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
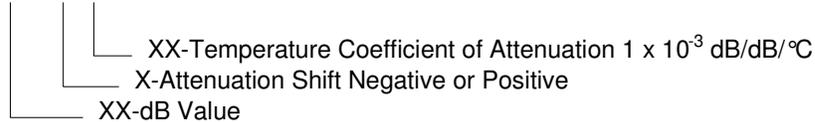Satellite Communications
Military Radios
Up/Down Converters

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:

TVAXX00XXX

XX-Temperature Coefficient of Attenuation 1×10^{-3} dB/dB/°C
X-Attenuation Shift Negative or Positive
XX-dB Value

SPECIFICATIONS

1.0 ELECTRICAL

Nominal Impedance:	50 ohms
Frequency Range:	DC – 6 GHz
Attenuation Values Available:	1-10 dB in 1 dB increments
Attenuation Accuracy:	@ 25ºC: ± 0.5 dB @ 1GHz
VSWR:	1.30:1 Max @ 1GHz
Input Power	Negative Shift 2 Watts Full Rated Power To 125°C Linearly To 0 Watts @ 150°C
	Positive Shift : .25 Watts Full Rated Power To 125°C, Derated Linearly To 0 Watts @ 150°C.
Temperature Coefficient of Attenuation:	-0.003, -0.004, -0.005, -0.006, -0.007, and -0.009 dB/dB/ºC
	0.003, 0.004, 0.005, 0.006, 0.007, 0.008, and 0.009 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:	dB Value (XX), Direction of Shift (N or P) and TCA Shift (X).

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

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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, MIL-I-10

Terminal Material: Thick Film, Nickel Barrier, Solder Plate

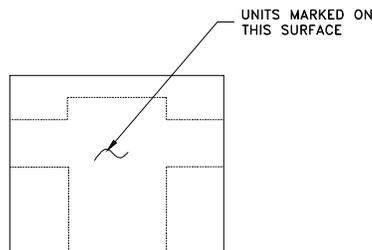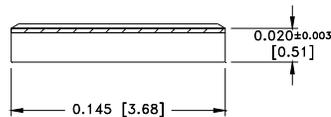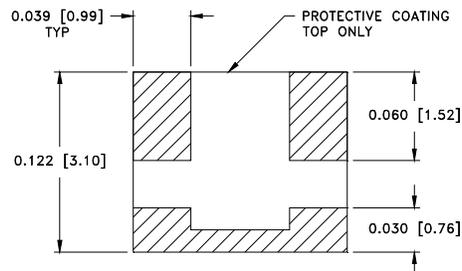Workmanship   PER MIL-PRF-55342

Resistive Element: Thick Film

Metric Dimensions: Provided for reference only

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

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7.0 FOOTPRINT

Part Number	Inches						mm					
	A	B	C	D	S	W	A	B	C	D	S	W
TVAXX00XXX	0.043	0.065	0.065	0.025	0.040	0.150	1.09	1.65	1.65	0.64	1.02	3.81