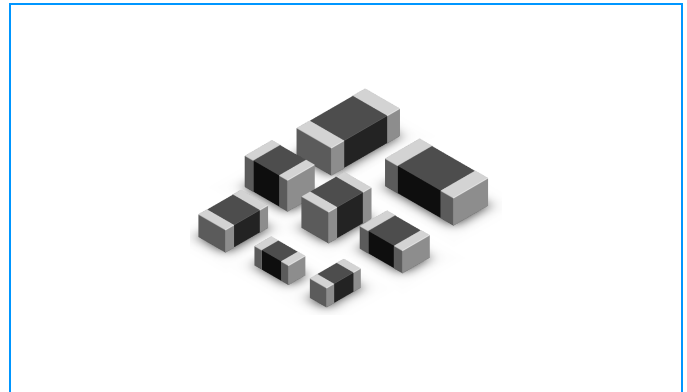


# Chip Ferrite Bead

## SCGB-S Series

### Features

- u Monolithic inorganic material construction
- u Closed magnetic circuit avoids crosstalk
- u SMD Type & suitable for reflow and wave soldering
- u Available in various sizes
- u Excellent solderability and heat resistance
- u High reliability
- u Effectively filtering capability over a wide range of frequency



### Applications

Filtering between analog and digital circuitry, clock generation circuitry, I/O interconnects, isolation between RF noisy circuits and logic devices susceptible to functional degradation, power supply filtering to prevent conducted RF energy from corrupting the power generation circuitry, high frequency EMI prevention of computer, printers, VCRs, TVs and portable telephones.

### General Technical Data

<b>Operating temperature range</b>	-40 ~ +125°C
<b>Storage Condition</b>	Less than 40°C and 70% RH
<b>Storage Time</b>	6 months(Size:1005), 12 months(Size:1608 above)
<b>Soldering method</b>	Reflow or Wave Soldering

### Part Numbering

**SCGB**   **1608**   **S**   **60**   **1**   **E**   **P**   **F**  
 (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)

- 1 Series Name
- 2 Size Code: the first two digitals : length(mm), the last two digitals : width(mm)
- 3 Material Code
- 4 Impedance( $\Omega$ ),  $\pm 25\%$
- 5 Fixed Decimal Point } e.g.: 600=60  $\Omega$ , 121=120 $\Omega$
- 6 Rated Current Cod

A=50mA	B=80mA	C=100mA	D=150mA	E=200mA	F=300mA
G=400mA	H=500mA	I=600mA	J=700mA	K=800mA	

- 7 Packaging: P - Embossed paper tape, 7" reel  
T - Embossed plastic tape, 7" reel
- 8 Soldering : Green Parts: S- Soldering Lead-Free    F- Lead-Free for whole chip

# Chip Ferrite Bead

## SCGB-S Series

### Electrical Characteristics

#### SCGB1005-S Series

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Freq. (MHz)	DCR ( $\Omega$ ) (Max.)	Rated Current (mA)
SCGB1005S100FPF	10	100	0.10	300
SCGB1005S200FPF	20	100	0.20	300
SCGB1005S300FPF	30	100	0.25	300
SCGB1005S400FPF	40	100	0.30	300
SCGB1005S600FPF	60	100	0.35	300
SCGB1005S700FPF	70	100	0.35	300
SCGB1005S121FPF	120	100	0.40	300
SCGB1005S241EPF	240	100	0.70	200
SCGB1005S301EPF	300	100	0.80	200
SCGB1005S471EPF	470	100	1.00	200
SCGB1005S601EPF	600	100	1.00	300
SCGB1005S102EPF	1000	100	1.50	200

#### SCGB1608-S Series

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Freq. (MHz)	DCR ( $\Omega$ ) (Max.)	Rated Current (mA)
SCGB1608S100IPF	10	100	0.05	600
SCGB1608S300IPF	30	100	0.08	600
SCGB1608S600IPF	60	100	0.10	600
SCGB1608S800IPF	80	100	0.10	600
SCGB1608S121IPF	120	100	0.15	600
SCGB1608S181FPF	180	100	0.30	300
SCGB1608S221FPF	220	100	0.30	300
SCGB1608S301FPF	300	100	0.35	300
SCGB1608S471FPF	470	100	0.40	300
SCGB1608S601EPF	600	100	0.45	200
SCGB1608S102CPF	1000	100	0.60	100

# Chip Ferrite Bead

## SCGB-S Series

### Electrical Characteristics (Continue)

#### SCGB2012-S Series

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Freq. (MHz)	DCR ( $\Omega$ ) (Max.)	Rated Current (mA)
SCGB2012S300KPF	30	100	0.05	800
SCGB2012S400KPF	40	100	0.05	800
SCGB2012S600KPF	60	100	0.15	800
SCGB2012S800KPF	80	100	0.15	800
SCGB2012S121KPF	120	100	0.15	800
SCGB2012S221HPF	220	100	0.20	500
SCGB2012S301HPF	300	100	0.20	500
SCGB2012S601HPF	600	100	0.30	500
SCGB2012S102FPF	1000	100	0.35	300
SCGB2012S202EPF	2000	100	0.50	200

#### SCGB3216-S Series

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Freq. (MHz)	DCR ( $\Omega$ ) (Max.)	Rated Current (mA)
SCGB3216S310KTF	31	100	0.05	800
SCGB3216S500KTF	50	100	0.08	800
SCGB3216S700KTF	70	100	0.10	800
SCGB3216S121ITF	120	100	0.15	600
SCGB3216S601HTF	600	100	0.30	500
SCGB3216S102HTF	1000	100	0.40	500
SCGB3216S122HTF	1200	100	0.40	500
SCGB3216S152ETF	1500	50	0.50	200
SCGB3216S202ETF	2000	30	0.50	200

#### SCGB3225-S Series

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Freq. (MHz)	DCR ( $\Omega$ ) (Max.)	Rated Current (mA)
SCGB3225S600KTF	60	100	0.30	800
SCGB3225S900KTF	90	100	0.30	800

## Chip Ferrite Bead

### SCGB-S Series

#### Electrical Characteristics (Continue)

##### SCGB4516-S Series

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Freq. (MHz)	DCR ( $\Omega$ ) (Max.)	Rated Current (mA)
SCGB4516S800KTF	80	100	0.10	800
SCGB4516S151KTF	150	100	0.30	800

##### SCGB4532-S Series

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Freq. (MHz)	DCR ( $\Omega$ ) (Max.)	Rated Current (mA)
SCGB4532S700KTF	70	100	0.40	800
SCGB4532S800KTF	80	100	0.40	800
SCGB4532S121KTF	120	100	0.40	800

Test Level : 250 mV

Test Instruments:

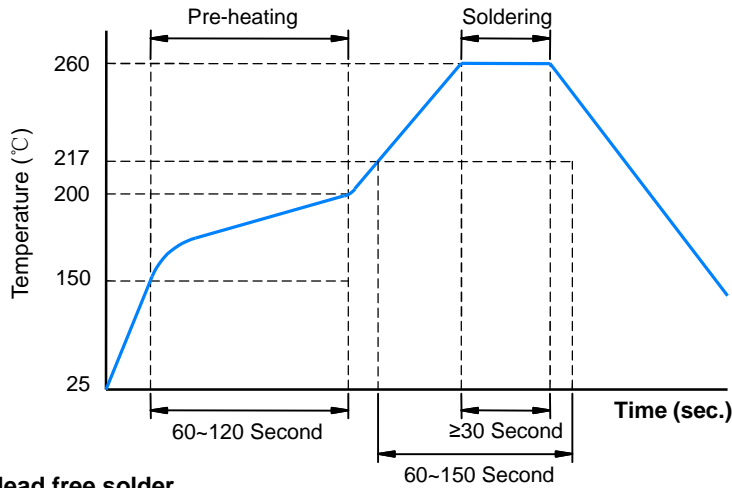
- I HP4291B  
RF IMPEDANCE / MATERIAL ANALYZER
- I HP4338A/B MILLIOHM METER
- I Agilent 8720ES S-PARAMETER NETWORK ANALYZER
- I HP6632B SYSTEM DC POWER SUPPLY

\*\* For special part number which is not shown in the above table, please refer to appendix.

# Chip Ferrite Bead

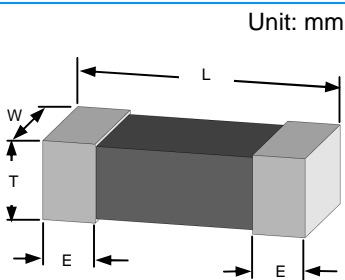
## SCGB-S Series

### Recommended Soldering Conditions



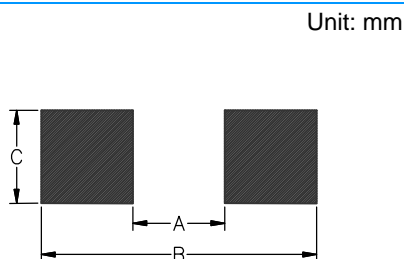
For lead free solder

### Construction & Dimensions



Symbol	1005 (EIA 0402)	1608 (EIA 0603)	2012 (EIA 0805)	3216 (EIA 1206)	3225 (EIA 1210)	4516 (EIA 1806)	4532 (EIA 1812)
L	1.00±0.10	1.60±0.15	2.00±0.20	3.20±0.20	3.20±0.20	4.50±0.25	4.50±0.25
W	0.50±0.10	0.80±0.15	1.25±0.20	1.60±0.20	2.50±0.20	1.60±0.20	3.20±0.25
T	0.50±0.10	0.80±0.15	0.90±0.20	1.10±0.20	1.30±0.20	1.0±0.20	1.50±0.25
E	0.25±0.10	0.30±0.20	0.50±0.30	0.50±0.30	0.50±0.30	0.60±0.40	0.60±0.40

### Recommended Pad Layout

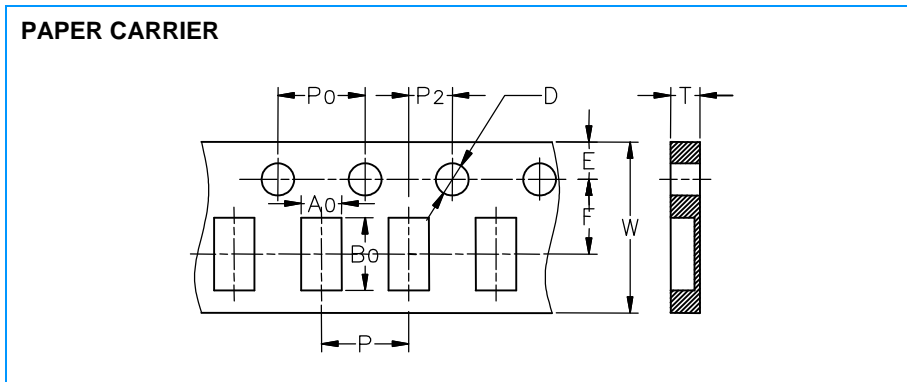
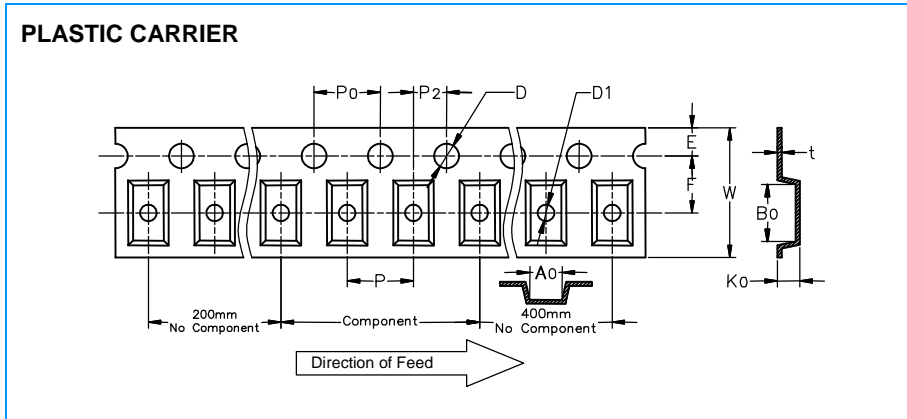


Size	A	B	C
1005	0.40~0.60	1.60~2.60	0.40~0.70
1608	0.50~0.70	2.10~3.10	0.65~0.95
2012	1.00~1.20	3.00~4.00	0.80~1.10
3216	2.00~2.40	4.20~5.20	1.00~1.40
3225	2.10~2.30	4.20~5.20	2.20~2.50
4516	3.40~3.70	6.30~7.30	1.30~1.70
4532	3.40~3.70	6.30~7.30	2.90~3.20

# Chip Ferrite Bead

## SCGB-S Series

### Tape Specifications



Unit: mm

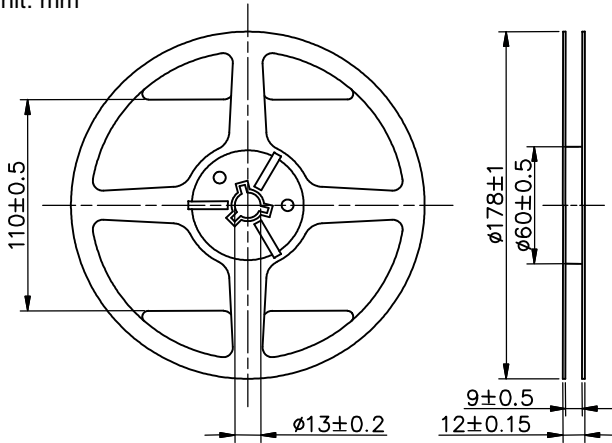
Symbol	1005	1608	2012	3216	3225	4516	4532
	Paper	Paper	Paper	Plastic	Plastic	Plastic	Plastic
<b>W</b>	8.00±0.10	8.00±0.10	8.00±0.10	7.90~8.30	7.90~8.30	11.7~12.3	12.00±0.10
<b>P</b>	2.00±0.05	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	8.00±0.10
<b>E</b>	1.75±0.05	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10
<b>F</b>	3.50±0.05	3.50±0.10	3.50±0.10	3.50±0.05	3.50±0.05	5.50±0.05	5.50±0.05
<b>D</b>	1.55±0.05	1.56±0.10	1.56±0.10	1.55±0.05	1.55±0.05	1.55±0.05	1.55±0.05
<b>D1</b>	NA	NA	NA	0.95~1.20	0.95~1.20	1.50~1.75	1.50~1.75
<b>P</b>	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10
<b>P<sub>0</sub>10</b>	NA	NA	40.0±0.20	40.0±0.20	40.0±0.20	40.0±0.20	40.0±0.20
<b>P2</b>	2.00±0.05	2.00±0.10	2.00±0.10	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05
<b>A0</b>	0.62±0.03	1.05±0.05	1.50±0.05	1.85±0.10	2.57±0.10	1.83±0.10	3.66±0.10
<b>B0</b>	1.12±0.03	1.85±0.05	2.30±0.05	3.43±0.10	3.40±0.10	4.85±0.10	4.95±0.10
<b>K0(T)</b>	0.60±0.03	0.95±0.05	0.95±0.05	1.22±0.10	1.32±0.10	1.83±0.10	1.83±0.10
<b>t</b>	NA	NA	NA	0.25±0.10	0.25±0.10	0.29±0.10	0.23±0.10

# Chip Ferrite Bead

## SCGB-S Series

### Reel Specifications & Packaging

Unit: mm



Part Size(EIA Size)	Packaging Option	Quantity
1005 (0402)	7"Reel	10,000
1608 (0603)	7"Reel	4,000
2012 (0805)	7"Reel	4,000
3216 (1206)	7"Reel	3,000
3225 (1210)	7"Reel	2,000
4516 (1806)	7"Reel	2,000
4532 (1812)	7"Reel	1,000

**The Contents of a box:**

1005 (0402): 6 reels / inner box      3225 (1210): 6 reels / inner box  
 1608 (0603): 6 reels / inner box      4516 (1806): 4 reels / inner box  
 2012 (0805): 6 reels / inner box      4532 (1812): 4 reels / inner box  
 3216 (1206): 6 reels / inner box

### Reliability and Test Condition

Test item	Test condition	Criteria
<b>Temperature Cycle</b>	a. Temperature : -40 ~ +85°C b. Cycle : 100 cycles c. Dwell time : 30minutes Measurement : at ambient temperature 24 hrs after test completion	a. No mechanical damage b. Induction value should be within ±20 % of the initial value
<b>Operational Life</b>	a. Temperature : 125°C±5°C b. Test time : 1000 hrs c. Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion	a. No mechanical damage b. Induction value should be within ±20 % of the initial value
<b>Biased Humidity</b>	a. Temperature : 40°C±2°C b. Humidity : 90 ~ 95 % RH c. Test time : 1000 hrs d. Apply current : full rated current Measurement : at ambient temperature 24 hrs after test completion	a. No mechanical damage b. Induction value should be within ±20 % of the initial value
<b>Resistance to Solder Heat</b>	a. Solder temperature : 260±5°C b. Flux : Rosin c. DIP time : 10±1 sec	a. More than 95 % of terminal electrode should be covered with new solder b. No mechanical damage c. Induction value should be within ±20 % of the initial value
<b>Adhesive Test</b>	a. Reflow temperature : 245°C It shall be Soldered on the substrate applying direction parallel to the substrate b. Apply force(F) : 5 N Test time : 10 sec	a. No mechanical damage b. Soldering the products on PCB after the pulling test force > 5 N
<b>Rated Current Test</b>	a. Apply current : full rated current / 5min	Temperature rise should be less than 25°C
<b>Steam Aging Test</b>	a. Temperature : 93°C b. Test time : 4hrs Others: 8hrs c. Solder temperature : 235±5°C d. Flux : Rosin e. DIP time : 5±1 sec	More than 95 % of terminal electrode should be covered with new solder