



**Features:**

1. DC-20GHz ultra-compact ultra-wideband.
2. Size 0.8\*0.85\*0.26 or 0.22mm, gold electrode, size & thickness consistent with active temperature compensation attenuation chip, easy to use.
3. Gold wire bonding, input and output pad size 0.22\*0.23mm.
4. N3~ N10 Various slopes are available.
5. High reliability, no need for extra-5V power supply.
6. Improve impedance matching, reduce return loss between 2 adjacent power amplifiers, play an isolation protection role, and effectively prevent self-excitation.
7. Compared to active temperature compensation attenuators, passive one exhibit no distortion, phase shift, or time delay.
8. The application system is simple and flexibl with high reliability, reducing the hidden costs associated with system redesign.
9. When power increases, passive temperature compensation attenuators provide better and more stable temperature and frequency response characteristics than active tones, offering higher reliability.
10. Ultra small design, supporting for small multi-channel active phased array radars and chip-level micro-miniature transceiver module.

**Applications:**

- Miniaturized multi-channel active phased array radar
- Chip-level micro-miniature packaged transceiver modules
- Small active phased array radar for unmanned aerial vehicles

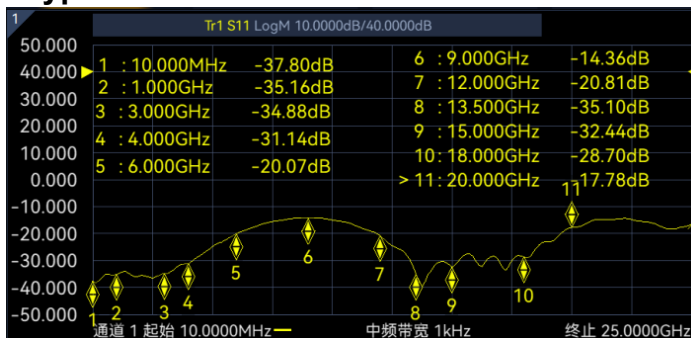
**Unit Marking**

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

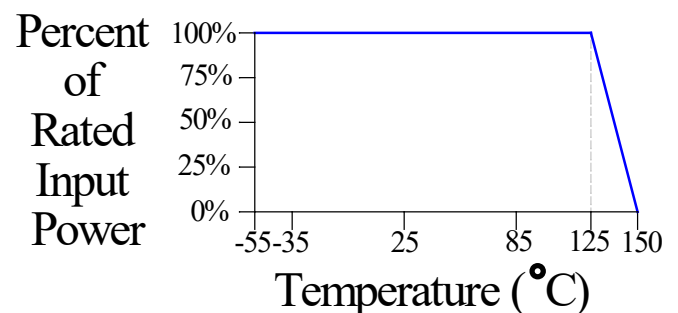
**Quality Assurance**

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 20 GHz 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.

**Typical VSWR, 25°C**



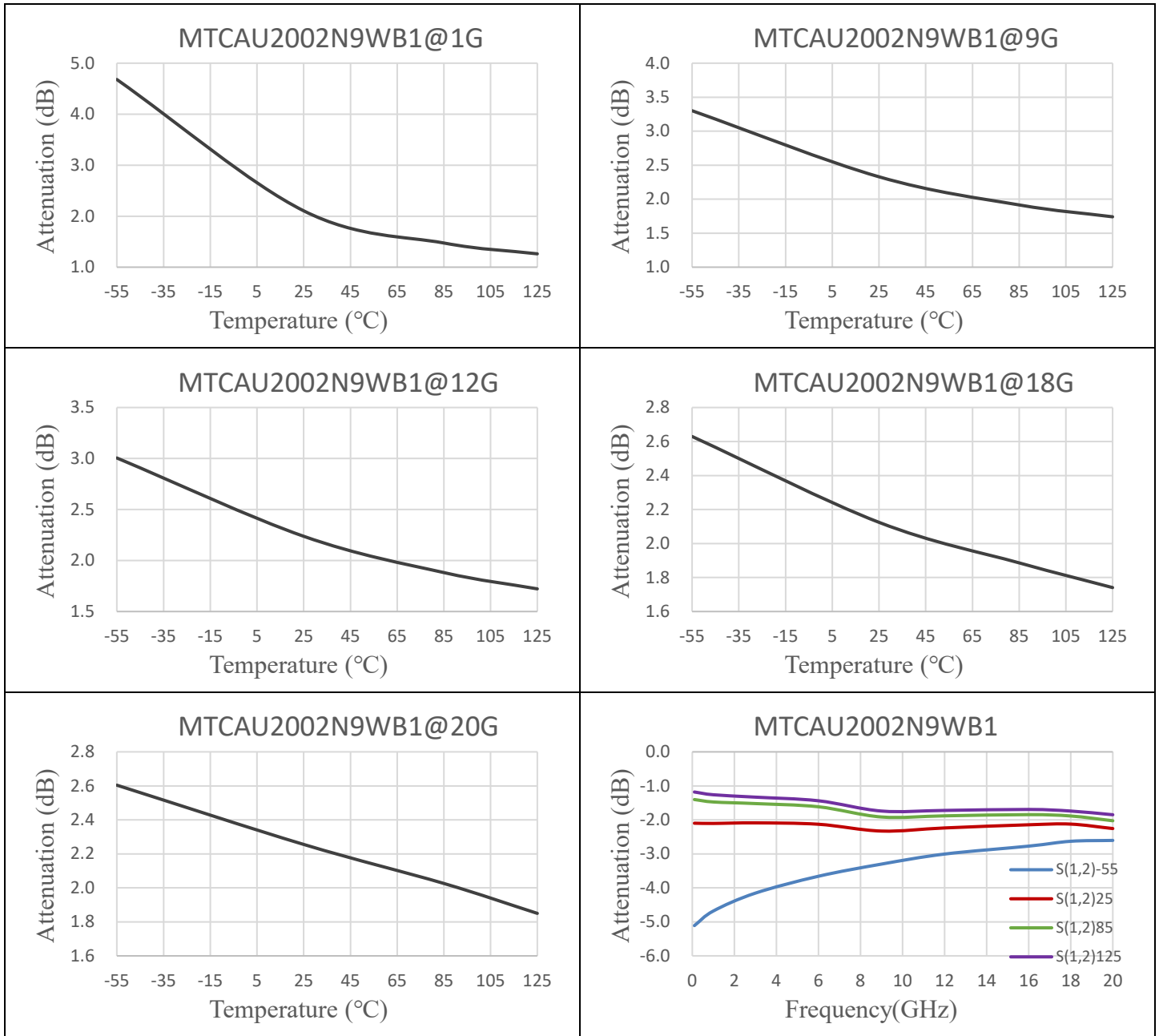
**Power Rating & Derating Curve**



**Yantel Corporation**

Add: No.308-322,3F,Building 1,Juchuang Jingu Innovation Park,Wenyuan Road 35,Xili Street,Nanshan,Shenzhen,China  
 Tel: 86-755-8355-1886 Fax: 86-755-8355-2533

For detailed performance specs & shopping online see Yantel web site : [www.yantel-corp.com](http://www.yantel-corp.com)

**MTCAU Response**


PN:	F(Hz) T(°C)	Attenuation(dB)								Return Loss(dB)							
		1G	3G	6G	9G	12G	16G	18G	20G	1G	3G	6G	9G	12G	16G	18G	20G
MTCAU2002N9WB1	25	2.10	2.09	2.13	2.33	2.24	2.14	2.12	2.26	35.19	34.92	20.07	14.35	20.81	30.24	28.70	17.78
	-55	4.68	4.15	3.66	3.30	3.01	2.77	2.63	2.60	15.36	16.01	20.34	18.28	26.03	21.57	28.11	21.65
	85	1.47	1.52	1.62	1.92	1.88	1.85	1.89	2.03	32.63	31.39	18.46	13.85	20.69	29.78	25.13	18.58
	125	1.26	1.33	1.44	1.74	1.72	1.69	1.74	1.85	29.74	28.23	18.02	14.08	20.91	28.52	24.49	19.31
	N value:	9.02	7.51	5.79	3.72	3.19	2.79	2.32	1.86								

**Yantel Corporation**

Add: No.308-322,3F,Building 1,Juchuang Jingu Innovation Park,Wenyuan Road 35,Xili Street,Nanshan,Shenzhen,China

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

 For detailed performance specs & shopping online see Yantel web site : [www.yantel-corp.com](http://www.yantel-corp.com)

**Notes on RF Testing and Circuit Layout:**

DC-20GHz WB1 series(for Gold Terminal type) Test Fixture



WB1 PCB Test Board



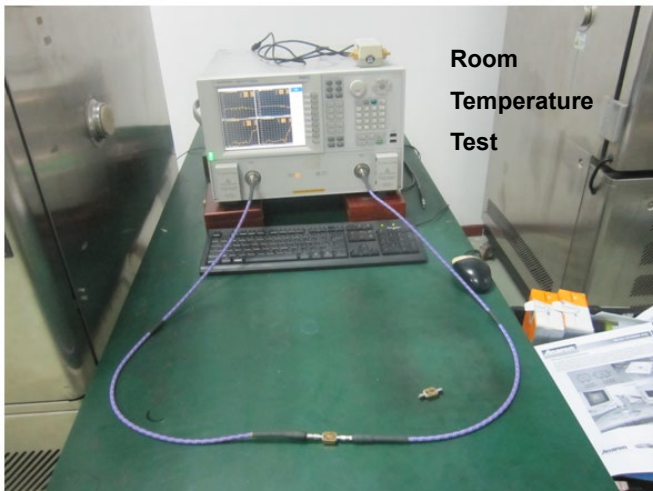
Connect test part to Test Fixture



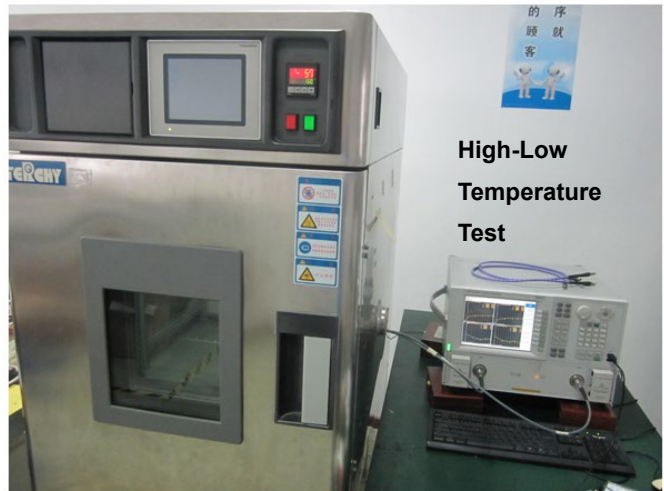
Equipment Calibration



Room  
Temperature  
Test



High-Low  
Temperature  
Test



- 1、 S2P files are available for download.
  - 2、 DC-20GHz or 16-36GHz test fixture is rentable (only for Chinese customers) ,otherwise please purchase them.
- For any questions or needs, please feel free to contact [inform@yantel-corp.com](mailto:inform@yantel-corp.com)

**Yantel Corporation**

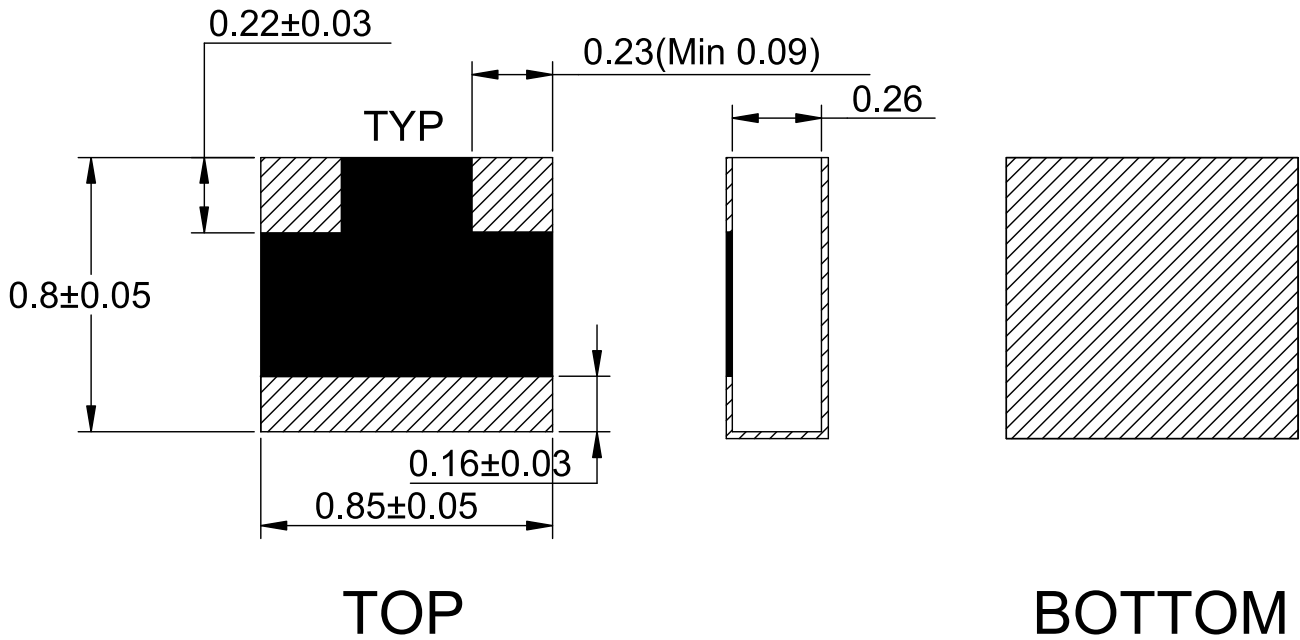
Add: No.308-322,3F,Building 1,Juchuang Jingu Innovation Park,Wenyuan Road 35,Xili Street,Nanshan,Shenzhen,China  
Tel: 86-755-8355-1886 Fax: 86-755-8355-2533

For detailed performance specs & shopping online see Yantel web site : [www.yantel-corp.com](http://www.yantel-corp.com)

**Package Outlines**

All dimensions shown in mm unless stated otherwise

Dimension tolerance:  $\pm 0.1\text{mm}$



**Recommended Layout**

All dimensions shown in mm unless stated otherwise

