

Data Sheet

Customer:

Product: Shielded SMD Power Inductor – PCDR Series

Sizes.: 0628/0728/0730/0732/0745/1045/1255/1265/1275

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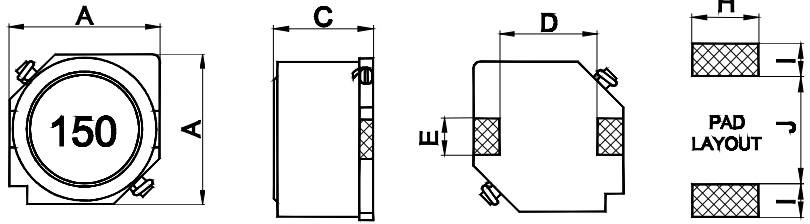
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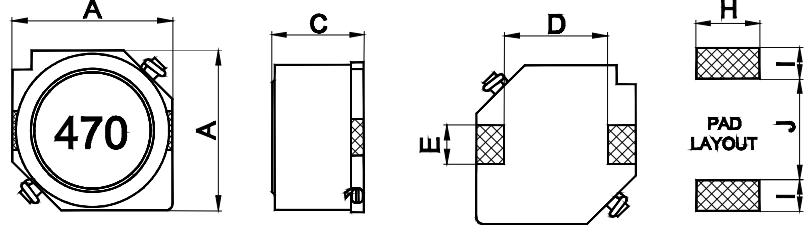
Shielded SMD Power Inductor



PCDR 0728 / 0730 / 0732 / 0745 / 1045



PCDR 0628 / 1255 / 1265 / 1275



Features

- Compact, low profile with low DCR and large current
- With magnetically shielded against radiation
- Flat bottom surface allows reliable mounting onto the board
- Available on tape and reel for auto surface mounting

Applications

- Portable Telephones
- Personal Computers
- DC/DC Converters, etc.
- Other Various Electronic Appliances

Characteristics

- Saturation Rated Current (I sat): The current when the inductance becomes 30% lower than its nominal value. (Ta=25°C)
- Temperature Rated Current (I rms): The actual current when the temperature of coil becomes to Δ 40°C. (Ta=25°C)
- Operating temperature range: -40~125°C

Product Identification

PCDR	0628	M	T	101
Product Type	Dimensions (AxC)	Inductor Tolerance	Packaging Style	Inductance
	0628: 6.0×2.8 0728: 7.0×2.8 0730: 7.0×3.0 0732: 7.0×3.2 0745: 7.0×4.5 1045: 10.1×4.5 1255: 12.5×5.5 1265: 12.5×6.5 1275: 12.5×7.5	M: ±20% N: ±30%	T: Tape and Reel	1R0: 1.0μH 470: 47μH 101: 100μH

Dimensions

Unit:mm

Type	A	C	D	E	H	I	J
PCDR0628	6.0±0.20	2.8±0.20	4.00	2.00	2.20	1.50	4.00
PCDR0728	7.0±0.20	2.8±0.20	4.00	2.00	2.20	1.50	4.00
PCDR0730	7.0±0.20	3.0±0.20	4.00	2.00	2.20	1.50	4.00
PCDR0732	7.0±0.20	3.2±0.20	4.00	2.00	2.20	1.50	4.00
PCDR0745	7.0±0.20	4.5±0.30	4.00	2.00	2.20	1.50	4.00
PCDR1045	10.1±0.30	4.5±0.30	6.00	3.00	3.20	2.50	5.60
PCDR1255	12.5±0.30	5.5±0.35	8.60	3.00	3.20	2.50	8.60
PCDR1265	12.5±0.30	6.5±0.35	8.60	3.00	3.20	2.50	8.60
PCDR1275	12.5±0.30	7.5±0.35	8.60	3.00	3.20	2.50	8.60

Inductance and rated current ranges

- PCDR0628 4.7~100μH 1.6~0.42A
- PCDR0728 3.3~56μH 1.6~0.5A
- PCDR0730 3.3~100μH 1.8~0.35A
- PCDR0732 1.0~1000μH 2.2~0.13A
- PCDR0745 1.0~1000μH 4.0~0.14A
- PCDR1045 1.0~1500μH 7.8~0.22A
- PCDR1255 6.0~1500μH 3.6~0.29A
- PCDR1265 2.0~150μH 10~1.00A
- PCDR1275 1.2~220μH 13~1.30A

- Test equipment:
L: HP4284A LCR meter
DCR: Milli-ohm meter
- Electrical specifications at 25°C

Shielded SMD Power Inductor

■Electrical Characteristics

PCDR0628 / 0728 / 0730 Type

Codes	L (μ H)	Tolerance	Test Condition	DCR (Ω) \pm 20%			IDC (A) max.					
							I sat			I rms		
				0628	0728	0730	0628	0728	0730	0628	0728	0730
3R3	3.3	M	1KHz, 0.5V	-	0.037	0.023	-	1.60	1.80	-	1.60	1.80
4R7	4.7	M	1KHz, 0.5V	0.036	0.045	0.036	1.60	1.50	1.60	2.50	1.50	1.60
6R8	6.8	M	1KHz, 0.5V	0.052	0.059	0.041	1.50	1.30	1.50	2.20	1.30	1.50
100	10	M	1KHz, 0.5V	0.068	0.083	0.053	1.30	1.10	1.30	1.80	1.10	1.30
150	15	M	1KHz, 0.5V	0.100	0.130	0.084	1.00	0.88	1.00	1.40	0.88	1.00
220	22	M	1KHz, 0.5V	0.120	0.180	0.110	0.77	0.75	0.86	1.30	0.75	0.86
330	33	M	1KHz, 0.5V	0.180	0.240	0.160	0.69	0.65	0.65	1.10	0.65	0.65
470	47	M	1KHz, 0.5V	0.270	0.340	0.240	0.59	0.54	0.57	0.92	0.54	0.57
560	56	M	1KHz, 0.5V	0.330	0.420	0.280	0.51	0.50	0.53	0.85	0.45	0.60
680	68	M	1KHz, 0.5V	0.390	-	0.310	0.50	-	0.49	0.78	-	0.49
101	100	M	1KHz, 0.5V	0.620	-	0.450	0.42	-	0.35	0.64	-	0.35

Shielded SMD Power Inductor

■Electrical Characteristics

PCDR0732 / 0745 / 1045 Type

Codes	L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$			IDC (A) max.		
				0732	0745	1045	0732	0745	1045
1R0	1.0	M	1KHz, 0.5V	0.019	0.019	0.012	2.20	4.00	7.80
1R2	1.2	M	1KHz, 0.5V	-	0.019	-	-	3.20	-
1R5	1.5	M	1KHz, 0.5V	-	-	0.014	-	-	5.80
2R2	2.2	M	1KHz, 0.5V	0.021	-	0.015	2.00	-	5.60
3R3	3.3	M	1KHz, 0.5V	0.023	0.020	0.016	1.90	2.50	5.10
3R9	3.9	M	1KHz, 0.5V	0.029	-	0.018	1.85	-	4.10
4R7	4.7	M	1KHz, 0.5V	0.036	0.030	0.020	1.70	2.00	3.70
5R6	5.6	M	1KHz, 0.5V	0.039	-	0.022	1.65	-	3.40
6R8	6.8	M	1KHz, 0.5V	0.041	0.039	0.025	1.60	1.70	3.20
8R2	8.2	M	1KHz, 0.5V	0.049	-	0.027	1.50	-	3.10
100	10	M	1KHz, 0.5V	0.053	0.036	0.036	1.40	1.30	3.00
120	12	M	1KHz, 0.5V	0.071	-	0.033	1.20	-	2.50
150	15	M	1KHz, 0.5V	0.075	0.052	0.047	1.10	1.10	2.40
180	18	M	1KHz, 0.5V	0.099	-	0.052	1.00	-	2.20
220	22	M	1KHz, 0.5V	0.110	0.061	0.059	0.96	0.90	2.10
270	27	M	1KHz, 0.5V	0.150	-	0.073	0.85	-	1.70
330	33	M	1KHz, 0.5V	0.160	0.096	0.082	0.75	0.82	1.60
390	39	M	1KHz, 0.5V	0.230	-	0.099	0.70	-	1.50
470	47	M	1KHz, 0.5V	0.240	0.125	0.100	0.67	0.75	1.40
560	56	M	1KHz, 0.5V	0.300	0.130	0.110	0.60	0.67	1.30
680	68	M	1KHz, 0.5V	0.310	0.175	0.140	0.59	0.60	1.20
820	82	M	1KHz, 0.5V	0.424	0.244	0.190	0.49	0.52	1.10
101	100	M	1KHz, 0.5V	0.450	0.250	0.200	0.45	0.50	1.00
121	120	M	1KHz, 0.5V	0.620	-	0.280	0.40	-	0.80
151	150	M	1KHz, 0.5V	0.650	0.340	0.350	0.37	0.40	0.79
181	180	M	1KHz, 0.5V	1.020	-	0.420	0.30	-	0.69
221	220	M	1KHz, 0.5V	1.050	0.520	0.470	0.29	0.33	0.65
271	270	M	1KHz, 0.5V	1.530	-	0.620	0.24	-	0.55
331	330	M	1KHz, 0.5V	1.670	1.100	0.680	0.22	0.25	0.54
391	390	M	1KHz, 0.5V	1.990	-	0.900	0.21	-	0.49
471	470	M	1KHz, 0.5V	2.050	1.050	1.030	0.20	0.22	0.47
561	560	M	1KHz, 0.5V	3.100	-	1.300	0.17	-	0.40
681	680	M	1KHz, 0.5V	3.150	1.480	1.600	0.16	0.20	0.38
821	820	M	1KHz, 0.5V	4.500	-	1.800	0.14	-	0.33
102	1000	M	1KHz, 0.5V	4.780	2.280	2.800	0.13	0.14	0.32
152	1500	M	1KHz, 0.5V	-	-	3.400	-	-	0.22

Shielded SMD Power Inductor

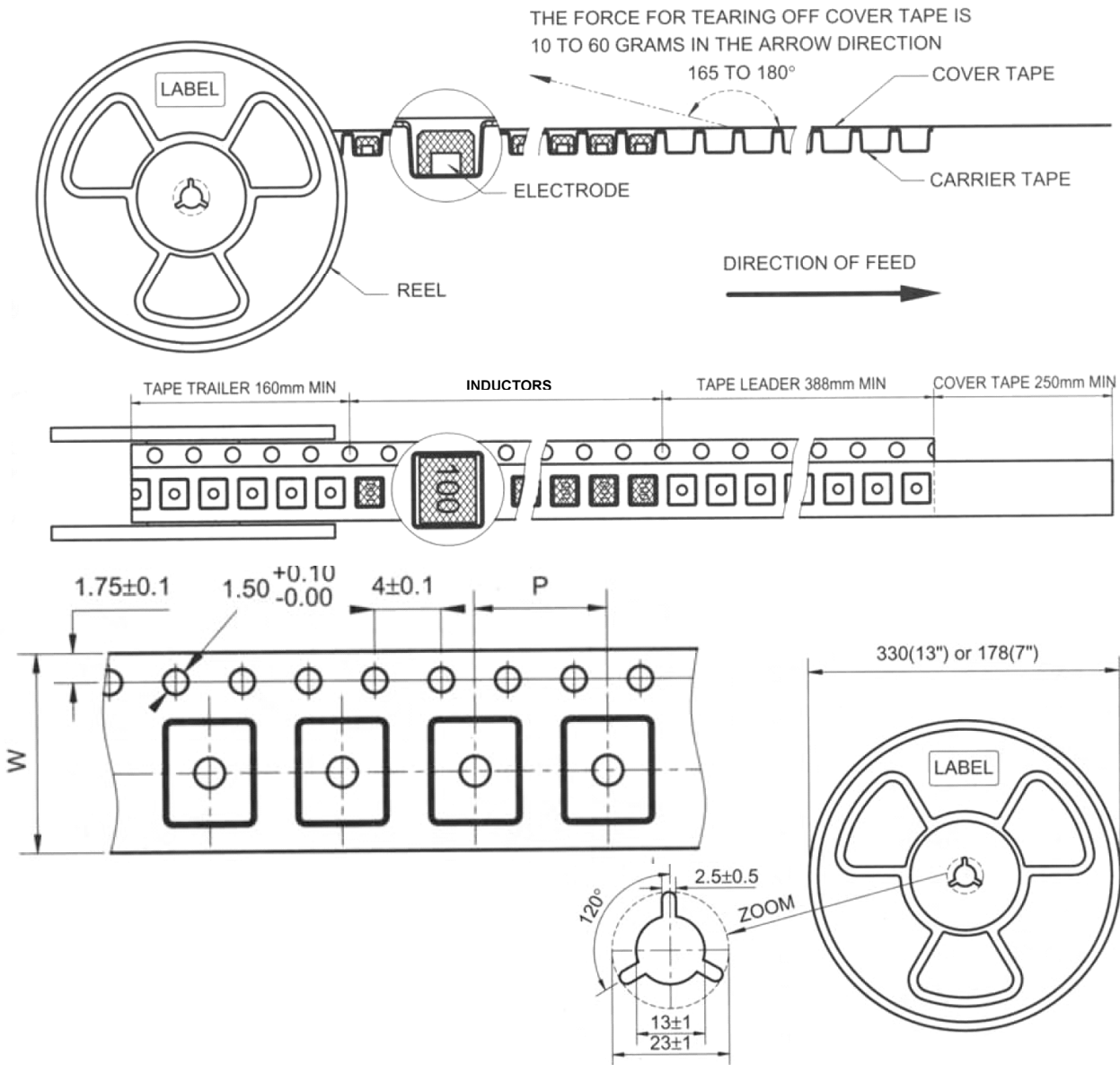
Electrical Characteristics

PCDR1255 / 1265 / 1275 Type

Codes	L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$			IDC (A) max.					
							I sat			I rms		
				1255	1265	1275	1255	1265	1275	1255	1265	1275
1R2	1.2	N	1KHz, 0.5V	-	-	0.0069	-	-	13.00	-	-	8.20
2R0	2.0	N	1KHz, 0.5V	-	0.0117	0.0080	-	10.0	11.00	-	6.20	-
2R7	2.7	N	1KHz, 0.5V	-	-	0.0094	-	-	10.00	-	-	7.00
3R3	3.3	N	1KHz, 0.5V	-	-	0.0100	-	-	9.50	-	-	6.80
3R9	3.9	N	1KHz, 0.5V	-	-	0.0104	-	-	9.00	-	-	6.70
4R2	4.2	N	1KHz, 0.5V	-	0.0150	-	-	7.30	-	-	5.50	-
5R6	5.6	N	1KHz, 0.5V	-	-	0.0116	-	-	7.80	-	-	6.30
6R0	6.0	N	1KHz, 0.5V	0.0164	-	-	3.60	-	-	4.90	-	-
6R8	6.8	N	1KHz, 0.5V	-	-	0.0131	-	-	7.20	-	-	5.90
7R0	7.0	M	1KHz, 0.5V	-	0.0177	-	-	5.70	-	-	5.00	-
100	10	M	1KHz, 0.5V	0.0215	0.0202	0.0156	3.40	5.00	5.50	4.30	4.80	5.40
150	15	M	1KHz, 0.5V	0.0259	0.0237	0.0184	2.80	4.20	4.70	3.90	4.40	5.00
220	22	M	1KHz, 0.5V	0.0338	0.0316	0.0263	2.30	3.50	4.00	3.40	3.80	4.00
330	33	M	1KHz, 0.5V	0.0415	0.0406	0.0395	1.90	2.80	3.20	3.10	3.40	3.40
390	39	M	1KHz, 0.5V	-	-	0.0440	-	-	3.00	-	-	3.20
470	47	M	1KHz, 0.5V	0.0618	0.0578	0.0528	1.60	2.40	2.70	2.50	2.80	3.00
560	56	M	1KHz, 0.5V	0.0750	0.0750	0.0670	1.45	2.20	2.30	2.30	2.50	2.60
680	68	M	1KHz, 0.5V	0.0832	0.0787	0.0778	1.30	2.00	2.00	2.20	2.40	2.40
101	100	M	1KHz, 0.5V	0.1170	0.1230	0.1250	1.10	1.60	1.90	1.80	1.90	1.90
121	120	M	1KHz, 0.5V	-	0.1850	-	-	1.30	-	-	1.50	-
151	150	M	1KHz, 0.5V	0.1900	0.2730	0.1750	0.88	1.00	1.60	1.40	1.20	1.60
221	220	M	1KHz, 0.5V	0.2700	-	0.2580	0.72	-	1.30	1.20	-	1.30
331	330	M	1KHz, 0.5V	0.4100	-	-	0.59	-	-	1.00	-	-
471	470	M	1KHz, 0.5V	0.5200	-	-	0.49	-	-	0.88	-	-
681	680	M	1KHz, 0.5V	0.7600	-	-	0.43	-	-	0.73	-	-
102	1000	M	1KHz, 0.5V	1.1200	-	-	0.34	-	-	0.60	-	-
152	1500	M	1KHz, 0.5V	1.7300	-	-	0.29	-	-	0.48	-	-

Shielded SMD Power Inductor

■Tape and Reel specifications



Unit:mm

Type	Tape size		Parts Per Reel
	W	P	13"
PCDR0628	16	12	1000
PCDR0728	16	12	1000
PCDR0730	16	12	1000
PCDR0732	16	12	1000
PCDR0745	16	12	1000
PCDR1045	24	16	750
PCDR1255	24	16	500
PCDR1265	24	16	500
PCDR1275	24	16	350

Shielded SMD Power Inductor

■ SMD Power Inductor Environmental Specifications

General

Items	Specifications
Shelf Storage conditions	Temperature range: 25±3°C; Humidity: <80% relative humidity. Recommended product should be used within six months from the time of delivery.

Environmental test

Test Items	Specifications	Test Conditions / Test Methods
High temperature Storage test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Temperature 85±2°C, Time: 48±2 hours, Tested after 1 hour at room temperature.
Low temperature Storage test		Temperature -40±2°C, Time: 48±2 hours, Tested after 1 hour at room temperature.
Humidity test		Temperature 40±2°C, 90~95% relative humidity Time: 96±2 hours Tested after 1 hour at room temperature.
Thermal shock test		First -25°C 30minutes then 25°C 10 minutes last 85°C 30 minutes, as 1 cycle. Go through 5 cycles. Tested after 1 hour at room temperature.

Mechanical test

Test Items	Specifications	Test Conditions / Test Methods
Solderability test	Terminal area must have 90% minimum solder coverage.	Product with Lead-free terminal: Dip pads in flux then dip in solder pot at 245±5°C for 3 seconds.
Resistance to Soldering Heat	No case deformation or change in appearance.	Flux should cover the whole of the sample before heating, then be preheated for about 2 minutes over temperature of 130~150°C. Immersing to 260±5°C for 10 seconds.
Vibration test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance		Drop down with 981m/s ² (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.

The condition of reflow (recommendation):

