

SP14 Series Shielded Power Inductors

Features

- High energy storage and very low resistance
- High efficiency
- Frequency range up to 5.0 MHz
- Alloy powder core material

Applications

- Industrial electronics, etc.
- High current power supplies
- Distributed power systems DC-DC converters
- Multi-phase regulators, VRMs, EVRDs

Environmental Data

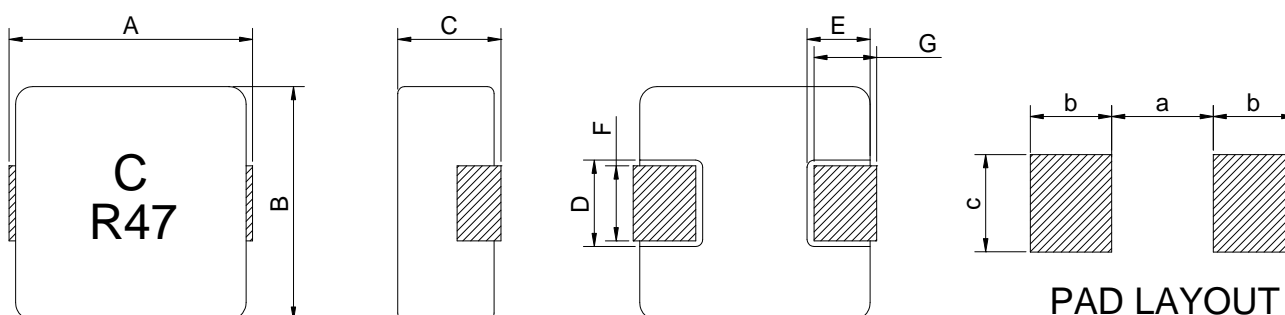
- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (including coil's self-temperature rise)
- Solder reflow temperature: +260°C Max for 10 seconds Max
- Moisture sensitivity level: 1
- RoHS&HF compliance



Packaging

- Supplied in tape and reel packaging, 3000pcs(SP14-057018), 2500pcs(SP14-057030), 2000pcs(SP14-070024), 1500pcs(SP14-070030), 1200pcs(SP14-070040), 600pcs(SP14-138040), 500pcs(SP14-138050), 400pcs(SP14-138060), per 13-inch reel

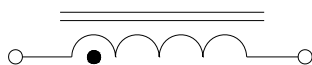
Mechanical Dimension (Unit: mm/inches)



Type	A	B	C	D	E	F	G	a	b	c
			Max.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.
SP14-057018	5.4±0.3	5.2±0.3	1.8	2.5	1.5	2.2	1.2	2.2	1.9	2.5
	0.213±0.012	0.205±0.012	0.071	0.099	0.059	0.087	0.047	0.087	0.075	0.099
SP14-057030	5.4±0.3	5.2±0.3	3.0	2.5	1.5	2.2	1.2	2.2	1.9	2.5
	0.213±0.012	0.205±0.012	0.119	0.099	0.059	0.087	0.047	0.087	0.075	0.099
SP14-070024	7.0±0.3	6.6±0.3	2.4	3.6	2.0	3.0	1.6	3.7	2.35	3.5
	0.276±0.012	0.26±0.012	0.095	0.142	0.079	0.119	0.063	0.146	0.093	0.138
SP14-070030	7.0±0.3	6.6±0.3	3.0	3.6	2.0	3.0	1.6	3.7	2.35	3.5
	0.276±0.012	0.26±0.012	0.119	0.142	0.079	0.119	0.063	0.146	0.093	0.138
SP14-070040	7.0±0.3	6.6±0.3	4.0	3.6	2.0	3.0	1.6	3.7	2.35	3.5
	0.276±0.012	0.26±0.012	0.158	0.142	0.079	0.119	0.063	0.146	0.093	0.138
SP14-138040	13.3±0.5	12.6±0.5	4.0	6.0	2.5	5.0	2.5	8.0	3.0	6.0
	0.524±0.02	0.496±0.02	0.158	0.237	0.099	0.197	0.099	0.315	0.119	0.237
SP14-138050	13.3±0.5	12.6±0.5	5.0	6.0	2.5	5.0	2.5	8.0	3.0	6.0
	0.524±0.02	0.496±0.02	0.197	0.237	0.099	0.197	0.099	0.315	0.119	0.237
SP14-138060	13.3±0.5	12.6±0.5	6.0	6.0	2.5	5.0	2.5	8.0	3.0	6.0
	0.524±0.02	0.496±0.02	0.237	0.237	0.099	0.197	0.099	0.315	0.119	0.237

SP14 Series Shielded Power Inductors

Electrical Schematic



Part Number Description

SP14 - 057018 R47 M
 ① ② ③ ④

- ① Type
- ② Dimensions
- ③ Inductance value
- ④ Tolerance code

Electrical Characteristic

Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-057018R47M	0.47	7.7	9.0	15.5	10.5	CR47
SP14-057018R56M	0.56	8.0	10.0	15.0	9.5	CR56
SP14-0570181R0M	1.0	15.0	17.0	9.5	8.0	C1R0
SP14-0570181R5M	1.5	21.0	26.0	9.0	7.5	C1R5
SP14-0570182R2M	2.2	30.0	35.0	6.5	5.0	C2R2
SP14-0570183R3M	3.3	52.0	58.0	5.0	4.5	C3R3
SP14-0570184R7M	4.7	78.0	85.0	4.0	3.5	C4R7
SP14-0570186R8M	6.8	107.0	120.0	3.4	2.8	C6R8
SP14-057018100M	10.0	140.0	155.0	3.0	2.5	C100

Electrical Characteristic

Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-057030R10M	0.10	2.4	3.0	33.0	25.0	CR10
SP14-057030R20M	0.20	3.5	3.9	14.5	14.0	CR20
SP14-057030R47M	0.47	7.4	8.5	12.0	11.0	CR47
SP14-057030R68M	0.68	11.0	12.0	11.5	9.0	CR68
SP14-0570301R0M	1.0	13.0	14.0	11.0	8.5	C1R0
SP14-0570301R2M	1.2	15.0	16.0	11.0	8.5	C1R2
SP14-0570301R5M	1.5	20.0	25.0	8.5	8.2	C1R5
SP14-0570302R2M	2.2	25.0	29.0	7.5	7.0	C2R2
SP14-0570303R3M	3.3	32.0	38.0	6.0	5.5	C3R3
SP14-0570304R7M	4.7	50.0	60.0	5.0	4.5	C4R7
SP14-0570306R8M	6.8	75.0	90.0	4.0	3.5	C6R8
SP14-057030100M	10.0	110.0	125.0	3.5	3.2	C100

- Tolerance of Inductance:K= ±10%,M= ±20%,N= ±30%.
- Test frequency and voltage:100KHz,1Vrms.
- All test data referenced to 25°C ambient.
- Saturation current(Isat) will cause L0 to drop approximately 30%.
- Heat rated current(Irms) will cause the coil temperature rise approximate Δt of 40°C.

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Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-070024R22M	0.22	2.5	3.0	34.0	21.0	CR22
SP14-070024R33M	0.33	3.5	4.1	24.5	18.0	CR33
SP14-070024R47M	0.47	4.5	5.1	22.0	15.0	CR47
SP14-070024R56M	0.56	5.5	6.5	17.0	13.0	CR56
SP14-070024R68M	0.68	6.2	7.0	16.0	12.0	CR68
SP14-0700241R0M	1.0	11.0	13.5	16.0	9.0	C1R0
SP14-0700241R5M	1.5	17.0	20.0	15.0	9.0	C1R5
SP14-0700242R2M	2.2	23.0	28.0	14.0	7.0	C2R2
SP14-0700243R3M	3.3	31.0	39.0	10.0	5.5	C3R3
SP14-0700244R7M	4.7	41.0	50.0	7.5	5.0	C4R7
SP14-0700246R8M	6.8	57.0	70.0	6.0	4.0	C6R8
SP14-070024100M	10.0	92.0	101.0	4.0	3.1	C100
SP14-070024150M	15.0	145.0	160.0	3.3	2.5	C150
SP14-070024220M	22.0	220.0	240.0	2.5	2.0	C220

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Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-070030R22M	0.22	2.5	3.0	34.0	24.0	CR22
SP14-070030R24M	0.24	2.6	3.1	26.0	23.0	CR24
SP14-070030R33M	0.33	3.0	3.5	25.0	21.0	CR33
SP14-070030R47M	0.47	3.5	4.1	20.0	18.0	CR47
SP14-070030R56M	0.56	3.9	4.5	18.0	16.5	CR56
SP14-070030R68M	0.68	4.8	5.3	17.0	16.0	CR68
SP14-070030R82M	0.82	5.4	6.0	16.0	14.0	C8R2
SP14-0700301R0M	1.0	6.7	7.4	15.0	12.0	C1R0
SP14-0700301R5M	1.5	10.6	12.1	14.0	12.0	C1R5
SP14-0700302R2M	2.2	13.5	15.0	10.0	9.5	C2R2
SP14-0700303R3M	3.3	18.0	22.0	9.5	8.5	C3R3
SP14-0700304R7M	4.7	28.0	33.0	6.5	6.0	C4R7
SP14-0700306R8M	6.8	42.5	48.0	6.0	5.0	C6R8
SP14-0700308R2M	8.2	54.0	60.0	6.0	5.0	C8R2
SP14-070030100M	10.0	62.0	67.0	5.5	4.5	C100
SP14-070030150M	15.0	104.0	115.0	4.5	3.0	C150
SP14-070030220M	22.0	180.0	200.0	3.0	2.3	C220
SP14-070030330M	33.0	280.0	310.0	2.5	2.0	C330

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Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-070040R22M	0.22	1.5	1.8	35.0	33.0	CR22
SP14-070040R47M	0.47	3.5	4.0	21.0	20.0	CR47
SP14-070040R68M	0.68	4.2	4.8	19.0	18.0	CR68
SP14-0700401R0M	1.00	5.0	6.0	17.0	14.0	C1R0
SP14-0700402R2M	2.20	11.0	13.5	13.0	11.0	C2R2
SP14-0700403R3M	3.30	16.0	20.0	12.5	10.0	C3R3
SP14-0700404R7M	4.70	25.0	30.0	9.0	7.0	C4R7
SP14-070040100M	10.0	60.0	65.0	5.0	5.0	C100
SP14-070040150M	15.0	95.0	105.0	4.5	4.0	C150
SP14-070040220M	22.0	115.0	125.0	4.0	3.5	C220

Electrical Characteristic

Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-138040R68M	0.68	3.0	3.5	47.0	28.0	CR68
SP14-138040R82M	0.82	4.0	4.5	40.0	28.0	CR82
SP14-1380401R0M	1.00	6.5	7.5	35.0	24.0	C1R0
SP14-1380401R5M	1.50	8.0	9.5	30.5	20.0	C1R5
SP14-1380402R2M	2.20	10.0	11.5	26.0	18.0	C2R2
SP14-1380403R3M	3.30	12.0	13.0	21.0	15.0	C3R3
SP14-1380404R7M	4.70	13.5	14.5	18.0	13.0	C4R7

Electrical Characteristic

Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-138050R68M	0.68	1.35	1.55	46.5	33.0	CR68
SP14-138050R82M	0.82	1.45	1.67	39.0	30.0	CR82
SP14-1380501R0M	1.0	1.90	2.20	35.0	26.0	C1R0
SP14-1380501R5M	1.5	2.80	3.20	33.0	23.0	C1R5
SP14-1380502R2M	2.2	4.00	5.00	24.0	15.0	C2R2
SP14-1380503R3M	3.3	5.90	7.00	22.0	14.0	C3R3
SP14-1380504R7M	4.7	8.20	9.00	21.0	13.0	C4R7
SP14-1380506R8M	6.8	14.5	18.0	16.0	12.0	C6R8
SP14-138050100M	10.0	19.0	22.0	12.0	9.0	C100
SP14-138050220M	22.0	51.0	58.0	6.5	4.5	C220
SP14-138050330M	33.0	75.0	84.0	6.0	3.5	C330
SP14-138050470M	47.0	116.0	130.0	5.0	3.0	C470

- Tolerance of Inductance:K= ±10%,M= ±20%,N= ±30%.
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Part Number	Inductance L0(uH)	DCR (mΩ)Typ.	DCR (mΩ)Max.	Isat (A)Typ.	Irms (A)Typ.	Marking
SP14-1380604R7M	4.7	8.5	9.0	24.0	20.0	C4R7
SP14-1380605R6M	5.6	9.5	11.0	22.5	18.0	C5R6
SP14-1380608R2M	8.2	13.6	16.0	13.5	11.0	C8R2
SP14-138060100M	10	18.0	20.7	12.5	10.0	C100
SP14-138060120M	12	20.0	23.0	10.0	7.0	C120
SP14-138060150M	15	25.0	29.0	9.0	6.0	C150
SP14-138060180M	18	30.0	35.0	8.0	5.5	C180
SP14-138060220M	22	34.0	39.5	7.5	5.0	C220
SP14-138060270M	27	49.0	56.0	6.5	4.5	C270
SP14-138060330M	33	65.0	75.0	6.0	4.0	C330
SP14-138060470M	47	80.0	90.0	5.5	3.5	C470
SP14-138060680M	68	120.0	140.0	4.5	3.0	C680
SP14-138060101M	100	180.0	200.0	3.5	2.5	C101
SP14-138060121M	120	210.0	235.0	3.2	2.3	C121
SP14-138060151M	150	300.0	350.0	2.7	2.0	C151

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