# ATTENUATOR
# TEMPERATURE VARIABLE

## FEATURES

Temperature Variable
Compact Package
Wideband Performance
Passive Gain Compensation
Rugged Construction
MIL-PRF-3933

## APPLICATIONS

Power Amplifiers
Instrumentation
Mobile Networks
Point-to-Point Radios
Satellite Communications
Military Radios
Up/Down Converters
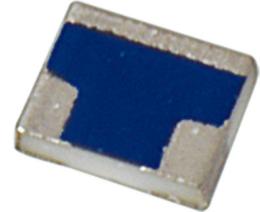
## GENERAL DESCRIPTION

EMC Technology is the leading authority in temperature variable attenuators. Thermopad® temperature variable attenuators have been a highly reliable passive solution for over temperature gain compensation for more than 20 years. All Thermopad® products can be qualified for high-reliability and space applications.

## ORDERING INFORMATION

### Part Identifier: MTVA0X00N0XW1S

X-Temperature Coefficient of Attenuation 1 x 10$^{-3}$ dB/dB/°C
N-Attenuation Shift Negative
X-dB Value
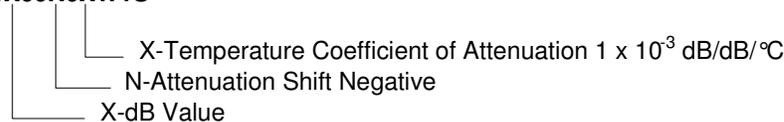
## SPECIFICATIONS

### 1.0 ELECTRICAL

| | |
|---|---|
| Nominal Impedance: | 50 ohms |
| Frequency Range: | DC-12.4 GHz |
| Attenuation Values Available: | 1-8 dB in 1 dB increments |
| Attenuation Accuracy: | @ 25ºC: ± 0.5 dB @ 1 GHz |
| VSWR: | 1.30:1 Max @ 1 GHz |
| Input Power | 200 milliwatts CW. Full Rated Power to 125°C, Derated Linearly to 0 Watts @ 150°C. |
| Temperature Coefficient of Attenuation: | -.003,-.004,-.005,-.006,-.007,and -.009 dB/dB/ºC |
| Temperature Coefficient Tolerance: | ± 0.001 dB/dB/ºC |

### 2.0 ENVIRONMENTAL

| | |
|---|---|
| Operating Temperature: | -55˚C to +150˚C |

### 3.0 MARKING

| | |
|---|---|
| Unit Marking: | None. |

### 4.0 QUALITY ASSURANCE

Sample Inspect Per ANSI/ASQC Z1.4 General Inspection, Level II, AQL=1.0.

Visual and Mechanical Examination for Conformance to Outline Drawing Requirements

Sample Inspection (Destructive Testing).

Select three (3) units from lot and measure DCA every 20ºC over the temperature range of

-55℃ to +125℃; Calculate using linear regression, the slope of the curve.

Calculate TCA using the following formula:

$$TCA = \frac{Slope}{Attenuation\ @\ 25°C}$$

Inspection in accordance with 824W107

Test Data Requirements:

    No Data Required for Customer

    Data Retention – 24 Months

## 5.0 PACKAGING

Standard:                       Tape and Reel

## 6.0 MECHANICAL

Substrate Material:           Alumina, 96% MIL-I-10

Terminal Material:            Thick Film, Nickel Barrier, Solder Coated

Workmanship               Per MIL-PRF-55342

Resistive Element:           Thick Film

Metric Dimensions:          Provided for reference only
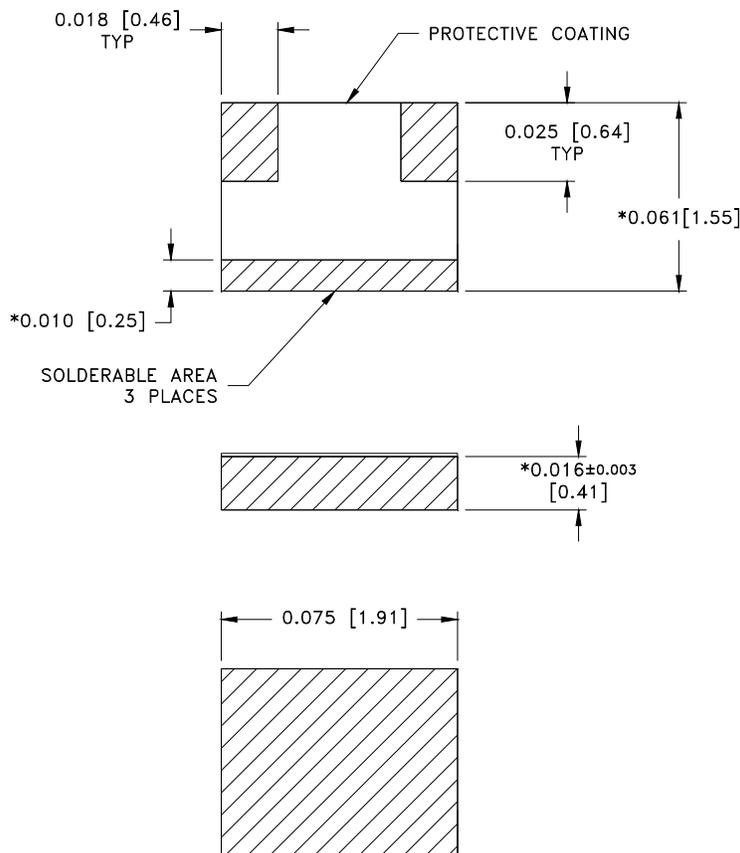


Unless Otherwise Specified:    TOLERANCE: X.XXX = ± 0.005

DIMENSIONS BEFORE SOLDER ALLOW 0.015 MAX FOR PRETINNED SURFACES