MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

MBR20035CT
MBR20045CT
MBR20050CT
MBR20060CT

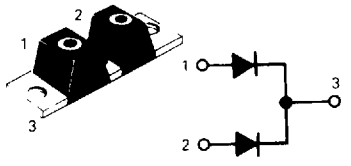
SCHOTTKY BARRIER RECTIFIERS

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

MAXIMUM RATINGS

Rating		Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	MBR20035CT MBR20045CT MBR20050CT MBR20060CT	V_{RRM} V_{RWM} V_R	35 45 50 60	Volts
Average Rectified Forward Current (Rated V_R) T_C = 140°C	Per Device Per Leg	$I_{F(AV)}$	200 100	Amps
Peak Repetitive Forward Current, Per Leg (Rated V_R, Square Wave, 20 kHz), T_C = 140°C		I_{FRM}	200	Amps
Nonrepetitive Peak Surge Current Per Leg (Surge applied at rated load conditions halfwave, single phase, 60 Hz)		I_{FSM}	1500	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	$R_{\theta JC}$	0.5	°C/W

ELECTRICAL CHARACTERISTICS PER LEG

Instantaneous Forward Voltage (1) (i_F = 200 Amp, T_J = 175°C) (i_F = 200 Amp, T_J = 125°C) (i_F = 100 Amp, T_J = 125°C) (i_F = 100 Amp, T_J = 25°C)	v_F	 0.650 0.825 0.710 0.800	Volts
Instantaneous Reverse Current (1) (Rated dc Voltage, T_J = 125°C) (Rated dc Voltage, T_J = 25°C)	i_R	 50 0.5	mA

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

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MBR20035CT, MBR20045CT, MBR20050CT, MBR20060CT

FIGURE 1 — TYPICAL FORWARD VOLTAGE, PER LEG

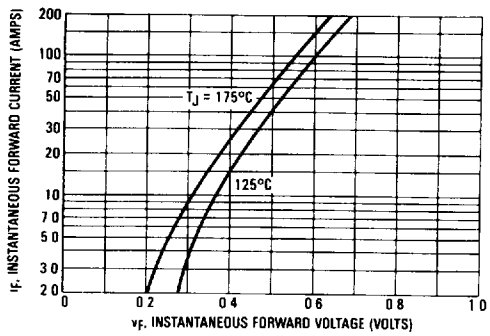

FIGURE 2 — TYPICAL REVERSE CURRENT, PER LEG

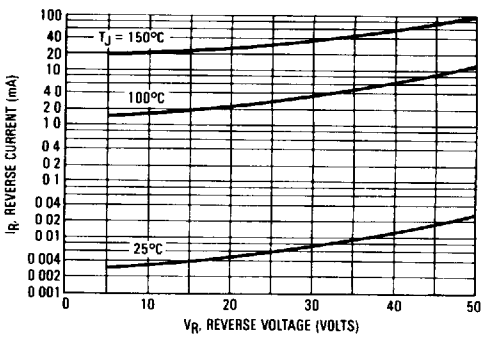

FIGURE 3 — FORWARD CURRENT DERATING, PER LEG

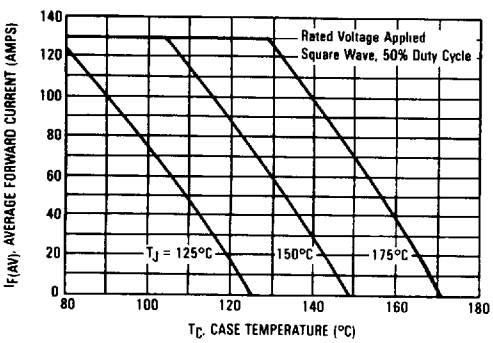

FIGURE 4 — POWER DISSIPATION, PER LEG

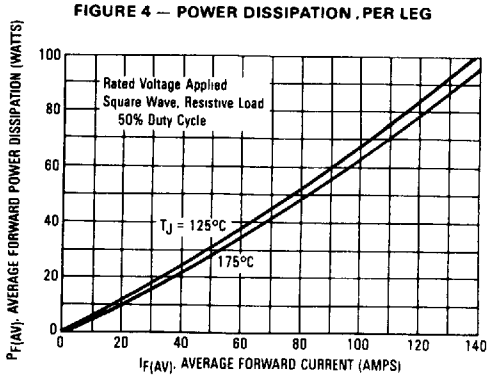

FIGURE 5 — CAPACITANCE, PER LEG

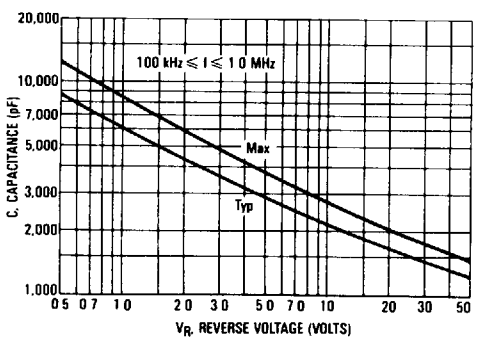

FIGURE 6 — TEST CIRCUIT FOR REPETITIVE REVERSE CURRENT