

SP16 Series Shielded Power Inductors

Features

- High energy storage and very low resistance
- High efficiency
- Low audible core noise
- Alloy powder core material

Applications

- LCD Panel, OLED Panel, LCD Driver
- Smart Phones, HDDs, DVCs
- DC-DC converters, Server application
- Battery powered devices



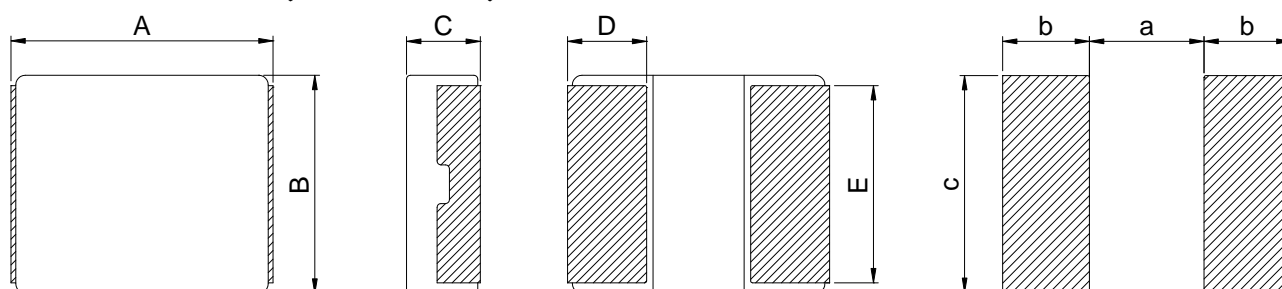
Environmental Data

- Storage temperature range: -55°C to +125°C
- Operating temperature range: -55°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(SP16-2010), 3000pcs(SP16-2012), 3000pcs(SP16-2510), 3000pcs(SP16-2512), per 7-inch reel

Mechanical Dimension (Unit: mm/inches)



PAD LAYOUT

Type	A	B	C Max.	D Nom.	E Nom.	a Nom.	b Nom.	c Nom.
SP16-2010A	2.0±0.2	1.6±0.2	1.0	0.5	1.44	0.9	0.7	1.6
	0.079±0.008	0.079±0.008	0.04	0.02	0.057	0.036	0.028	0.063
SP16-2010B	2.0±0.2	1.6±0.2	1.0	0.5	1.44	0.9	0.7	1.6
	0.079±0.008	0.079±0.008	0.04	0.02	0.057	0.036	0.028	0.063
SP16-2012A	2.0±0.2	1.6±0.2	1.2	0.5	1.44	0.9	0.7	1.6
	0.079±0.008	0.079±0.008	0.048	0.02	0.057	0.036	0.028	0.063
SP16-2012B	2.0±0.2	1.6±0.2	1.2	0.5	1.44	0.9	0.7	1.6
	0.079±0.008	0.079±0.008	0.048	0.02	0.057	0.036	0.028	0.063
SP16-2510A	2.5±0.2	2.0±0.2	1.0	0.6	1.84	1.2	0.8	2.0
	0.099±0.008	0.079±0.008	0.04	0.024	0.073	0.048	0.032	0.079
SP16-2510B	2.5±0.2	2.0±0.2	1.0	0.6	1.84	1.2	0.8	2.0
	0.099±0.008	0.079±0.008	0.04	0.024	0.073	0.048	0.032	0.079
SP16-2512A	2.5±0.2	2.0±0.2	1.2	0.6	1.84	1.2	0.8	2.0
	0.099±0.008	0.079±0.008	0.048	0.024	0.073	0.048	0.032	0.079
SP16-2512B	2.5±0.2	2.0±0.2	1.2	0.6	1.84	1.2	0.8	2.0
	0.099±0.008	0.079±0.008	0.048	0.024	0.073	0.048	0.032	0.079

SP16 Series Shielded Power Inductors

Electrical Schematic



Part Number Description

SP16 - 2010 A R24 M
 ① ② ③ ④ ⑤

① Type
 ② Dimensions
 ③ Characteristic code
 ④ Inductance value
 ⑤ Tolerance code

Electrical Characteristic

Part Number	Inductance		DCR		Isat		Irms	
	L0(uH)	(mΩ)Typ.	(mΩ)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.	
SP16-2010AR24M	0.24	20.0	24.0	4.8	4.3	4.0	3.5	
SP16-2010AR33M	0.33	29.0	36.0	4.2	3.7	3.4	3.0	
SP16-2010AR47M	0.47	36.0	46.0	3.6	3.2	2.7	2.4	
SP16-2010AR68M	0.68	55.0	66.0	3.2	2.9	2.4	2.2	
SP16-2010A1R0M	1.00	63.0	78.0	2.7	2.2	2.1	1.9	
SP16-2010A1R5M	1.50	105.0	137.0	2.2	2.0	1.8	1.6	
SP16-2010A2R2M	2.20	174.0	197.0	1.9	1.6	1.6	1.4	

Electrical Characteristic

Part Number	Inductance		DCR		Isat		Irms	
	L0(uH)	(mΩ)Typ.	(mΩ)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.	
SP16-2010BR24M	0.24	17.0	20.5	6.0	5.4	4.7	4.2	
SP16-2010BR33M	0.33	25.0	30.0	5.2	4.7	4.1	3.6	
SP16-2010BR47M	0.47	32.0	38.0	5.0	4.4	3.8	3.3	
SP16-2010BR68M	0.68	42.0	48.0	4.0	3.6	3.2	2.7	
SP16-2010B1R0M	1.00	60.0	68.0	2.9	2.4	2.6	2.3	
SP16-2010B1R5M	1.50	100.0	116.0	2.4	1.8	2.1	1.8	
SP16-2010B2R2M	2.20	147.0	163.0	1.9	1.6	1.8	1.6	

Electrical Characteristic

Part Number	Inductance		DCR		Isat		Irms	
	L0(uH)	(mΩ)Typ.	(mΩ)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.	
SP16-2012AR24M	0.24	17.0	21.0	5.3	4.8	4.5	4.0	
SP16-2012AR33M	0.33	27.0	33.0	4.6	4.0	3.9	3.5	
SP16-2012AR47M	0.47	30.0	36.0	3.9	3.5	3.5	3.1	
SP16-2012AR68M	0.68	46.0	55.0	3.5	3.0	2.8	2.6	
SP16-2012A1R0M	1.00	60.0	72.0	2.9	2.5	2.4	2.2	
SP16-2012A1R5M	1.50	86.0	112.0	2.4	2.2	1.9	1.7	
SP16-2012A2R2M	2.20	146.0	186.0	2.0	1.65	1.5	1.35	

- Tolerance of Inductance:K= ±10%,M= ±20%,N= ±30%.
- Test frequency and voltage:1MHz,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.

SP16 Series Shielded Power Inductors

Electrical Characteristic

Part Number	Inductance	DCR		Isat		Irms	
	L0(μ H)	($m\Omega$)Typ.	($m\Omega$)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.
SP16-2012BR24M	0.24	15.0	19.0	6.5	5.6	5.2	4.4
SP16-2012BR33M	0.33	22.0	26.0	5.4	4.6	4.6	3.9
SP16-2012BR47M	0.47	25.0	30.0	4.5	3.8	4.0	3.4
SP16-2012BR68M	0.68	36.0	44.0	3.8	3.2	3.5	3.0
SP16-2012B1R0M	1.00	50.0	60.0	2.9	2.5	3.0	2.5
SP16-2012B1R5M	1.50	86.0	104.0	2.3	2.0	2.2	2.0
SP16-2012B2R2M	2.20	120.0	144.0	2.0	1.65	1.8	1.6

Electrical Characteristic

Part Number	Inductance	DCR		Isat		Irms	
	L0(μ H)	($m\Omega$)Typ.	($m\Omega$)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.
SP16-2510AR22M	0.22	15.0	18.0	6.6	6.0	5.8	5.22
SP16-2510AR33M	0.33	18.0	26.0	5.3	4.77	4.4	4.0
SP16-2510AR47M	0.47	25.0	41.0	4.5	4.05	3.5	3.1
SP16-2510AR68M	0.68	40.0	48.0	4.3	3.6	3.3	3.0
SP16-2510A1R0M	1.00	49.0	65.0	3.55	3.2	2.8	2.52
SP16-2510A1R5M	1.50	76.0	95.0	2.9	2.4	2.2	1.98
SP16-2510A2R2M	2.20	110.0	121.0	2.4	2.1	1.8	1.62

Electrical Characteristic

Part Number	Inductance	DCR		Isat		Irms	
	L0(μ H)	($m\Omega$)Typ.	($m\Omega$)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.
SP16-2510BR22M	0.22	15.0	17.0	8.5	7.0	6.5	5.5
SP16-2510BR33M	0.33	16.5	20.0	6.5	5.8	5.5	4.8
SP16-2510BR47M	0.47	23.0	29.0	5.5	5.0	4.1	3.6
SP16-2510BR68M	0.68	36.0	44.0	4.6	4.1	3.6	3.1
SP16-2510B1R0M	1.00	44.0	53.0	4.0	3.6	3.4	3.0
SP16-2510B1R5M	1.50	61.0	70.0	3.0	2.5	2.8	2.4
SP16-2510B2R2M	2.20	90.0	105.0	2.6	2.2	2.0	1.8

- Tolerance of Inductance:K= $\pm 10\%$,M= $\pm 20\%$,N= $\pm 30\%$.
- Test frequency and voltage:1MHz,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.

SP16 Series Shielded Power Inductors

Electrical Characteristic

Part Number	Inductance	DCR		Isat		Irms	
	L0(μ H)	($m\Omega$)Typ.	($m\Omega$)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.
SP16-2512AR22M	0.22	12.0	15.0	8.5	7.0	7.3	6.2
SP16-2512AR33M	0.33	15.0	17.0	5.8	5.22	5.5	4.95
SP16-2512AR47M	0.47	23.0	28.0	5.0	4.5	4.5	4.0
SP16-2512AR68M	0.68	34.0	40.0	4.3	3.7	3.8	3.3
SP16-2512A1R0M	1.00	42.0	55.0	3.8	3.3	3.1	2.7
SP16-2512A1R5M	1.50	61.0	70.0	2.9	2.61	2.7	2.43
SP16-2512A2R2M	2.20	92.0	105.0	2.5	2.2	2.3	2.0

Electrical Characteristic

Part Number	Inductance	DCR		Isat		Irms	
	L0(μ H)	($m\Omega$)Typ.	($m\Omega$)Max.	(A)Typ.	(A)Max.	(A)Typ.	(A)Max.
SP16-2512BR22M	0.22	11.0	13.0	8.5	7.0	10.0	8.0
SP16-2512BR33M	0.33	15.0	16.5	7.0	5.8	5.8	5.2
SP16-2512BR47M	0.47	20.0	25.0	6.0	5.0	4.8	4.2
SP16-2512BR68M	0.68	30.0	34.0	4.6	4.0	3.9	3.5
SP16-2512B1R0M	1.00	38.0	45.0	4.3	3.9	3.7	3.2
SP16-2512B1R5M	1.50	53.0	60.0	3.0	2.6	2.9	2.6
SP16-2512B2R2M	2.20	78.0	90.0	2.7	2.3	2.4	2.0

- Tolerance of Inductance:K= $\pm 10\%$,M= $\pm 20\%$,N= $\pm 30\%$.
- Test frequency and voltage:1MHz,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.