



## Shielded SMT Power Inductor SPRI3D12P Series

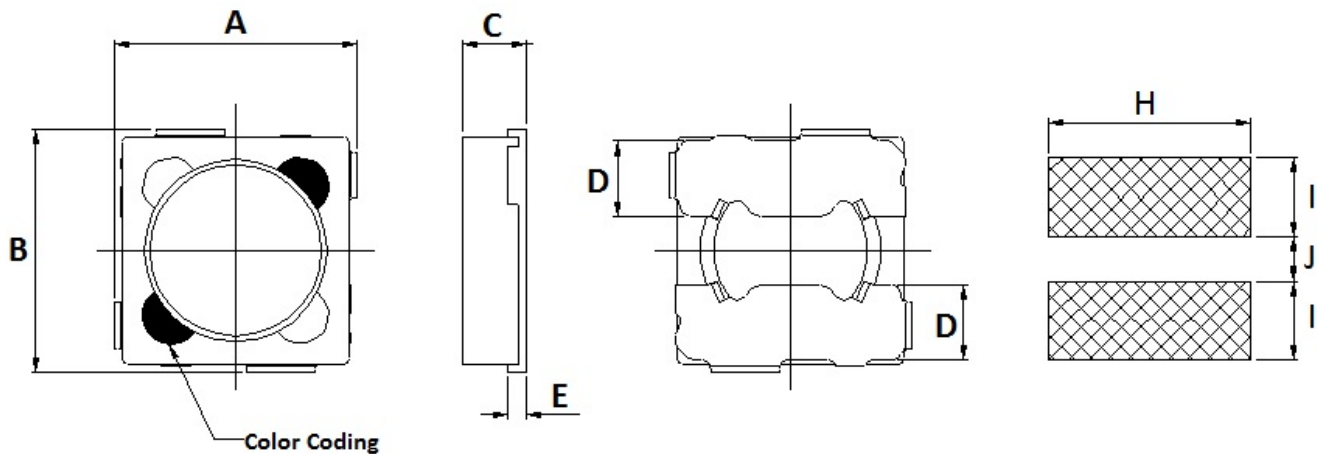
### ■ Feature

- 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	1.25	1.30	0.3
inch	0.165 ±0.008	0.165 ±0.008	0.049	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   3D12   P   6R8   M   A  
1        2        3        4        5        6

1. Series Name
2. Size Code
3. Type Code
4. Inductance (R=Decimal Point)   Unit : uH  
6R8 = 6.8uH
5. Inductance tolerance :  
“M” ±20%;   “N” ±30%.
6. Soldering : A=Lead free

## ■ ELECTRICAL CHARACTERISTICS

1. Test equipments
  - 1.1. L,Idc : Agilent/HP 4284A Precision LCR Meter , 1KHz with 1V.
  - 1.2. Rdc: Chroma Milli-ohm meter 16502 or equivalent. (Typ: ±30% tolerance)
  - 1.3. Idc for Inductance drop 10% or 35% from its value without current.
  - 1.4. Irms for a 25°C rise above 25°C ambient.
  - 1.5. Operating temperature range from -40°C to 105°C



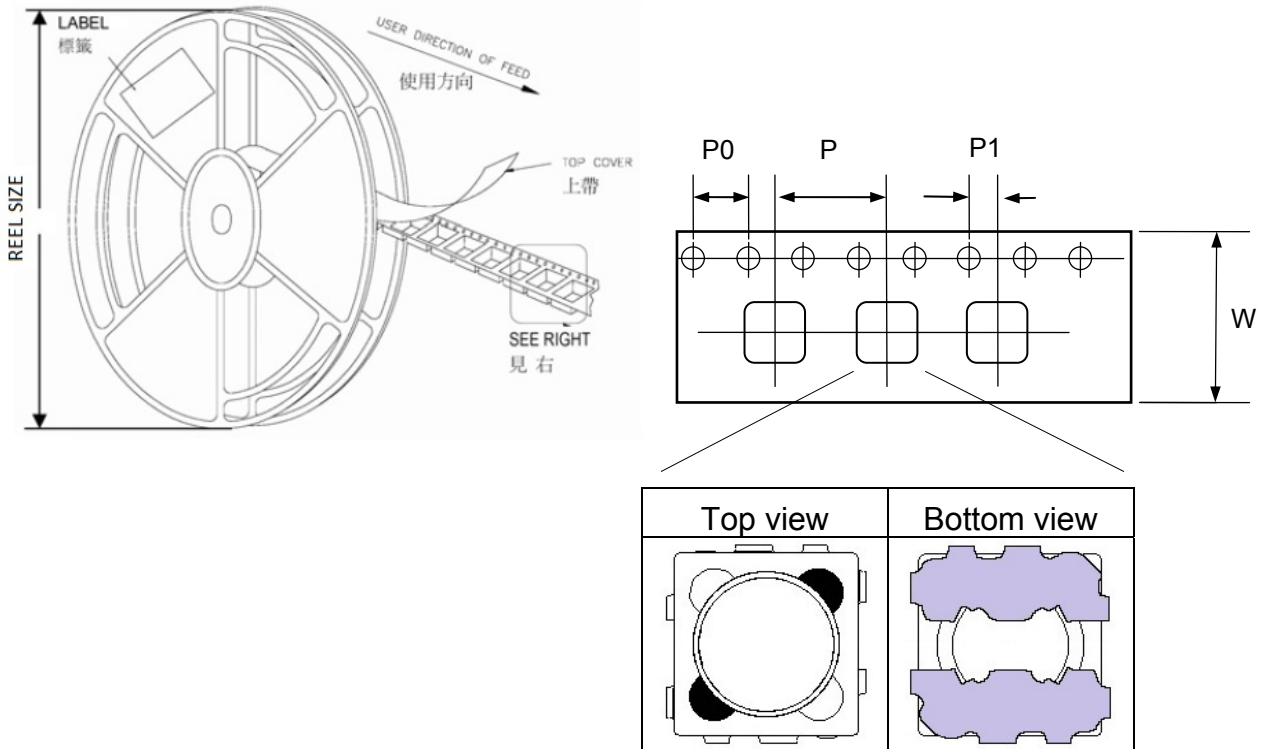
## 2. Part Number and Characteristics Table

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	
SPRI3D12P-R68□A	0.68/1	M, N	0.040	2700	3200	3000	Gray
SPRI3D12P-1R0□A	1.0/1	M, N	0.045	2300	3000	2000	Black
SPRI3D12P-1R2□A	1.2/1	M, N	0.048	2200	2800	1900	Brown
SPRI3D12P-1R5□A	1.5/1	M, N	0.055	1900	2400	1800	Red
SPRI3D12P-1R8□A	1.8/1	M, N	0.073	1800	2300	1750	Orange
SPRI3D12P-2R2□A	2.2/1	M, N	0.083	1700	2100	1750	Yellow
SPRI3D12P-2R7□A	2.7/1	M, N	0.109	1400	1700	1440	Green
SPRI3D12P-3R3□A	3.3/1	M, N	0.118	1300	1700	1400	Blue
SPRI3D12P-3R9□A	3.9/1	M, N	0.143	1260	1600	1300	Violet
SPRI3D12P-4R7□A	4.7/1	M, N	0.159	1240	1580	1200	Gray
SPRI3D12P-5R6□A	5.6/1	M, N	0.213	1000	1300	1000	White
SPRI3D12P-6R8□A	6.8/1	M, N	0.224	1000	1300	960	Black
SPRI3D12P-8R2□A	8.2/1	M, N	0.252	920	1140	940	Brown
SPRI3D12P-100□A	10/1	M	0.327	860	1060	900	Red
SPRI3D12P-120□A	12/1	M	0.363	800	980	820	Orange
SPRI3D12P-150□A	15/1	M	0.516	600	800	640	Yellow
SPRI3D12P-180□A	18/1	M	0.625	560	760	600	Green
SPRI3D12P-220□A	22/1	M	0.732	460	640	520	Blue
SPRI3D12P-330□A	33/1	M	1.165	420	500	420	Violet
SPRI3D12P-680□A	68/1	M	2.90	300	340	350	Gray

When ordering, please specify tolerance and packaging codes. Ex: SPRI3D12P-100MA ;  
Tolerance : M = ±20% , N = ±30% ; Packaging: Clear tape and reel { standard }.



## REEL DIMENSIONS AND PACKAGING QUANTITY

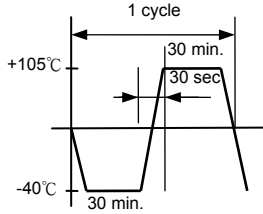


Unit: mm

TYPE	W	P	P0	P1	REEL SIZE	PCS / REEL
SPRI3D12P	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 85±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 -25±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.

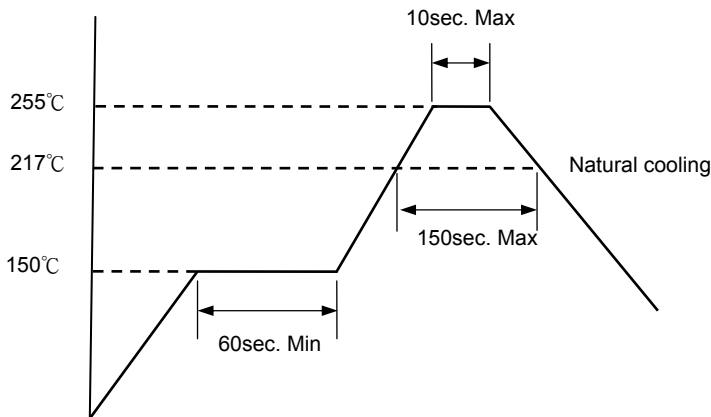


## ■ RECOMMENDED SOLDERING CONDITIONS

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

Operating temperature range : Ferrite Series :-40~+105°C

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

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