Wire Wound Chip Common Mode Choke

PBCM Series

FEATURES 特征

- Chip common mode filter for large current applications.
  适用大电流的片式共模滤波器
- Excellent common-mode noise suppression performance.
  能高效抑制共模噪音效果
- Compact size high performance and low cost.
  体积小、高性价比
- Operating Temp：-40℃~+85℃(Including self heating)
  工作温度范围:-40℃~+85℃(包括自身温度上升)

APPLICATIONS 用途

- Common mode noise suppression of various electronic products, multimedia equipment, power cords.
  各种电子产品、多媒体设备,电源线的共模噪音抑制

PART NUMBERING 产品型号

PBCM	0905	C	-	100	Y	B
①	②	③		④	⑤	⑥

① Series Name	
PBCM	Wire Wound Chip Common Mode Choke

② External Dimensions [LxWxT mm]	
0904	9.5x5.6x5.2
0905	9.2x6.0x5.0

③ Feature Type
C Type
L Type

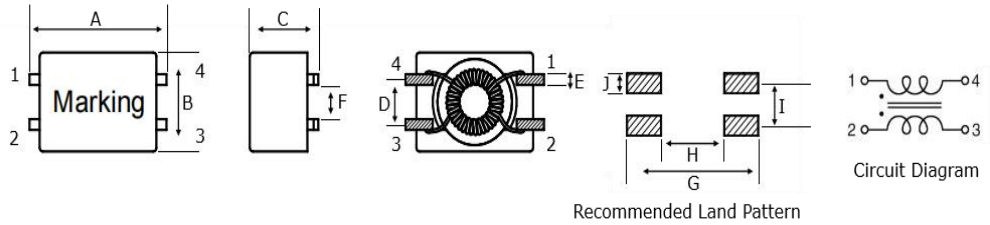
④ Nominal Inductance	
Code (example)	Nominal Inductance [μH]
100	10
471	470
202	2000

⑤ Inductance Tolerance	
Y	+50%/-30%

⑥ Design Code	
B~Z	Design Code

DIMENSIONS & RECOMMENDED LAND PATTERN 尺寸及推荐焊盘

- PBCM0904L



Unit: mm

Dimensions							Recommended Land Pattern			
Series	A	B	C	D	E	F	G Typ.	H Typ.	I Typ.	J Typ.
PBCM0904L	9.5 Max.	5.6 Max.	5.2 Max.	2.54±0.5	0.5 Typ.	5.5 Typ.	10.5	4.50	2.54	1.00

ELECTRICAL CHARACTERISTICS 特性规格表

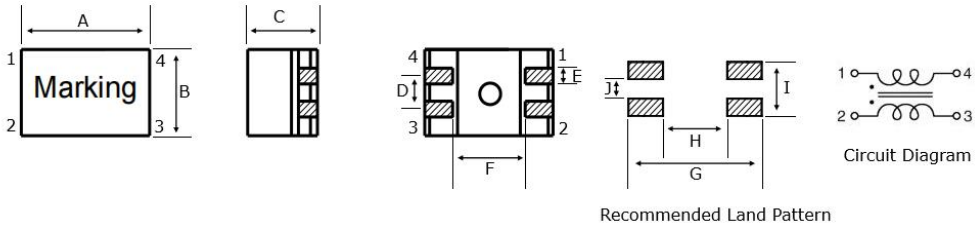
- PBCM0904L Series

Part Number	Inductance (μH)	Inductance Test Frequency	Leakage Inductance (nH)	DC Resistance (mΩ)	Rated Current (A)	Impedance (Ω)	Freq. range (MHz)	Rated Voltage (V)
	+50%/-30%	Hz/V	Typ.	Max.	Max.	Min.		Max.
PBCM0904L-6R0YB	6	100KHz/0.1V	30	100	2.50	300	20-300	50
PBCM0904L-110YB	11	100KHz/0.1V	80	120	0.50	160	20-300	50
PBCM0904L-250YB	25	100KHz/0.1V	150	200	0.50	450	20-150	50
PBCM0904L-510YB	51	100KHz/0.1V	200	300	0.50	800	20-100	50
PBCM0904L-101YB	100	100KHz/0.1V	250	100	0.50	600	3-20	50
PBCM0904L-471YB	470	100KHz/0.1V	280	280	0.50	1200	2-15	50
PBCM0904L-102YB	1000	100KHz/0.1V	280	300	0.50	1800	1-10	50
PBCM0904L-222YB	2200	100KHz/0.1V	290	400	0.50	3000	0.8-5	50
PBCM0904L-272YB	2700	100KHz/0.1V	300	280	0.40	1500	0.8-5	50
PBCM0904L-302YB	3000	100KHz/0.1V	300	520	0.35	1500	0.8-5	50
PBCM0904L-472YB	4700	100KHz/0.1V	300	700	0.20	5000	0.5-3	50

- Rated Current: Temp.rise 40°C Typ.
- Storage Temperature: 15°C up to 25°C, 65% RH max.
- The temperature of electrical characteristic test is 25°C indoor temperature.

DIMENSIONS & RECOMMENDED LAND PATTERN 尺寸及推荐焊盘

- PBCM0905C



Unit: mm

Dimensions							Recommended Land Pattern			
Series	A	B	C	D	E	F	G Typ.	H Typ.	I Typ.	J Typ.
PBCM0905C	9.2±0.3	6.0±0.3	5.0±0.3	2.54±0.2	1.0±0.1	5.7 Typ.	9.50	5.50	3.74	1.34

ELECTRICAL CHARACTERISTICS 特性规格表

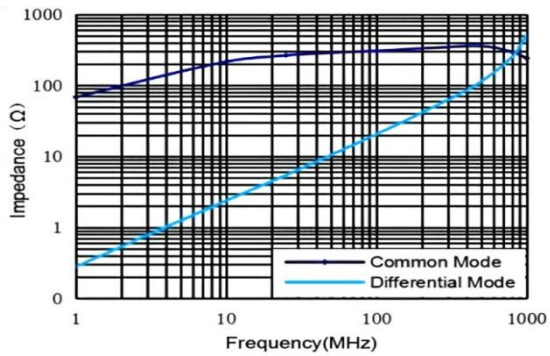
- PBCM0905C Series

Part Number	Inductance (μH)	Inductance Test Frequency	Leakage Inductance (nH)	DC Resistance (mΩ)	Rated Current (A)	Impedance (Ω)	Freq. range (MHz)	Rated Voltage (V)
	+50%/-30%	Hz/V	Typ.	Max.	Max.	Min.		Max.
PBCM0905C-100YB	10	1K/0.1	55	80	1.60	300	20-200	50
PBCM0905C-250YB	25	1K/0.1	60	160	1.00	600	5-100	50
PBCM0905C-400YB	40	1K/0.1	80	250	0.90	800	5-100	50
PBCM0905C-510YB	51	1K/0.1	85	160	0.80	1000	5-50	50
PBCM0905C-251YB	250±50%	100K/5m	60	130	1.20	600	5-50	50
PBCM0905C-471YB	470±50%	100K/5m	72	140	1.10	800	1-50	50
PBCM0905C-501YB	500±50%	100K/5m	75	150	1.00	900	1-40	50
PBCM0905C-102YB	1000±50%	100K/5m	90	310	0.80	1000	1-30	50
PBCM0905C-202YB	2000±50%	100K/5m	130	420	0.60	3000	1-30	50
PBCM0905C-472YB	4700±50%	100K/5m	180	900	0.40	3000	0.5-5	50
PBCM0905C-652YB	6500±50%	100K/5m	280	1050	0.30	4000	0.3-2	50
PBCM0905C-103YB	10000±50%	10K/0.1	320	1150	0.26	4000	0.3-2	50

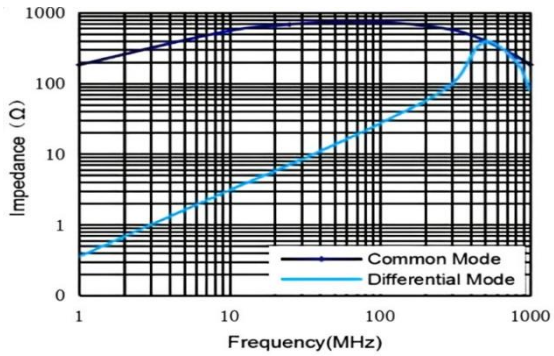
- Rated Current: Temp.rise 40°C Typ.
- Storage Temperature: 15°C up to 25°C, 65% RH max.
- The temperature of electrical characteristic test is 25°C indoor temperature.

CHARACTERISTICS(REFERENCE) 特征曲线

PBCM0904L-110YB



PBCM0904L-250YB



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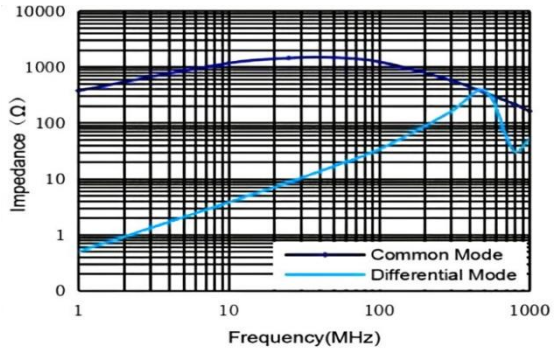
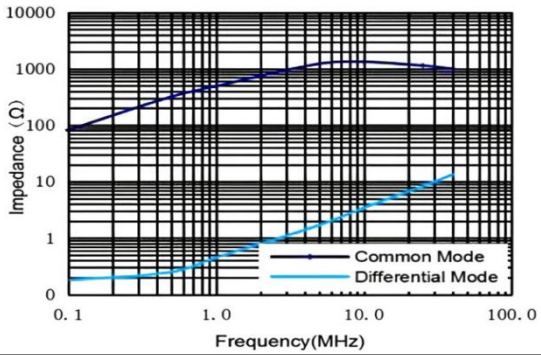
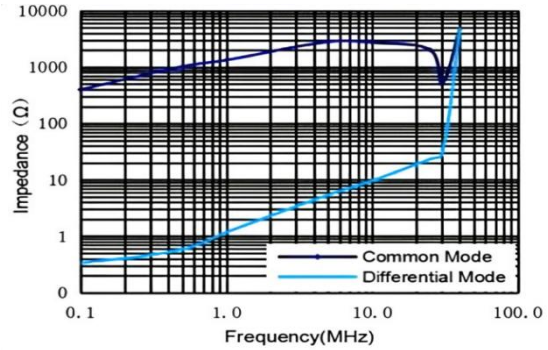


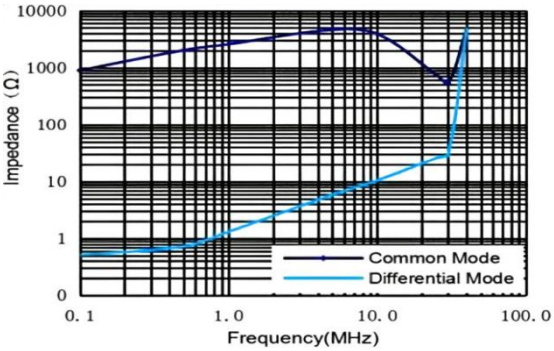
PBCM0904L-101YB



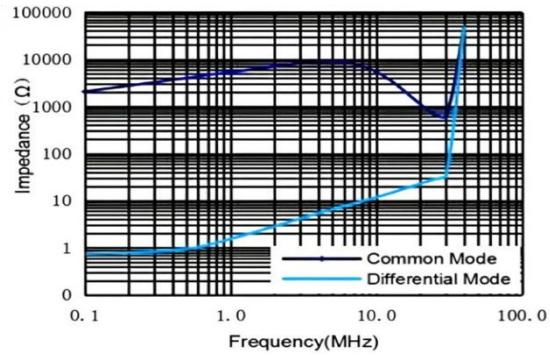
PBCM0904L-471YB



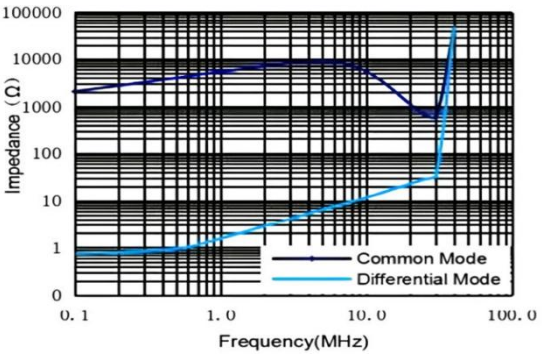
PBCM0904L-102YB



PBCM0904L-222YB

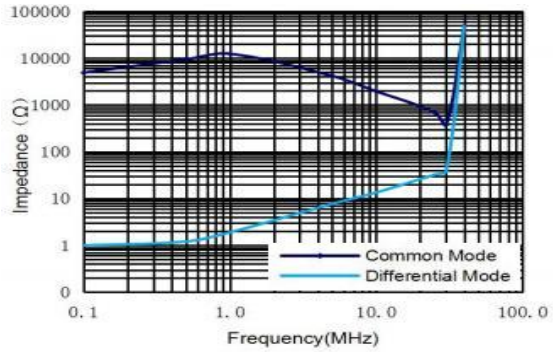


PBCM0904L-272YB

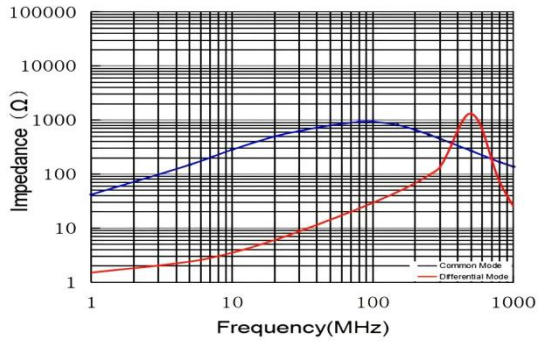


CHARACTERISTICS(REFERENCE) 特征曲线

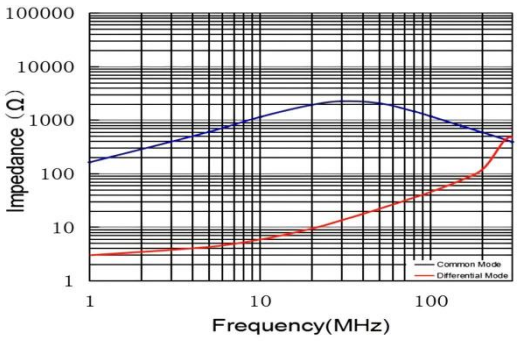
PBCM0904L-472YB



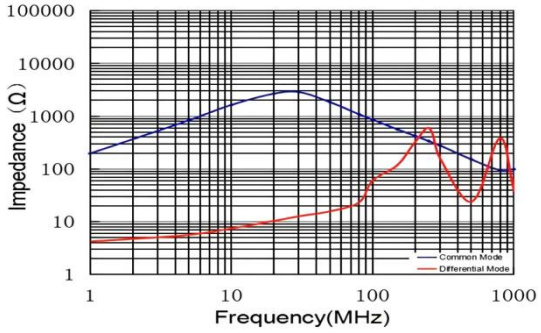
PBCM0905C-100YB



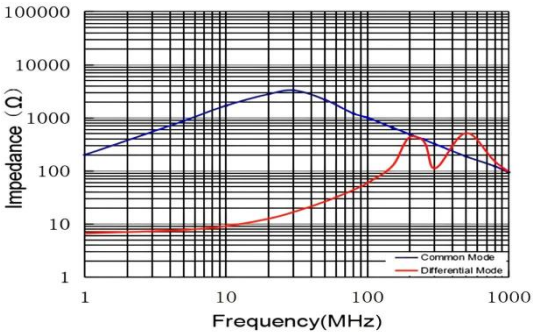
PBCM0905C-250YB



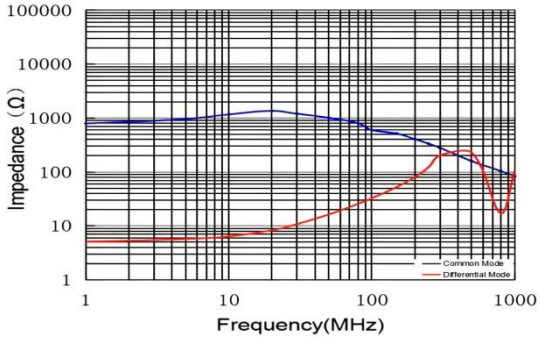
PBCM0905C-400YB



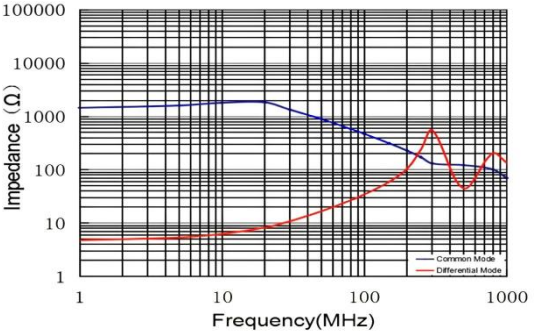
PBCM0905C-510YB



PBCM0905C-251YB

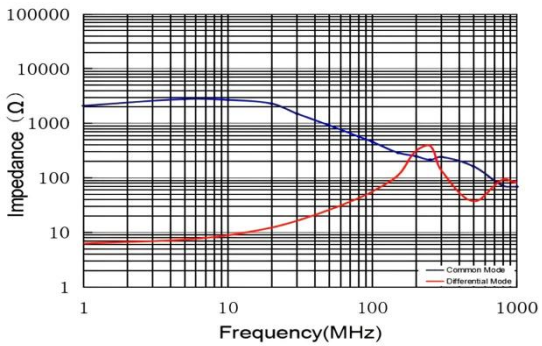


PBCM0905C-471YB

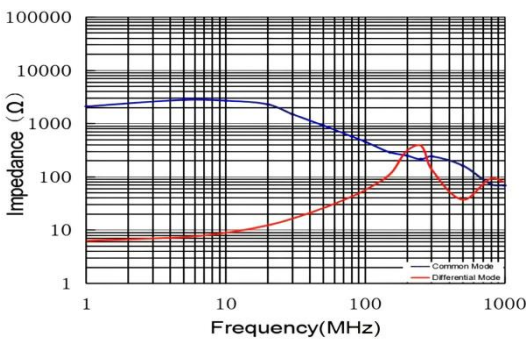


CHARACTERISTICS(REFERENCE) 特征曲线

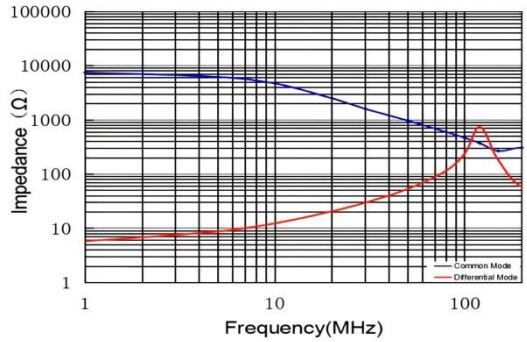
PBCM0905C-501YB



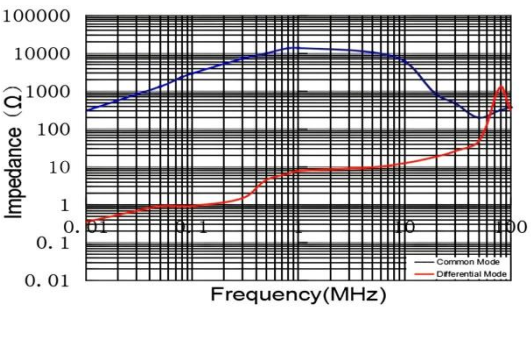
PBCM0905C-102YB



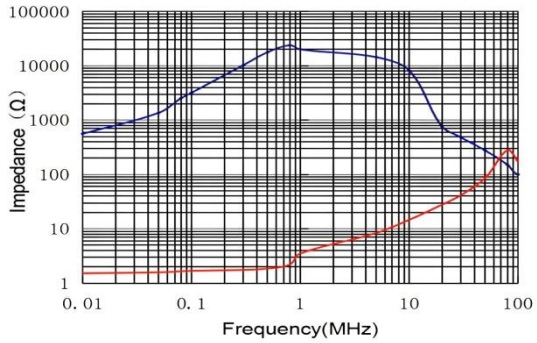
PBCM0905C-202YB



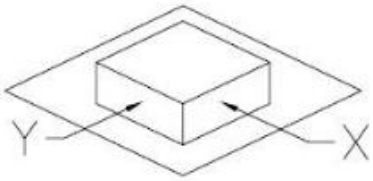
PBCM0905C-472YB



PBCM0905C-652YB

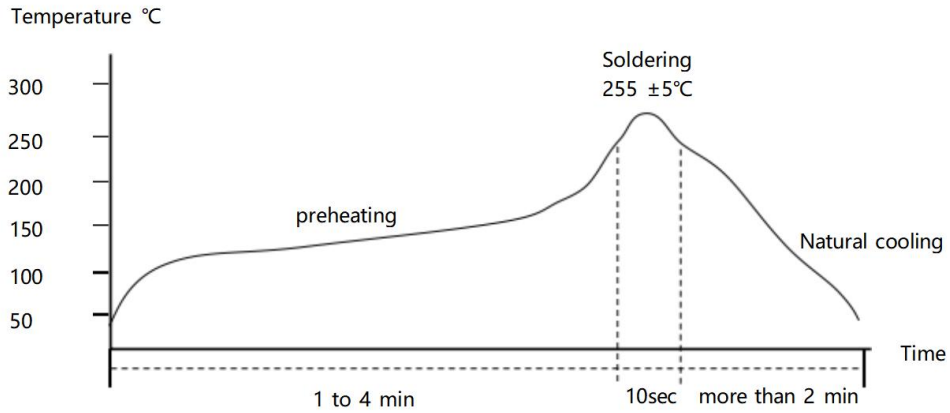


RELIABILITY TEST 可靠性测试

Operating Temperature	- 40 to +85 ℃ (Contain Heating coil)
Appearance Inspection	No external defects by visual inspection
Terminal Strength 	After soldering , between copper plaet and terminals of coils , push in two directions of X , Y with standing 10N(1.02kg) for10+/-2 sec. Terminal should not peel off. (Refer to figure at right)
Heat endurance of reflow soldering	Refer to figure
Insulating resistance	Over 10 MΩ at 50V D.C . between wire and core
Dielectric Strength	Apply at 0.5KV 1mA for 3S between wire and core
Temperature characteristics	Inductance coefficient (0~2,000) × 10 / ℃(- 40~ + 85 ℃)
Humidity characteristics	Inductance deviation within ± 10% , after 96 hours in 90~95% relative humidity at 40 ± 2 ℃ and 1 hours drying under normal condition
A test is made under the above mentioned condition , and it is kept for 2 hours in the normal	

RECOMMENDED SOLDERING TECHNOLOGIES 回流焊建议

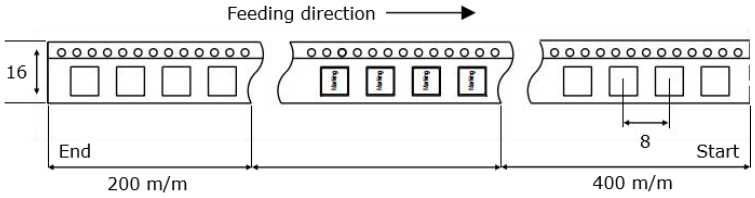
- Re-flow profile



- Temperature and humidity . After that , no mechanical and electrical defect should be found.

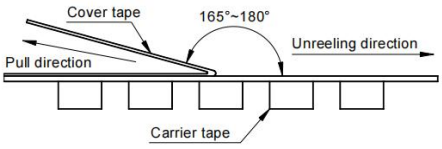
PACKAGING 包装

- Dimension of plastic taping: (Unit: mm)
  The following dimensions are related to the actual fit of the machine，for reference only.
- PBCM0904-0905 Series



- PRIM5040 Series

- Transparent carrier and cover tape.



P/N	Tapewidth	Distance	Pull-of force
PBCM0904	16mm	8mm	10~120g
PBCM0905	16mm	12mm	10~120g

Product Series	Reel
PBCM0904	1500PCS
PBCM0905	1000PCS

PRECAUTIONS ON USE 使用注意事项

- Precautions on Use.

1.Always wear static control bands to protect against ESD.
2.Any devices used with the products (soldering irons, measuring instruments) should be properly grounded.
3.Keep bare hands and metal conductors (i.e., metal desk) away from electrodes or conductive areas that lead to electrodes.
4.Preheat when soldering.
5.Don't apply current in excess of the rated current value. It may reduce the impedance or inductance, or cause damage to components due to over-current.
6.For magnetic products, keep clear of anything that may generate magnetic fields such as speakers and coils. Use non-magnetic tweezers when handing the chips.
7.When soldering, the electrical characteristics may be varied due to hot energy and mechanical stress.
8.When coating products with resin, the relatively high resin curing stress may change the electrical characteristics. For exterior coating, select resin carefully so that electrical and mechanical performance of the product is not affected. Before using, please evaluate reliability with the product mounted in your application set.
9.When mount chips with adhesive in preliminary assembly, do appropriate check before the soldering stage, i.e., the size of land pattern, type of adhesive, amount applied, hardening of the adhesive on proper usage and amounts of adhesive to use.
10.Mounting density: Add special attention to radiating heat of products when mounting other components nearby. The excessive heat by other products may cause deterioration at joint of this product with substrate.
11.Since some products are constructed like an open magnetic circuit, narrow spacing between components may cause magnetic coupling.
12.Please do not give the product any excessive mechanical shocks in transportation.
13.Please do not touch wires by sharp terminals such as tweezers to avoid causing any damage to wires.
14.Please do not add any shock and power to the soldered product to avoid causing any damage to chip body.
15.Please do not touch the electrodes by naked hand as the solderability of the external electrodes may deteriorate by grease or oil on the skin.
16.Magnetic materials shall be far away from parts to avoid impacts on their electrical characteristics;
17.Parts could be damaged by external mechanical pressure or stacked heavy objects, as well as strong shaking & dropping;
18.Please do not store parts in bulk to prevent coils and parts being damaged;
19.Oversized external force to parts on PCB may lead to parts being damaged or slipped off;
20.Please do not use parts on edge or top of PCB board in your design to avoid parts being damaged during PCB is moved.
21.Please use flux contained with resin since the highly acidic (Chlorine content more than 0.2 wt%) or water-soluble one could damage the insulation film of wires, then causing short circuit of parts.
22.Please do not use the brush to clean product or its surroundings. If you use the brush to clean product or its surroundings on PCB,copper wire may be broke, causing the product open.
23.Avoid ultrasonic processing, which may cause component falling off and poor pad contact.
24.When using APV products, customers should record the production batch number for traceability.

SAFETY REMINDERS 注意事项

SAFETY REMINDERS

● All products listed in this specification are developed, designed and intended for use in general electronics equipment. The products are not designed or Warranted to meet the requirements of the applications listed below, whose performance and/or quality require especially high reliability, or whose failure, malfunction or trouble might directly cause damage to society, person, or property. Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below. Please contact us for more details if you intend to use our products in the following applications.

☆ 1.Aerospace/aviation equipment

☆ 2.Transportation equipment (cars, electric trains, ships, etc.)

☆ 3.Medical equipment

☆ 4.Power-generation control equipment

☆ 5.Atomic energy-related equipment

☆ 6.Seabed equipment

☆ 7.Transportation control equipment

☆ 8.Public information-processing equipment

☆ 9.Military equipment

☆ 10.Electric heating apparatus, burning equipment

☆ 11.Disaster prevention/crime prevention equipment

☆ 12.Safety equipment

☆ 13.Other applications that are not considered general-purpose applications

● When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.