

Part No. Descriptions

| TCA Series | Frequency | Attenuation | Temperature Coefficient Code | Metallization Options | Termination Plating Options |
|--------------------------------|--------------------|-------------|------------------------------|-----------------------------------|-------------------------------------|
| TCA, STCA, MTCA, HTCA, or BTCA | (03, 06, 12 or 18) | (01 to 10) | (N3 to N10) or (P3 to P8) | Planar(no code), W1, W3, WB1 or G | (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~N7 | -0.003~ -0.007 | 1.20 | 100 | ±0.5 |
| STCA0602N* | DC-6 | 2 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0603N* | DC-6 | 3 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0604N* | DC-6 | 4 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0605N* | DC-6 | 5 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0606N* | DC-6 | 6 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0607N* | DC-6 | 7 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0608N* | DC-6 | 8 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0609N* | DC-6 | 9 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |
| STCA0610N* | DC-6 | 10 | N3~N9 | -0.003~ -0.009 | 1.20 | 100 | ±0.5 |

General Specifications

- Frequency Range DC to 6GHz
- Attenuation 3dB
- Attenuation Accuracy at 25°C ±0.5dB@1GHz
- 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
- Nominal Impedance 50 Ohms
- Power Rating 100 mW CW
- Power Derating 100% @ 100°C
Derates to 0% @ 150°C
- Operating Temperature -55°C to +150°C
- Temperature Coefficient over Operating Temperature Range: See Table Above.
Temperature Coefficient Tolerance: ±0.001dB/dB/°C.
- Substrate: Alumina (Al₂O₃)
- Resistive material: Thick film
- Terminal material: Thick film, Nickel barrier with pure tin plate (lead free) or with tin (Sn90) plate (10% lead contained)
- Protective Coating: Thick film (ethyl acetate)
- Package Outline: See Sheet 3.
- Workmanship: per MIL-PRF-55342.
- RoHS Compliant.
- 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

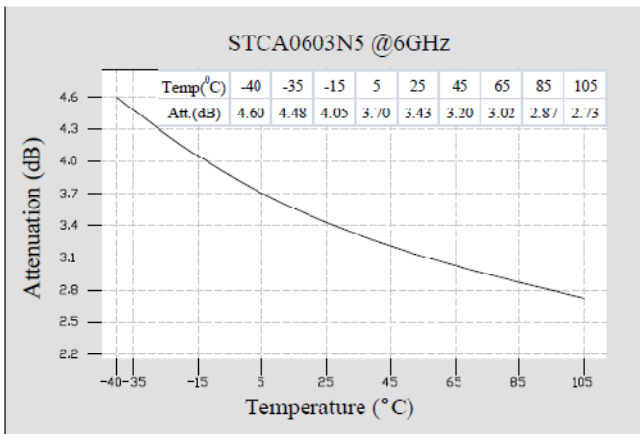
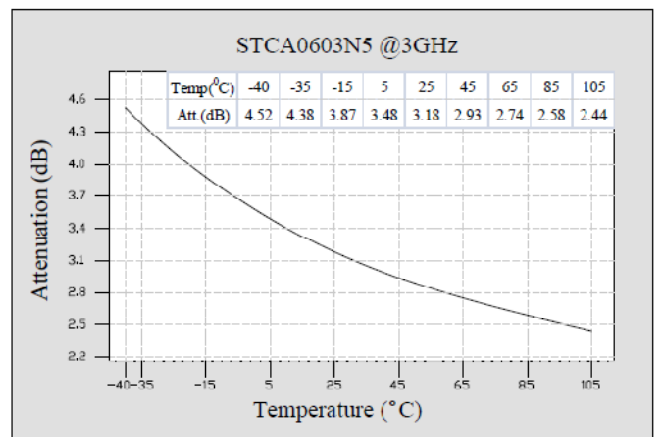
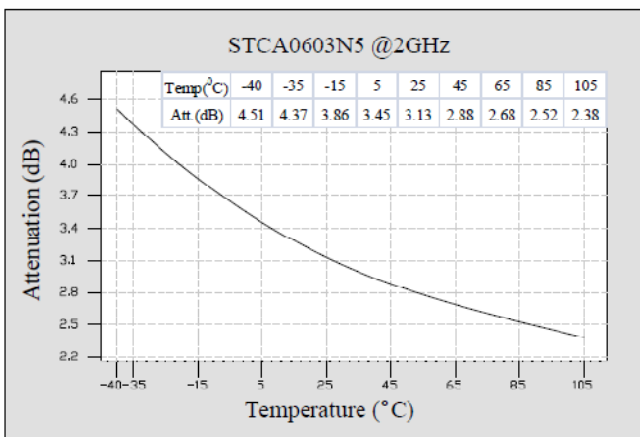
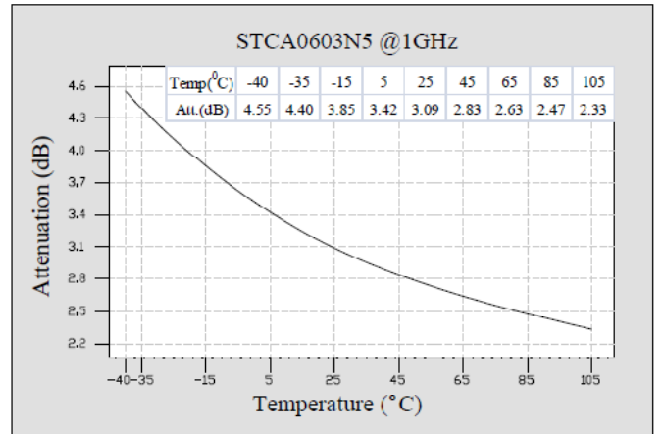
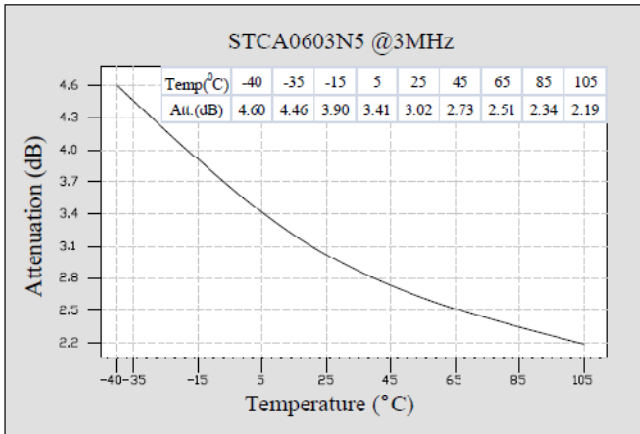
- Sample inspect per ANSI/ASQC Z1.4 general inspection, LEVEL II, AQL = 1.0.
 - 1.1 Visual and mechanical examination for conformance to outline package requirements.
- Select five (5) Units from lot measure attenuation from DC to 6GHz every 20°C over the temperature range -55°C to +125°C.
 - 2.1 Calculate, using linear regression, the slope of the curve.
 - 2.2 Calculate TCA using the following formula: TCA = Slope / Attenuation @ 25°C.
- Test data required for customer.

Yantel Corporation

Add:2nd Floor, Building 2, Gaofa Technology Park, Longjing, Nanshan, Shenzhen, China. PC 518055

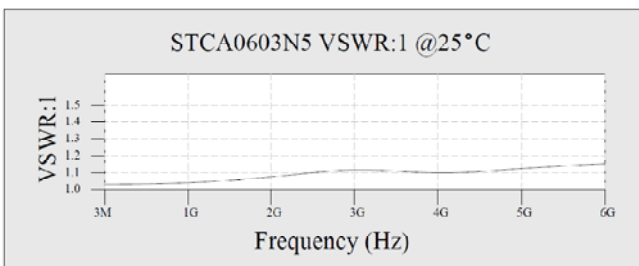
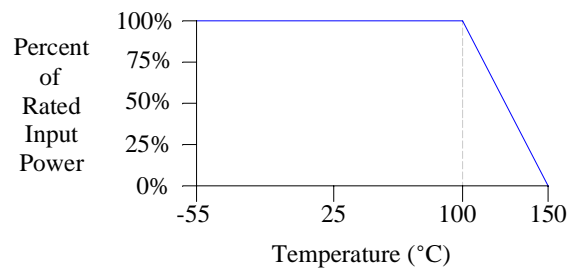
Tel: 86-755-8355-1886 Fax: 86-755-8355-2533

 For detailed performance specs & shopping online see Yantel web site : www.yantel-corp.com

STCA Response


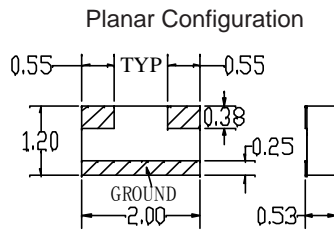
Statistical Table of Attenuation(typ.) VS Temperature

| ATT(dB) \ Temp(°C) | 3MHz | 1GHz | 2GHz | 3GHz |
|--------------------|------|------|------|------|
| -40 | 4.60 | 4.55 | 4.51 | 4.52 |
| -35 | 4.46 | 4.40 | 4.37 | 4.38 |
| -15 | 3.90 | 3.85 | 3.86 | 3.87 |
| 5 | 3.41 | 3.42 | 3.45 | 3.48 |
| 25 | 3.02 | 3.09 | 3.13 | 3.18 |
| 45 | 2.73 | 2.83 | 2.88 | 2.93 |
| 65 | 2.51 | 2.63 | 2.68 | 2.74 |
| 85 | 2.34 | 2.47 | 2.52 | 2.58 |
| 105 | 2.19 | 2.33 | 2.38 | 2.44 |

Typical VSWR @25°C

Power Rating & Derating Curve


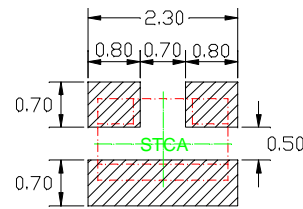
Package Outlines

All dimensions shown in mm unless stated otherwise



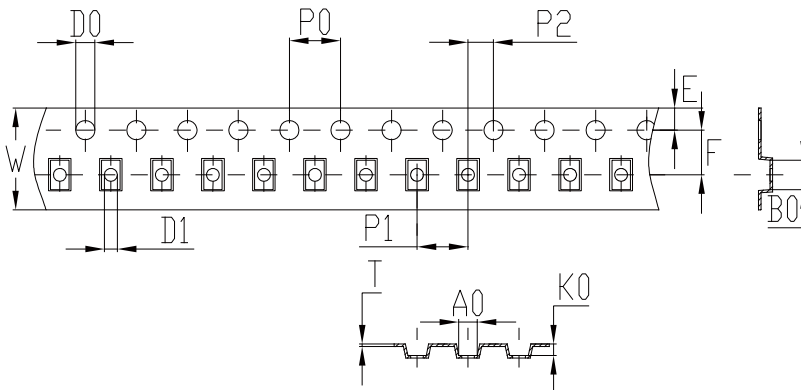
Recommended Layout

All dimensions shown in mm unless stated otherwise



Tape & Reel Drawing

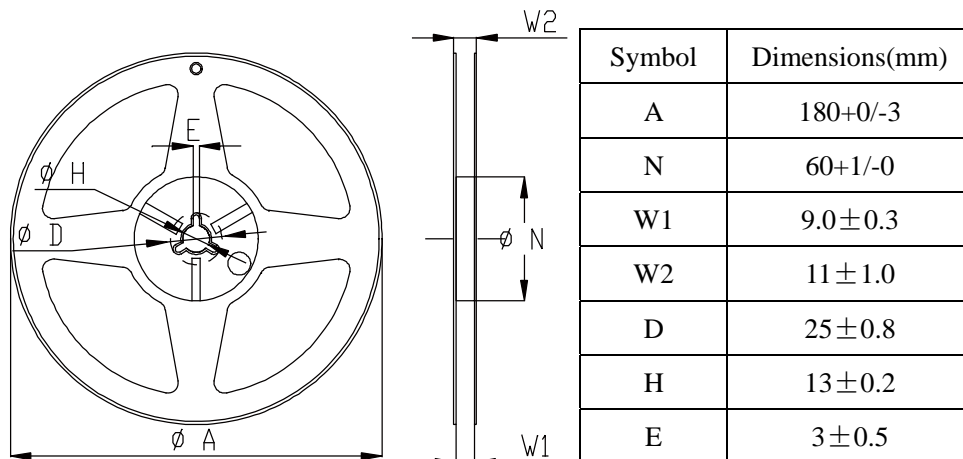
All dimensions shown in mm unless stated otherwise



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 | Φ1.5 ^{+0.1} _{-0.0} | Φ1.0 ^{+0.1} _{-0.0} |



Yantel Corporation

Add:2nd Floor,Building 2,Gaofa Technology Park,Longjing,Nanshan,Shenzhen,China.PC 518055

Tel: 86-755-8355-1886 Fax: 86-755-8355-2533

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