

**Part No. Descriptions**

|        |           |                            |                              |                         |                                     |   |
|--------|-----------|----------------------------|------------------------------|-------------------------|-------------------------------------|---|
| ***    | **        | **                         | **                           | **                      | **                                  | * |
| Series | Frequency | Attenuation                | Temperature Coefficient Code | Metallization Options   | Termination Plating Options         |   |
|        |           |                            |                              |                         |                                     |   |
| STCA,  | 06        | (01 to 10)<br>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**

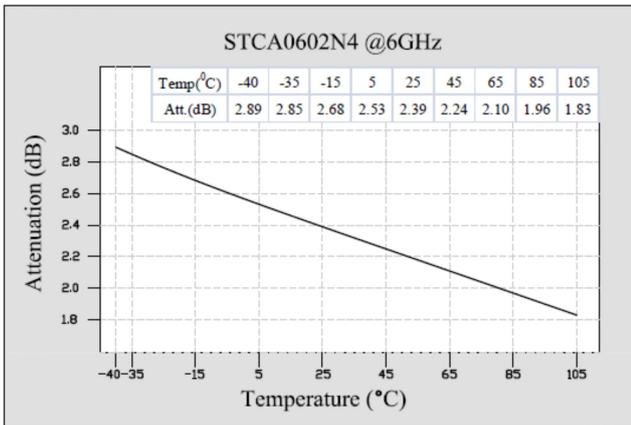
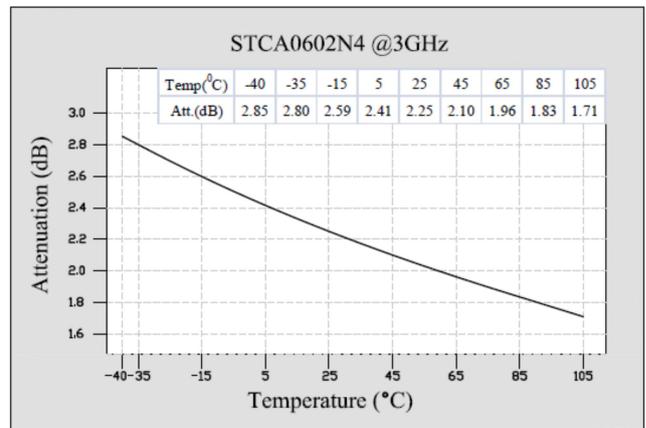
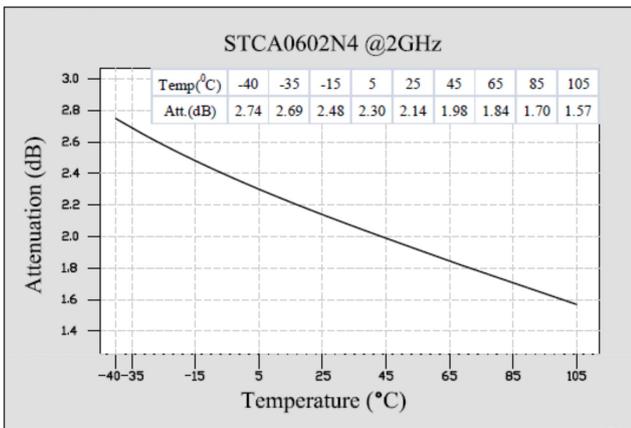
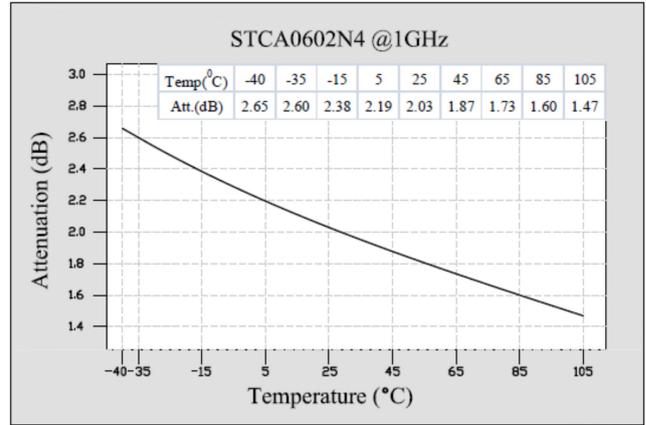
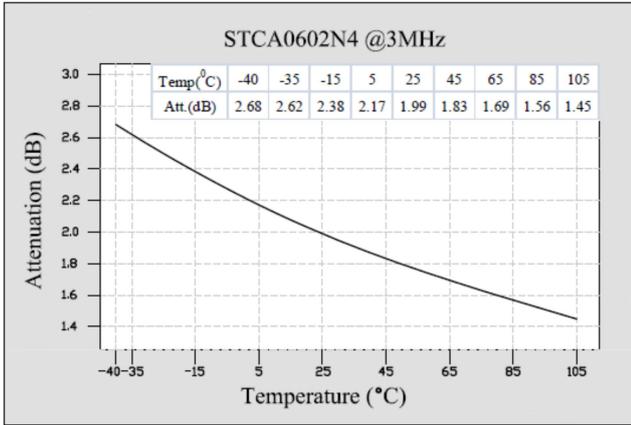
1. Frequency Range DC to 6GHz
2. Attenuation 2dB
3. Attenuation Accuracy at 25°C ±0.5dB@1GHz
4. VSWR 1.20:1 Max. @1GHz at 25°C  
1.20:1 typical @2GHz at 25°C  
1.20:1 typical @3 GHz at 25°C
5. Nominal Impedance 50 Ohms
6. Power Rating 100 mW CW
7. Power Derating 100% @ 125°C  
Derates to 0% @ 150°C
8. 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 (Al<sub>2</sub>O<sub>3</sub>)
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.

**STCA Response**

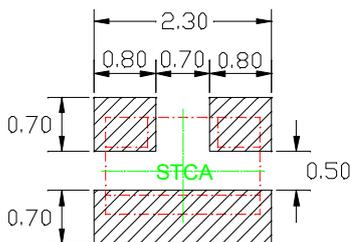


Statistical Table of Attenuation(typ.) VS Temperature

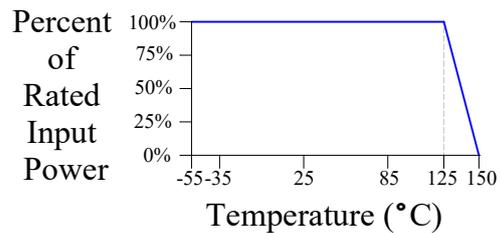
| ATT(dB) / Temp(°C) | 3MHz | 1GHz | 2GHz | 3GHz |
|--------------------|------|------|------|------|
| -40                | 2.68 | 2.65 | 2.74 | 2.85 |
| -35                | 2.62 | 2.60 | 2.69 | 2.80 |
| -15                | 2.38 | 2.38 | 2.48 | 2.59 |
| 5                  | 2.17 | 2.19 | 2.30 | 2.41 |
| 25                 | 1.99 | 2.03 | 2.14 | 2.25 |
| 45                 | 1.83 | 1.87 | 1.98 | 2.10 |
| 65                 | 1.69 | 1.73 | 1.84 | 1.96 |
| 85                 | 1.56 | 1.60 | 1.70 | 1.83 |
| 105                | 1.45 | 1.47 | 1.57 | 1.71 |

**Recommended Layout**

All dimensions shown in mm unless stated otherwise



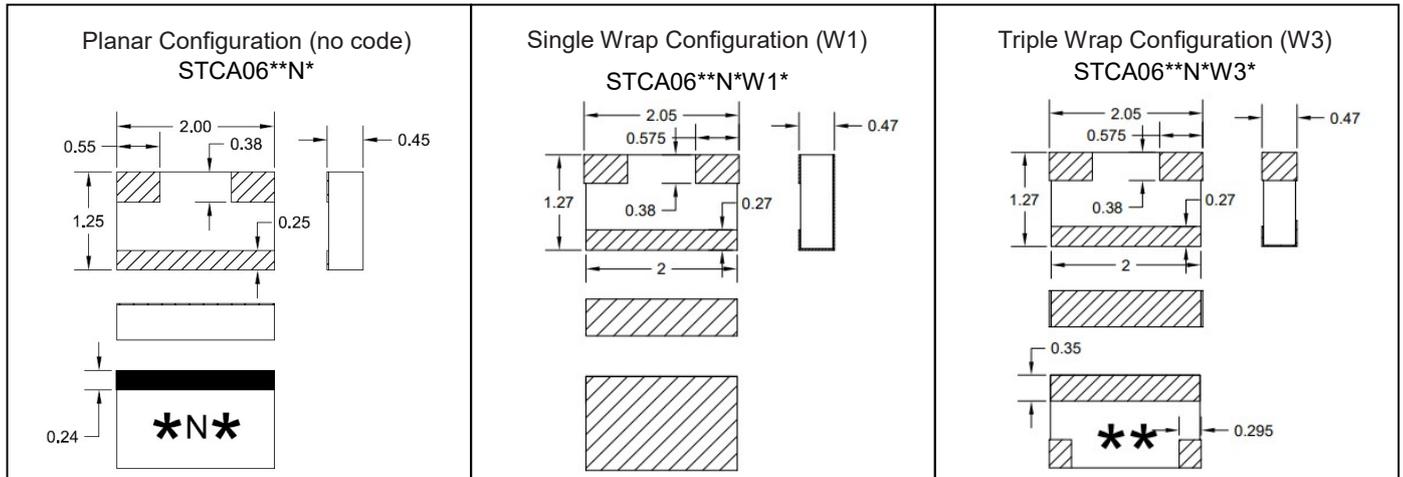
**Power Rating & Derating Curve**



**Package Outlines**

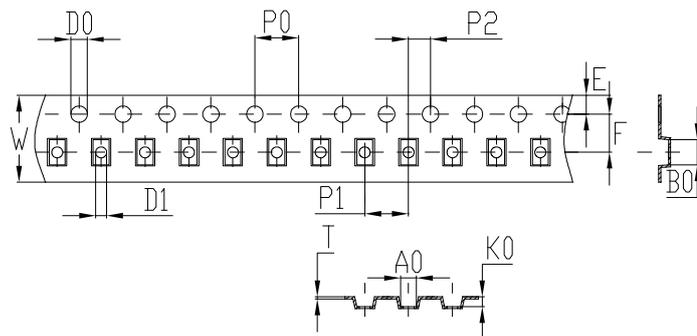
All dimensions shown in mm unless stated otherwise

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



**Tape & Reel Drawing**

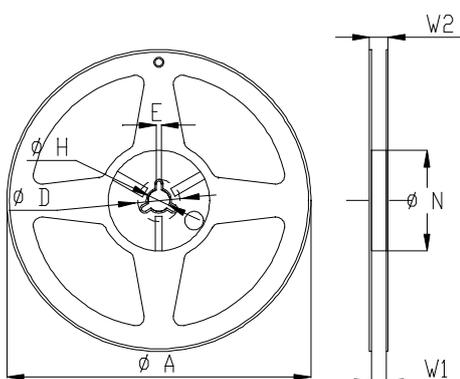
All dimensions shown in mm unless stated otherwise



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      | $3 \pm 0.5$    |

