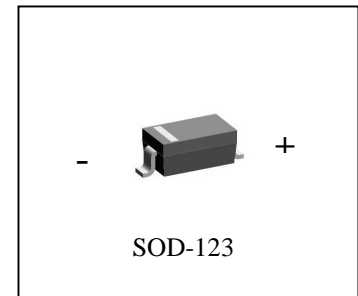


SCHOTTKY BARRIER DIODE
MBR0520

FEATURES

- Guardring for Stress Protection
- Very Low Forward Voltage (0.38 V Max @ 0.5 A, 25°C)
- 125°C Operating Junction Temperature
- Epoxy Meets UL94, VO at 1/8"
- Package Designed for Optimal Automated Board Assembly

Mechanical Characteristics

- Device Marking: B2
- Polarity Designator: Cathode Band
- Weight: 11.7 mg (approximately)
- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	Volts
Average Rectified Forward Current (Rated V_R) $T_L = 90^\circ\text{C}$	$I_{F(AV)}$	0.5	Amps
Non-repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	5.5	Amps
Storage Temperature	T_{stg}	-65 to +125	°C
Operating Junction Temperature	T_J	-65 to +125	°C
Voltage Rate of Change (Rated V_R)	dv/dt	1000	V/ μs

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Ambient (1)	$R_{\theta JA}$	340	°C/W
Thermal Resistance — Junction to Lead	$R_{\theta JL}$	150	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (2) ($I_F = 0.1$ Amps) ($I_F = 0.5$ Amps)	V_F	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	Volts
		0.300 0.385	0.220 0.330	
Maximum Instantaneous Reverse Current (2) ($V_R = 10$ V) (Rated dc Voltage = 20 V)	I_R	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	mA
		75 μA 250 μA	5 mA 8 mA	

(1) FR-4 or FR-5 = 3.5 x 1.5 inches using the Motorola minimum recommended footprint.

(2) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$.

MBR0520 Typical Characteristics

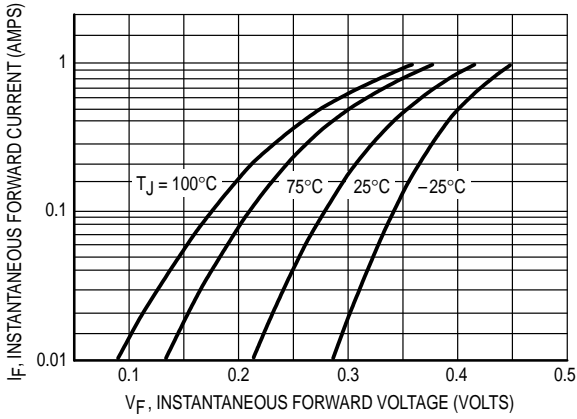


Figure 1. Typical Forward Voltage

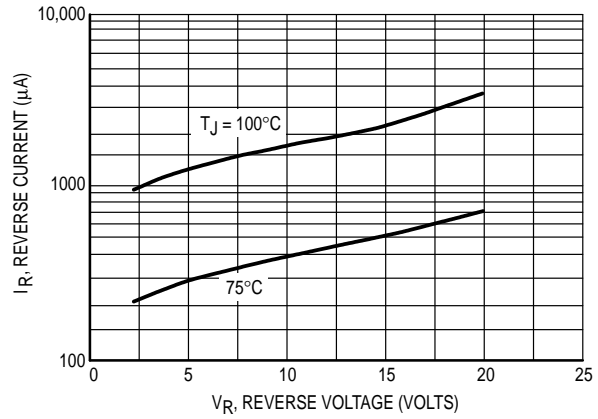


Figure 2. Typical Reverse Current

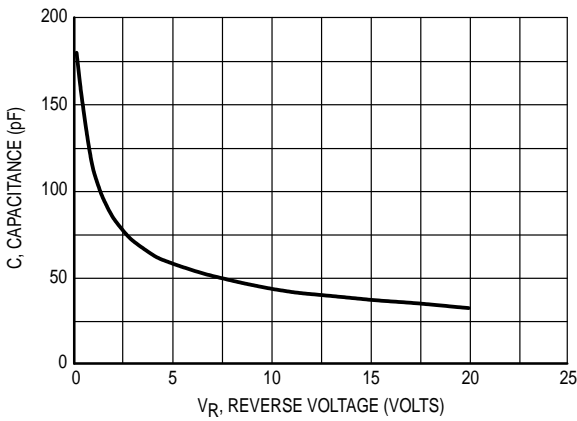


Figure 3. Typical Capacitance

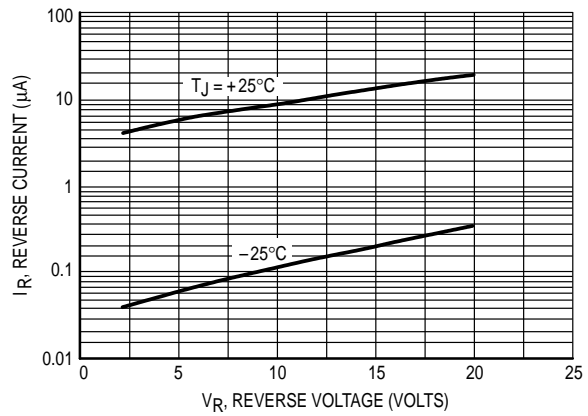


Figure 4. Typical Reverse Current

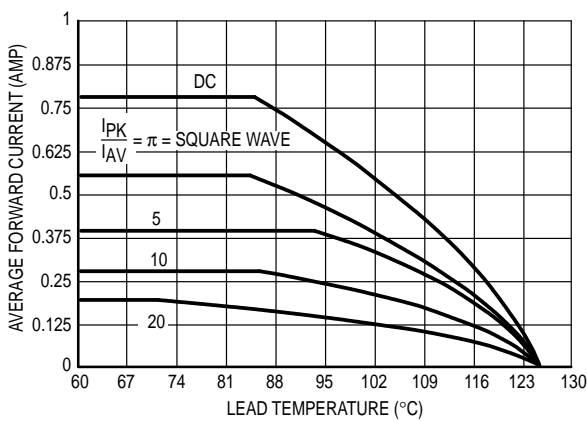


Figure 5. Current Derating (Lead)

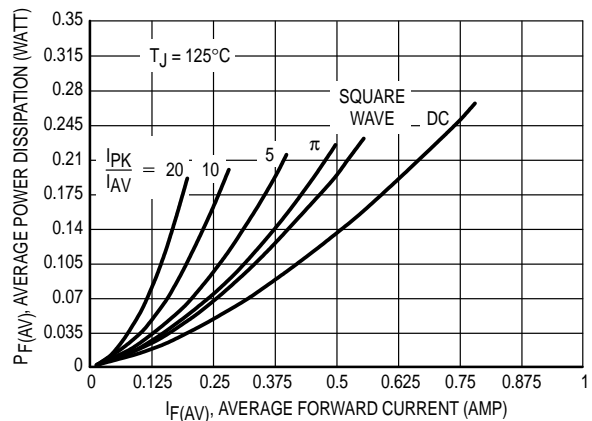


Figure 6. Power Dissipation