MBR0530T1, MBR0530T3

Preferred Devices

Surface Mount Schottky Power Rectifier

Plastic SOD–123 Package

. . . using the Schottky Barrier principle with a large area metal–to–silicon power diode. Ideally suited for low voltage, high frequency rectification or as free wheeling and polarity protection diodes in surface mount applications where compact size and weight are critical to the system. This package also provides an easy to work with alternative to leadless 34 package style. These state–of–the–art devices have the following features:

- Guardring for Stress Protection
- Low Forward Voltage
- 125°C Operating Junction Temperature
- Epoxy Meets UL94, VO at 1/8″
- Package Designed for Optimal Automated Board Assembly

Mechanical Characteristics

- Reel Options: MBR0530T1 = 3,000 per 7″ reel/8 mm tape
  MBR0530T3 = 10,000 per 13″ reel/8 mm tape
- Device Marking: B3
- 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	30	V
Average Rectified Forward Current (Rated V_R, T_L = 100°C)	$I_{F(AV)}$	0.5	A
Non–Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	5.5	A
Storage Temperature Range	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

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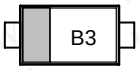
SCHOTTKY BARRIER RECTIFIER 0.5 AMPERES 30 VOLTS

SOD–123
CASE 425
STYLE 1

MARKING DIAGRAM



B3 = Device Code

ORDERING INFORMATION

Device	Package	Shipping
MBR0530T1	SOD–123	3000/Tape & Reel
MBR0530T3	SOD–123	10,000/Tape & Reel

Preferred devices are recommended choices for future use and best overall value.

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance — Junction to Ambient (Note 1.)	$R_{\theta JA}$	206	°C/W
Thermal Resistance — Junction to Lead	$R_{\theta JL}$	150	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 2.) (i_F = 0.1 Amps, T_J = 25°C) (i_F = 0.5 Amps, T_J = 25°C)	v_F	 0.375 0.43	Volts
Maximum Instantaneous Reverse Current (Note 2.) (Rated dc Voltage, T_C = 25°C) (V_R = 15 V, T_C = 25°C)	I_R	 130 20	μA

1. 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board.
2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2%.

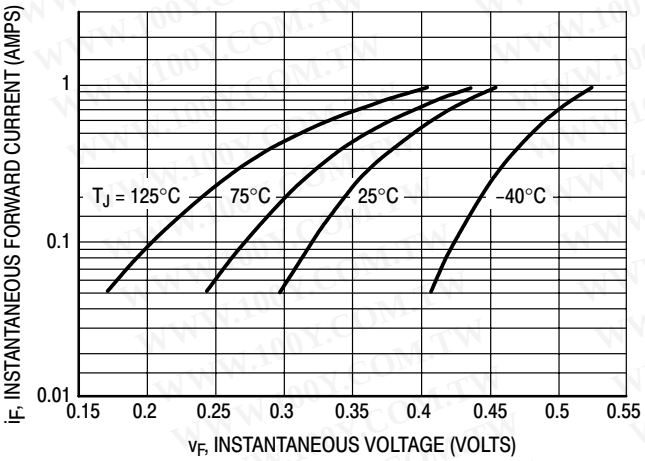


Figure 1. Typical Forward Voltage

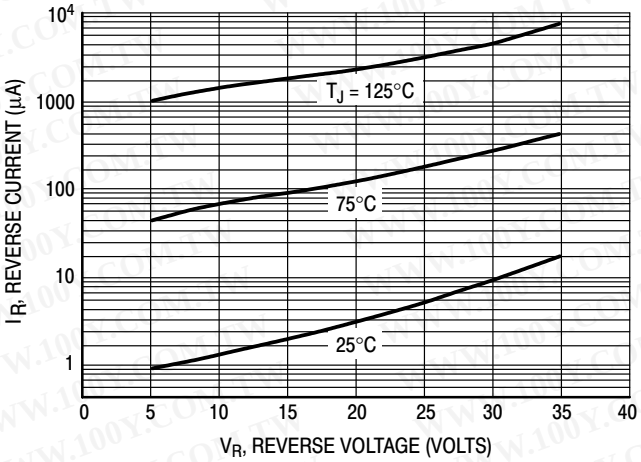


Figure 2. Typical Reverse Current

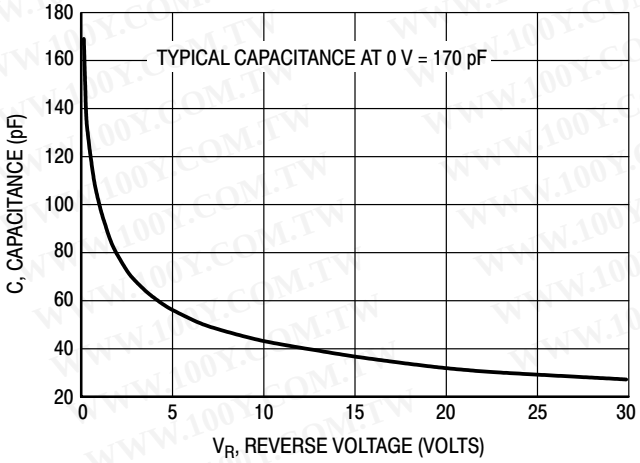


Figure 3. Typical Capacitance

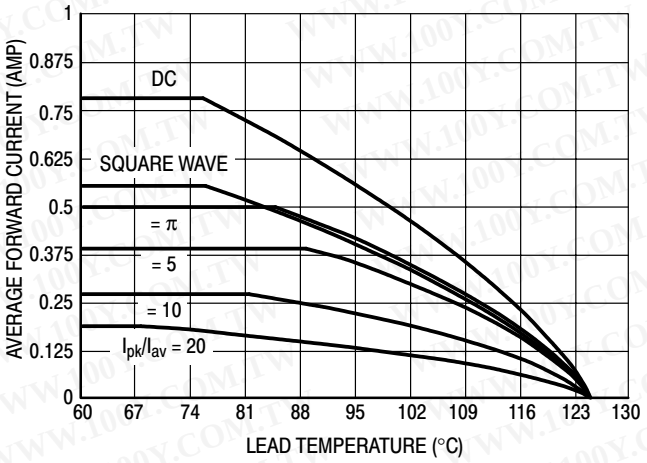


Figure 4. Current Derating (Lead)

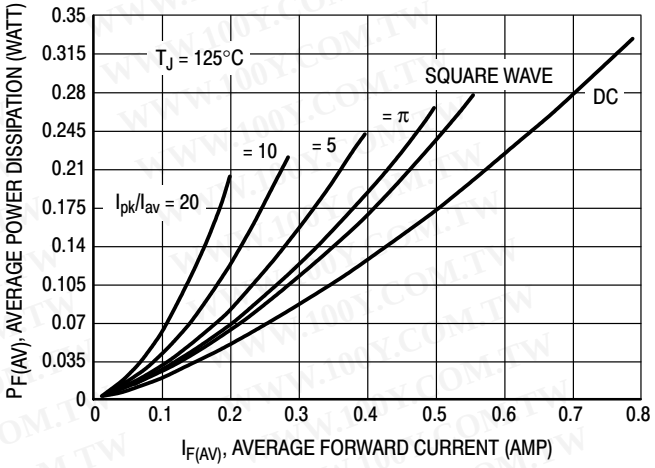
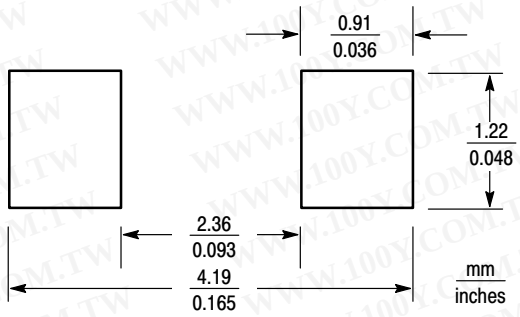


Figure 5. Power Dissipation

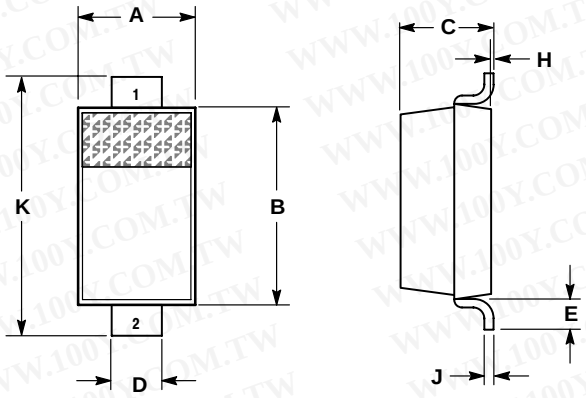
RECOMMENDED FOOTPRINT FOR SOD–123



SOD–123

PACKAGE DIMENSIONS

SOD–123
PLASTIC
CASE 425–04
ISSUE C



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.055	0.071	1.40	1.80
B	0.100	0.112	2.55	2.85
C	0.037	0.053	0.95	1.35
D	0.020	0.028	0.50	0.70
E	0.004	---	0.25	---
H	0.000	0.004	0.00	0.10
J	---	0.006	---	0.15
K	0.140	0.152	3.55	3.85

STYLE 1:
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2. ANODE

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