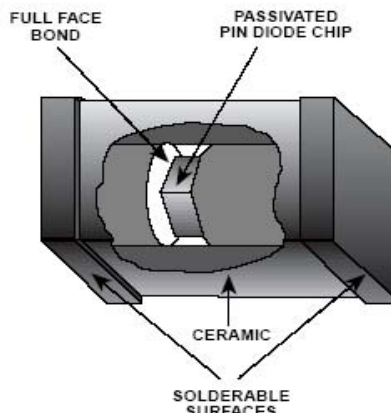


## MADP-007224-01072T

## Non Magnetic MELF PIN Diode

### Features

- Rectangular MELF SMQ
- Hermetically Sealed
- Low Loss
- Low Distortion
- High Isolation
- Passivated PIN Diode Chips
- Full Face Bonds
- Ultra Low Non-Magnetic Packages Suitable for MRI Applications
- High Power Handling Capability



### Description

The MADP-007224-01072T is a square, surface mountable, PIN diode in a metal electrode leadless faced (MELF) package. It utilizes M/A-COM's HIPAX technology to produce a low inductance ceramic package with no ribbons or whisker wires. The package is hermetically sealed at temperatures exceeding 300°C and is plated using M/A-COM's new ultra low magnetic plating process. The end result is a package with extremely low magnetic permeability. Incorporated in the package is a passivated PIN diode chip that is full face bonded to refractory metal pins on both the cathode and anode of the chip. The end product is a device which has a very low resistance, low loss and high power handling capability. The mechanical and electrical properties of these devices make them ideally suited for MRI transmitters, receivers and surface coils. The MADP-007224-01072 has been comprehensively characterized both electrically and mechanically to ensure predictable performance.

### Applications

The diodes are designed specifically for use as a low loss, low distortion, high power switching element in a high magnetic field at HF and UHF frequencies. Its high power rating provides superior performance at high RF power levels and is designed to meet the most stringent electrical and mechanical requirements of MRI equipment.

### Designed for Automated Assembly

These SMQ PIN diodes are designed for high volume tape and reel assembly. The rectangular package design makes automatic pick and place, indexing and assembly extremely easy. The parallel flat surfaces are suitable for key jaw or vacuum pickup techniques. All solderable surfaces are tin plated and compatible with reflow and vapor phase RoHS soldering methods.

### RoHS Statement

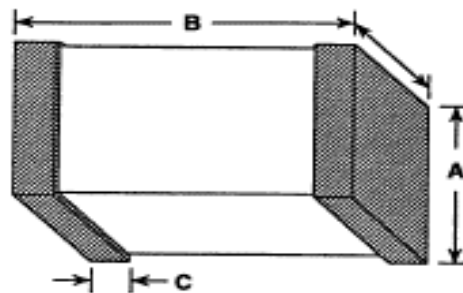
The MADP-007224-01072T is RoHS compliant, meaning it does not contain the maximum concentration of 0.1% by weight in homogenous materials for lead, hex chrome, mercury, PBB, PBDE, and 0.01% for cadmium.

### Environmental Capability

The MADP-007224-01072T devices are capable of meeting the environmental and mechanical requirements set forth in MIL-STD-750, MIL-STD-202 as well as other military standards. The table below lists some of the typical MIL-STD 750 tests the device is designed to meet.

MIL-STD-750		
Test	Method	Description
High Temp. Storage	1031	+175C, 250 Hours
Temp. Shock	1051	-65C to +175C 20 Cycles
HTRB	1038	80% of rated $V_B$ , +150C, 96 Hours
Moisture Resistance	1021	
Fine Leak	1071 Cond. H	1 X 10 <sup>-7</sup> CC/Sec
Constant Acceleration	2006	20,000 G's
Vibration Fatigue	2046	20,000 G's
Solderability	2026	

Case Style	Size in Inches (mm)		
	A Min./Max.	B Min./Max.	C Min./Max.
1072	.080/.095 (2.03/2.41)	.115/.135 (2.92/3.43)	.008/.030 (.203/.762)

**Maximum Temperature**

Storage -65 to +150C

Operating -50 to +125C

**Electrical Specifications @ +25°C**

Parameter	Symbol	Condition	MADP-007224-01072
Forward Voltage (Maximum)	$V_F$	100mA	1.0V <sub>DC</sub>
Voltage Rating (Minimum)	$V_{DC}$	$I_r = 1\mu A$	100V <sub>DC</sub>
Total Capacitance (Maximum)	$C_T$	100V @ 100MHz	1.0pF
Series Resistance (Maximum)	$R_S$	100mA @ 100MHz	0.5 $\Omega$
Parallel Resistance (Minimum)	$R_p$	0V @ 42.5MHz	40K $\Omega$
		<b>Package Style</b>	1072