High Current SMD Common Mode Filter \ PCM Series

.Feature

1.High impedance at high frequency effects excellent noise suppression performance.

2.The choke coils structure enables noise suppression without degrading the signal.

.Applications

1.The PCM Series is SMD common mode filter specifically designed to eliminate common mode noise in USB 2.0, IEEE1394, and LVDS applications.

.Product Identification

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1 2 3 4

Series Name	Dimensions (WxLxH)		Internal Code	
PCM	474520	4.7*4.5*2.0 mm	S	Mylar
	070603	7.0*6.0*3.8 mm	F	Bakelite
	090704	9.0*7.0*4.8 mm		
	121106	12.0*10.8*6.4 mm		
	151306	15.0*13.0*6.0 mm		

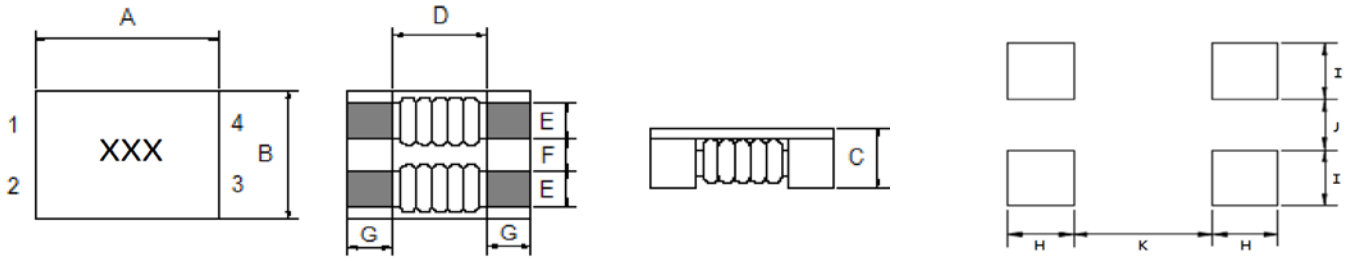
Impedance	
301	300Ω
701	700Ω
102	1000Ω

.Rating

1.Operating temperature -40℃ ~ +125℃

2.Storage conditions -40℃ ~ +125℃

.Shape and Dimension



Dimensions in mm

TYPE	A	B	C	D	E	F	G	H	I	J	K
PCM474520S(F)	4.7	4.5	2.00	2.70	1.30	1.00	1.00	1.30	1.50	0.90	2.40
	±0.50	±0.50	±0.50	Typ.	±0.30	±0.30	±0.30	Ref	Ref	Ref	Ref
PCM070603S(F)	7.0	6.0	3.80	3.50	1.50	1.50	1.75	2.20	1.50	1.50	2.50
	±0.50	±0.50	Max.	Typ.	±0.20	±0.20	±0.20	Ref	Ref	Ref	Ref
PCM090704S(F)	9.0	7.0	4.80	5.70	1.90	1.80	1.70	3.00	1.75	1.50	5.00
	±0.50	±0.50	Max.	Typ.	±0.40	±0.40	±0.30	Ref	Ref	Ref	Ref
PCM121106S(F)	12.0	10.8	6.40	7.00	2.70	2.50	2.50	2.70	2.90	2.30	6.80
	±0.50	±0.50	Max.	Typ.	±0.20	±0.20	±0.20	Ref	Ref	Ref	Ref
PCM151306S(F)	15.0	13.0	6.00	9.00	2.70	3.80	3.00	3.50	3.00	3.20	8.70
	±0.50	±0.50	Max.	Typ.	±0.20	±0.20	±0.20	Ref	Ref	Ref	Ref

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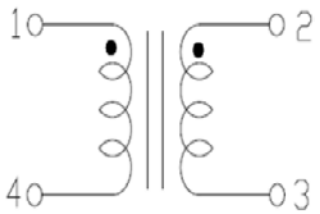
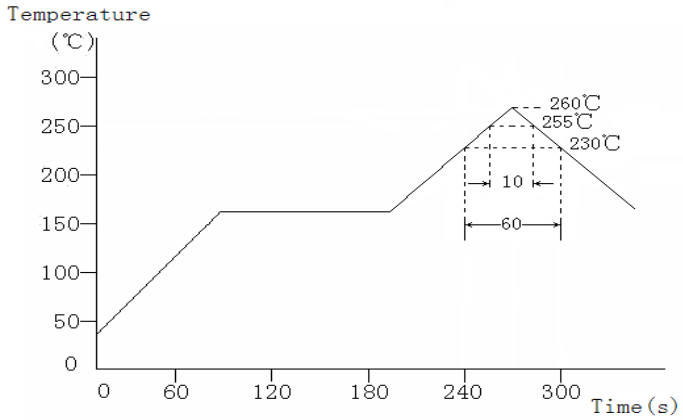
.Equivalent Circuit Schematic



.Recommended Reflow Soldering Conditions.

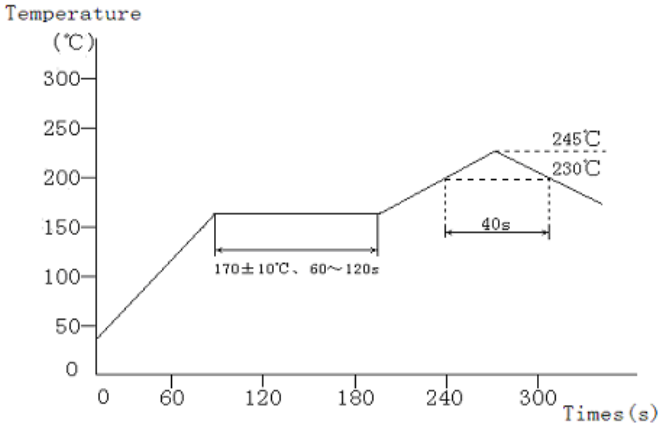


No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours.

Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions.

The reflow test profile may vary with the testing instruments.

.Recommended Reflow Conditions.



The recommended reflow profile is based on the testing instruments used. Solder ability will reflow conditions, testing method, etc. So it is necessary to make a confirmation of them when the reflow conditions are set up.

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.Electrical Characteristics PCM474520S(F)

Part No.	Impedance (N1=N2) (Ω) Min.	Impedance (N1=N2) (Ω) Typ.	Rated Current (A) Max.	DCR (N1=N2) (mΩ) Max.	Insulation Resistance (mΩ) Min.	Rated Volt. (V) Max.	Test Frequency (MHz)
PCM474520S(F)-900	60	90	2.0	35	10	80	100
PCM474520S(F)-151	90	150	1.9	40	10	80	100
PCM474520S(F)-231	180	230	1.8	45	10	80	100
PCM474520S(F)-301	200	300	1.7	45	10	80	100
PCM474520S(F)-401	300	420	1.5	50	10	80	100
PCM474520S(F)-701	500	700	1.4	59	10	80	100
PCM474520S(F)-901	650	900	1.3	68	10	80	100
PCM474520S(F)-102	800	1000	1.3	68	10	80	100
PCM474520S(F)-122	1000	1200	1.2	74	10	80	100
PCM474520S(F)-142	1200	1400	1.2	81	10	80	100

.Electrical Characteristics PCM070603S(F)

Part No.	Impedance (N1=N2) (Ω) Min.	Impedance (N1=N2) (Ω) Typ.	Rated Current (A) Max.	DCR (N1=N2) (mΩ) Max.	Insulation Resistance (mΩ) Min.	Rated Volt. (V) Max.	Test Frequency (MHz)
PCM070603S(F)-400	40	70	15	5	10	125	100
PCM070603S(F)-101	100	140	9.0	10	10	125	100
PCM070603S(F)-301	225	300	5.0	10	10	125	100
PCM070603S(F)-501	275	350	5.0	10	10	125	100
PCM070603S(F)-601	500	700	4.0	15	10	125	100
PCM070603S(F)-701	500	700	4.0	15	10	125	100
PCM070603S(F)-102	800	1020	3.0	17	10	125	100
PCM070603S(F)-132	910	1300	2.5	21	10	125	100
PCM070603S(F)-272	2000	2700	1.0	63	10	125	100
PCM070603S(F)-302	2500	3000	0.9	75	10	125	100

.Electrical Characteristics PCM090704S(F)

Part No.	Impedance (N1=N2) (Ω) Min.	Impedance (N1=N2) (Ω) Typ.	Rated Current (A) Max.	DCR (N1=N2) (mΩ) Max.	Insulation Resistance (mΩ) Min.	Rated Volt. (V) Max.	Test Frequency (MHz)
PCM090704S(F)-301	225	300	6.0	6	10	125	100
PCM090704S(F)-501	450	600	5.5	8	10	125	100
PCM090704S(F)-701	500	700	5.0	10	10	125	100
PCM090704S(F)-102	750	1000	4.0	13	10	125	100
PCM090704S(F)-222	1700	2200	3.0	50	10	125	100
PCM090704S(F)-272	2000	2700	2.0	86	10	125	100

.Electrical Characteristics PCM121106S(F)

Part No.	Impedance (N1=N2) (Ω) Min.	Impedance (N1=N2) (Ω) Typ.	Rated Current (A) Max.	DCR (N1=N2) (mΩ) Max.	Insulation Resistance (mΩ) Min.	Rated Volt. (V) Max.	Test Frequency (MHz)
PCM121106S(F)-800	80	230	10	2	10	125	100
PCM121106S(F)-701	500	700	8.0	6	10	125	100
PCM121106S(F)-801	600	800	8.0	8	10	125	100
PCM121106S(F)-102	750	1000	6.0	14	10	125	100
PCM121106S(F)-222	2200	2500	1.8	35	10	125	10
PCM121106S(F)-272	2300	2700	1.5	50	10	125	10

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.Electrical Characteristics PCM151306S(F)

Part No.	Impedance (N1=N2) (Ω) Min.	Impedance (N1=N2) (Ω) Typ.	Rated Current (A) Max.	DCR (N1=N2) (mΩ) Max.	Insulation Resistance (mΩ) Min.	Rated Volt. (V) Max.	Test Frequency (MHz)
PCM151306S(F)-301	250	300	13	6	10	80	100
PCM151306S(F)-551	450	550	11	6	10	80	100
PCM151306S(F)-601	500	600	11	7	10	80	100
PCM151306S(F)-701	500	700	11	7	10	80	100

Note

1.IDC:The actual value of D.C. current when the temperature rise is △t = 40℃(Ta = 20℃).

2.Test Insrument:

Z : HP42918I Impedance analyzer

DCR : CH16502 Milliohmmeter

I.R : CH19073 AC/DC/IR HIPOT Tester

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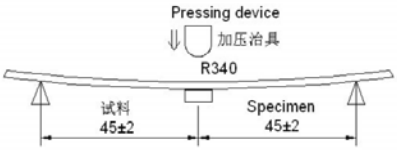
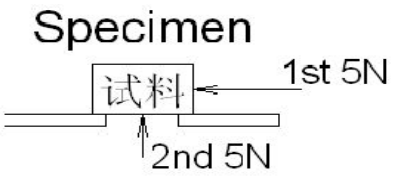
.Reliability and Test Conditions(可靠性测試條件)

General Characteristics

Item	Specification	Conditions
Temperature drift	Inductance temperature coefficient 2000 ppm/℃ or less	To be measured in the range of -40℃~ +125℃.
Bending test	Change from an intial value L : within±10%	Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 3mm and hold for 30±5s.  Board: 40*100mm Thickness: 1.0mm
Adhesion strength	Change from an intial value L : within±10%	A static load using a R0.5 pressing tool shall be applied the arrow and to the body of the specimen in the direction of the arrow and shall be hold for 60±5s. Measure after removing pressure. 
Vibration	Change from an initial value L : within±10%	The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz (10Hz to 55Hz to 10Hz in a period of one minute) for 1 h in each of 3(X,Y,Z) axes.
Mechanical shock	Change from an initial value L : within±10%	Peak acceleration: 981 m/S2 Duration of pulse: 6ms 3 times in each of 3(X,Y,Z)axes. The specimen must be fixed on test board. Three successive shock shall be applied in the perpendicular direction of each surface of the specimen.
Free fall test	Change from an initial value L : within±10%	The specimen must be fixed on test board. It must be equipped with instruments of which weight is 500g. Then it shall be fallen freely from 1m height to rigid wood 3 times in each of three axes.

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General Characteristics

Item	Specification	Conditions
Solder ability	New solder shall cover 90% minimum of the surface immersed.	Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten solder at 245±5℃ for 3±0.5 seconds.
Dielectric strength	Without damage.	100V DC shall be applied for 60s between the terminal and the core.
Resistance to soldering heat	Change from an initial value L : within±10%	Test method Reflow soldering method Preheat 150~180℃ 90±30s Peak temp 250(+ 5,-0)℃ (230℃min , 30±10s) The specimen shall be subjected to the reflow process under the above condition 2 times.Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. Measurement The specimen shall be stored at standard atmospheric conditions for 1 h in prior to the measurement.
Insulation resistance	100mΩ or more.	100V DC shall be applied between the terminal and the core.
Low temperature	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of -40±3℃ for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
Dry heat	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of -125±2℃ for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
Dump heat	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of 60±2℃ with relative humidity of 90 ~ 95% for 500 ± 2h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.

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General Characteristics

Item	Specification	Conditions
Temperature cycle	Change from an initial value L : within±10%	The specimen shall be subjected to 500 continuous cycles of temperature change of -40℃ for 30 min and 125℃ for 30 min with the transit period of 2min or less. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions in making measurements and test as follows;

Ambient temperature : 5℃ to 35℃, Relative humidity: 45% to 85%, Air pressure: 86kPa to 106kPa

If more strict measurement is required, measurement shall be made within following limits;

Ambient temperature : 20±2℃, Relative humidity: 65±5%, Air pressure: 86kPa to 106kPa

Prohibited Subtances

We confirm that our products and our production process accord with "rule of RoHS".

All materials used in this product are registered material under the law concerning the examination and Regulation of Manufacture of Chemical Substances.

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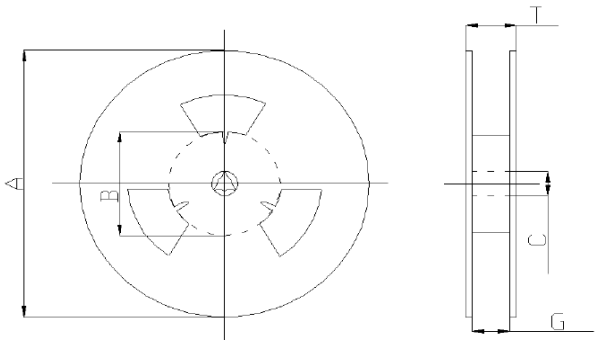
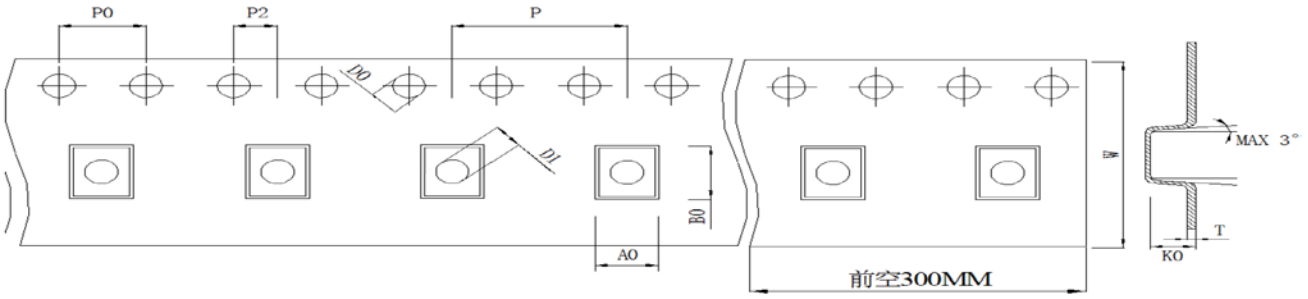
.Packing Specifications

1.Reel Dimension(m/m)



Series	Item	A	B	C	G	T
PCM474520S(F)	7"x12	178 ± 1	60 ± 1	13.3 ± 1	10.0 ± 1	14.0 ± 2
PCM070603S(F)	13"x16	330 ± 1	100 ± 1	13.0 ± 1	16.5 ± 1	21.1 ± 2
PCM090704S(F)	13"x24	330 ± 1	100 ± 1	13.0 ± 1	24.5 ± 1	28.5 ± 2
PCM121106S(F)	13"x24	330 ± 1	100 ± 1	13.0 ± 1	24.5 ± 1	28.5 ± 2
PCM151306S(F)	13"x24	330 ± 1	100 ± 1	13.0 ± 1	24.5 ± 1	28.5 ± 2

2.Taping Dimension(m/m)



Series	W	A0	B0	K0	P	P0	P2	T
PCM474520S(F)	12.0 ± 0.3	4.8 ± 0.1	5.1 ± 0.1	2.05 ± 0.1	8.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1	0.35 ± 0.05
PCM070603S(F)	16.0 ± 0.3	6.2 ± 0.1	7.3 ± 0.1	4.1 ± 0.1	12.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1	0.35 ± 0.05
PCM090704S(F)	24.0 ± 0.3	8.0 ± 0.1	10.0 ± 0.1	5.0 ± 0.1	16.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1	0.40 ± 0.05
PCM121106S(F)	24.0 ± 0.3	14.0 ± 0.1	14.0 ± 0.1	6.6 ± 0.1	16.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1	0.40 ± 0.05
PCM151306S(F)	24.0 ± 0.3	15.0 ± 0.1	16.0 ± 0.1	6.6 ± 0.1	16.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.1	0.40 ± 0.05

3.Packaging Carton

Series	Reel Packing Unit	Inner Box Packing Unit	Carton Packing Unit
PCM474520S(F)	1,000 PCS / Reel	4,000 PCS / Box	40,000 PCS / Box
PCM070603S(F)	1,500 PCS / Reel	4,500 PCS / Box	22,500 PCS / Box
PCM090704S(F)	700 PCS / Reel	1,400 PCS / Box	7,000 PCS / Box
PCM121106S(F)	500 PCS / Reel	1,000 PCS / Box	5,000 PCS / Box
PCM151306S(F)	350 PCS / Reel	700 PCS / Box	3,500 PCS / Box