Surface Mount
Schottky Power Rectifier
Pb-Free package is available

LMBR0530T1G

SOD–123

The LMBR0530T1G uses 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−artdevices have the following features:

Features

- Guardring for Stress Protection
- Low Forward Voltage
- 125°C Operating Junction Temperature
- Epoxy Meets UL 94, V−0 @ 0.125 in
- Package Designed for Optimal Automated Board Assembly
- Pb−Free Packages are Available

Mechanical Characteristics

- Reel Options: LMBR0530T1G = 3,000 per 7 in reel/8 mm tape
  LMBR0530T3G = 10,000 per 13 in 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

ORDERING INFORMATION

Device	Package	Shipping†
LMBR0530T1G	SOD−123 (Pb−Free)	3000/Tape & Reel
LMBR0530T3G	SOD−123 (Pb−Free)	10,000/Tape & Reel

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 +150	°C
Operating Junction Temperature	T_J	−65 to +125	°C
Voltage Rate of Change (Rated V_R)	dv/dt	1000	V/μs
ESD Rating: Machine Model = C Human Body Model = 3B		> 400 > 8000	V

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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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

Minimum Reverse Breakdown Voltage (i_R = 130 μA)	$v_{(BR)R}$	30	V
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 0.45	V
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%.

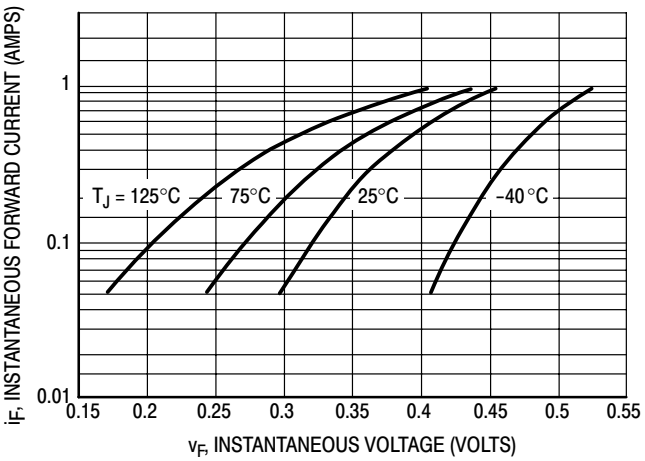

Figure 1. Typical Forward Voltage

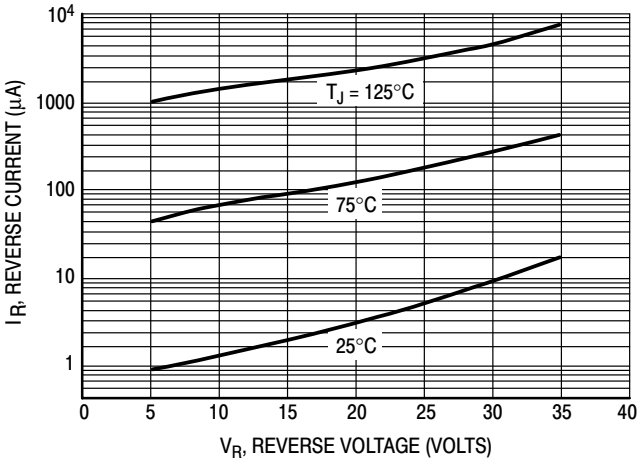

Figure 2. Typical Reverse Current

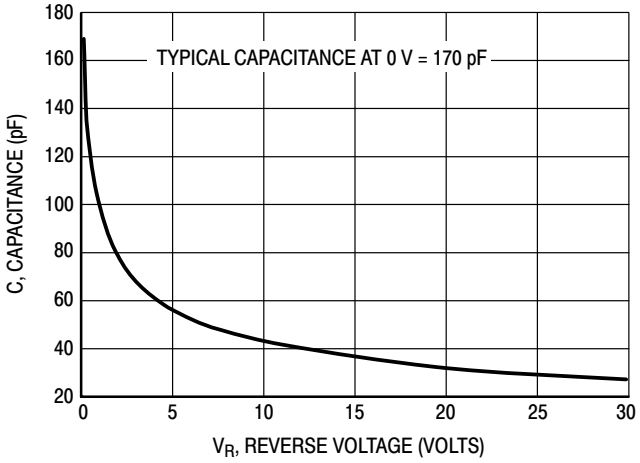

Figure 3. Typical Capacitance

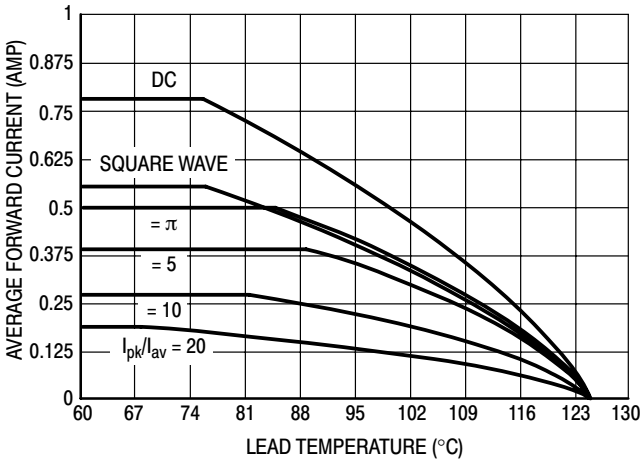

Figure 4. Current Derating (Lead)

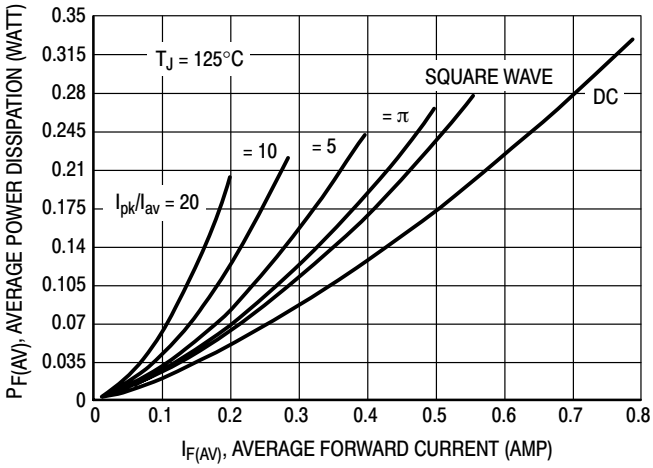

Figure 5. Power Dissipation

LMBR0530T1G

PACKAGE DIMENSIONS

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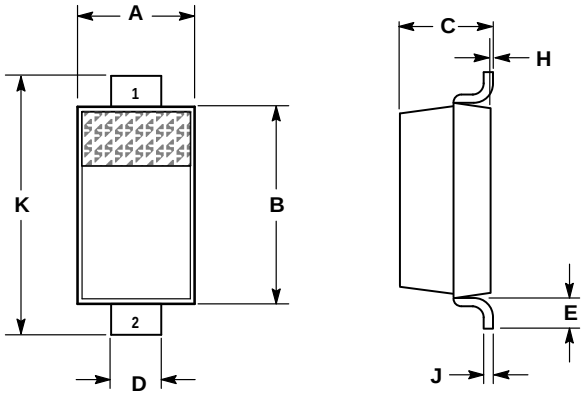
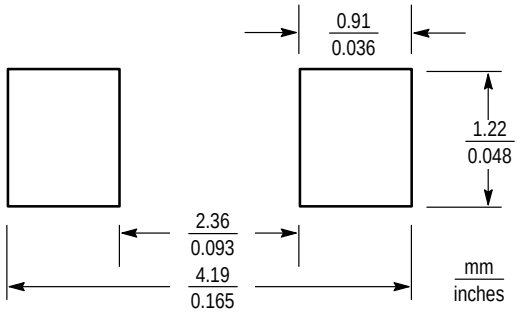


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	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:
PIN 1. CATHODE
2. ANODE

RECOMMENDED FOOTPRINT FOR SOD–123



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