

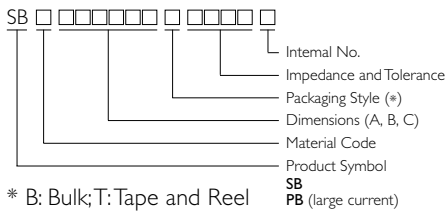
Multilayer Ferrite Chip Beads

SB/PB Series

[PB Series for Large Current]



PRODUCT IDENTIFICATION



APPLICATIONS

Prevention of high frequency EMI from computers, printers, VCRs, TVs, wireless telephone and other related equipment.

OUTLINE

YAGEO ferrite chip EMI suppressers provide a powerful means of EMI/RFI attenuation for electronic equipment. These products are highly produced with the use of magnetic material and multilayered technology.

These components contain tremendous electrode strength, solder heat resistance and outstanding solderability. These products are specially designed for flow, reflow and wave soldering required for surface mounting application.

FEATURES

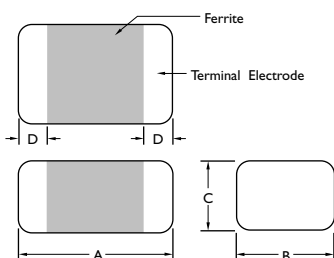
Unlike conventional beads, these beads do not require wiring; Simply mounts them onto the PCB to eliminate the EMI/RFI.

Specially designed for surface mounting equipment, available in various size which allows them to wide rang of application and usage.

Best designed and tested to offer high impedance for volume.

SHAPES AND DIMENSIONS

Dimensions : mm



TYPE	A	B	C	D
S/PB 160808	1.6±0.20	0.80±0.15	0.8±0.15	0.4±0.2
S/PB 201209	2.0±0.20	1.25±0.20	0.9±0.20	0.5±0.3
S/PB 321611	3.2±0.20	1.60±0.20	1.1±0.20	0.5±0.3
SB 321616	3.2±0.20	1.60±0.20	1.6±0.20	0.5±0.3
SB 322513	3.2±0.20	2.50±0.20	1.3±0.20	0.5±0.3
S/PB 451616	4.5±0.25	1.60±0.20	1.6±0.20	0.5±0.3
S/PB 453215	4.5±0.25	3.20±0.20	1.5±0.20	0.5±0.3

Note :

ELECTRICAL CHARACTERISTICS

PART NO.	Test Frequency (MHz)	Impedance (Ω)	DC Resistance (Ω) Max.	Rate Current (mA) Max.
SBK160808T-300Y-S	100	30 \pm 25%	0.20	200
SBK160808T-400Y-S	100	40 \pm 25%	0.20	200
SBK160808T-600Y-S	100	60 \pm 25%	0.20	200
SBK160808T-800Y-S	100	80 \pm 25%	0.30	200
SBK160808T-121Y-S	100	120 \pm 25%	0.30	200
SBK160808T-221Y-S	100	220 \pm 25%	0.50	100
SBK160808T-301Y-S	100	300 \pm 25%	0.60	100
SBK160808T-451Y-S	100	450 \pm 25%	0.70	100
SBK160808T-601Y-S	100	600 \pm 25%	0.80	100
SBK160808T-751Y-S	100	750 \pm 25%	1.00	100
SBK160808T-102Y-S	100	1000 \pm 25%	1.00	100
SBY201209T-070Y-S	100	7 \pm 25%	0.10	600
SBY201209T-090Y-S	100	9 \pm 25%	0.10	600
SBY201209T-110Y-S	100	11 \pm 25%	0.10	600
SBY201209T-170Y-S	100	17 \pm 25%	0.10	500
SBY201209T-320Y-S	100	32 \pm 25%	0.20	500
SBK201209T-600Y-S	100	60 \pm 25%	0.30	400
SBK201209T-700Y-S	100	70 \pm 25%	0.30	400
SBK201209T-800Y-S	100	80 \pm 25%	0.40	400
SBK201209T-121Y-S	100	120 \pm 25%	0.40	200
SBK201209T-151Y-S	100	150 \pm 25%	0.50	200
SBK201209T-221Y-S	100	220 \pm 25%	0.60	200
SBK201209T-301Y-S	100	300 \pm 25%	0.90	200
SBK201209T-401Y-S	100	400 \pm 25%	0.90	200
SBK201209T-501Y-S	100	500 \pm 25%	1.00	200
SBK201209T-601Y-S	100	600 \pm 25%	1.00	200
SBK201209T-102Y-S	50	1000 \pm 25%	1.00	100
SBK201212T-152Y-S	30	1500 \pm 25%	1.00	100



Note :

ELECTRICAL CHARACTERISTICS

PART NO.	Test Frequency (MHz)	Impedance (Ω)	DC Resistance (Ω) Max.	Rate Current (mA) Max.
SBY321611T-190Y-S	100	19 \pm 25%	0.15	500
SBY321611T-260Y-S	100	26 \pm 25%	0.15	500
SBY321611T-320Y-S	100	32 \pm 25%	0.15	500
SBY321611T-500Y-S	100	50 \pm 25%	0.20	400
SBY321611T-600Y-S	100	60 \pm 25%	0.30	400
SBK321611T-700Y-S	100	70 \pm 25%	0.30	400
SBK321611T-900Y-S	100	90 \pm 25%	0.30	400
SBK321611T-121Y-S	100	120 \pm 25%	0.40	400
SBK321611T-151Y-S	100	150 \pm 25%	0.50	200
SBK321611T-201Y-S	100	200 \pm 25%	0.50	200
SBK321611T-401Y-S	100	400 \pm 25%	0.50	200
SBK321611T-501Y-S	100	500 \pm 25%	0.50	200
SBK321611T-601Y-S	100	600 \pm 25%	0.50	200
SBK321611T-102Y-S	50	1000 \pm 25%	1.00	100
SBK321611T-122Y-S	50	1200 \pm 25%	1.00	100
SBK321611T-202Y-S	30	2000 \pm 25%	1.50	100
SBY321616T-250Y-S	100	25 \pm 25%	0.50	200
SBY321616T-600Y-S	100	60 \pm 25%	0.50	200
SBK321616T-700Y-S	100	70 \pm 25%	0.50	200
SBY322513T-320Y-S	100	32 \pm 25%	0.30	400
SBY322513T-600Y-S	100	60 \pm 25%	0.30	400
SBY322513T-900Y-S	100	90 \pm 25%	0.30	400
SBK322513T-202Y-S	30	2000 \pm 25%	1.50	100
SBY451616T-330Y-S	100	33 \pm 25%	0.30	400
SBY451616T-600Y-S	100	60 \pm 25%	0.30	400
SBY451616T-800Y-S	100	80 \pm 25%	0.30	400
SBY451616T-101Y-S	100	100 \pm 25%	0.40	300
SBK451616T-151Y-S	100	150 \pm 25%	0.50	200
SBK451616T-171Y-S	100	170 \pm 25%	0.50	200
SBY453215T-700Y-S	100	70 \pm 25%	0.40	300
SBY453215T-121Y-S	100	120 \pm 25%	0.40	300

Note :

ELECTRICAL CHARACTERISTICS

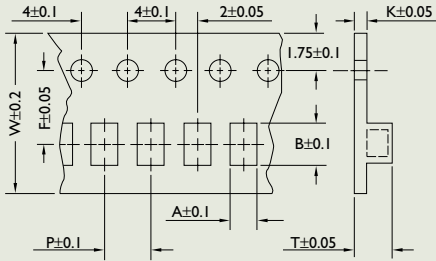
PART NO.	Test Frequency (MHz)	Impedance (Ω)	DC Resistance (Ω) Max.	Rate Current (mA) Max.
PBY160808T-110□-S	100	11 \pm 25 or 20%	0.015	5000
PBY160808T-250□-S	100	25 \pm 25 or 20%	0.030	4000
PBY201209T-110□-S	100	11 \pm 25 or 20%	0.010	6000
PBY201209T-320□-S	100	32 \pm 25 or 20%	0.025	4000
PBY201209T-600□-S	100	60 \pm 25 or 20%	0.025	4000
PBY201209T-800□-S	100	80 \pm 25 or 20%	0.030	4000
PBY321611T-260□-S	100	26 \pm 20 or 20%	0.015	7000
PBY321611T-320□-S	100	32 \pm 25 or 20%	0.015	6000
PBY321611T-500□-S	100	50 \pm 25 or 20%	0.020	5000
PBY321611T-700□-S	100	70 \pm 25 or 20%	0.020	5000
PBY321611T-800□-S	100	80 \pm 20 or 20%	0.015	5000
PBY321611T-900□-S	100	90 \pm 25 or 20%	0.030	4000
PBY451616T-600□-S	100	60 \pm 25 or 20%	0.020	6000
PBY451616T-700□-S	100	70 \pm 25 or 20%	0.025	6000
PBY451616T-800□-S	100	80 \pm 25 or 20%	0.025	5000
PBY453215T-700□-S	100	70 \pm 25 or 20%	0.030	7000
PBY453215T-121□-S	100	120 \pm 25 or 20%	0.030	4000

□ :Y (\pm 25%) M (\pm 20%)



TAPE DIMENSIONS

Dimensions : mm

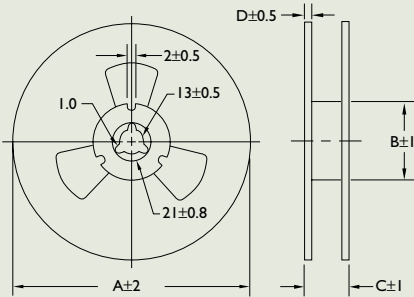


TYPE	A	B	T	W	P	F	K
□B160808	1.14	1.75	1.15	8.0	4.0	3.5	0.2
□B201209	1.54	2.32	1.15	8.0	4.0	3.5	0.2
□B321611	1.94	3.54	1.29	8.0	4.0	3.5	0.2
SB321616	1.94	3.64	1.90	8.0	4.0	3.5	0.2
SB322513	2.80	3.42	1.64	8.0	4.0	3.5	0.2
□B451616	1.94	4.94	1.90	12.0	4.0	5.5	0.3
□B453215	3.64	4.94	1.80	12.0	8.0	5.5	0.3

□ : S or P

REEL DIMENSIONS

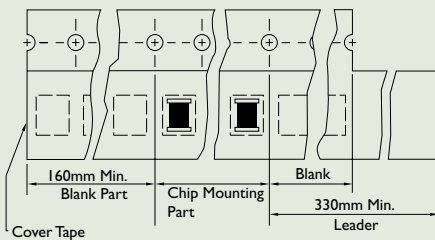
Dimensions : mm



TYPE	A	B	C	D
SB/PB 160808	178	60	10	2
SB/PB 201209	178	60	10	2
SB/PB 321611	178	60	10	2
SB 321616	178	60	10	2
SB 322513	178	60	10	2
SB/PB 451616	178	60	14	2
SB/PB 453215	178	60	14	2

TAPE MATERIAL

Carrier Tape : Polystyrene Cover Type : Polyethyiene

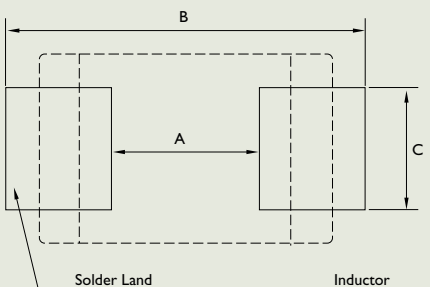


PACKAGING QUANTITY

TYPE	BULK	CHIP/REEL
SB/PB 160808	√	4000
SB/PB 201209	√	4000
SB/PB 321611	√	3000
SB 321616	√	2000
SB 322513	√	2500
SB/PB 451616	√	2000
SB/PB 453215	√	1000

RECOMMENDED PATTERN

Dimensions : mm

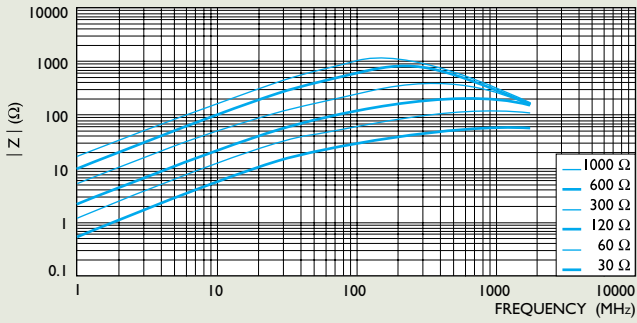


TYPE	A	B	C
SB/PB 160808	0.8	2.4~3.4	0.6
SB/PB 201209	1.2	3.0~4.0	1.0
SB/PB 321611	2.0	4.2~5.2	1.2
SB/PB 321616	2.0	4.2~5.2	1.2
SB 322513	2.0	5.5~6.5	1.8
SB 451616	3.0	5.5~6.5	1.2
SB/PB 453215	3.0	5.5~6.5	2.4

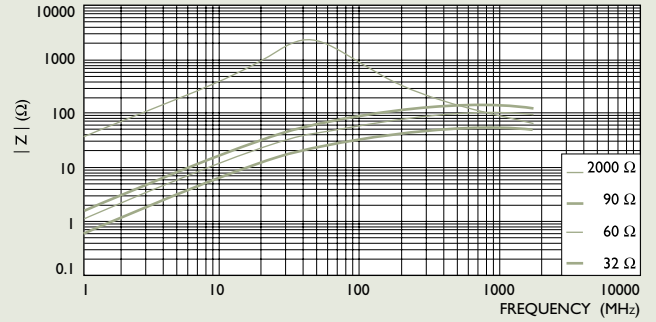
TYPICAL ELECTRICAL CHARACTERISTIC

Test Instruments: HP4291A Impedance/Material Analyzer

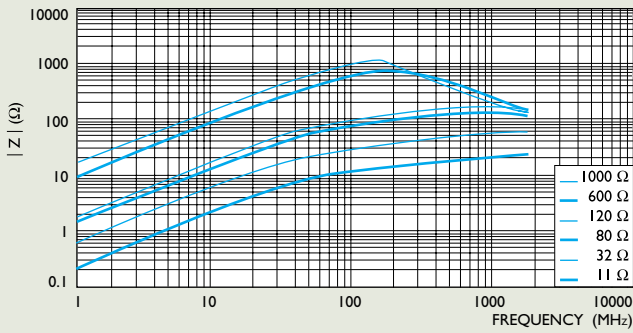
PB SERIES



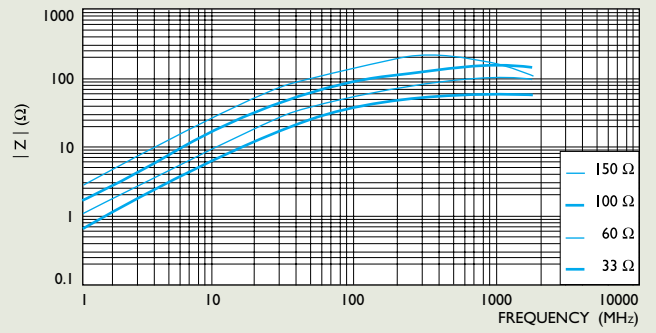
SB 321616 SERIES



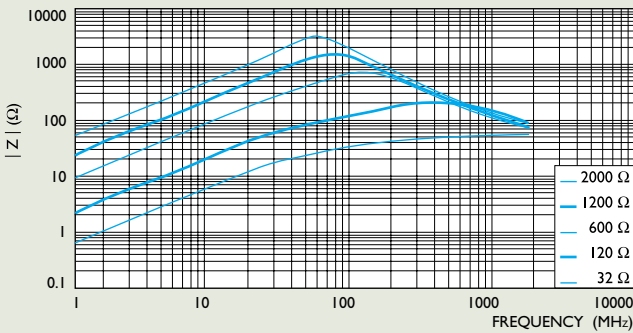
SB 160808 SERIES



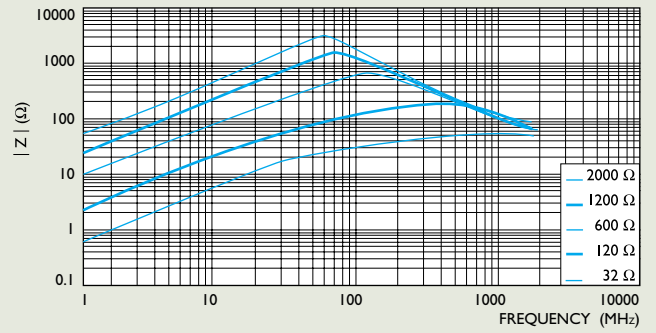
SB 322513 SERIES



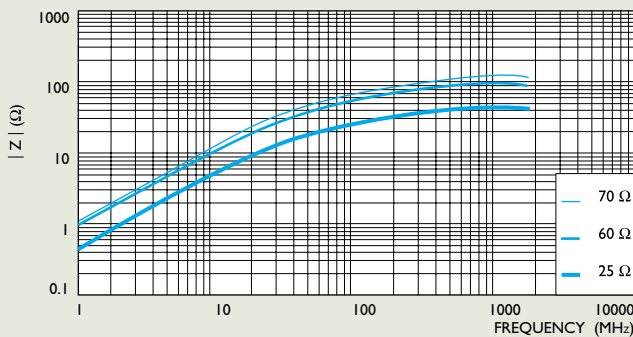
SB 201209 SERIES



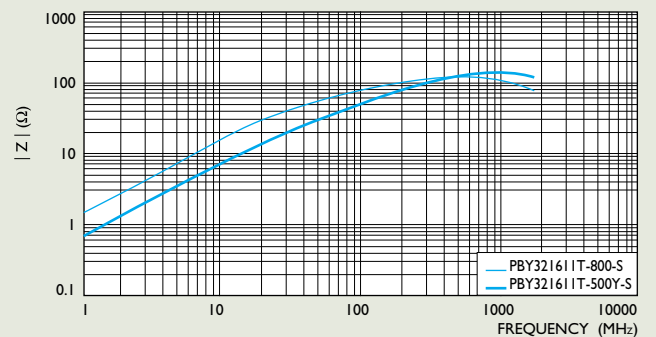
SB 451616 SERIES



SB 321611 SERIES



SB 453215 SERIES



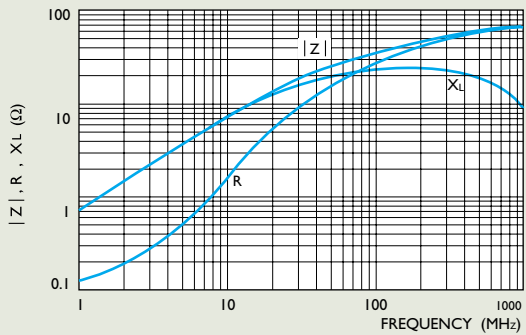


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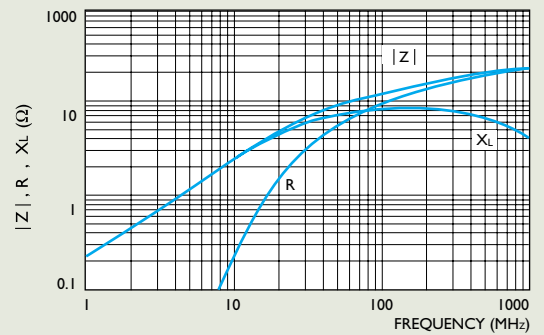
TYPICAL ELECTRICAL CHARACTERISTIC

Test Instruments: HP4291A Impedance/Material Analyzer

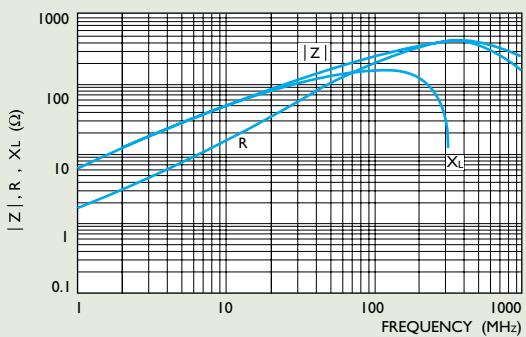
SBKI60808T-300 Y-S



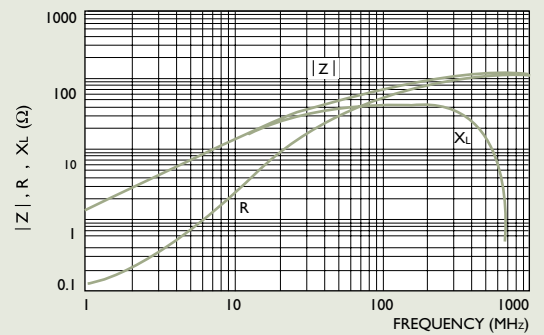
SBY201209T-110 Y-S



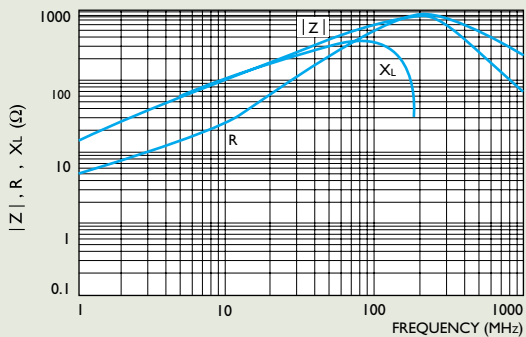
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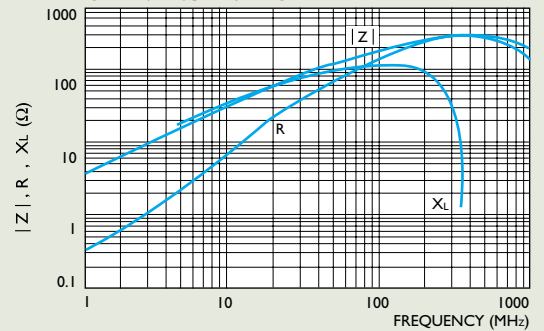
SBK201209T-800 Y-S



SBKI60808T-601 Y-S



SBK201209T-151 Y-S

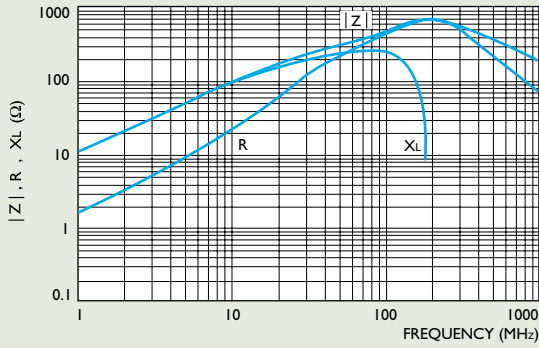


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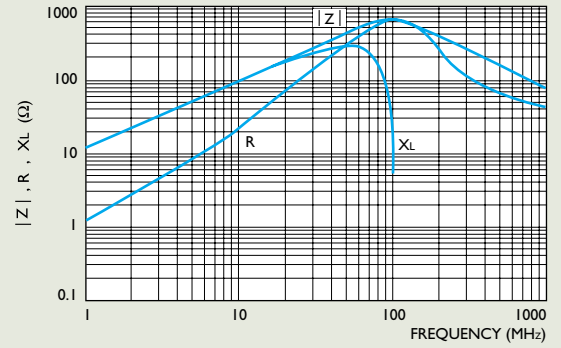
TYPICAL ELECTRICAL CHARACTERISTIC

Test Instruments: HP4291A Impedance/Material Analyzer

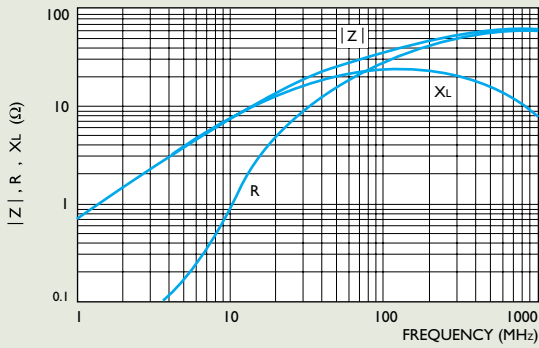
SBK201209T-601Y-S



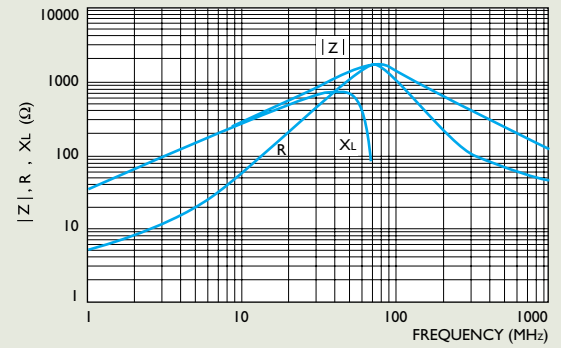
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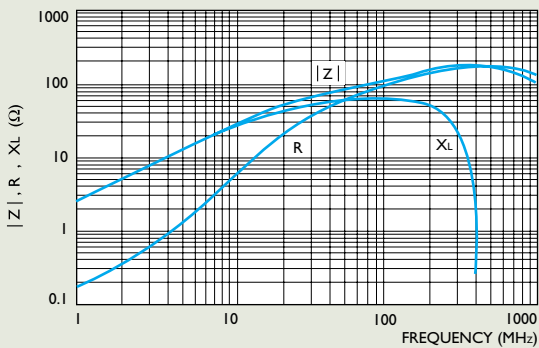
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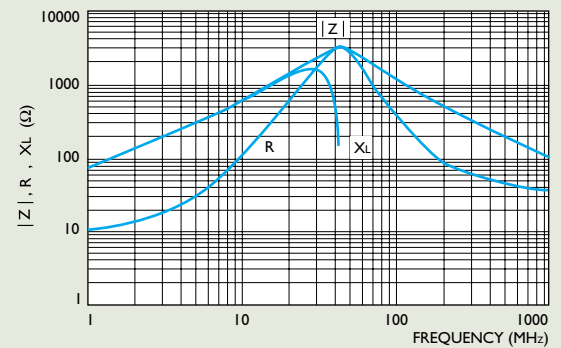
SBK321611T-122Y-S



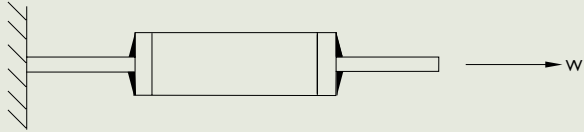
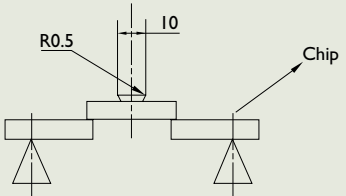
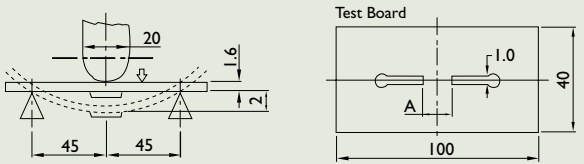
SBK321611T-121Y-S



SBK321611T-202Y-S



SB, PB, CL SERIES RELIABILITY TEST

NO	ITEM	TEST CONDITIONS	REMARKS																
1	Thermal Shock (Temperature Cycle)	Temperature : -40°C + 85°C, Kept Stabilized For 30 Minutes Each Cycle : 100 Cycles	Inductance value shall be within $\pm 10\%$ of the initial value. Q-factor shall be within $\pm 30\%$ of the initial value. Impedance shall be within $\pm 20\%$ of the initial value.																
2	Humidity Resistance	Humidity : 90% to 95% RH Temperature : 40 \pm 2°C Testing Time : 1000 \pm 12 Hours	DCR value shall be within $\pm 20\%$ of the initial value. • NO 1-4 Measurement : After placing for 24 hours min. • NO 2-3 Applied current : Rated current (maximum value) • NO 5 Cycle : 5 cycles																
3	High Temperature Resistance	Temperature : 85 \pm 2°C Humidity : 20% Testing Time : 1000 \pm 12 Hours																	
4	Low Temperature Storage Life Test	Temperature : -40 \pm 2°C Time : 1000 \pm 12 Hours																	
5	Temperature and Humidity Cycle	<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Humidity</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25 \pm 2°C</td> <td>95 ~ 100% RH</td> <td>3 Hours</td> </tr> <tr> <td>2</td> <td>55 \pm 2°C</td> <td>95 ~ 96% RH</td> <td>9.5 Hours</td> </tr> <tr> <td>3</td> <td>25 \pm 2°C</td> <td>95 ~ 100% RH</td> <td>9.5 Hours</td> </tr> </tbody> </table>	Step	Temperature	Humidity	Time	1	25 \pm 2°C	95 ~ 100% RH	3 Hours	2	55 \pm 2°C	95 ~ 96% RH	9.5 Hours	3	25 \pm 2°C	95 ~ 100% RH	9.5 Hours	
Step	Temperature	Humidity	Time																
1	25 \pm 2°C	95 ~ 100% RH	3 Hours																
2	55 \pm 2°C	95 ~ 96% RH	9.5 Hours																
3	25 \pm 2°C	95 ~ 100% RH	9.5 Hours																
6	Vibration	Frequency : 10 Hz to 55 Hz Amplitude : 1.5mm Direction : X, Y, Z Time : 2 Hours Each																	
7	IR Reflow Soldering	Solder : H63A (Eutectic Solder) Solder Temperature : 230 \pm 5°C Time : 6 Minutes Cycles : 1	Impedance shall be within $\pm 20\%$ of the initial value. DCR value shall be within $\pm 20\%$ of the initial value.																
8	Soldering Heat Resistance	Preheat : 120 to 150°C, 60 Seconds Solder : H63A (Eutectic Solder) Solder Temperature : 260 \pm 5°C Flux : Rosin Dip time : 10 \pm 1 Seconds	The chip must have no cracks. More than 75% of the terminal electrode must be covered with solder.																
9	Terminal Strength		The terminal electrode and the ferrite must not be damaged by the forces applied on the test conditions. Spec : 160808 series : $\geq 0.5\text{Kg}$ 201209 series : $\geq 1\text{Kg}$ Other series : $\geq 2\text{Kg}$																
10	Bending Strength		The terminal electrode and the ferrite must not be damaged by the forces applied on the test conditions. Spec : 4753215, 451616 : $\geq 8\text{Kg}$ 321616, 321611, 322513 : $\geq 6\text{Kg}$ 201209, 160808 : $\geq 3\text{Kg}$																
11	Flexure Strength		No mechanical damage shall be noticed even when the board is bent 2 mm.																