Yantel

Broadcast(CATV)Temperature Compensation Attenuator   DC~3GHz   75Ω   2W   1~6dB   N3~N9

Part No. Descriptions

****	**	**	**	**	*
Series	**Frequency**	**Attenuation**	**Temperature Coefficient Code**	**Metallization Options**	**Termination Plating Options**
BTCA	03	(01 to 6) 1dB to 6 dB	(N3 to N9)	Planar(no code), W3	(no code)=lead free or (S)=Lead(Pb)
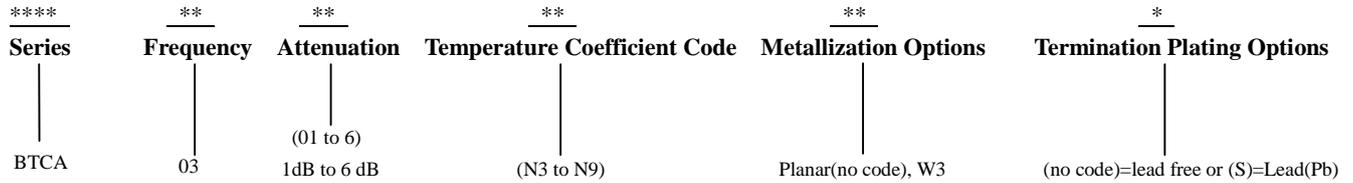
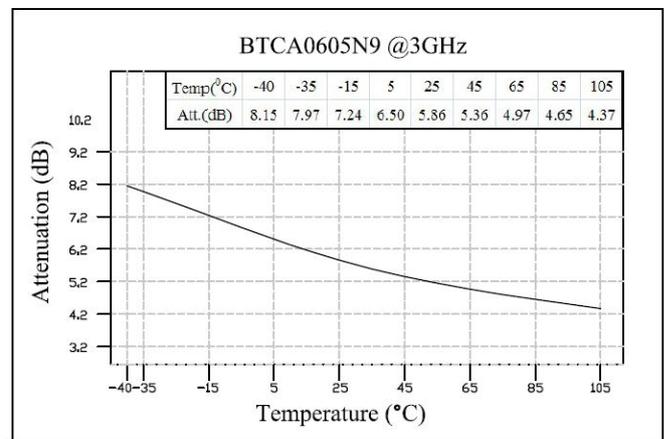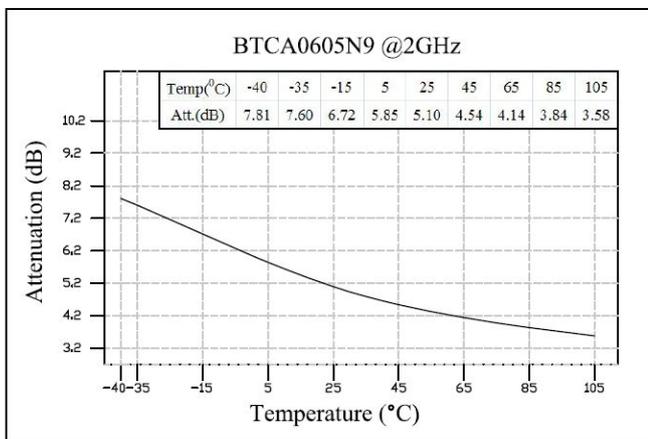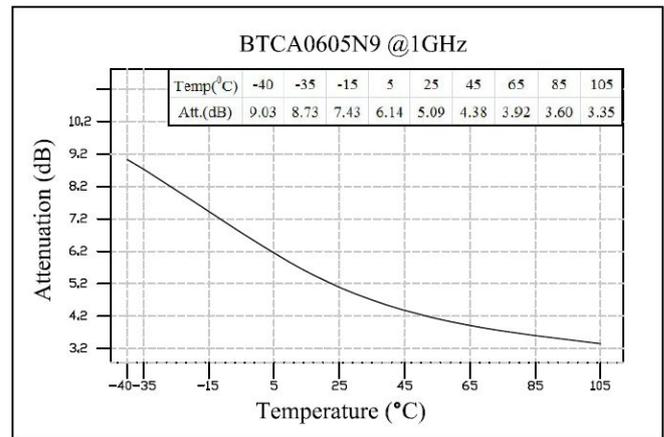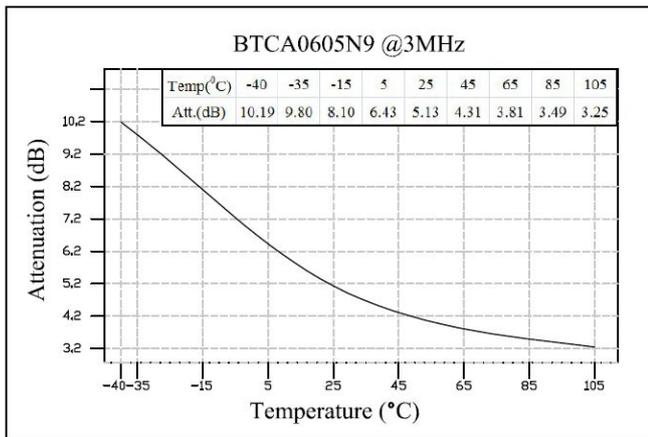| Part No.	Frequency Range (GHz)	Attenuation (dB)	Temperature Coefficient Code	Temperature Coefficient of Attenuation (dB/dB/℃)	Max. VSWR (:1) @1GHz@25℃	Max. Input Power (W)	Attenuation Accuracy (dB)
BTCA0601N*	DC-3	1	N3~N9	-0.003~ -0.009	1.2	2	±0.5
BTCA0602N*	DC-3	2	N3~N9	-0.003~ -0.009	1.2	2	±0.5
BTCA0603N*	DC-3	3	N3~N9	-0.003~ -0.009	1.2	2	±0.5
BTCA0604N*	DC-3	4	N3~N9	-0.003~ -0.009	1.2	2	±0.5
BTCA0605N*	DC-3	5	N3~N9	-0.003~ -0.009	1.2	2	±0.5
BTCA0606N*	DC-3	6	N3~N9	-0.003~ -0.009	1.2	2	±0.5

General Specifications

1. Frequency Range   DC to 3GHz
2. Attenuation   5dB
3. Attenuation Accuracy   at 25℃ ±0.5dB@1GHz
4. VSWR   1.20:1 Max. @1GHz at 25℃
5. Nominal Impedance   75Ohms
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. Electrostatic Discharge Control: per MIL-STD-1686.

Unit Marking

dB Value (XX), Direction of Shift (N) and TCA Shift (X), Lead free (F).
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 3GHz 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.
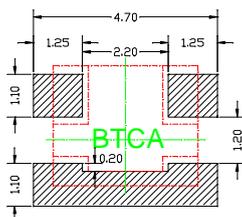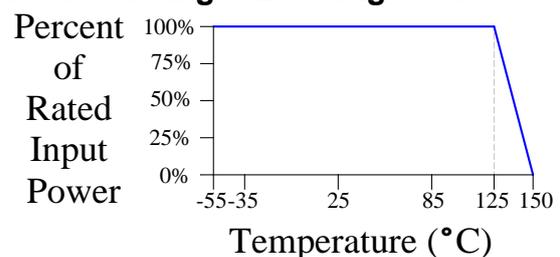3. Test data required for customer.

Yantel Corporation

BTCA Response

BTCA0605N9 @3MHz

Temp(°C)	-40	-35	-15	5	25	45	65	85	105
Att.(dB)	10.19	9.80	8.10	6.43	5.13	4.31	3.81	3.49	3.25

BTCA0605N9 @1GHz

Temp(°C)	-40	-35	-15	5	25	45	65	85	105
Att.(dB)	9.03	8.73	7.43	6.14	5.09	4.38	3.92	3.60	3.35

BTCA0605N9 @2GHz

Temp(°C)	-40	-35	-15	5	25	45	65	85	105
Att.(dB)	7.81	7.60	6.72	5.85	5.10	4.54	4.14	3.84	3.58

BTCA0605N9 @3GHz

Temp(°C)	-40	-35	-15	5	25	45	65	85	105
Att.(dB)	8.15	7.97	7.24	6.50	5.86	5.36	4.97	4.65	4.37

Statistical Table of Attenuation(typ.) VS Temperature				
ATT(dB) / Temp(°C)	3MHz	1GHz	2GHz	3GHz
-40	10.19	9.03	7.81	8.15
-35	9.8	8.73	7.60	7.97
-15	8.1	7.43	6.72	7.24
5	6.43	6.14	5.85	6.50
25	5.13	5.09	5.10	5.86
45	4.31	4.38	4.54	5.36
65	3.81	3.92	4.14	4.97
85	3.49	3.60	3.84	4.65
105	3.25	3.35	3.58	4.37

Recommended Layout

All dimensions shown in mm unless stated otherwise

4.70
1.25 2.20 1.25
1.10
BTCA
1.20
0.20
1.10

Power Rating & Derating Curve

Percent of Rated Input Power

100%
75%
50%
25%
0%

-55 -35   25   85   125 150

Temperature (°C)

Yantel Corporation

Package Outlines
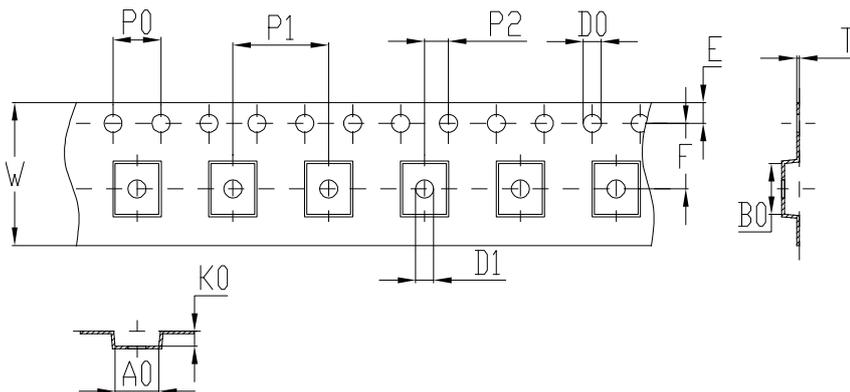
All dimensions shown in mm unless stated otherwise

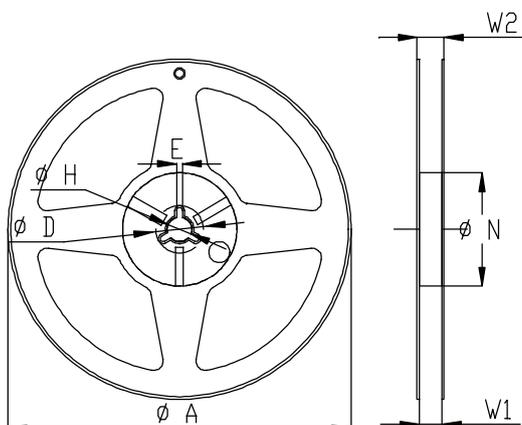Note: Dimension tolerance in ±0.10 otherwise mention. * represents number

Planar Configuration (no code)
BTCA06**N*

Triple Wrap Configuration (W3)
BTCA06**N*W3*
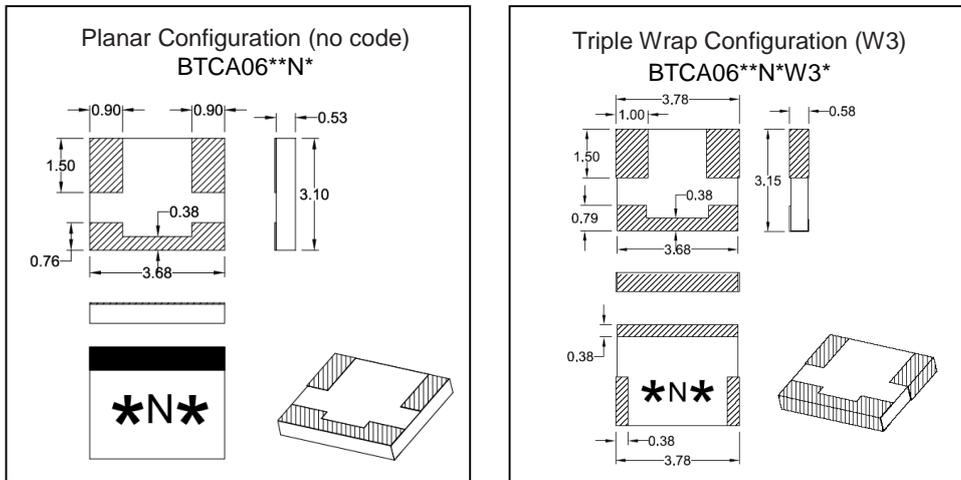
Tape & Reel Drawing

All dimensions shown in mm unless stated otherwise

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	$\Phi 1.5^{+0.1}_{-0.0}$	$\Phi 1.5min$

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

Yantel Corporation