

HCM G Series

Data Sheet

Product Name	HCM G Series
Series	Common Mode Choke
Size	EIAJ 2012
Version	A12

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 (Vac)	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

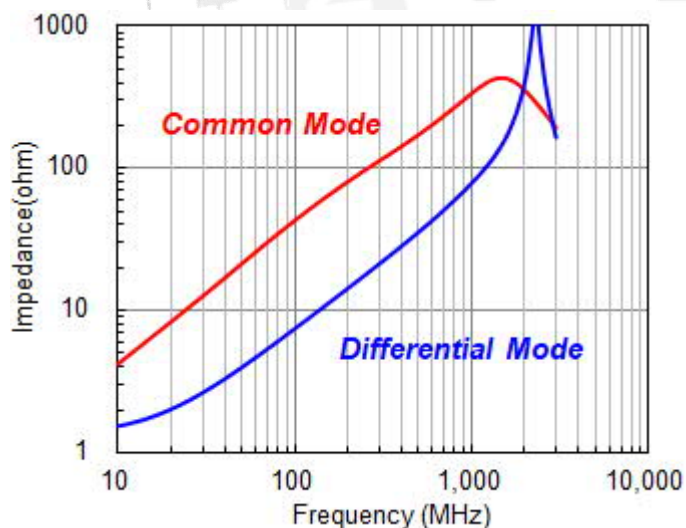
<u>HCM</u>	<u>2012</u>	<u>G</u>	<u>D</u>	<u>90</u>	<u>0</u>	<u>A</u>	<u>E</u>
1	2	3	4	5	6	7	8

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

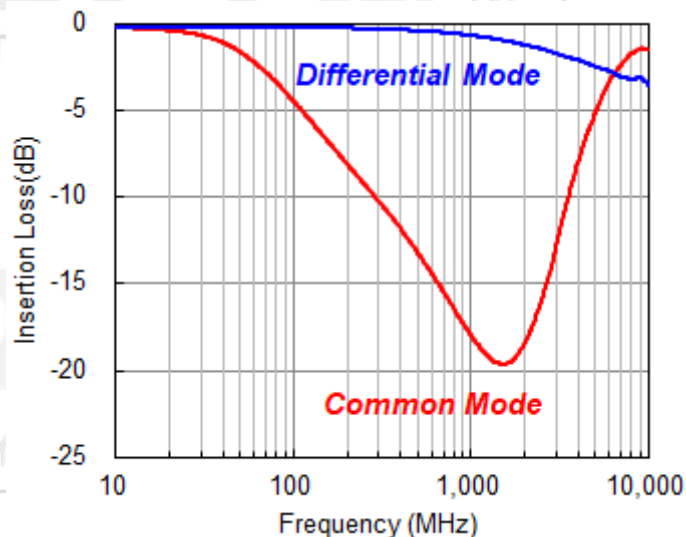
3.TYPICAL CHARACTERISTIC

HCM2012GD500A

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

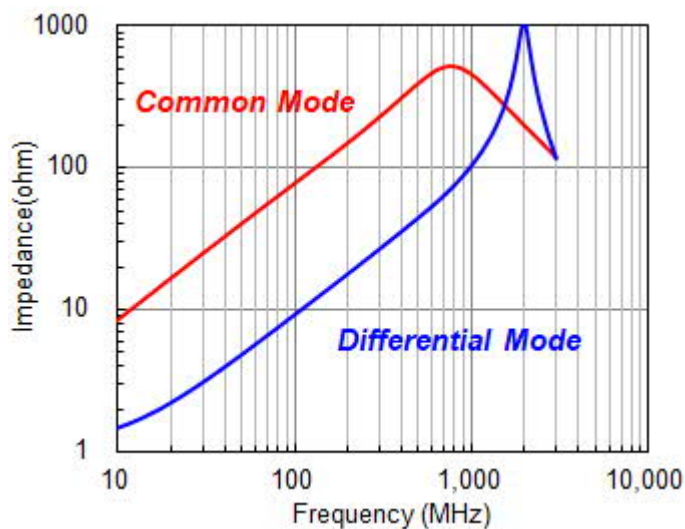


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

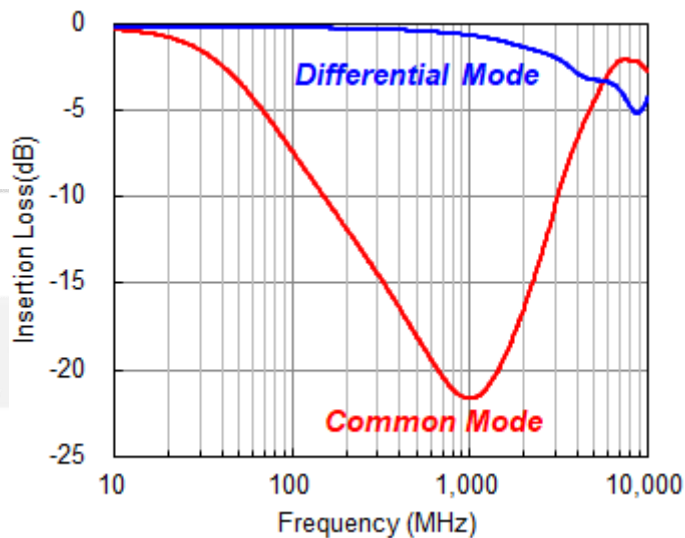


HCM2012GD900A

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

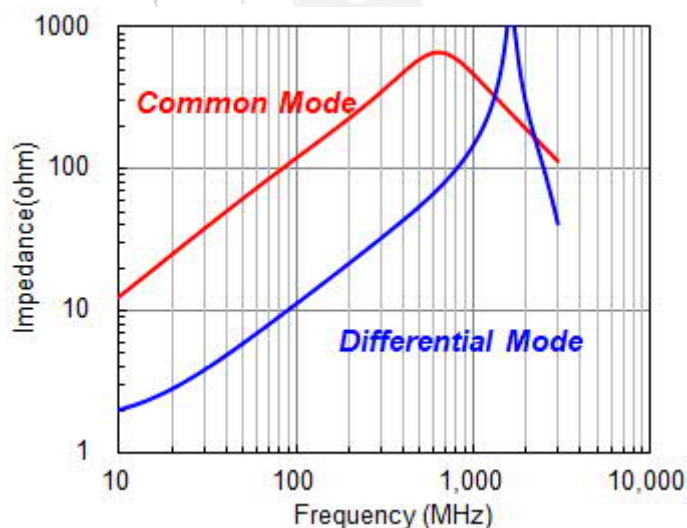


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

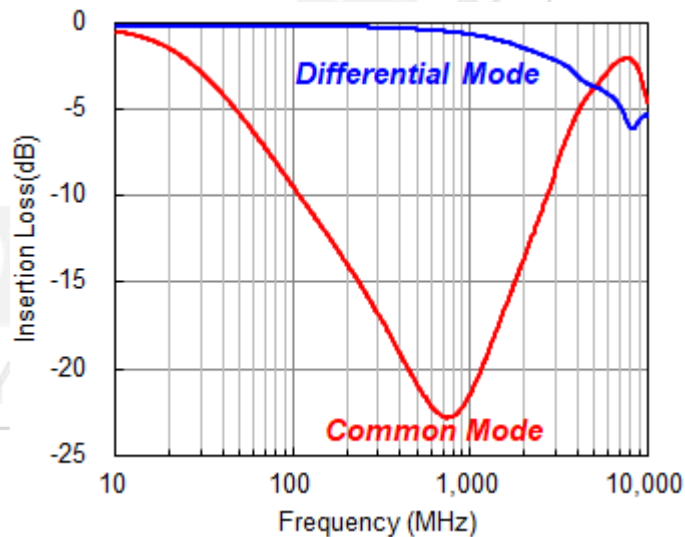


HCM2012GD121A

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

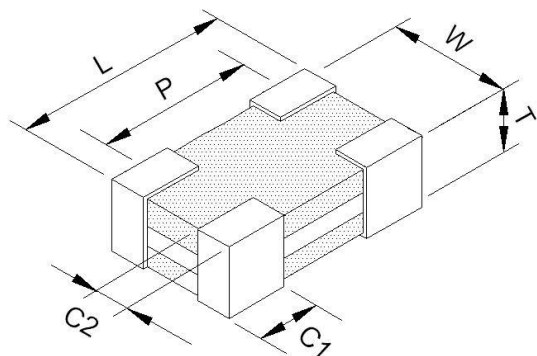


INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



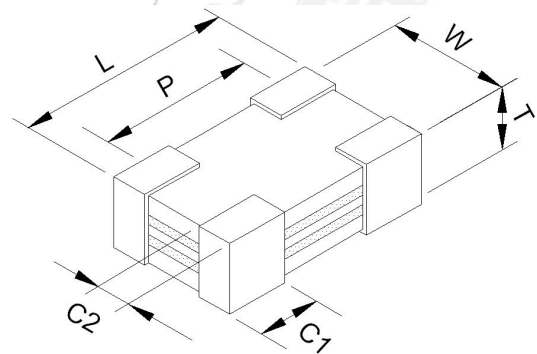
4.SHAPES AND DIMENSIONS

HCM2012GD900A、HCM2012GD121A



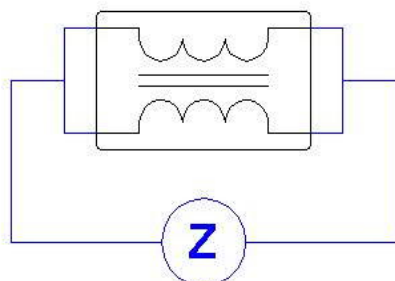
TYPE	Dimension
L	2.00±0.20
W	1.20±0.20
T	1.00±0.10
P	1.60±0.20
C1	0.40±0.20
C2	0.30±0.20
Unit : mm	

HCM2012GD500A

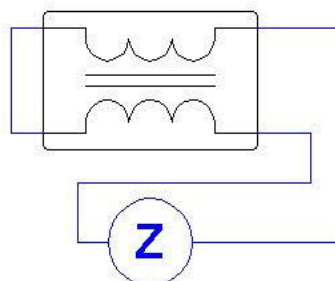


5. MEASURING CIRCUITS

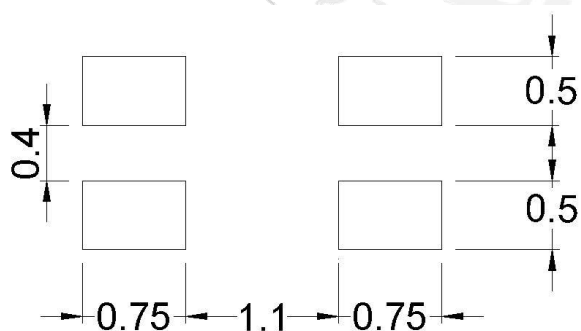
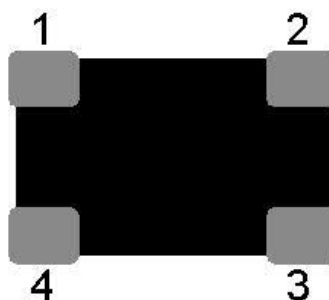
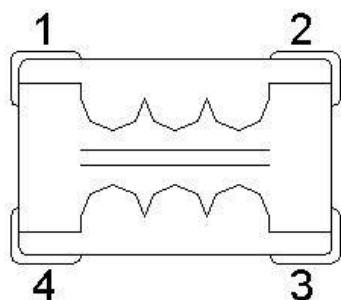
(A): Common mode



(B): Differential mode

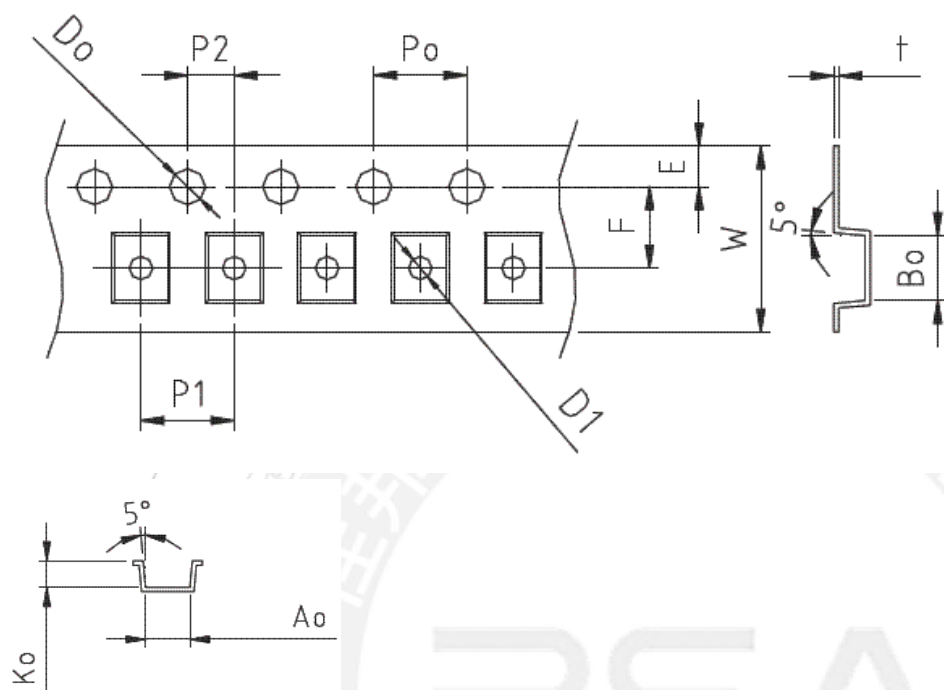


6. CIRCUIT CONFIGURATION & LAYOUT PAD



7.TAPE AND REEL SPECIFICATIONS/ TAPING DIMENSIONS

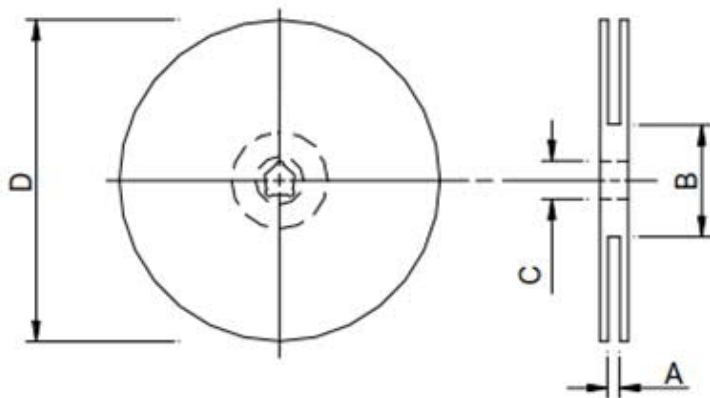
Type : Embossed Carrier



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

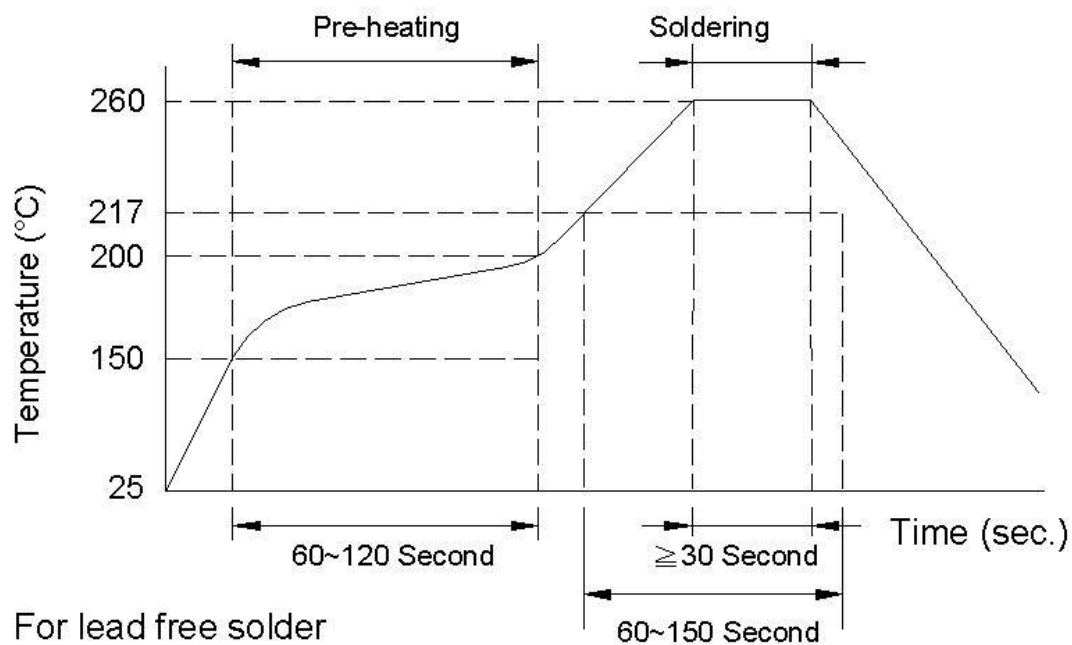
9. STANDARD QUANTITY FOR PACKAGING

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 ~ +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
Operational Life	A. Temperature : 85°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 ~ 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.

