

## Features

- High Average Incident Power Handling
- Low Loss/ Low Distortion
- Rectangular MELF Glass Package
- Hermetically Sealed
- RoHS\* Compliant

## Applications

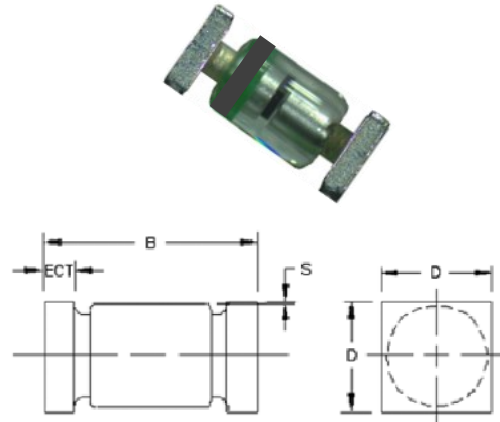
- MIL-Com
- Public Safety Radio

## Description

The MADP-047600-14320T is a surface mount PIN diode in a low magnetic Metal Electrode Leadless Faced (MELF) glass package.

This device is manufactured using MACOM's time proven HIPAX technology. The result is a low inductance glass package with no ribbons or wires. Incorporated in the package is a glass passivated CERMA chip that is full face bonded on the cathode and anode which maximizes the surface contact area to minimize the electrical and thermal resistances. The chip and package have been comprehensively characterized both electrically and mechanically to ensure repeatable and predictable performance.

## Case Style ODS 1432



Symbol	Dimensions			
	Inches		Millimeters	
	Min.	Max.	Min.	Max.
D	0.070	0.085	1.78	2.16
B	0.165	0.195	4.19	4.95
ECT	0.019	0.028	0.048	0.71
S	0.003	—	0.08	—

Lead Finish: tin

End Cap Material (U, US): copper

Polarity: cathode end is banded

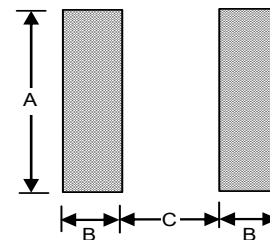
Package Weight: 0.095 G

Mounting Surface Selection: The Axial Coefficient of Expansion (COE) of this device is approximately +4PPM/°C.

## Ordering Information

Part Number	Package
MADP-047600-14320T	750 piece reel

## Circuit Pad Layout



Dimension	inches	mm
A	0.095	2.41
B	0.040	1.02
C	0.122	3.10

**Electrical Specifications:  $T_A = +25^\circ\text{C}$** 

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Forward Voltage	$I_F = 50\text{ mA}$	V	—	—	1
Reverse Voltage	$V_R = 400\text{ V}$	nA	—	—	100
Capacitance	100 V, 1 MHz	pF	—	—	0.50
Series Resistance <sup>1</sup>	50 mA, 100 MHz	$\Omega$	—	—	1
CW Power Dissipation	—	W	—	15	—
Nominal Carrier Lifetime	90% Recovery	$\mu\text{s}$	2	—	—
Nominal I-Region Width	—	$\mu\text{m}$	—	96	—

1. Series Resistance is measured on an HP4291A Impedance Analyzer.

**Absolute Maximum Ratings<sup>2,3,4</sup>**

Parameter	Absolute Maximum
Reverse Voltage	-600 V
Operating Temperature	$-55^\circ\text{C}$ to $+150^\circ\text{C}$
Storage Temperature	$-55^\circ\text{C}$ to $+175^\circ\text{C}$
Mounting Temperature	$+260^\circ\text{C}$ for 90 seconds

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.
- Values will de-rate over temperature.

**Handling Procedures**

Please observe the following precautions to avoid damage:

Device can be handled with tweezers or vacuum pickups and are suitable for use with automatic pick-and-place equipment.

**Static Sensitivity**

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 1 devices.

**Cleanliness and Storage**

These devices should be handled and stored in a clean environment. Ends of the device are tin plated for greater solderability. Continuous exposure to high humidity (>80%) for extended periods may cause the surface to oxidize. Caution should be taken when storing devices for long periods.

**Mounting Techniques****Solder Attach**

Typical wave soldering or reflow techniques may be used to mount MACOM's SMQ packages to circuit boards using Sn63/Pb37 alloy or RoHS compliant solders. For more information visit the MACOM website and read application note M538.

**RoHS**

The MADP-047600-14320T is fully RoHS compliant (5/6) meaning it contains less than the maximum allowable concentration of 0.1% by weight in homogenous materials for lead, hex chrome, mercury, PBB, PBDE, and 0.01% for cadmium.

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