



RoHS & Halogen Free & REACH Compliance.

SPECIFICATION FOR APPROVAL

Customer : _____

Customer P/N : _____

Drawing No : _____

Quantity : _____ Pcs. Date : _____

Chilisin P/N : **BTLU0016083G6S1A10**

| SPECIFICATION ACCEPTED BY: | |
|-------------------------------|--|
| COMPONENT ENGINEER | |
| ELECTRICAL ENGINEER | |
| MECHANICAL ENGINEER | |
| APPROVED | |
| REJECTED | |

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| | | |
|---------------------------|-------------------------|-----------------------------|
| Drawn by Jasper | Checked by CF | Approved by Derek |
|---------------------------|-------------------------|-----------------------------|



ISO9001 ISO14001 IATF16949 CHILISIN ELECTRONICS CORP.

APPLICATION

LTE mobile system and WiFi communication.

FEATURES

1-1 Compact Size

Miniaturized SMD packaged in low profile and lightweight.

1-2 Low loss

Low insertion loss.

1-3 High Soldering Heat Resistance

High quality termination allows both flow and re-flow soldering methods to be applied.

1-4 Characteristics

Eliminates noise over a wide frequency range. Idea for high frequency and space limited designs.

1-5 Internal Shielding incorporated

1-6 Available in tape and reel packaging for automatic mounting

PRODUCT IDENTIFICATION

B T L U 0 0 1 6 0 8 ###xx A 1 0
 ① ② ③ ④ ⑤ ⑥

- ① Product Code
- ② Customer Code
- ③ Dimension Code
- ④ Series Type (### represents center frequency and xx represents material type)
- ⑤ Design Code
- ⑥ Version Code

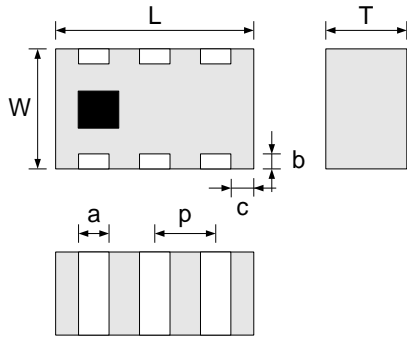
ELECTRICAL REQUIREMENTS

| Part NO. | Frequency | Bandwidth | VSWR | Insertion Loss in BW |
|--------------------|----------------------------------|-----------|-------------------------------------|------------------------------------|
| BTLU0016083G6S1A10 | 3600 MHz | ±300 MHz | 2 max. | 1 dB max. |
| | Phase Difference at Balance Port | | Amplitude Imbalance at Balance Port | Impedance Unbalance / Balance Port |
| | 180°±15° | | 1.2 dB max. | 50 / 100 |

Operating Temperature Range : -40~85°C

Power Capacity : 3W max.

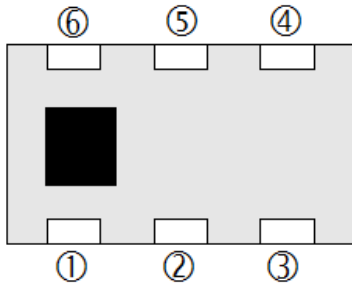
PRODUCT DIMENSION



| L | W | T | a |
|-----------|-----------|-----------|-----------|
| 1.60±0.15 | 0.80±0.10 | 0.60±0.10 | 0.20±0.10 |
| b | c | p | |
| 0.15±0.10 | 0.20±0.15 | 0.50±0.05 | |

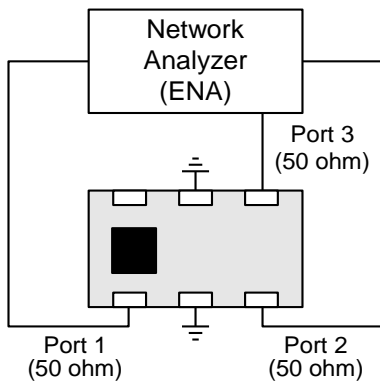
NOTE : Dimensions in mm

TERMINAL CONFIGURATION



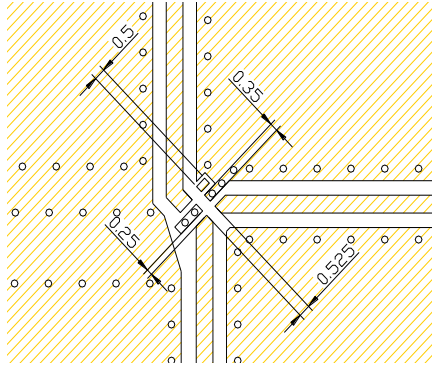
- ① Unbalanced Port
- ② GND or DC feed + RF GND
- ③ Balanced Port1
- ④ Balanced Port2
- ⑤ GND
- ⑥ N.C

MEASURING DIAGRAM

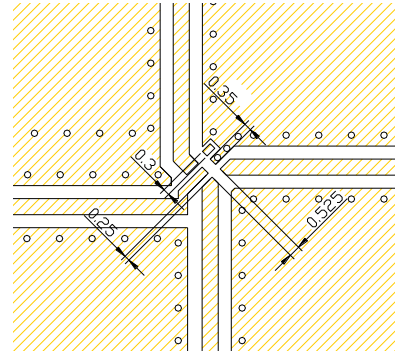


Test Instrument :
Agilent E5071A Network Analyzer

RECOMMENDED PCB LAYOUT



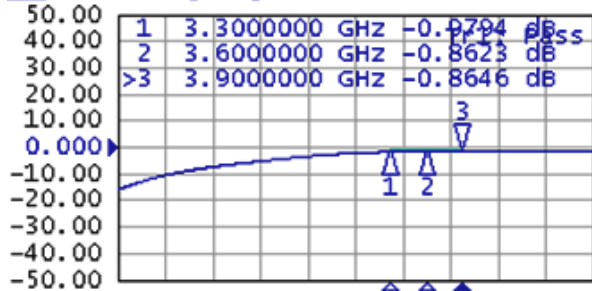
Without DC



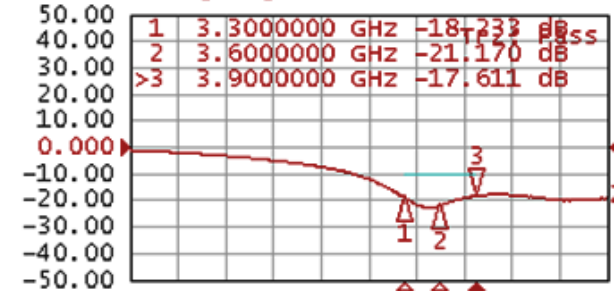
With DC

ELECTRICAL CHARACTERISTICS (T=25°C)

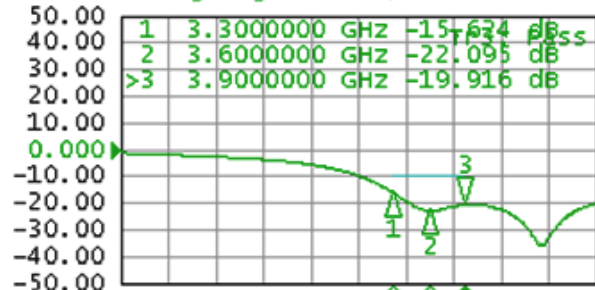
Tr1 Sds21 Log Mag 10.00dB/ Ref 0.000dB



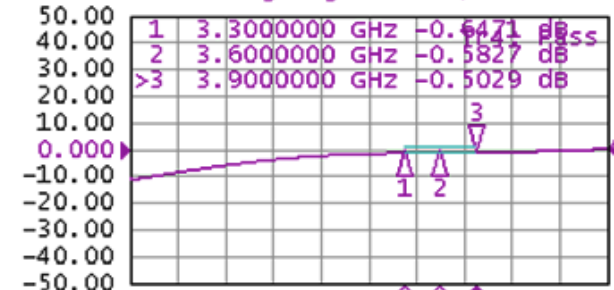
Tr2 Sss11 Log Mag 10.00dB/ Ref 0.000dB



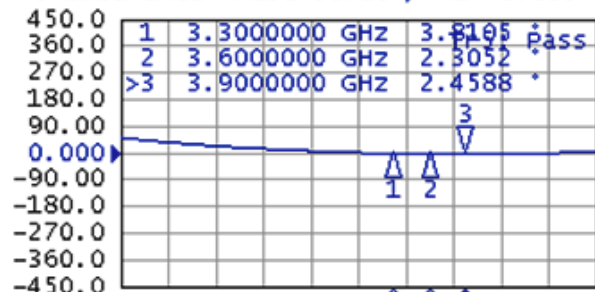
Tr3 sdd22 Log Mag 10.00dB/ Ref 0.000dB



Tr4 Imbalance Log Mag 10.00dB/ Ref 0.000dB



Tr5 Imbalance Phase 90.00°/ Ref 0.000°

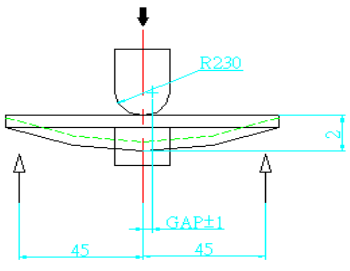


Tr6 sdd22 Smith (R+jX) scale 1.000U [F4



RELIABILITY TEST

Mechanical Test

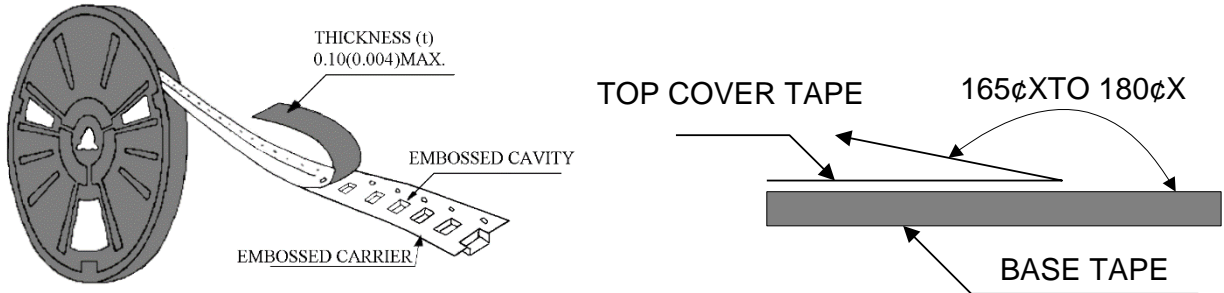
| Item | Test Condition | Specification |
|--|---|--------------------|
| Vibration | 10 Hz/min~55 Hz/min~10 Hz/min vibration frequency with 1.5 mm amplitude for two hours in x, y, z directions | No apparent damage |
| Drop shock | Dropped onto printed circuit board from 100cm height three times in x, y, z directions. The terminals shall be protected. | No apparent damage |
| Soldering heat resistance | Preheating temperature : 150±10°C Preheating time : 1 to 2 minutes Solder bath temperature : 260±5°C Bathing time : 5±0.5 seconds | No apparent damage |
| Bending test onto printed circuit board | <p>Solder specimen LTCC components on the test printed circuit board (L: 100 x W: 40 x T: 1.6mm) in appended recommended PCB pattern.</p> <p>Apply the load in direction of the arrow until bending reaches 2 mm.</p>  <p style="text-align: right;">Unit: mm</p> | No apparent damage |
| Solderability | The dipped surface of the terminal shall be at least 75% covered with solder after dipped in solder bath of 245±5°C for 3±0.5 seconds. | No apparent damage |

Environment Test

| | | |
|------------------------------------|---|---|
| Thermal shock | -40°C~85°C for 100 cycles each cycle being 30 min | No apparent damage Fulfill the electrical spec. after test |
| Humidity resistance | 85±2°C, 80~90% R.H. for 500 hours | No apparent damage Fulfill the electrical spec. after test |
| High temperature resistance | 85±2°C for 500 hours | No apparent damage Fulfill the electrical spec. after test |
| Low temperature resistance | -40±3°C for 500 hours | No apparent damage Fulfill the electrical spec. after test |

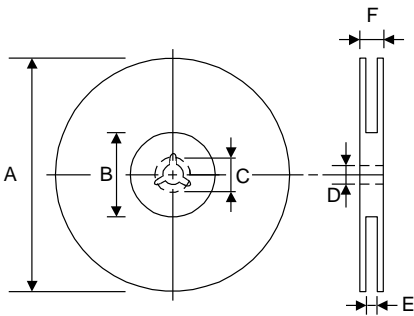
PACKAGING FOR SMC

Peel-off force



The force for peeling off cover tape is 10 grams in the arrow direction.

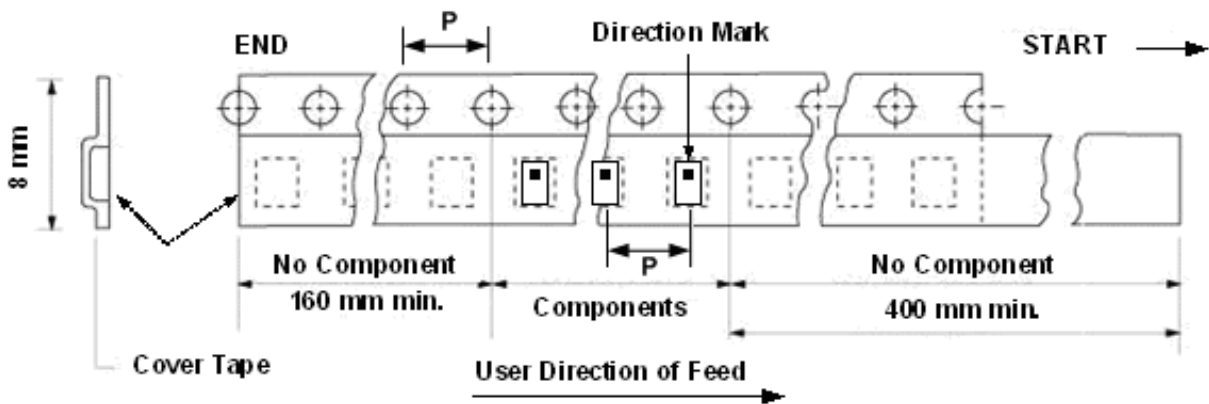
Dimension (Unit: mm)



| TYPE | A | B | C | D | E | F |
|-------|---------|--------------|----------|----------|----------|--------|
| 8 mm | 178±1 | 60+0.5 -0 | - | 13±0.2 | 9±0.5 | 12±0.5 |
| 12 mm | 178±0.3 | 60±0.2 | 19.3±0.1 | 13.5±0.1 | 13.6±0.1 | - |

Taping quantity

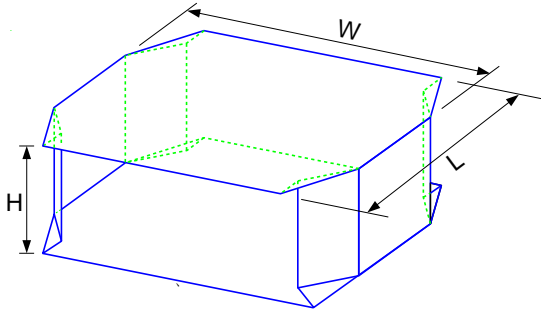
| SERIES | 5824 5724 | 5320 5220 | 4532 | 4516 | 3225 | 3216 2520 | 2012 1608 1109 | 1005 |
|----------|--------------|--------------|------|------|------|--------------|----------------------|-------|
| PCS/Reel | 5000 | 3000 | 1000 | 2000 | 2500 | 3000 | 4000 | 10000 |



P= 4 mm

TAPE PACKING CASE

Unit:cm



| No. of Reels | W | L | H |
|--------------|--------|--------|---------|
| 2 | 18±0.5 | 18±0.5 | 2.4±0.2 |
| 3 | 18±0.5 | 18±0.5 | 3.6±0.2 |
| 4 | 18±0.5 | 18±0.5 | 4.8±0.2 |
| 5 | 18±0.5 | 18±0.5 | 6.0±0.2 |

OPERATION TEMPERATURE

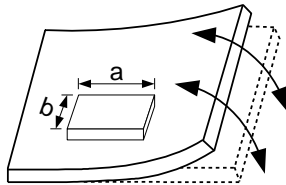
-40°C~85°C

STORAGE CONDITION

The temperature should be within -40~85°C and humidity should be less than 75% RH. The product should be used within 6 months from the time of delivery.

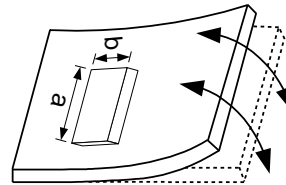
ATTENTION REGARDING PCB BENDING

- (a) PCB shall be designed so that products are not subjected to the mechanical stress for board wrapage. Product shall be located in the sideways direction to the mechanical stress.



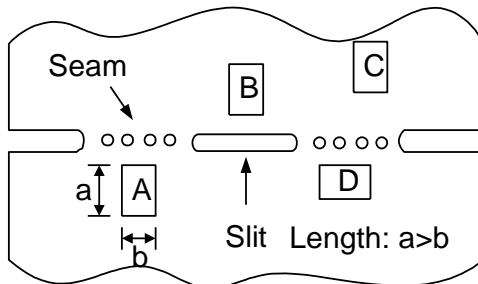
(Poor example)

Length: $a > b$

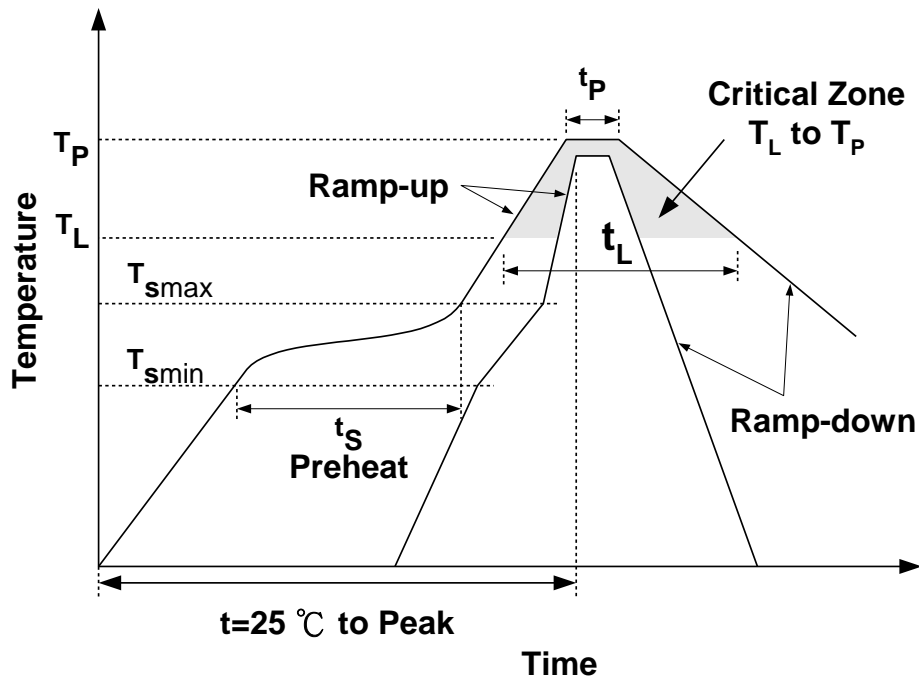


(Good example)

- (b) Products (A,B,C,D) shall be located carefully so that products are not subjected to the mechanical stress due to warping the board. Because they may be subjected to the mechanical stress in order of $A > C > B \approx D$.



RECOMMENDED REFLOW SOLDERING PROFILE



| Profile Feature | | Sn-Pb | Pb-Free |
|--|-----------------------|-----------------|-----------------|
| Preheat | t_s | 60~120 seconds | 60~180 seconds |
| | T_{smin} | 100°C | 150°C |
| | T_{smax} | 150°C | 200°C |
| Average ramp-up rate (T_{smax} to T_P) | | 3°C/second max. | 3°C/second max. |
| Time main above | Temperature (T_L) | 183°C | 217°C |
| | Time (t_L) | 60~150 seconds | 60~150 seconds |
| Peak temperature (T_P) | | 230°C | 250~260°C |
| Time within 5°C of actual peak temperature (t_P) | | 10 seconds | 10 seconds |
| Ramp-down rate | | 6°C/sec max. | 6°C/sec max. |
| Time 25°C to peak temperature | | 6 minutes max. | 8 minutes max. |

NOTES

The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.