

Tentative Specification

(Under Development)

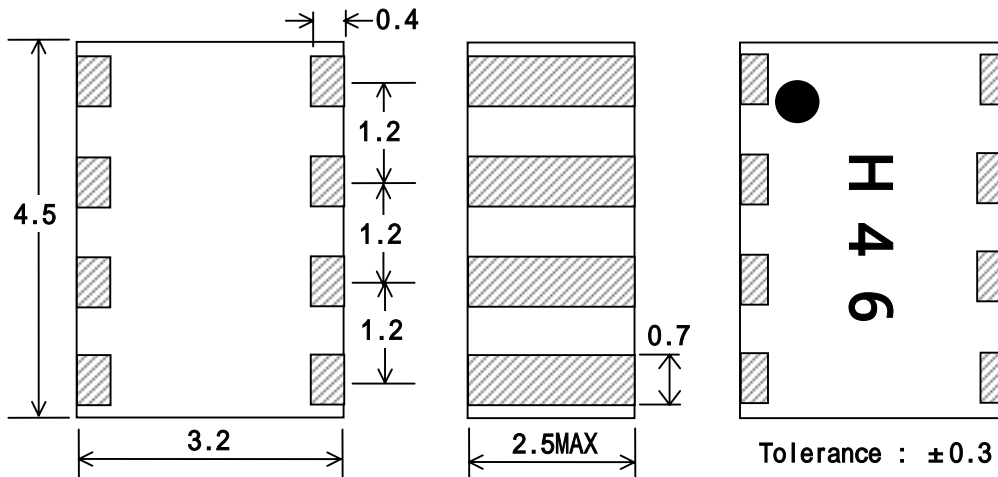
Control : GSC-0546-A 1
 Established on Jan. 17, 2006

1. 3.5GHz Band 3dB Chip Coupler

TYPE : GSC546-HYB3500 RoHS correspondence article

2. Appearance and Construction

2.1 Dimension (Unit : mm)



Terminal	
	IN
	0 ° OUT (S21)
	90 ° OUT (S31)
	Isolation
	GND

2.2 Construction

Body ... Ceramics
 Terminal ... Ni+Au plating

2.3 Marking ... Abbreviation of Model is printed

3. Target Electrical Characteristics

- 3.1 Impedance : 50 Nominal
- 3.2 Frequency Range : 3400 ~ 3600MHz
- 3.3 Insertion Loss : 0.25dB MAX $\left(\frac{|S21| + |S31|}{2} - 3 \right)$ (at 25)
 (TYP. 0.15dB)
- 3.4 Amplitude Level Balance : 0.35dB MAX (-40 ~ 125)
 : 0.4dB MAX $|S21 - S31|$ (at 25)
 : 0.5dB MAX (-40 ~ 125)
- 3.5 Phase Balance : $90 \pm 4^\circ$
- 3.6 V.S.W.R : 1.2 MAX
- 3.7 Isolation : 23dB MIN

4. Note

- 4.1 Number of pieces ordered
 At least 1,000 pieces must be ordered for serial production.
- 4.2 Input Power : 40W MAX
- 4.3 Operating Temperature : -40 ~ 125
- 4.4 Storage Temperature : -40 ~ 85
 (-20 ~ 35 for tape and reel materials)

Specifications of products are subject to change without notice

5. Note

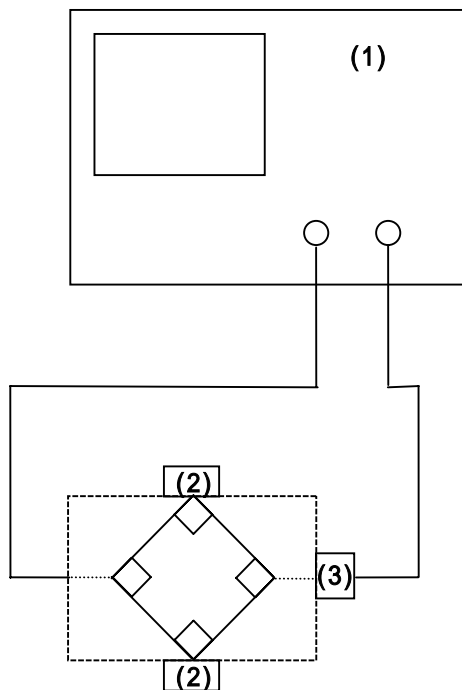
5.1 Heat dissipation

Please let me emit sufficient heat so that product surface temperature may become quantity fewer than 120 , and use it.

6. Measuring Circuit

6.1 All items of electrical characteristics shall be measured on test fixture which is decided by supplier.

Terminal	Connection			
0 ° OUT (S21)	IN	OUT	LOAD	LOAD
90 ° OUT (S31)	IN	LOAD	OUT	LOAD
ISO (S41)	IN	LOAD	LOAD	OUT

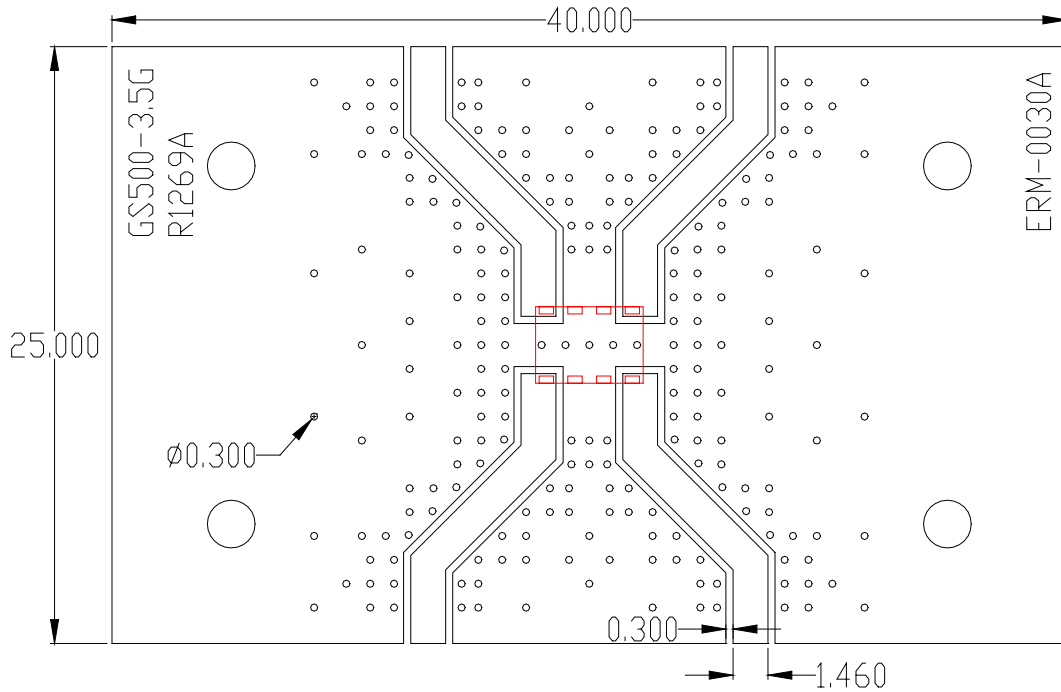


- (1) Network analyzer : HP8753 Agilent
 (2) 50 Ω LOAD
 (3) 6dB attenuator
 (4) A measuring instrument and fixtures use a considerable article.

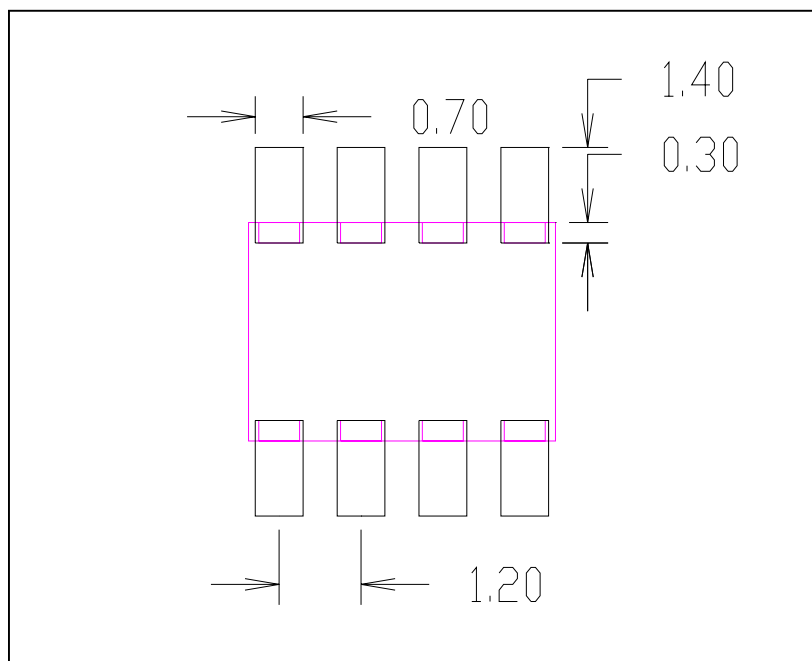
7. Measurement board pattern

Substrate specification to confirm only electric characteristic

(Example : $\epsilon=2.6, t=0.8\text{mm}$ Double side printed circuit board)

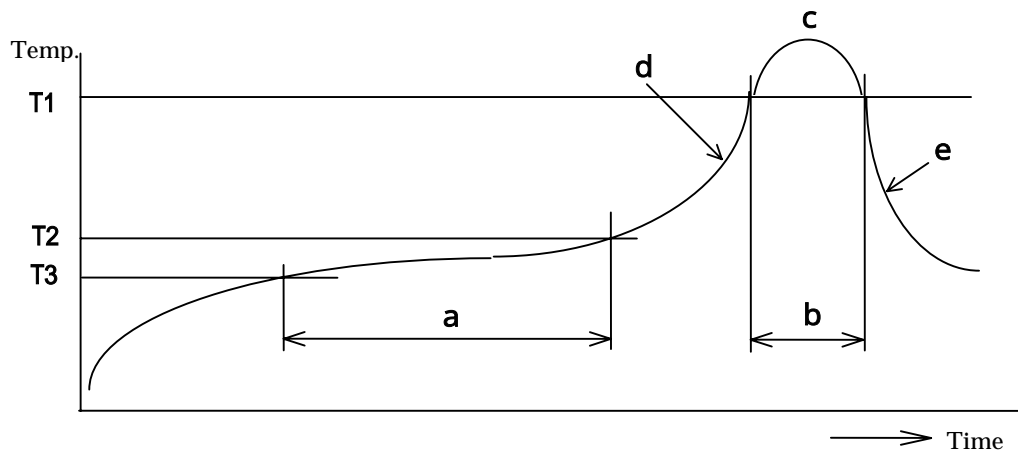


8. Resist pattern



Recommended use conditions

- Reflow soldering conditions



- (1) High temperature reflow conditions (Products may be put through reflow oven 2 times maximum.)

T1: 230 , T2: 180 , T3: 150

a: Preheating for 60 - 120 seconds,

b: Heating for 30 - 50 seconds,

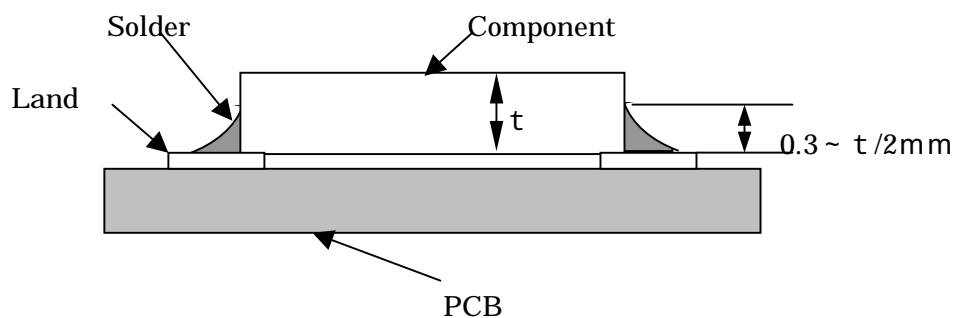
c: Peak temperature 260 ± 5 , 5 - 10 seconds

d: Temperature ramp-up slope - 10 , max./1 sec.

e: Temperature ramp-down slope - 8 , max./1 sec.

- Solder build-up

Formation of a solder fillet measuring 0.3 mm or up to a half of the product thickness (t) at edges of external electrode must be ascertained. Solder build-up which is shorter or greater than this dimension may cause detrimental effects on the mechanical strength and/or variation in electrical performance.



Example) When a 0.3 mm thick solder mask is used, fillets will be about 0.95 mm

- Cleaning conditions

Cleaning fluid: isopropylalcohol
Dip cleaning: No longer than 30 minutes at 40
Steam cleaning: 30 minutes, max.
Ultrasonic cleaning: No longer than 1 minute with 10W output

Caution

- Application of excessive output power will cause PCBs to resonate, resulting in damage to mounted components.
- Ultrasonic cleaning conditions are dependent on the size of the soldering bath and PCBs being cleaned.
- Drying immediately after cleaning is essential.

- Manual soldering rework conditions

- (1) Pre-heating

Pre-heating must be sufficient so that, or the temperature difference between solder and component surfaces, will be at least 100 °C.

- (2) Use of soldering irons may proceed only under the following conditions:

Soldering iron tip temperature: 290 °C, max.
Soldering iron capacity: 20W, max.
Shape of soldering iron tip: 3 mm dia., approx.
Soldering duration: 3 seconds, max.
Soldering times: 2 times, max.

Consideration must be given so that no mechanical stress may be applied to the components.

- Other items

- (1) This product is outside of item 2 of paragraph 7 in annexed table 1 to the Export Control Order, and also of the strategic goods (service) category.
- (2) This product is free from use of ozone layer depleting substances and/or brominated flame retardant materials in either materials or during production.
- (3) This product is designed for application in electronic equipment intended for use in normal environmental conditions (room temperature, humidity and atmospheric pressure).
Application of this product under conditions other than the above, as stated below, will deteriorate its physical properties resulting in electrical shock and burnout:
 - Certain gaseous atmosphere (chloride, ammonia, sulfur oxide, nitrogen oxide)
 - Volatile/flammable gaseous atmosphere
 - Dust-prone environment
 - Environment exposed to water sprays, and/or subject to condensation, direct sunlight or freezing