Smart Temperature Compensation Attenuator DC~6GHz 50Ω 100mW 1~10dB N3~N10

Part No. Descriptions

***	**	**	**	**	*
Series	**Frequency**	**Attenuation**	**Temperature Coefficient Code**	**Metallization Options**	**Termination Plating Options**
STCA,	06	(01 to 10) 1dB to 10 dB	N3 to N10	Planar(no code), W1, W3	(no code)=lead free or (S)=Lead(Pb)

Part No.	Frequency Range (GHz)	Attenuation (dB)	Temperature Coefficient Code	Temperature Coefficient of Attenuation (dB/dB/℃)	Max. VSWR (:1) @1GHz@25℃	Max. Input Power (mW)	Attenuation Accuracy (dB)
STCA0601N*	DC-6	1	N3~N9	-0.003~ -0.009	1.20	100	±0.5
STCA0602N*	DC-6	2	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0603N*	DC-6	3	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0604N*	DC-6	4	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0605N*	DC-6	5	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0606N*	DC-6	6	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0607N*	DC-6	7	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0608N*	DC-6	8	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0609N*	DC-6	9	N3~N10	-0.003~ -0.010	1.20	100	±0.5
STCA0610N*	DC-6	10	N3~N10	-0.003~ -0.010	1.20	100	±0.5

General Specifications

1. Frequency Range: DC to 6GHz
2. Attenuation: 2dB
3. Attenuation Accuracy: at 25℃ ±0.5dB@1GHz
4. VSWR: 1.20:1 Max. @1GHz at 25℃
   1.20:1 typical @2GHz at 25℃
   1.20:1 typical @3 GHz at 25℃
5. Nominal Impedance: 50 Ohms
6. Power Rating: 100 mW 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.

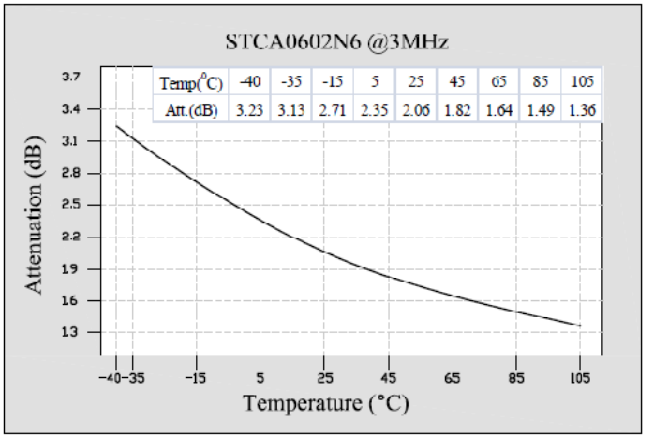
Unit Marking

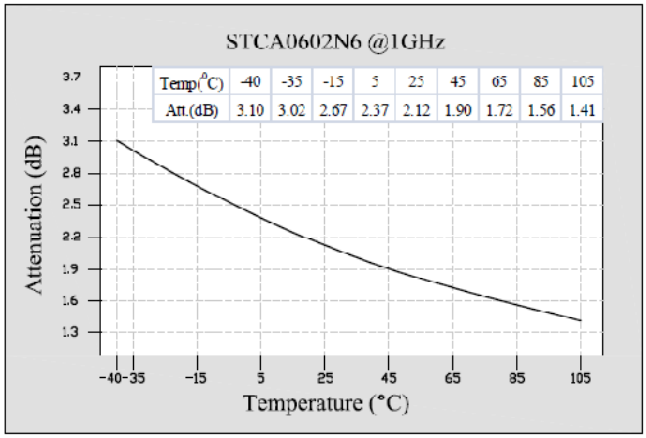
dB Value (XX), Direction of Shift (N) and TCA Shift (X).
Legibility and Permanency: per MIL-STD-130.

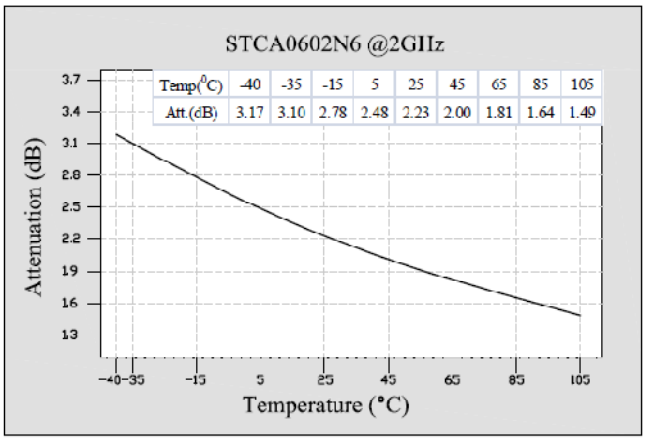
Quality Assurance

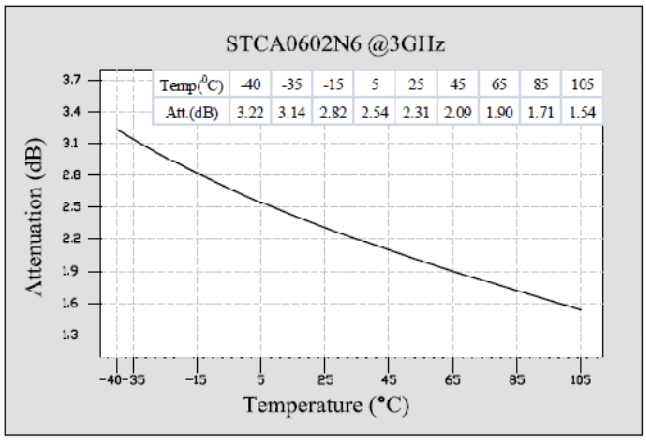
1. Sample inspect per ANSI/ASQC Z1.4 general inspection, LEVEL II, AQL = 1.0.
   1.1 Visual and mechanical examination for conformance to outline package requirements.
2. Select five (5) Units from lot measure attenuation from DC to 6GHz every 20°C over the temperature range -55°C to +125°C.
   2.1 Calculate, 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.

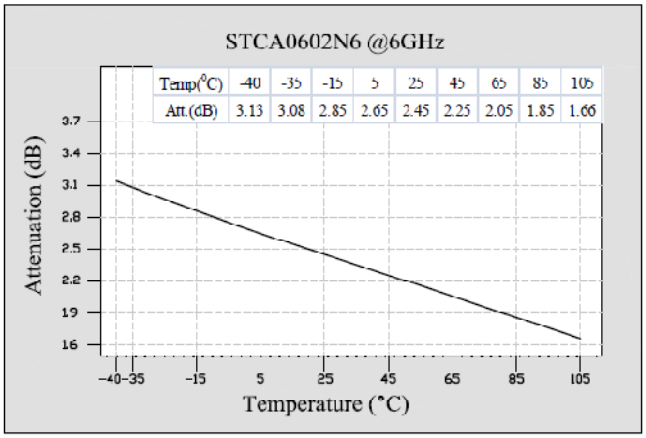
STCA Response







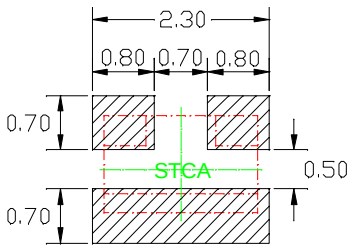




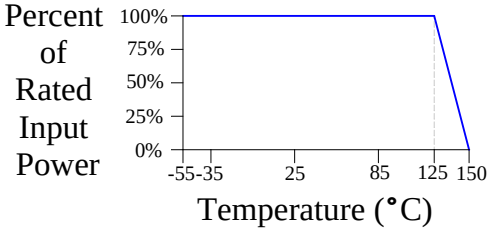
Statistical Table of Attenuation(typ.) VS Temperature				
ATT(dB) / Temp(℃)	3MHz	1GHz	2GHz	3GHz
-40	3.23	3.10	3.17	3.22
-35	3.13	3.02	3.10	3.14
-15	2.71	2.67	2.78	2.82
5	2.35	2.37	2.48	2.54
25	2.06	2.12	2.23	2.31
45	1.82	1.90	2.00	2.09
65	1.64	1.72	1.81	1.90
85	1.49	1.56	1.64	1.71
105	1.36	1.41	1.49	1.54

Recommended Layout

All dimensions shown in mm unless stated otherwise



Power Rating & Derating Curve

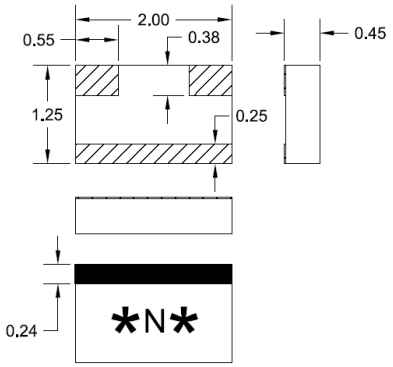


Package Outlines

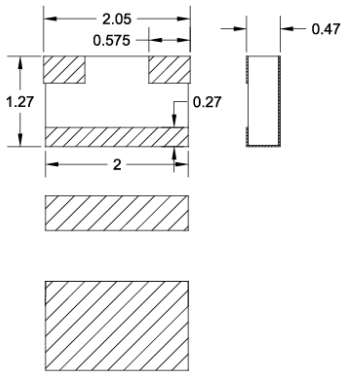
All dimensions shown in mm unless stated otherwise

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

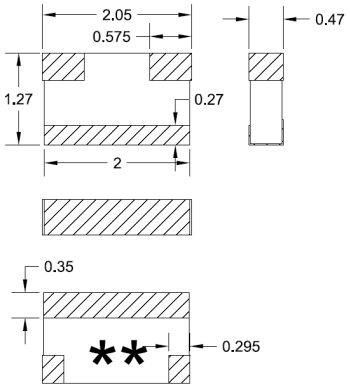
Planar Configuration (no code)
STCA06**N*



Single Wrap Configuration (W1)
STCA06**N*W1*

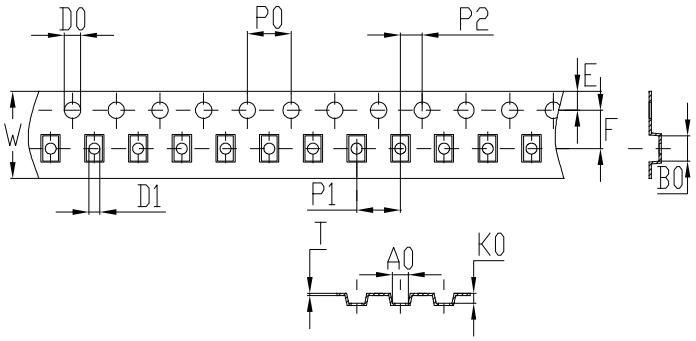


Triple Wrap Configuration (W3)
STCA06**N*W3*



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.

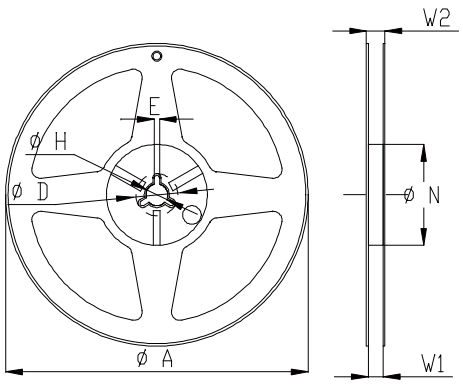
E. K0 measured from a place on the inside bottom of the pocket to top surface of carrier.

F. Material: PE 100

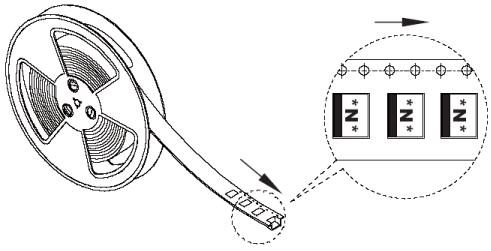
G. Thickness: 0.20±0.05mm

H. 3000 units (maximum) / T&R

symbol	A0	B0	K0	P0	P1	P2
spec	1.45±0.1	2.30±0.1	0.9±0.1	4.0±0.1	4.0±0.1	2.0±0.1
symbol	W	T	E	F	D0	D1
spec	8.0±0.1	0.20±0.05	1.75±0.1	3.5±0.1	$\Phi 1.5^{+0.1}_{-0.0}$	$\Phi 1.0^{+0.1}_{-0.0}$



Symbol	Dimensions(mm)
A	180+0/-3
N	60+1/-0
W1	9.0±0.3
W2	11±1.0
D	25±0.8
H	13±0.2
E	3±0.5



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