Temperature Compensation Attenuator DC~3GHz 50Ω 2W 3~6dB N10~N16

Part No. Descriptions

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Series	Frequency	Attenuation	Temperature Coefficient Code
ETCA,	03	(01 to 10) 1dB to 10 dB	N3 to N12

Part No.	Frequency Range (GHz)	Attenuation (dB)	Temperature Coefficient Code	Temperature Coefficient of Attenuation (dB/dB/℃)	Max. VSWR (:1) @1GHz@25℃	Max. Input Power (W)	Attenuation Accuracy (dB)
ETCA0303N*	DC-3	3	N10~N16	-0.010~ -0.016	1.30	2	±0.5
ETCA0604N*	DC-3	4	N10~N16	-0.010~ -0.016	1.30	2	±0.5
ETCA0605N*	DC-3	5	N10~N16	-0.010~ -0.016	1.30	2	±0.5
ETCA0606N*	DC-3	6	N10~N16	-0.010~ -0.016	1.30	2	±0.5

General Specifications

1. Frequency Range DC to 3GHz
2. Attenuation 3dB
3. Attenuation Accuracy at 25℃ ±0.5dB@1GHz
4. VSWR 1.30:1 Max. @1GHz, 1.30:1 Max.@2GHz at 25℃
5. Nominal Impedance 50 Ohms
6. Power Rating 2 Watts CW
7. Power Derating 100% @ 125℃
   Derates to 0% @ 150℃
8. Operating Temperature -55℃ to +150℃
9. Temperature Coefficient over Operating Temperature Range: See Table Above.
   Temperature Coefficient Tolerance:±0.001dB/dB/℃.
10. Substrate: Alumina (Al2O3)
11. Resistive material: Thick film
12. Terminal material: Thick film, Nickel barrier with pure tin plate (lead free) or with tin (Sn90) plate (10% lead contained)
13. Protective Coating: Thick film (ethyl acetate)
14. Package Outline: See Sheet 3.
15. Workmanship: per MIL-PRF-55342.
16. RoHS Compliant.
17. Electrostatic Discharge Control: per MIL-STD-1686.

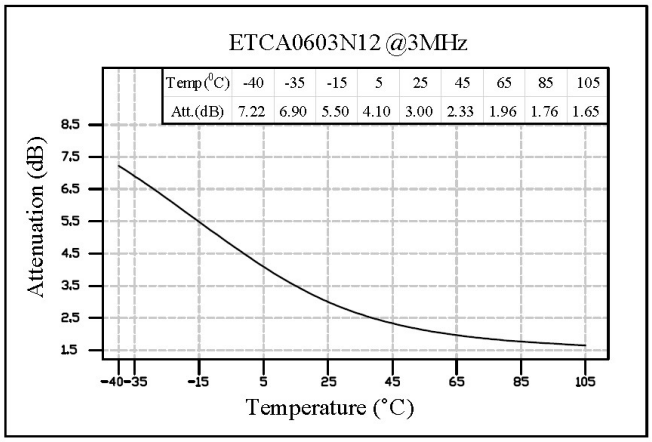
Unit Marking

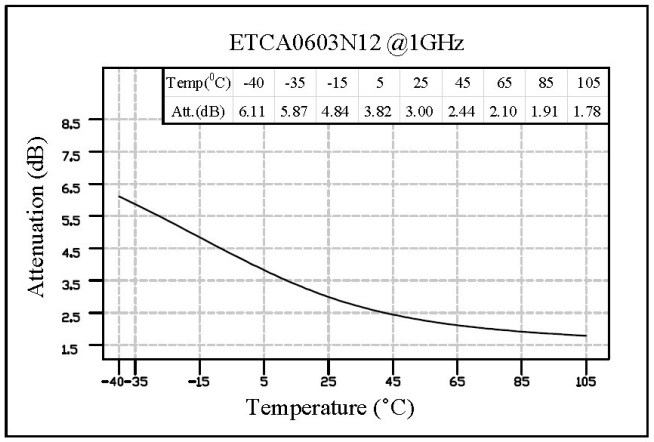
dB Value (XX), Direction of Shift (N) and TCA Shift (X).
Legibility and Permanency: per MIL-STD-130.

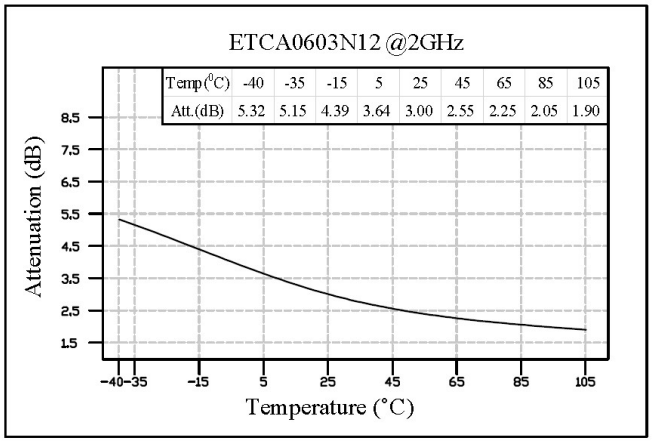
Quality Assurance

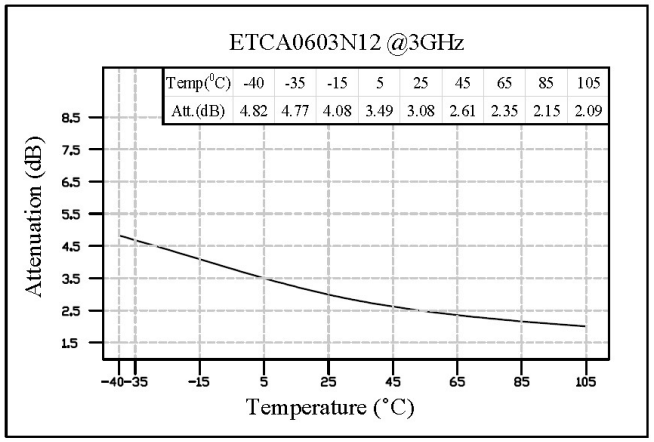
1. Sample inspect per ANSI/ASQC Z1.4 general inspection, LEVEL II, AQL = 1.0.
   1.1 Visual and mechanical examination for conformance to outline package requirements.
2. Select five (5) Units from lot measure attenuation from DC to 6 GHz every 20°C over the temperature range -35°C to +105°C.
   2.1 Calculate, using linear regression, the slope of the curve.
   2.2 Calculate TCA using the following formula: TCA = Slope / Attenuation @ 25°C.
3. Test data required for customer.

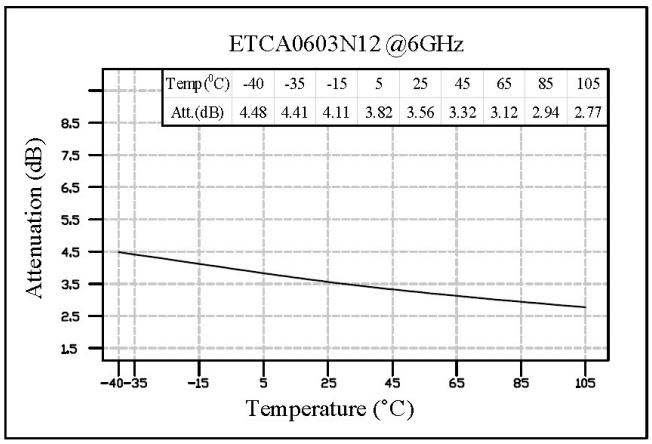
TCA Response







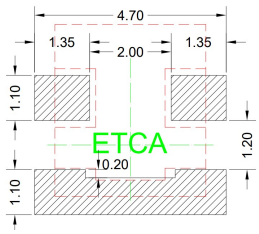




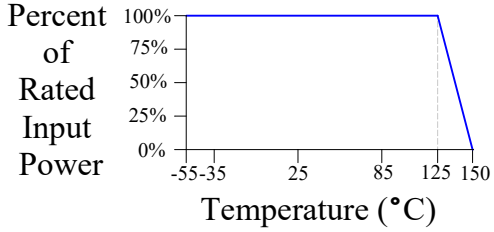
Statistical Table of Attenuation(typ.) VS Temperature				
ATT(dB) / Temp(℃)	3MHz	1GHz	2GHz	3GHz
-40	7.22	6.11	5.32	4.82
-35	6.90	5.87	5.15	4.77
-15	5.50	4.84	4.39	4.08
5	4.10	3.82	3.64	3.49
25	3.00	3.00	3.00	3.08
45	2.33	2.44	2.55	2.61
65	1.96	2.10	2.25	2.35
85	1.76	1.91	2.05	2.15
105	1.65	1.78	1.90	2.09

Recommended Layout

All dimensions shown in mm unless stated otherwise



Power Rating & Derating Curve

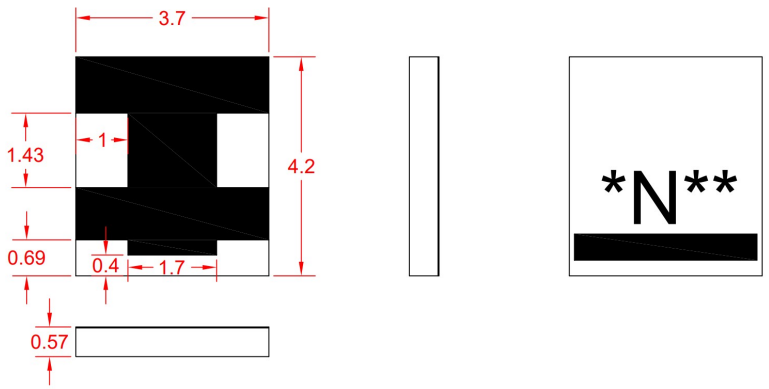


Package Outlines

All dimensions shown in mm unless stated otherwise

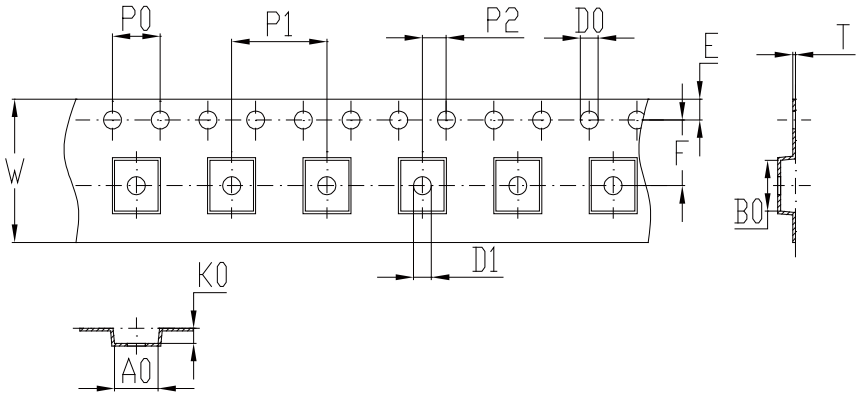
Note: Dimension tolerance in ±0.10 otherwise mention. * represents number

Planar Configuration (no code)
ETCA03**N**



Tape & Reel Drawing

All dimensions shown in mm unless stated otherwise



Notice:

A.10 Sprocket hole pitch cumulative tolerance is 0.2mm.

B. Carrier camber shall be not more than 1mm per 100mm through a length of 250mm.

C. All dimensions meet EIA-418-B requirements.

D. A0 & B0 measured as indicated.

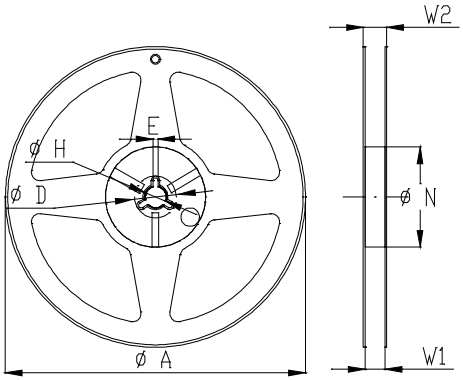
E. K0 measured from a place on the inside bottom of the pocket to top surface of carrier.

F. Material: PE 100

G. Thickness: 0.23±0.05mm

H. 1500 units (maximum) / T&R

symbol	A0	B0	K0	P0	P1	P2
spec	3.65±0.1	4.25±0.1	1.25±0.1	4.0±0.1	8.0±0.1	2.0±0.1
symbol	W	T	E	F	D0	D1
spec	12.0±0.3	0.23±0.05	1.75±0.1	5.5±0.1	$\Phi 1.5^{+0.1}_{-0.0}$	Φ1.5min



Symbol	Dimensions(mm)
A	180+0/-3
N	60+1/-0
W1	12.0±0.3
W2	14±1.0
D	25±0.8
H	13±0.2
E	3±0.5