

# APPROVAL SHEET

**RGTCM Series – 0806(3025)- RoHS Compliance**

**THIN FILM CERAMIC COMMON MODE FILTER**

**Halogens Free Product**

**P/N: RGTCM0806650H0T**

\*Contents in this sheet are subject to change without prior notice.

**Approval Sheet**

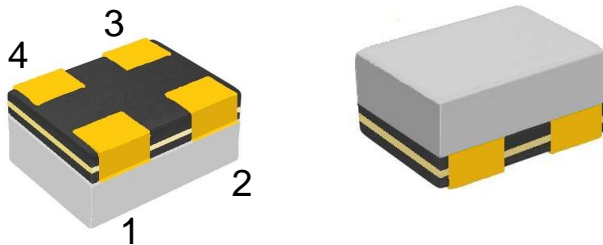
**FEATURES**

1. Miniature footprint: 0.8 X 0.6 X 0.5 mm<sup>3</sup>.
2. Thin Film Technology.
3. Reflow Solderable SMD Devices.
4. Wide Pass Band( Cut- Off Frequency: -3dB : 4/5/8GHz Typical).
5. High attenuation for common mode noise.
6. This product contains no lead and supports lead-free Ni/Au soldering

**APPLICATIONS**

1. For Super Speed Signal Line Application
2. LVDS/IEEE1394/HDMI/DVI/MIPI/USB3.0

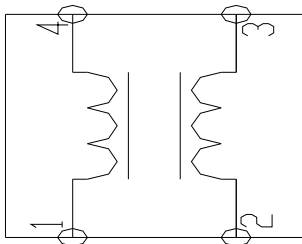
**CONSTRUCTION**



**DIMENSIONS**

Figure	Symbol	Dimension (mm)
	L	0.88 ± 0.05
	W	0.68 ± 0.05
	T	0.50 ± 0.05
	A	0.15 ± 0.05
	B	0.20 ± 0.05
	C	0.27 ± 0.10
	D	0.62 ± 0.05
	E	0.50 ± 0.10
	F	0.82 ± 0.05

**EQUIVALENT CIRCUIT**



**ELECTRICAL CHARACTERISTICS**

Type	Common Mode Impedance (Ω)	Max. DC Resistance (Ω)	Rated Current (mA)	Rated Voltage Ed(V)	Cut off Frequency (GHz) typ.	Insulation Resistance (MΩ) min.
RGTCM0806650H0T	65±20%	2.5±30%	100	10	5G	10

Operating temperature range : -40°C to +85°C

**Typical electrical performance**

<p>S-Parameter</p> <p>TCM0806650H0</p>	<p>Impedance VS Frequency Characteristics</p> <p>TCM0806650H0</p>
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**SOLDER LAND PATTERN**

Figure	Symbol	Dimension( mm)
	A	0.90 ± 0.10
	B	0.50 ± 0.10
	C	0.30 ± 0.10
	D	0.30± 0.10

## RELIABILITY TEST

Test item	Test condition / Test method	Specification						
Solderability JIS C 0050-4.6 JESD22-B102D	*Solder bath temperature : $235 \pm 5^{\circ}\text{C}$ *Immersion time : $2 \pm 0.5$ sec *Solder : Sn3Ag0.5Cu for lead-free	At least 95% of a surface of each terminal electrode must be covered by fresh solder.						
Leaching (Resistance to dissolution of metallization) IEC 60068-2-58	*Solder bath temperature : $260 \pm 5^{\circ}\text{C}$ *Leaching immersion time : $30 \pm 0.5$ sec *Solder : SN63A	Loss of metallization on the edges of each electrode shall not exceed 25%.						
Resistance to soldering heat JIS C 0050-5.4	*Preheating temperature : $120\sim 150^{\circ}\text{C}$ , 1 minute. *Solder temperature : $270\pm 5^{\circ}\text{C}$ *Immersion time : $10\pm 1$ sec *Solder : Sn3Ag0.5Cu for lead-free Measurement to be made after keeping at room temperature for $24\pm 2$ hrs	Loss of metallization on the edges of each electrode shall not exceed 25%. No mechanical damage. Samples shall satisfy electrical specification after test, meet Table 1. Table 1 <table border="1"> <tr> <td>Appearance</td> <td>No damaged</td> </tr> <tr> <td>Common Mode Impedance Change</td> <td>Within <math>\pm 20\%</math></td> </tr> <tr> <td>DC Resistance Change</td> <td>Within <math>\pm 30\%</math></td> </tr> </table>	Appearance	No damaged	Common Mode Impedance Change	Within $\pm 20\%$	DC Resistance Change	Within $\pm 30\%$
Appearance	No damaged							
Common Mode Impedance Change	Within $\pm 20\%$							
DC Resistance Change	Within $\pm 30\%$							
Drop Test JIS C 0044	*Height : 75 cm *Test Surface : Rigid surface of concrete or steel. *Times : 6 surfaces for each units ; 2 times for each side.	No mechanical damage. Samples shall satisfy electrical specification after test, meet Table 1.						
Vibration JIS C 0040	*Frequency : 10Hz~55Hz~10Hz(1min) *Total amplitude : 1.5mm *Test times : 6hrs.(Two hrs each in three mutually perpendicular directions)							
Bending test JIS C 0051- 7.4.1	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 1mm/s and then pressure shall be maintained for $5\pm 1$ sec. Measurement to be made after keeping at room temperature for $24\pm 2$ hours	No mechanical damage. Samples shall satisfy electrical specification after test, meet Table 2. Table 2 <table border="1"> <tr> <td>Appearance</td> <td>No damaged</td> </tr> <tr> <td>DC Resistance Change</td> <td>Within <math>\pm 30\%</math></td> </tr> </table>	Appearance	No damaged	DC Resistance Change	Within $\pm 30\%$		
Appearance	No damaged							
DC Resistance Change	Within $\pm 30\%$							

**Approval Sheet**

<p>Temperature cycle JIS C 0025</p>	<p>1. 30±3 minutes at -40°C±3°C, 2. 10~15 minutes at room temperature, 3. 30±3 minutes at +85°C±3°C, 4. 10~15 minutes at room temperature, Total 100 continuous cycles Measurement to be made after keeping at room temperature for 24±2 hrs</p>	<p>No mechanical damage. Samples shall satisfy electrical specification after test, meet Table 1.</p>
<p>High temperature JIS C 0021</p>	<p>*Temperature : 85°C±2°C *Test duration : 1000+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs</p>	<p>No mechanical damage. Samples shall satisfy electrical specification after test, meet Table 1.</p>
<p>Humidity (steady conditions) JIS C 0022</p>	<p>*Humidity : 90% to 95% R.H. *Temperature : 40±2°C *Time : 1000+24/-0 hrs. Measurement to be made after keeping at room temperature for 24±2 hrs ※ 500hrs measuring the first data then 1000hrs data</p>	<p>No mechanical damage. Samples shall satisfy electrical specification after test, meet Table 1.</p>
<p>Low temperature JIS C 0020</p>	<p>*Temperature : -40°C±2°C *Test duration : 1000+24/-0 hours Measurement to be made after keeping at room temperature for 24±2 hrs</p>	<p>No mechanical damage. Samples shall satisfy electrical specification after test, meet Table 1.</p>

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**SOLDERING CONDITION**

Typical examples of soldering processes that provide reliable joints without any damage are given in Fig 2,

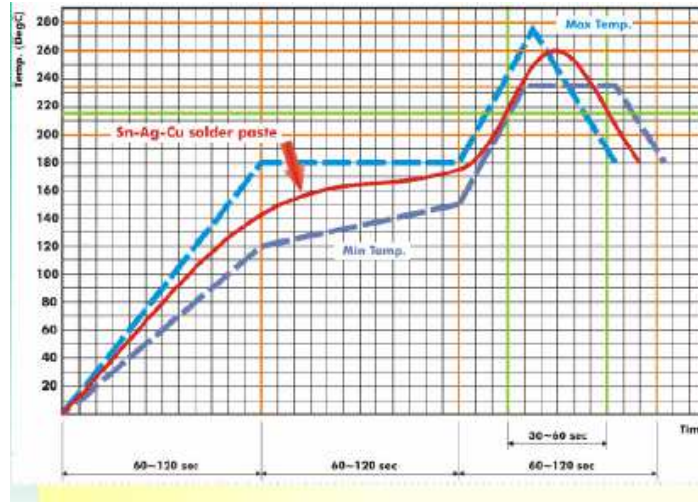


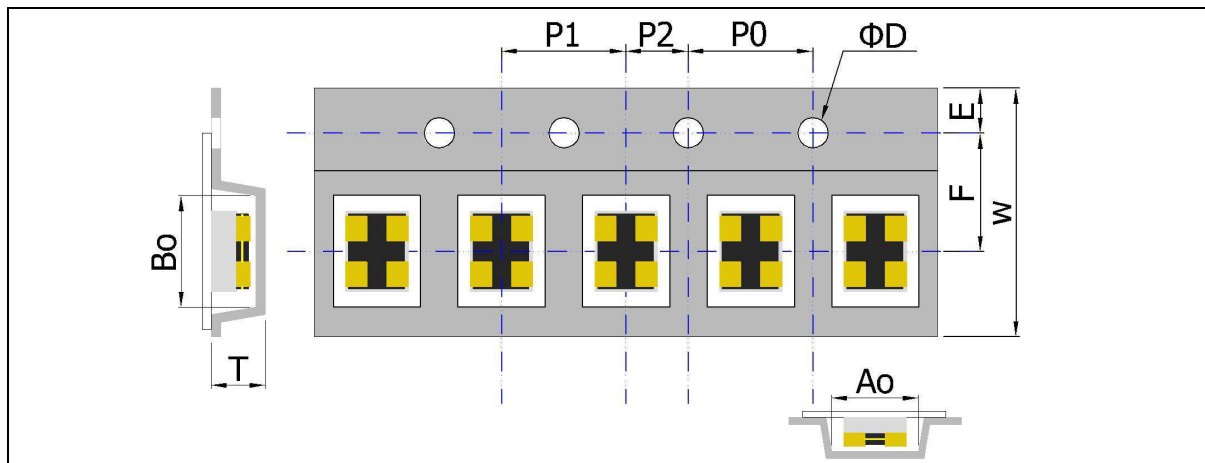
Fig 2. Infrared soldering profile

**ORDERING CODE**

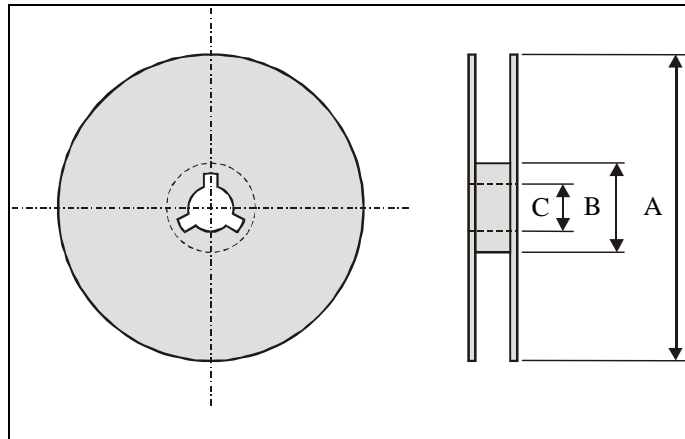
<b>RG</b> Walsin RG device	<b>TCM</b> Product code TCM : Thin Film Common Mode Filter	<b>0806</b> Dimension code 0806 = Length 08 Width 06,	<b>650</b> CM Impedance 650 : 65 ohm	<b>H</b> Application H : HDMI/DVI/LVDS /SATA/PCI-/D- Port	<b>0</b> Specification Code from 0~9 dependent on different electrical specification	<b>T</b> Packing T : Reeled
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Minimum Ordering Quantity: 10000 pcs per reel.

**PACKAGING**



Index	A <sub>0</sub>	B <sub>0</sub>	ΦD	T	W
Dimension(mm)	0.78±0.03	1.04±0.03	1.55±0.05	0.6±0.03	8.0±0.10
Index	E	F	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>
Dimension(mm)	1.75±0.05	3.5±0.05	4.0±0.10	4.0±0.10	2.0±0.05



Index	A	B	C
Dimension (mm)	Φ178.0	Φ60.0	Φ13.0

Taping Quantity: 10000 pieces per 7" reel

### CAUTION OF HANDLING

#### Limitation of Applications

Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects, which might directly cause damage to the third party's life, body or property.

- (1) Aircraft equipment
- (2) Aerospace equipment
- (3) Undersea equipment
- (4) Medical equipment
- (5) Disaster prevention / crime prevention equipment
- (6) Traffic signal equipment
- (7) Transportation equipment (vehicles, trains, ships, etc.)
- (8) Applications of similar complexity and /or reliability requirements to the applications listed in the above.

#### Storage condition

- Products should be storage in the warehouse on the following conditions.
- Temperature : -10 to +40°C
- Humidity : 30 to 70% relative humidity
- Don't keep products in corrosive gases such as sulfur. Chlorine gas or acid or it may cause oxidization of electrode, resulting in poor solderability.
- Products should be storage on the palette for the prevention of the influence from humidity, dust and son on.
- Products should be storage in the warehouse without heat shock, vibration, direct sunlight and so on.
- Products should be storage under the airtight packaged condition.