thermal Resistance, Junction to Case	R _{θJC}	0.85	°C/W
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ELECTRICAL CHARACTERISTICS PER LEG

Instantaneous Forward Voltage (1) (I _F = 60 Amp, T _J = 125°C) (I _F = 120 Amp, T _J = 175°C) (I _F = 120 Amp, T _J = 125°C) (I _F = 120 Amp, T _J = 25°C)	V _F	0.590 0.620 0.680 0.830	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, T _J = 125°C) (Rated dc Voltage, T _J = 25°C)	I _R	25 0.25	mA

(1) Pulse Test Pulse Width = 300 μs, Duty Cycle ≤ 2.0%

3

FIGURE 1 — TYPICAL FORWARD VOLTAGE PER LEG

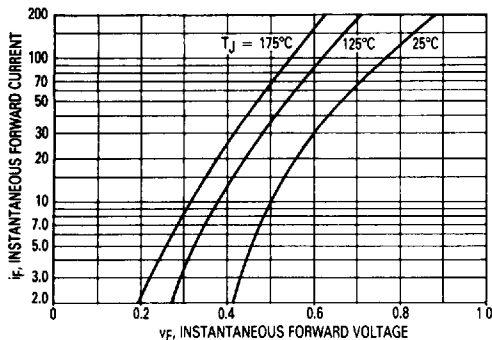


FIGURE 2 — TYPICAL REVERSE CURRENT, PER LEG*

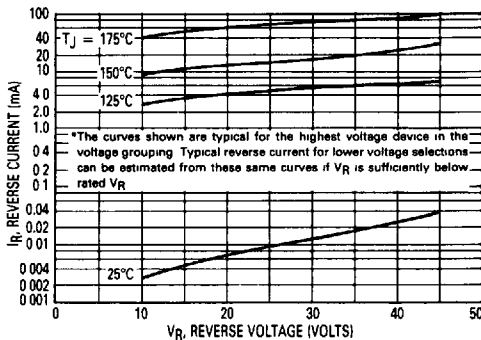


FIGURE 3 — FORWARD CURRENT DERATING, PER LEG

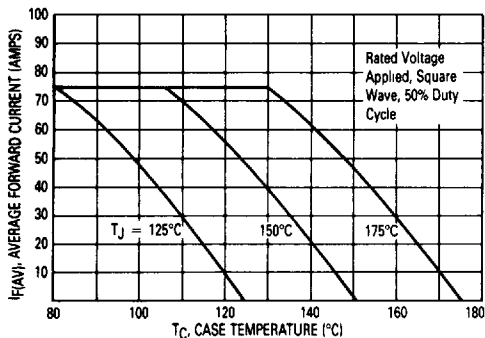


FIGURE 4 — POWER DISSIPATION PER LEG

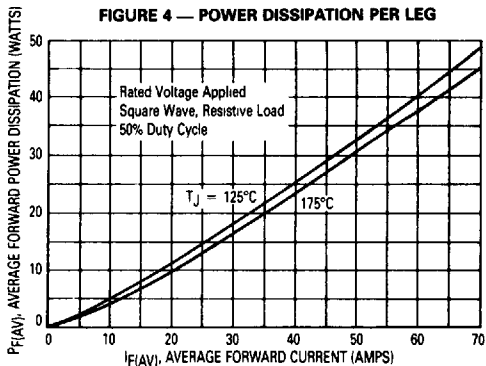


FIGURE 5 — TYPICAL CAPACITANCE, PER LEG

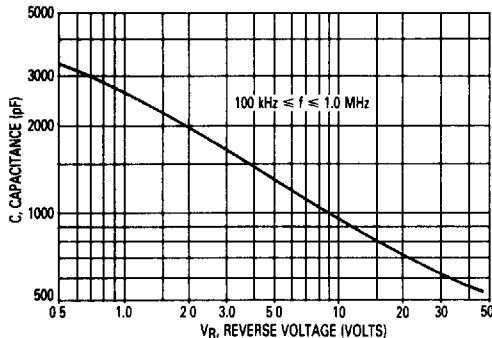


FIGURE 6 — TEST CIRCUIT FOR REPETITIVE REVERSE CURRENT

