

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

**Part No. Descriptions**

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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/°C)	Max. VSWR (:1) @1GHz@25°C	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**

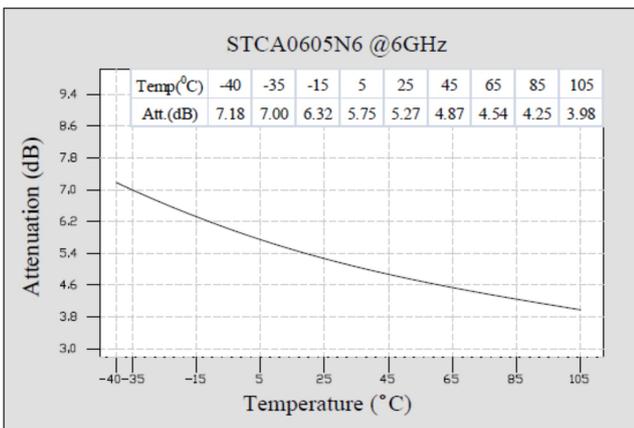
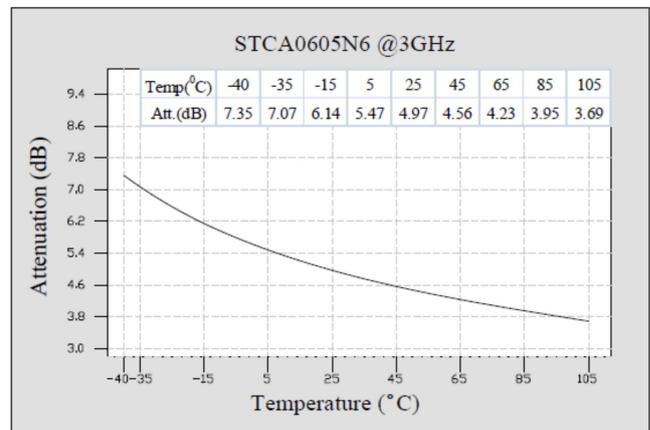
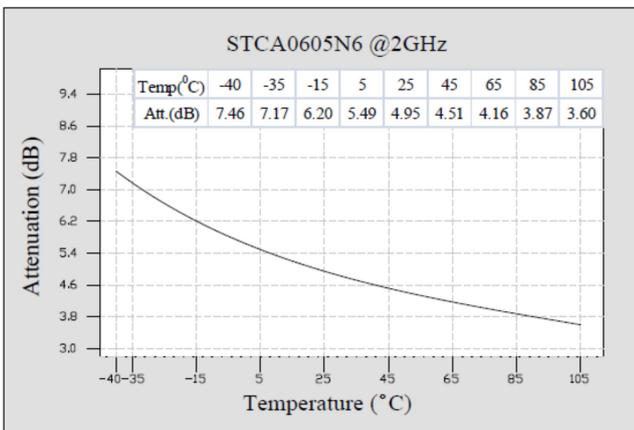
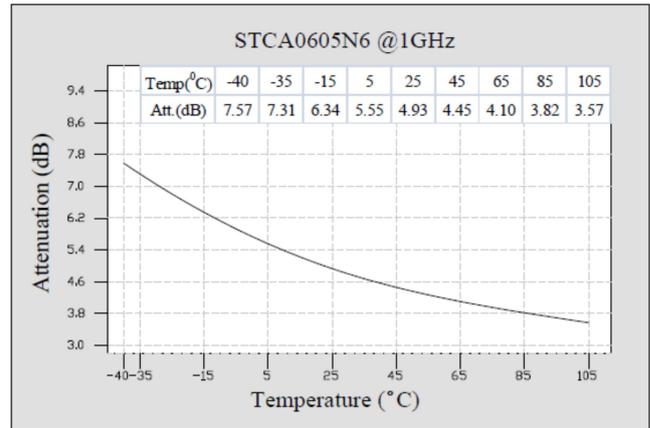
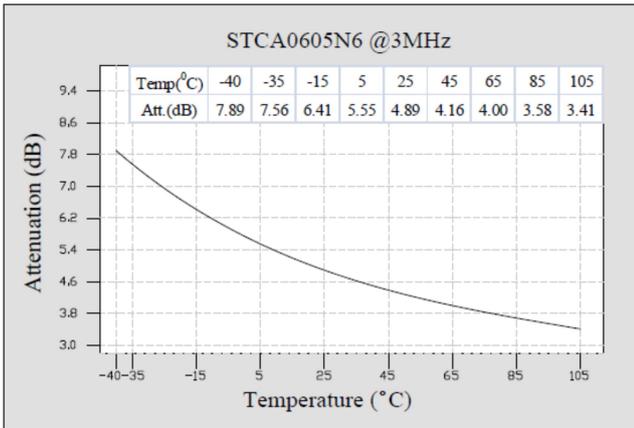
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|---|--|
| 1. Frequency Range  | DC to 6GHz   |
| 2. Attenuation  | 5dB  |
| 3. Attenuation Accuracy   | at 25°C ±0.5dB@1GHz  |
| 4. VSWR   | 1.20:1 Max. @1GHz at 25°C<br>1.20:1 typical @2GHz at 25°C<br>1.20:1 typical @3 GHz at 25°C |
| 5. Nominal Impedance  | 50 Ohms  |
| 6. Power Rating   | 100 mW CW  |
| 7. Power Derating   | 100% @ 125°C<br>Derates to 0% @ 150°C  |
| 8. Operating Temperature  | -55°C to +150°C  |
| 9. Temperature Coefficient over Operating Temperature Range: See Table Above.   | Temperature Coefficient Tolerance: ±0.001dB/dB/°C.   |
| 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 -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.

**STCA Response**

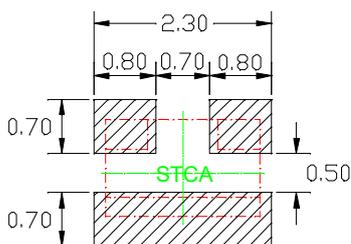


Statistical Table of Attenuation(typ.) VS Temperature

ATT(dB) \ Temp(°C)	3MHz	1GHz	2GHz	3GHz
-40	7.89	7.57	7.46	7.35
-35	7.56	7.31	7.17	7.07
-15	6.41	6.34	6.20	6.14
5	5.55	5.55	5.49	5.47
25	4.89	4.93	4.95	4.97
45	4.16	4.45	4.51	4.56
65	4.00	4.10	4.16	4.23
85	3.58	3.82	3.87	3.95
105	3.41	3.57	3.60	3.69

**Recommended Layout**

All dimensions shown in mm unless stated otherwise



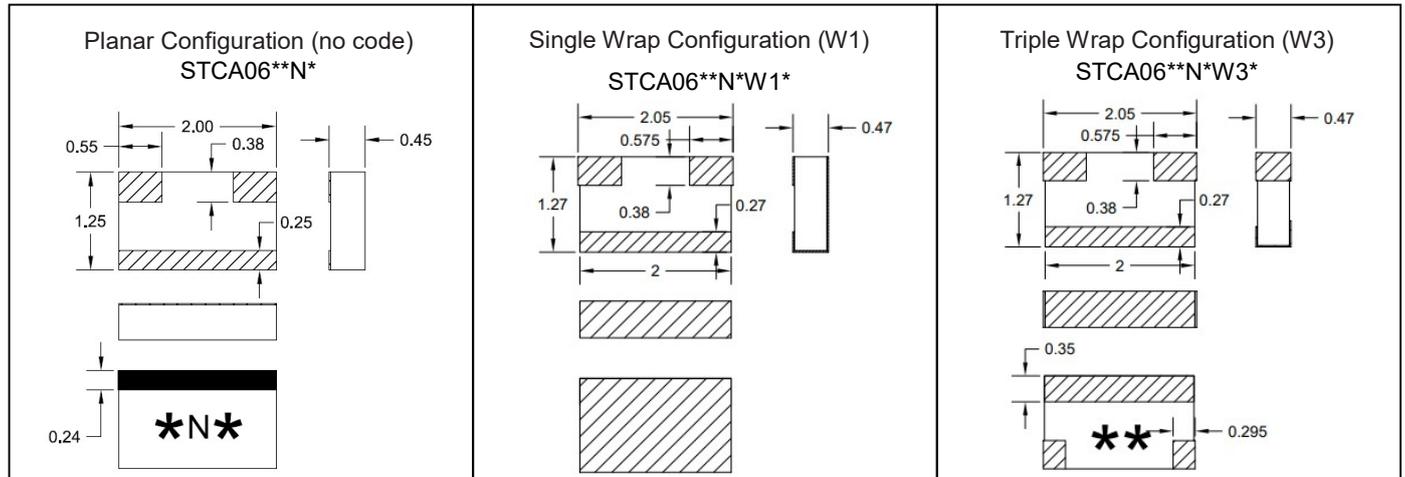
**Power Rating & Derating Curve**



**Package Outlines**

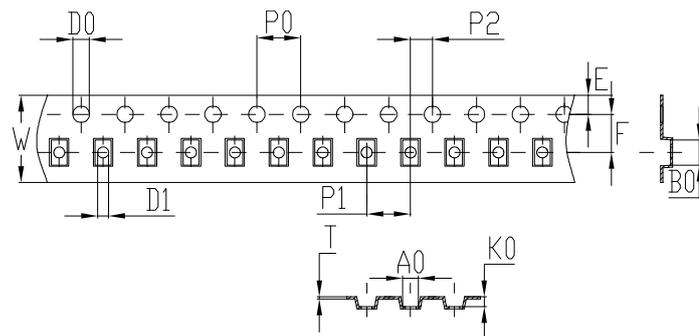
All dimensions shown in mm unless stated otherwise

Note: Dimension tolerance in  $\pm 0.10$  otherwise mention. \* represents number



**Tape & Reel Drawing**

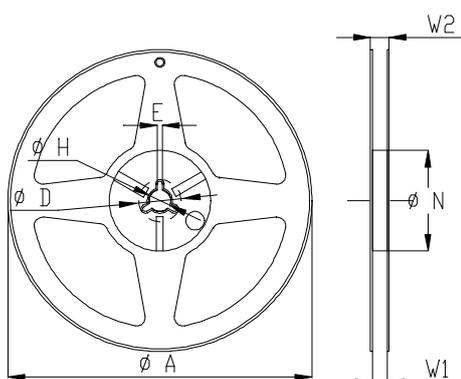
All dimensions shown in mm unless stated otherwise



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:  $0.20 \pm 0.05$ mm
- H. 3000 units (maximum) / T&R

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



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

