Data Sheet

Customer:	
Product:	**SMD Power Inductor – PCD-G Series**
Sizes.:	**0403/0504/0705**
Issued Date:	**1-Mar-22**
Edition:	**REV.A2**

Pb RoHS Compliant

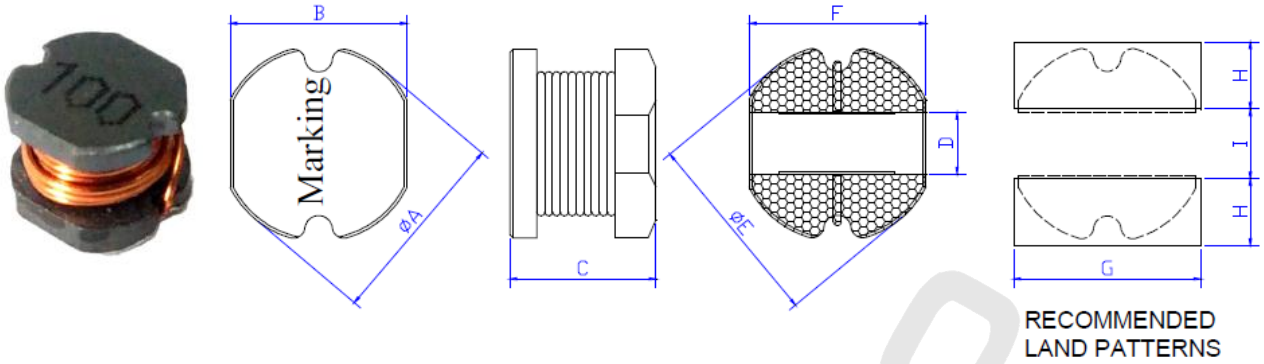
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SMD Power Inductor



Dimensions

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)
PCD0403-G	4.5±0.3	4.0±0.3	3.2±0.3	1.6 typ	4.5 typ	4.0 typ	4.5 typ	1.75 typ	1.5 typ
PCD0504-G	5.8±0.3	5.2±0.3	4.5±0.3	2.0 typ	5.8 typ	5.2 typ	5.5 typ	2.15 typ	1.7 typ
PCD0705-G	7.8±0.3	7.0±0.3	5.0±0.3	2.5 typ	7.8 typ	7.0 typ	7.5 typ	3.00 typ	2.0 typ

Features

- High power, High saturation inductors
- Silver Plated Type, Low cost design
- Ideal inductors for DC-DC converters
- Available on tape and reel for auto surface mounting

Applications

- Power Supply For VTRs.
- LCD Televisions
- Personal Computers
- Handheld Communication
- DC/DC Converters, etc.

Inductance and rated current ranges

- PCD0403-G 1.0～220μH 3.50～0.27A
- PCD0504-G 0.47～1200μH 4.80～0.13A
- PCD0705-G 1.0～2200μH 5.80～0.15A
- Test equipment:
  L: HP4263B\IM3532-50 or equivalent
  RDC: HP4263B\RM3545 or equivalent
  IDC: Microtest 6379 & 6220 or equivalent
- Electrical specifications at 20°C

Characteristics

- Rated DC Current: The DC current when the inductance becomes 10% lower than its initial value or DC current when temperature of coil is increased to 40℃, whichever is smaller (Ta=20℃).
- Operating temperature range: -40～85°C

Product Identification

PCD	0705	K	T	101	-G
Product Type	Dimensions (AxBxC)	Inductor Tolerance	Packaging Style	Inductance	Special
	0403: 4.5×4.0×3.2 0504: 5.8×5.2×4.5 0705: 7.8×7.0×5.0	K: ±10% M: ±20% N: ±30%	T: Tape and Reel	1R0: 1.0μH 100: 10μH 101: 100μH 102: 1000μH	

■Electrical Characteristics

PCD0403-G Type(□: Tolerance):

Part No.	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A)
PCD0403□T1R0-G	1.0	M	100KHz, 0.5V	0.045	.3.50
PCD0403□T1R5-G	1.5	M	100KHz, 0.5V	0.055	2.85
PCD0403□T2R2-G	2.2	M	100KHz, 0.5V	0.070	2.40
PCD0403□T2R7-G	2.7	M	100KHz, 0.5V	0.075	2.30
PCD0403□T3R3-G	3.3	M	100KHz, 0.5V	0.085	2.25
PCD0403□T3R9-G	3.9	M	100KHz, 0.5V	0.090	1.70
PCD0403□T4R7-G	4.7	M	100KHz, 0.5V	0.105	1.65
PCD0403□T5R6-G	5.6	M	100KHz, 0.5V	0.120	1.60
PCD0403□T6R8-G	6.8	M	100KHz, 0.5V	0.130	1.40
PCD0403□T8R2-G	8.2	M	100KHz, 0.5V	0.145	1.30
PCD0403□T100-G	10	M	100KHz, 0.5V	0.180	1.10
PCD0403□T120-G	12	M	100KHz, 0.5V	0.210	1.00
PCD0403□T150-G	15	M	100KHz, 0.5V	0.235	0.85
PCD0403□T180-G	18	M	100KHz, 0.5V	0.330	0.80
PCD0403□T220-G	22	M	100KHz, 0.5V	0.360	0.70
PCD0403□T270-G	27	M	100KHz, 0.5V	0.520	0.65
PCD0403□T330-G	33	M	100KHz, 0.5V	0.540	0.60
PCD0403□T390-G	39	M	100KHz, 0.5V	0.580	0.55
PCD0403□T470-G	47	M	100KHz, 0.5V	0.840	0.48
PCD0403□T560-G	56	M	100KHz, 0.5V	0.930	0.46
PCD0403□T680-G	68	M	100KHz, 0.5V	1.110	0.44
PCD0403□T820-G	82	M	100KHz, 0.5V	1.250	0.42
PCD0403□T101-G	100	K	1KHz, 0.5V	1.400	0.40
PCD0403□T121-G	120	K	1KHz, 0.5V	1.500	0.38
PCD0403□T151-G	150	K	1KHz, 0.5V	2.000	0.35
PCD0403□T181-G	180	K	1KHz, 0.5V	2.120	0.30
PCD0403□T221-G	220	K	1KHz, 0.5V	2.460	0.27

■Electrical Characteristics

PCD0504-G Type(□: Tolerance):

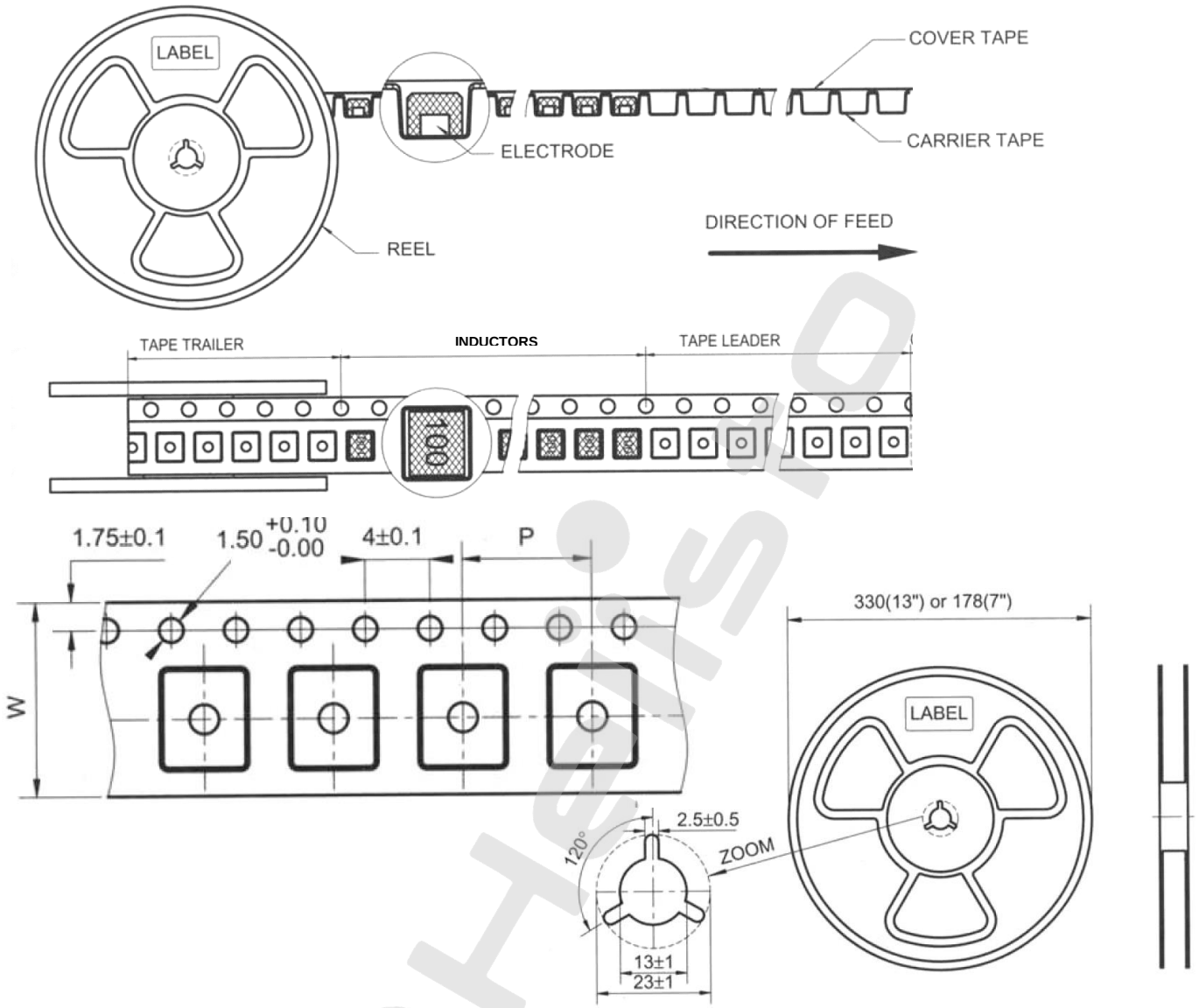
Part No.	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A)
PCD0504□TR47-G	0.47	N	100KHz, 0.5V	0.012	4.80
PCD0504□T1R0-G	1.0	M	100KHz, 0.5V	0.025	3.50
PCD0504□T1R5-G	1.5	M	100KHz, 0.5V	0.025	3.30
PCD0504□T2R2-G	2.2	M	100KHz, 0.5V	0.028	3.20
PCD0504□T2R7-G	2.7	M	100KHz, 0.5V	0.030	3.00
PCD0504□T3R3-G	3.3	M	100KHz, 0.5V	0.035	2.50
PCD0504□T3R9-G	3.9	M	100KHz, 0.5V	0.038	2.40
PCD0504□T4R7-G	4.7	M	100KHz, 0.5V	0.040	2.30
PCD0504□T5R6-G	5.6	M	100KHz, 0.5V	0.050	2.10
PCD0504□T6R8-G	6.8	M	100KHz, 0.5V	0.055	2.00
PCD0504□T7R2-G	7.2	M	100KHz, 0.5V	0.070	1.80
PCD0504□T8R2-G	8.2	M	100KHz, 0.5V	0.090	1.70
PCD0504□T100-G	10	M	100KHz, 0.5V	0.100	1.65
PCD0504□T120-G	12	M	100KHz, 0.5V	0.120	1.55
PCD0504□T150-G	15	M	100KHz, 0.5V	0.140	1.40
PCD0504□T180-G	18	M	100KHz, 0.5V	0.150	1.25
PCD0504□T220-G	22	M	100KHz, 0.5V	0.180	1.10
PCD0504□T270-G	27	M	100KHz, 0.5V	0.200	0.95
PCD0504□T330-G	33	M	100KHz, 0.5V	0.220	0.90
PCD0504□T390-G	39	M	100KHz, 0.5V	0.300	0.80
PCD0504□T470-G	47	M	100KHz, 0.5V	0.350	0.75
PCD0504□T560-G	56	M	100KHz, 0.5V	0.400	0.70
PCD0504□T680-G	68	M	100KHz, 0.5V	0.450	0.65
PCD0504□T820-G	82	M	100KHz, 0.5V	0.600	0.60
PCD0504□T101-G	100	K	1KHz, 0.5V	0.700	0.55
PCD0504□T121-G	120	K	1KHz, 0.5V	0.850	0.45
PCD0504□T151-G	150	K	1KHz, 0.5V	1.100	0.43
PCD0504□T181-G	180	K	1KHz, 0.5V	1.350	0.40
PCD0504□T221-G	220	K	1KHz, 0.5V	1.550	0.35
PCD0504□T331-G	330	K	1KHz, 0.5V	1.760	0.30
PCD0504□T391-G	390	K	1KHz, 0.5V	1.890	0.27
PCD0504□T471-G	470	K	1KHz, 0.5V	2.500	0.25
PCD0504□T561-G	560	K	1KHz, 0.5V	2.870	0.20
PCD0504□T681-G	680	K	1KHz, 0.5V	3.500	0.18
PCD0504□T821-G	820	K	1KHz, 0.5V	5.200	0.17
PCD0504□T102-G	1000	K	1KHz, 0.5V	5.500	0.15
PCD0504□T122-G	1200	K	1KHz, 0.5V	6.400	0.13

■Electrical Characteristics

PCD0705-G Type(□: Tolerance):

Part No.	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A)
PCD0705□T1R0-G	1.0	M	100KHz, 0.5V	0.015	5.80
PCD0705□T1R5-G	1.5	M	100KHz, 0.5V	0.017	5.50
PCD0705□T2R2-G	2.2	M	100KHz, 0.5V	0.018	5.20
PCD0705□T2R7-G	2.7	M	100KHz, 0.5V	0.023	5.00
PCD0705□T3R3-G	3.3	M	100KHz, 0.5V	0.025	4.80
PCD0705□T3R9-G	3.9	M	100KHz, 0.5V	0.027	4.20
PCD0705□T4R7-G	4.7	M	100KHz, 0.5V	0.045	4.00
PCD0705□T5R6-G	5.6	M	100KHz, 0.5V	0.040	3.80
PCD0705□T6R8-G	6.8	M	100KHz, 0.5V	0.036	3.00
PCD0705□T8R2-G	8.2	M	100KHz, 0.5V	0.055	2.70
PCD0705□T100-G	10	M	100KHz, 0.5V	0.070	2.55
PCD0705□T120-G	12	M	100KHz, 0.5V	0.080	2.40
PCD0705□T150-G	15	M	100KHz, 0.5V	0.090	2.00
PCD0705□T180-G	18	M	100KHz, 0.5V	0.100	1.95
PCD0705□T220-G	22	M	100KHz, 0.5V	0.110	1.70
PCD0705□T270-G	27	M	100KHz, 0.5V	0.120	1.55
PCD0705□T330-G	33	M	100KHz, 0.5V	0.130	1.40
PCD0705□T390-G	39	M	100KHz, 0.5V	0.150	1.35
PCD0705□T470-G	47	M	100KHz, 0.5V	0.190	1.25
PCD0705□T560-G	56	M	100KHz, 0.5V	0.230	1.10
PCD0705□T680-G	68	M	100KHz, 0.5V	0.250	1.00
PCD0705□T820-G	82	M	100KHz, 0.5V	0.350	0.95
PCD0705□T101-G	100	K	1KHz, 0.5V	0.400	0.78
PCD0705□T121-G	120	K	1KHz, 0.5V	0.450	0.73
PCD0705□T151-G	150	K	1KHz, 0.5V	0.600	0.70
PCD0705□T181-G	180	K	1KHz, 0.5V	0.700	0.60
PCD0705□T221-G	220	K	1KHz, 0.5V	0.950	0.55
PCD0705□T271-G	270	K	1KHz, 0.5V	1.100	0.50
PCD0705□T331-G	330	K	1KHz, 0.5V	1.250	0.45
PCD0705□T391-G	390	K	1KHz, 0.5V	1.750	0.40
PCD0705□T471-G	470	K	1KHz, 0.5V	1.950	0.35
PCD0705□T561-G	560	K	1KHz, 0.5V	1.980	0.32
PCD0705□T681-G	680	K	1KHz, 0.5V	2.180	0.31
PCD0705□T821-G	820	K	1KHz, 0.5V	2.880	0.24
PCD0705□T102-G	1000	K	1KHz, 0.5V	3.850	0.20
PCD0705□T152-G	1500	K	1KHz, 0.5V	5.200	0.18
PCD0705□T182-G	1800	K	1KHz, 0.5V	7.000	0.16
PCD0705□T202-G	2000	K	1KHz, 0.5V	8.000	0.16
PCD0705□T222-G	2200	K	1KHz, 0.5V	8.300	0.15

■Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13"
PCD0403-G	12	8	2,000
PCD0504-G	16	8	1,500
PCD0705-G	16	12	1,000

■ SMT Power Inductor Environmental Specifications

General

Items	Specifications
Shelf Storage conditions	Temperature range: -10~+40℃(product with taping), -40~+85℃(body);Humidity: 30~70% RH. Recommended product should be used within 6 months from the time of delivery.

Environmental test

Test Items	Specifications	Test Conditions / Test Methods
High Temperature Load (Life Span)	No visible mechanical damage. Inductance change: within±10%	Temperature 85±2℃ ,Time 1000+24/0 hours , Apply a rated current. Test within 48 hours after 2hours of placement at room temperature.
Constant Damp Heat		Temperature 60±2℃, 90~95% R.H. for 1000+24/0 hours Test within 48 hours after 2hours of placement at room temperature.
High Temperature		Temperature 85±2℃, Time 1000+24/0hours. Test within 48 hours after 2hours of placement at room temperature.
Low Temperature		Temperature -40±2℃, Time 1000+24/0hours. Test within 48 hours after 2hours of placement at room temperature.
Temperature Cycling		The test sample shall be placed at -40±3℃ and 85±2℃ for 30±3 min, different temperature conversion time is 2~3 minutes. The temperature cycle shall be repeated 32 cycles. Test within 48 hours after 2hours of placement at room temperature.
Temperature Characteristic	Inductance change Pc-b Pc-d： within ±20%	a: +20℃ 30~45 min → b: -40℃ 30~45 min → c: +20℃ 30~45 min → d: +85℃ 30~45 min → e: +20℃ 30~45 min Pc-b=((Lb-Lc)/Lc)x100% ; Pc-d=((Ld-Lc)/Lc)x100%

Mechanical test

Test Items	Specifications	Test Conditions / Test Methods
Solder ability	Terminal area must have 95% minimum solder coverage.	Dip pads in flux then dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at 245±5℃ for 5±1 seconds.
Resistance to Soldering Heat	No visible mechanical damage. Inductance change: within±10%	Dip pads in flux and dip in solder pot(96.5Sn/3.0Ag/0.5Cu) at 260±5℃ for 10±1 seconds
Insulation Resistance	≥100MΩ	100V DC between inductor coil and core for 60 seconds.
Adhesion of Terminal Electrode	Strong bond between the pad and the core, without come off PC board.	Inductors shall be subjected to 260±5℃ for 20±5sec soldering in the base whit 0.3mm solder. And then aplomb electrode way plus tax 10 N for 10±1 seconds.

The condition of reflow (recommendation)

