

# APPROVAL SHEET

**RFHCM Series – 1012(0405)- RoHS Compliance**

MULTILAYER CERAMIC COMMON MODE FILTER

**Halogens Free Product**

**P/N: RFHCM1012GD900B05T**

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

**FEATURES and Application**

1. Powerful components with composite co-fired material to solve EMI problem for high speed differential signal transmission line as USB, and LVDS, without distortion to high speed signal transmission.
2. MIPI, MHL serial interface in mobile device.

**CONSTRUCTION**



**DIMENSIONS**

Figure	Symbol	Dimension (mm)
	L	1.25 ± 0.10
	W	1.00 ± 0.10
	T	0.50 ± 0.10
	P	0.55 ± 0.10
	C1	0.30 ± 0.10
	C2	0.20 ± 0.15

**ELECTRICAL CHARACTERISTICS**

RFHCM1012GD900B05T	Specification
Common Mode Impedance	90 Ω ± 25% @ 100MHz
DC Resistance	3.0 Ω max.
Rated Current	100 mA max.
Rated Voltage	10 V
Insulation Resistance	100 MΩ min.
Test Instruments	<ul style="list-style-type: none"> <li>• Agilent E4991A RF IMPEDANCE / MATERIAL ANALYZER</li> <li>• HP4338 MILLIOHMMETER</li> <li>• Agilent E5071C ENA SERIES NETWORK ANALYZER</li> <li>• Keithley 2410 1100V SOURCE METER</li> </ul>

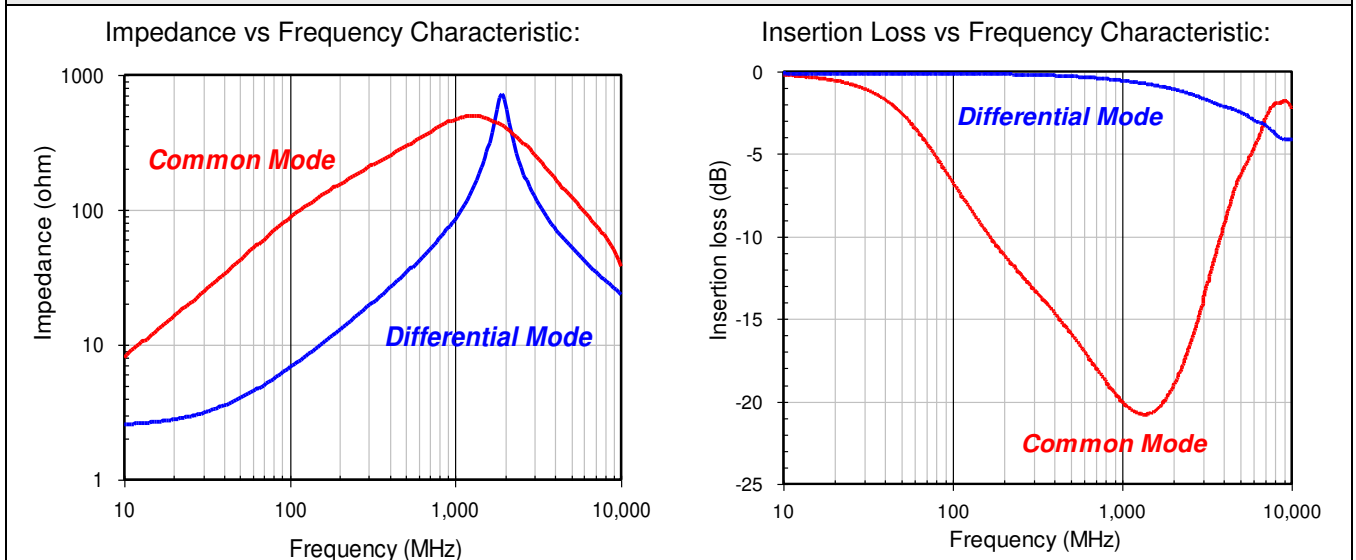
**Operating & Storage Condition (Component)**

Operation Temperature Range: -40 ~ +85 °C  
Storage Temperature Range: -40 ~ +85 °C

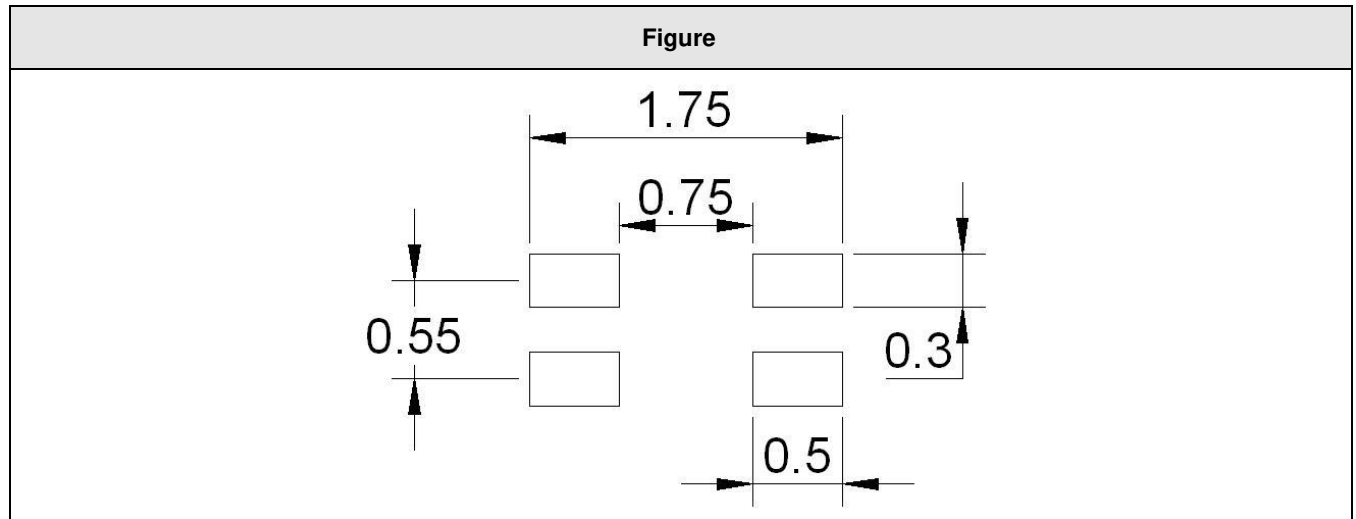
**Storage Condition before Soldering (Included packaging material)**

Storage Temperature Range: +5 ~ +40 °C  
Humidity: 30 to 70% relative humidity

**Typical Transmission Chart**



**LAND PATTERN**



**RELIABILITY TEST**

Test item	Test condition	Criteria
<b>Temperature Cycle</b>	A. Temperature : -40 ~ +85°C B. Cycle : 100 cycles C. Dwell time : 30minutes Measurement : at ambient temperature 24 hrs after test completion	A. No mechanical damage B. Impedance value should be within $\pm 20$ % of the initial value
<b>Operational Life</b>	A. Temperature : 85°C $\pm$ 5°C B. Test time : 1000 hrs C. Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion	A. No mechanical damage B. Impedance value should be within $\pm 20$ % of the initial value
<b>Biased Humidity</b>	A. Temperature : 40 $\pm$ 2°C B. Humidity : 90 ~ 95 % RH C. Test time : 1000 hrs D. Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion	A. No mechanical damage B. Impedance value should be within $\pm 20$ % of the initial value
<b>Resistance to Solder Heat</b>	A. Solder temperature : 260 $\pm$ 5°C B. Flux : Rosin C. DIP time : 10 $\pm$ 1 sec	A. More than 95 % of terminal electrode should be covered with new solder B. No mechanical damage C. Impedance value should be within $\pm 20$ % of the initial value
<b>Steam Aging Test</b>	A. Temperature : 93 $\pm$ 2°C B. Test time : 4 hrs C. Solder temperature : 235 $\pm$ 5°C D. Flux : Rosin E. DIP time : 5 $\pm$ 1 sec	More than 95 % of terminal electrode should be covered with new solder

**SOLDERING CONDITION**

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

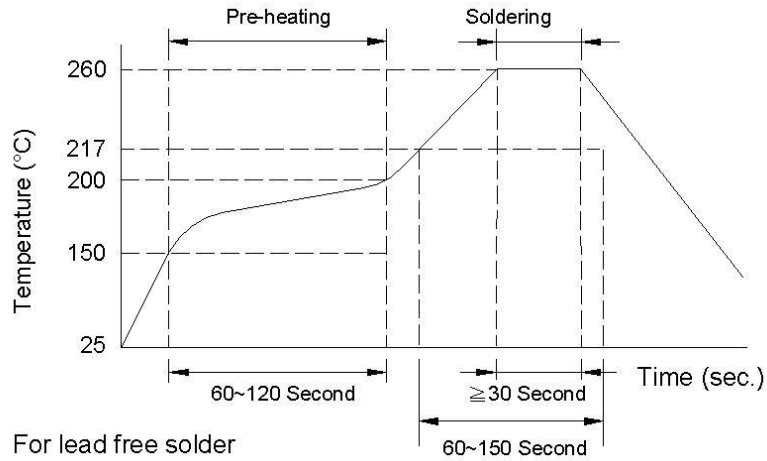


Fig 2. Infrared soldering profile

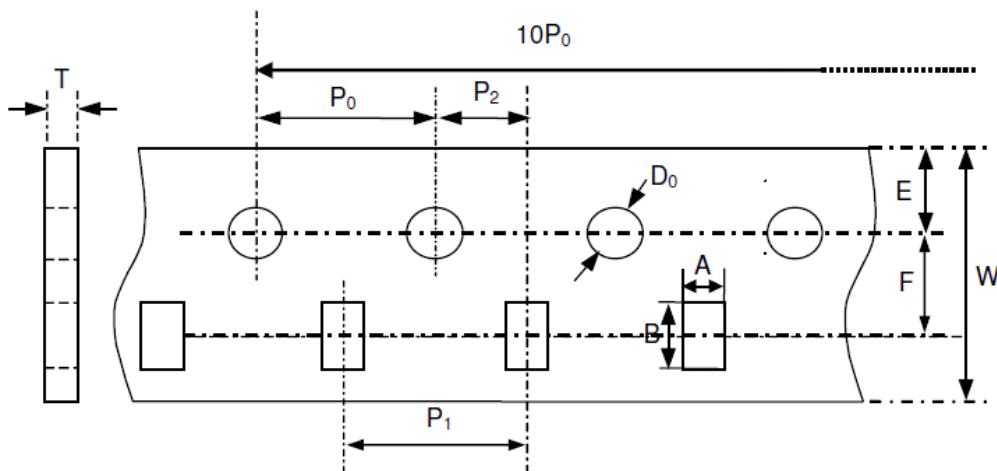
**ORDERING CODE**

<b>RF</b>	<b>HCM</b>	<b>1012</b>	<b>G</b>	<b>D</b>	<b>900</b>	<b>B</b>	<b>05</b>	<b>T</b>
Walsin RF device	Product Code HCM : Common Mode Filter	Dimension code (L*W) 1012 = Width 10, Length 12,	Material Code	Product identification number	Impedance Value Ex: 900=90 ohm	Internal Code	Dimension Code (T) 05=0.50mm	Packing T: Reeled

Minimum Ordering Quantity: 4000 pcs per reel.

**PACKAGING**

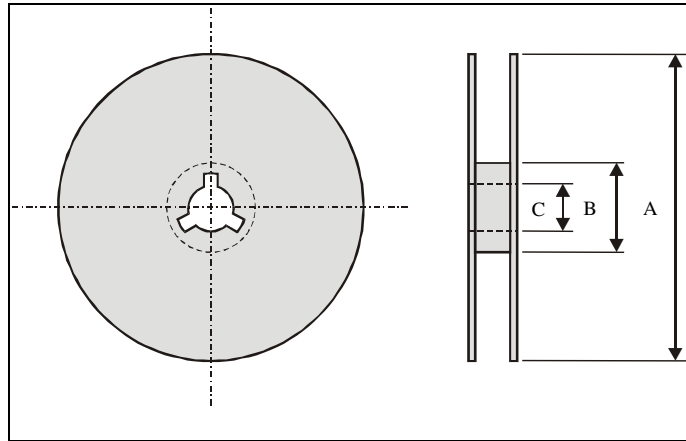
Type : Paper Carrier



Unit : mm

Symbol	Size	Symbol	Size
A	1.20±0.05	Po	4.00±0.10
B	1.45±0.05	P1	4.00±0.10
W	8.00±0.10	P2	2.00±0.05
E	1.75±0.05	Do	1.55±0.05
F	3.50±0.05	T	0.60±0.03

## Reel dimensions



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

Taping Quantity:4000 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

- (1) Products should be used in 6 months from the day of WALSIN outgoing inspection.
- (2) Storage environment condition.
  - Products should be storage in the warehouse on the following conditions.
  - Temperature : +5 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.