



Shielded SMT Power Inductor SPRI3D18P Series

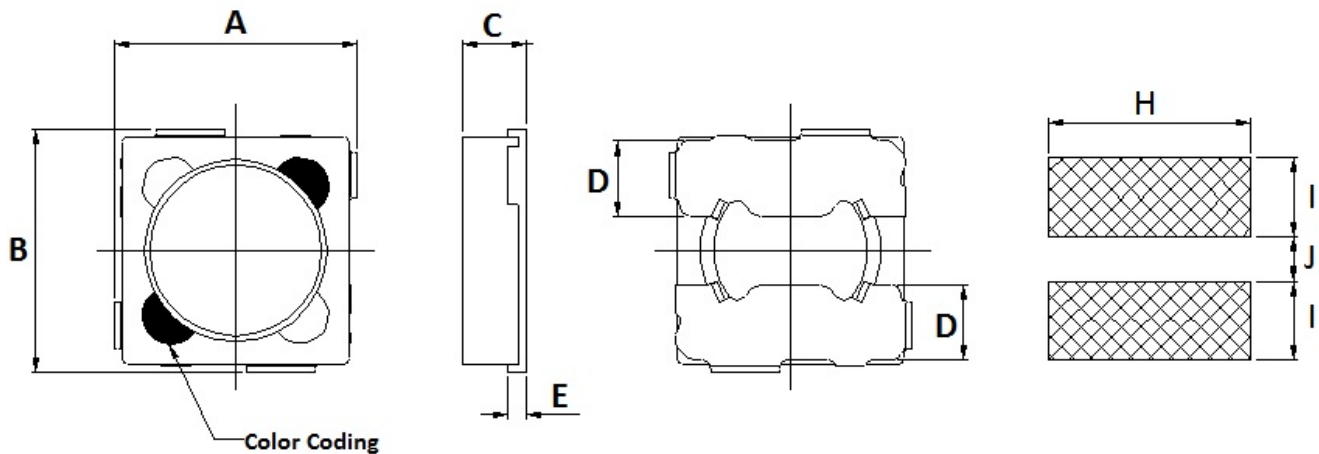
■ Feature

- Low profile, low Rdc, and high current handling capacities.
- Magnetically shielded structure that ensures the high-density mounting configuration.
- Flat bottom surface ensures secure, reliable mounting.

■ Application

- Low profile/ large current specifically suitable for Portable telephones, hard disk drives, PDA, DSC and other electronic equipments.

■ SHAPES AND DIMENSIONS



Unit	A	B	C max	D	E
mm	4.2 ±0.2	4.2 ±0.2	1.80	1.30	0.3
inch	0.165 ±0.008	0.165 ±0.008	0.071	0.051	0.012

H	I	J
4.60	1.60	1.40
0.181	0.063	0.055

Marking : Color Coding



■ PART NUMBER CODE

SPRI 3D18 P 100 M A
1 2 3 4 5 6

1. Series Name
2. Size Code
3. Type Code
4. Inductance (R=Decimal Point) Unit : uH
 100 = 10uH
5. Inductance tolerance :
 “M” ±20%; “N” ±30%.
6. Soldering : A=Lead free

■ ELECTRICAL CHARACTERISTICS

1. Test equipments
 - 1.1. L, I_{dc} : Agilent/HP 4284A Precision LCR Meter , 1KHz with 1V.
 - 1.2. R_{dc}: Chroma Milli-ohm meter 16502 or equivalent. (Typ: ±30% tolerance)
 - 1.3. I_{dc} for Inductance drop 10% or 35% from its value without current.
 - 1.4. I_{rms} for a 25°C rise above 25°C ambient.
 - 1.5. Operating temperature range from -40°C to 125°C



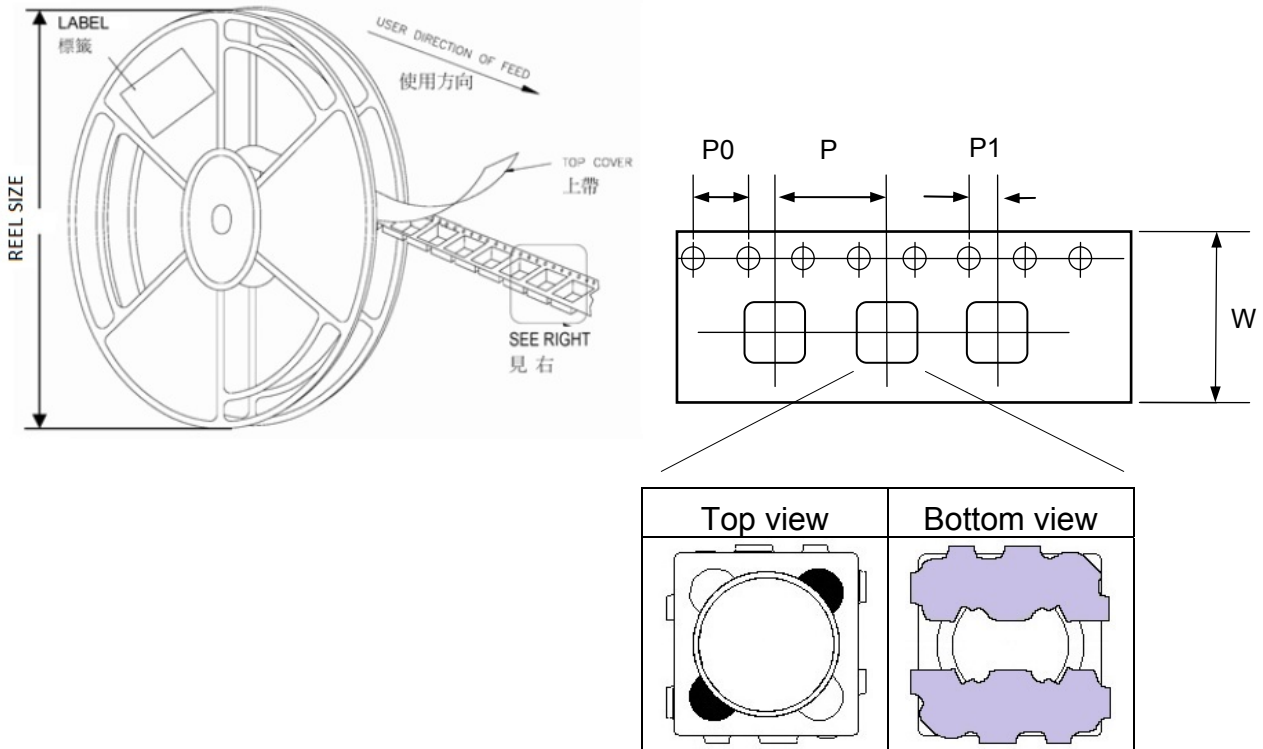
2. Part Number and Characteristics Table

Part Number	Inductance	Inductance	Rdc(Ω)	Idc Typ (mA)		Irms Typ (mA)	Color Coding
	(uH)/KHz	Tolerance	Typ	L ↓ 10%	L ↓ 35%	T ↑ 25°C	
SPRI3D18P-R27□A	0.27/1	M, N	0.019	2900	5000	4600	Red
SPRI3D18P-R47□A	0.47/1	M, N	0.029	2700	4000	3600	Blue
SPRI3D18P-R68□A	0.68/1	M, N	0.032	2600	3500	3000	Gray
SPRI3D18P-1R0□A	1.0/1	M, N	0.038	2600	3200	2400	Black
SPRI3D18P-1R2□A	1.2/1	M, N	0.044	2400	3000	2200	Brown
SPRI3D18P-1R5□A	1.5/1	M, N	0.050	2200	2700	2200	Red
SPRI3D18P-1R8□A	1.8/1	M, N	0.058	1900	2400	2000	Orange
SPRI3D18P-2R2□A	2.2/1	M, N	0.062	1800	2200	1900	Yellow
SPRI3D18P-2R7□A	2.7/1	M, N	0.068	1700	2100	1800	Green
SPRI3D18P-3R3□A	3.3/1	M, N	0.080	1500	1880	1650	Blue
SPRI3D18P-3R9□A	3.9/1	M, N	0.084	1400	1800	1560	Violet
SPRI3D18P-4R7□A	4.7/1	M, N	0.099	1220	1460	1400	Gray
SPRI3D18P-5R6□A	5.6/1	M, N	0.110	1160	1480	1300	White
SPRI3D18P-6R8□A	6.8/1	M, N	0.128	1020	1260	1200	Black
SPRI3D18P-8R2□A	8.2/1	M, N	0.146	1000	1240	1150	Brown
SPRI3D18P-100□A	10.0/1	M	0.165	900	1100	1050	Red
SPRI3D18P-120□A	12.0/1	M	0.254	840	1000	800	Orange
SPRI3D18P-150□A	15.0/1	M	0.320	740	880	720	Yellow
SPRI3D18P-180□A	18.0/1	M	0.360	700	840	680	Green
SPRI3D18P-220□A	22.0/1	M	0.418	600	740	650	Blue
SPRI3D18P-270□A	27.0/1	M	0.450	560	700	600	Violet
SPRI3D18P-330□A	33.0/1	M	0.620	460	580	580	Gray
SPRI3D18P-390□A	39.0/1	M	0.650	450	560	480	White
SPRI3D18P-470□A	47.0/1	M	0.790	430	520	450	Black
SPRI3D18P-560□A	56.0/1	M	0.862	380	480	400	Brown
SPRI3D18P-680□A	68.0/1	M	1.000	300	400	360	Red
SPRI3D18P-101□A	100/1	M	1.380	260	320	360	Yellow
SPRI3D18P-151□A	150/1	M	2.410	180	240	320	Yellow
SPRI3D18P-181□A	180/1	M	3.420	180	240	290	Violet
SPRI3D18P-221□A	220/1	M	3.900	150	230	290	Red
SPRI3D18P-331□A	330/1	M	5.170	140	180	240	Orange
SPRI3D18P-471□A	470/1	M	8.420	120	150	190	Green
SPRI3D18P-681□A	680/1	M	10.300	100	130	160	Blue
SPRI3D18P-102□A	1000/1	M	15.200	80	100	130	Black
SPRI3D18P-152□A	1500/1	M	25.000	70	90	100	Black

When ordering, please specify tolerance and packaging codes. Ex: SPRI3D18P-100MA ;
Tolerance : M = ±20% , N = ±30% ; Packaging: Clear tape and reel { standard }.



REEL DIMENSIONS AND PACKAGING QUANTITY

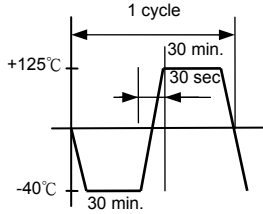


Unit: mm

TYPE	W	P	P0	P1	REEL SIZE	PCS / REEL
SPRI3D18P	12	8	4	2	180 mm (7")	1000



■ RELIABILITY AND TEST CONDITION

Item (項目)	Required Characteristics (要求)	Test Method/Condition (測試方法)
Solderability	The metalized area must have 90% minimum solder coverage.	Dip pads in flux and dip in solder pot (96.5 Sn/3.5 Ag solder) at 255°C ±5°C.
Resistance to soldering heat	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be reflowed onto a PC board using 96.5 Sn/3.5 Ag solder paste. Solder process shall be at a maximum temperature of 260°C. For 96.5 Sn/3.5 Ag solder paste:>217°C for 90 seconds
High temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature 125±2°C for 50±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Static Humidity	Inductors must not have a shorted or open winding.	Inductors shall be subjected to temperature 85±2°C and 90 to 95%RH for ten 24hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Component adhesion (push test)	Inductors shall be subjected to 0.5Kg	Inductors shall be reflow soldered (255°C ±5°C for 10 seconds) to a tinned copper substrate. A force gauge shall be applied to the side of the component. The device must withstand the stated force without a failure of the termination.
Low temperature storage	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature -40±2°C for 48±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 1 to 2 hours.
Resistance to solvent	There must be no case deformation, change in dimensions, or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
Thermal shock	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to 10 cycles to the following temperature cycle:  Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.

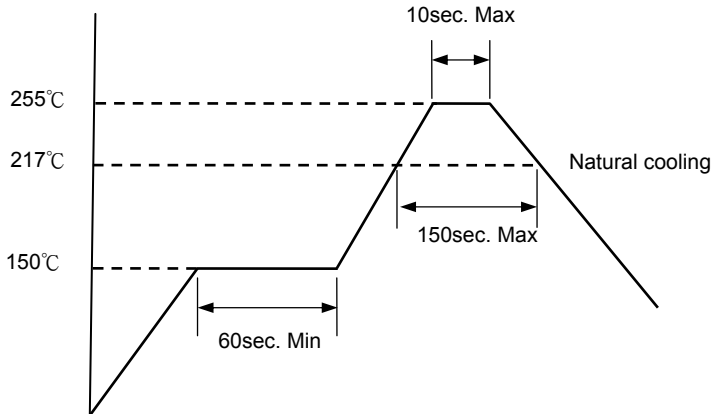


■ RECOMMENDED SOLDERING CONDITIONS

Please use this product by reflow soldering

1. Recommended Reflow Pattern

Reflow : until two times



2. Iron Soldering

Use a solder iron of less than 30W when soldering, do not allow the soldering iron tip directly touch the Ceramic body outside of terminal electrode.

5 seconds max. at 260°C.

3. Attention in Case of Using

In case of using product, please avoid following matters:

Splashing water or salt water

Dew condenses

Toxic gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)

Vibrations or shocks which exceed the specified condition

Please be careful for the stress to this product by board flexure or something after the mounting.

4. Other

4.1. Operating temperature range : Ferrite Series : -40~+125°C

4.2. The part temperature (ambient + temp rise) should not exceed 125°C under worse operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provision all affect the part temperature.

4.3. Storage condition : Temperature 20°~25°C, Relative Humidity 40%~60%

4.4. Recommended wire wound inductors should be used within 6 months from the time of delivery.