

APPROVAL SHEET

PRODUCT	Common Mode Choke (HCM2012G)		
SERIES	HCM2012G		
PART NO.			
DESCRIPTION			
ISSUE DATE	2023/12/27	REVISION DATE	2023/12/27
REFERENCE NO.	ENS000047270		
RoHS COMPLIANCE ITEM			
Halogen Free			

CUSTOMER APPROVAL	
CUSTOMER	CUSTOMER PN

■ Vendor: Walsin Technology Corporation
566-1, Kao Shi Road, Yangmei, Taiwan
Tel. 886-3-475-3711 www.passivecomponent.com

■ Manufacturer: INPAQ Technology Co., Ltd.
No.11, Ke-Yi St., Chunan, Miaoli 35059, Taiwan
Tel. 886-37-585-555 www.inpaq.com.tw

Note:

- The product is subjected to changes in accordance with individual product change notification (PCN) agreement (if any) or Walsin Technology Corporation's policy.
- Hyperlinks may be included in this document and may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Walsin Technology Corporation disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Multilayer Common Mode Choke(HCM G Series)

This product belongs to the 3C and industrial grade standard, not for automotive application. If customer privately uses to automotive parts and results in any consequences, INPAQ is not responsible for after-sales service, thank you!

Features and Application

- 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.
- MIPI, MHL serial interface in mobile device.

1.PRODUCT DETAIL

Part No.	Imp. Com. (Ω) $\pm$ 25% @100MHz	DCR Max. (Ω)	Rated Current Max.(mA)	Rated Voltage (V)	Insulation Resistance Min.(M Ω)
HCM2012GD500AE	50	1.0	100	10	100
HCM2012GD900AE	90	1.0	200	10	100
HCM2012GD121AE	120	1.2	100	10	100
Test Instruments	•HP4991A/B RF IMPEDANCE / MATERIAL ANALYZER •HP4338A/B MILLIOHMMETER •Agilent E5071C S-PARAMETER NETWORK ANALYZER •HP6632B SYSTEM DC POWER SUPPLY •Keithley 2410 1100V SOURCE METER				

2. PART NUMBER CODE

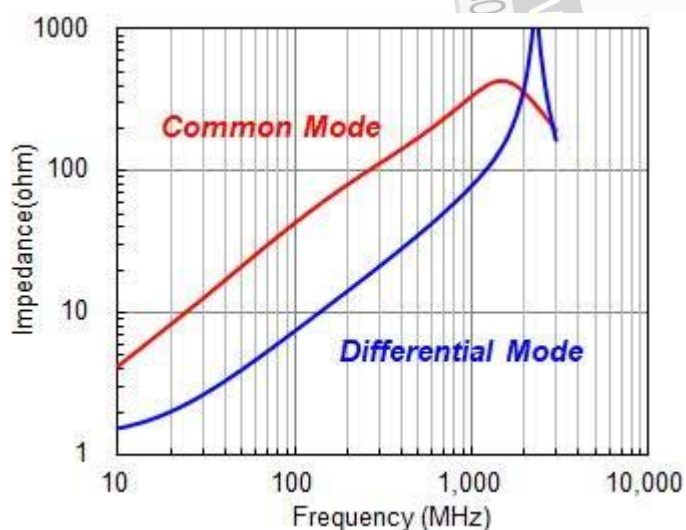
<u>HCM</u>	<u>2012</u>	<u>G</u>	<u>D</u>	<u>90</u>	<u>0</u>	<u>A</u>	<u>E</u>
1	2	3	4	5	6	7	8

- 1: Series name
- 2: Dimensions L*W
- 3: Material code
- 4: Product identification number
- 5: Impedance value
- 6: Fixed decimal point 7: (ex: 900=90Ω)
- INPAQ internal code
- 8: Packaging style E – Embossed tape, 7" reel

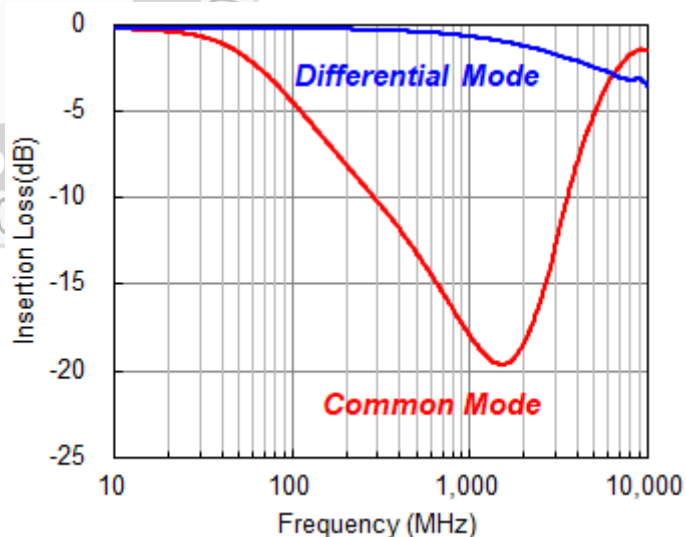
3. TYPICAL CHARACTERISTIC

HCM2012GD500A

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

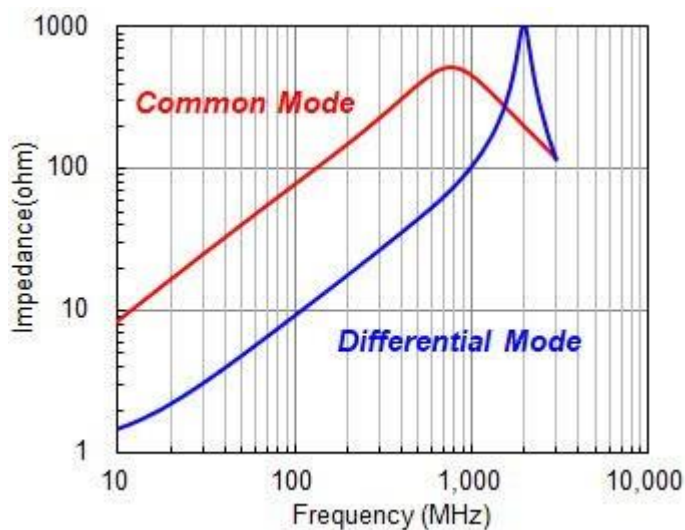


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

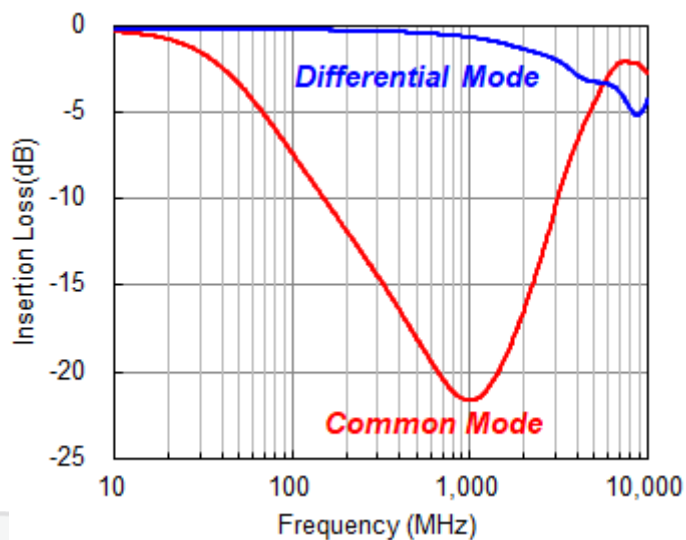


HCM2012GD900A

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

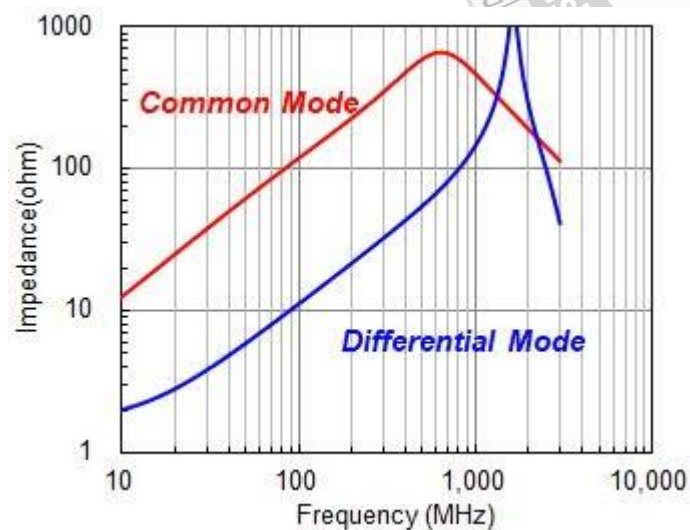


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

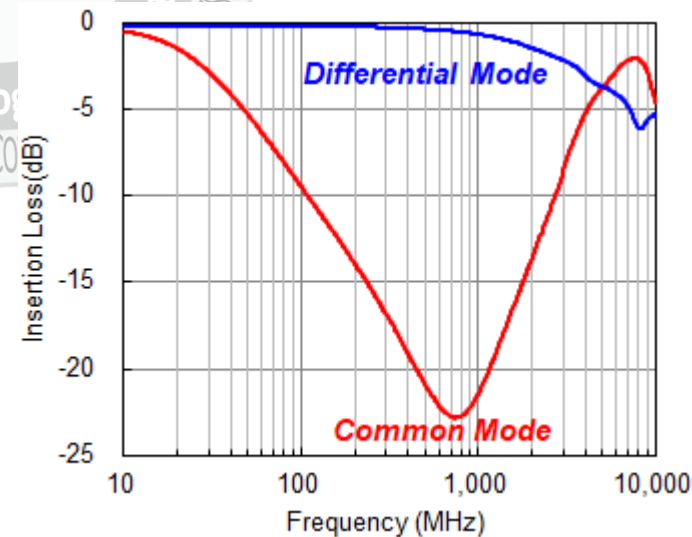


HCM2012GD121A

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

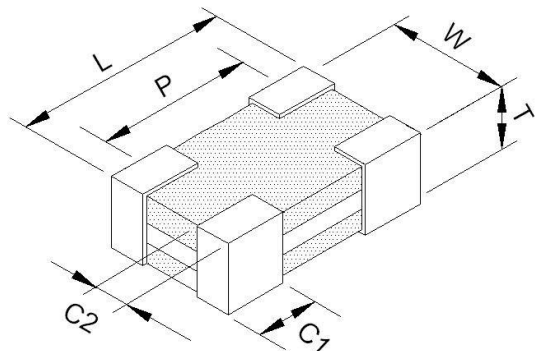


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



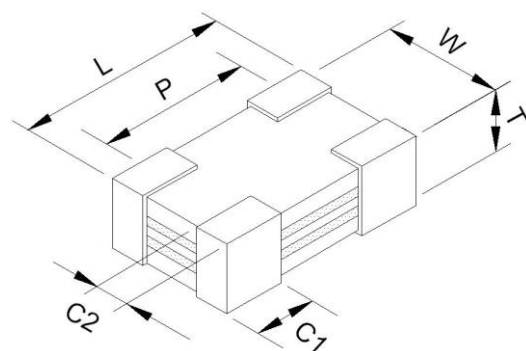
4. SHAPES AND DIMENSIONS

HCM2012GD900A、HCM2012GD121A



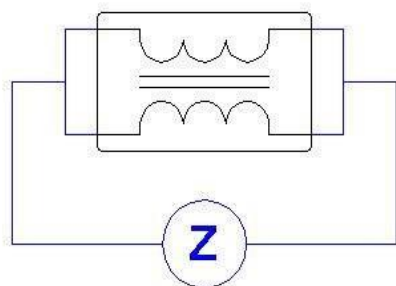
TYPE	Dimension
L	2.00±0.20
W	1.20±0.20
T	1.00±0.10
P	1.60±0.20
C1	0.40±0.20
C2	0.30±0.20
Unit: mm	

HCM2012GD500A

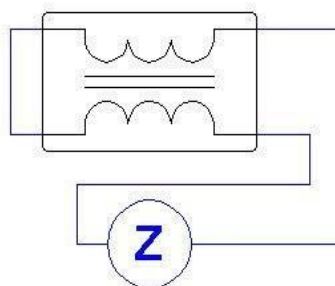


5. MEASURING CIRCUITS

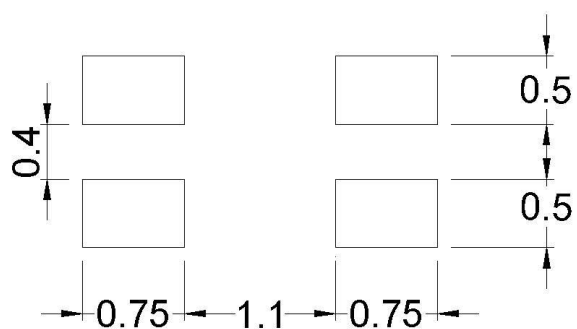
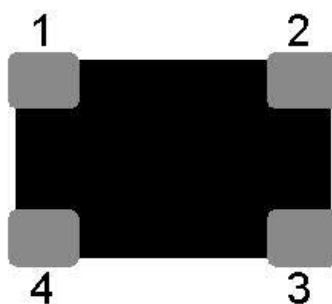
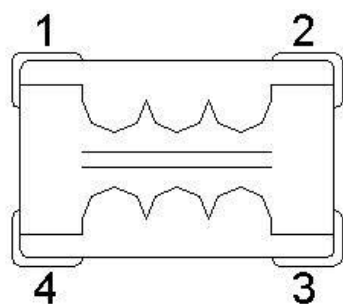
(A): Common mode



(B): Differential mode

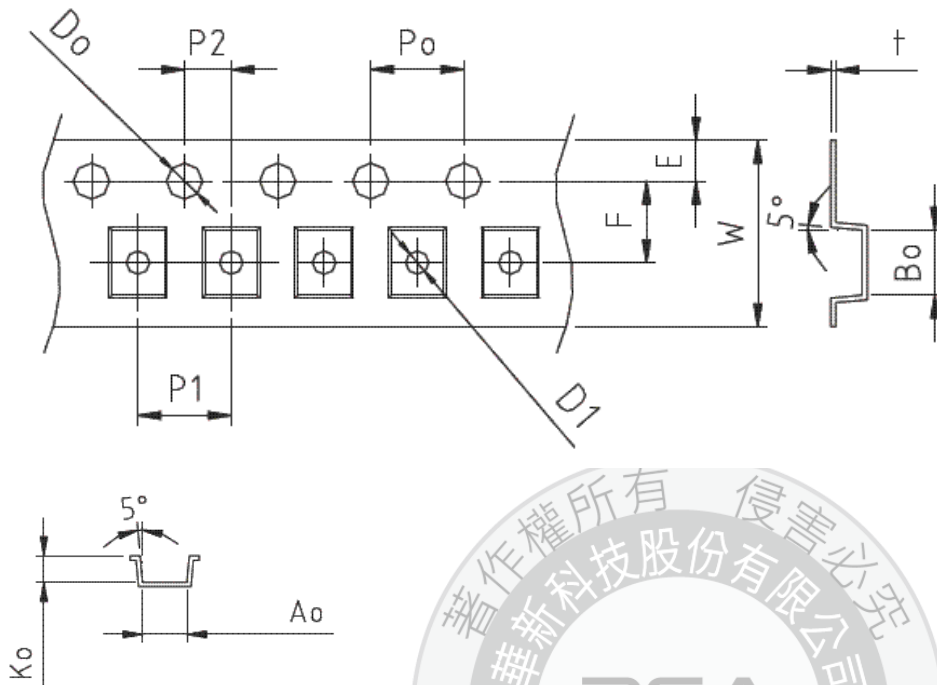


6. CIRCUIT CONFIGURATION & LAYOUT PAD



7.TAPE AND REEL SPECIFICATIONS/ TAPING DIMENSIONS

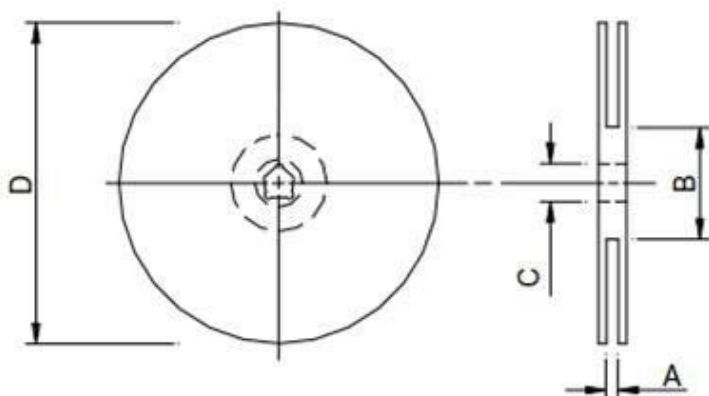
Type: Embossed Carrier



Unit: mm

Symbol	Size	Symbol	Size
W	8.00±0.10	P ₀	4.00±0.10
P ₁	4.00±0.10	P ₂	2.00±0.10
E	1.75±0.10	B ₀	2.25±0.10
F	3.50±0.10	A ₀	1.40±0.10
D ₀	1.55±0.05	K ₀	1.13±0.10
D ₁	1.00±0.05	t	0.22±0.05

8. REEL DIMENSIONS



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"	10±1.5	50 or more	13.2±1.0	178±2.0

9. STANDARD QUANTITY FOR PACKAGING

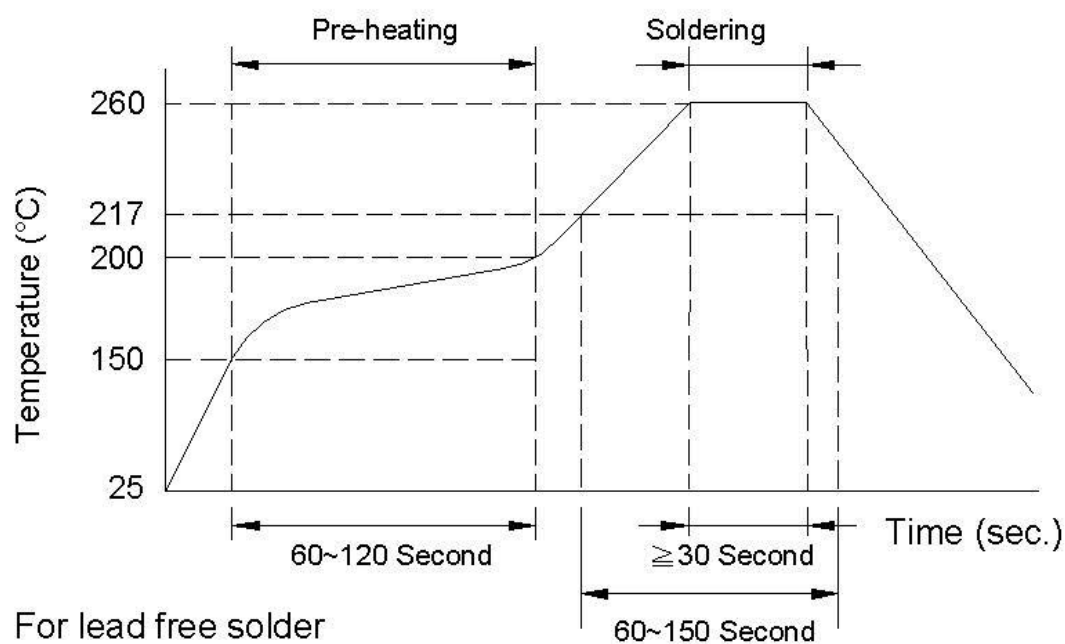
Packaging style: Taping

Reel packaging quantity: 3,000 pcs/reel

Inner box: 5 reel/inner box



10. RECOMMENDED SOLDERING CONDITIONS



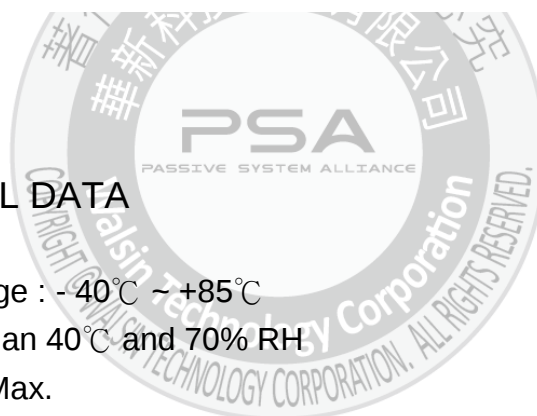
11. GENERAL TECHNICAL DATA

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

Storage Condition : Less than 40°C and 70% RH

Storage Time: 12 months Max.

Soldering method: Reflow



12. RELIABILITY AND TEST CONDITION

Test item	Test condition	Criteria
Thermal Shock	A. Temperature : $-40 \sim +85^{\circ}\text{C}$ 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
Operational Life	A. Temperature : $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 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
Biased Humidity	A. Temperature : $40 \pm 2^{\circ}\text{C}$ B. Humidity : $90 \sim 95\%$ 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
Resistance to Solder Heat	A. Solder temperature : $260 \pm 5^{\circ}\text{C}$ B. Flux : Rosin C. DIP time : 10 ± 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
Steam Aging Test	A. Temperature : $93 \pm 2^{\circ}\text{C}$ B. Test time : 4 hrs C. Solder temperature : $235 \pm 5^{\circ}\text{C}$ D. Flux : Rosin E. DIP time : 5 ± 1 sec	More than 95 % of terminal electrode should be covered with new solder

13. NOTE

The storage atmosphere must be free of gas containing sulfur and chlorine. Also, avoid exposing the product to saline moisture. If the product is exposed to such atmospheres, the terminals will oxidize and solderability will be affected.

