

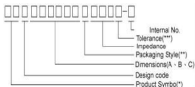
Multilayer Ferrite Chip beads



LYE's offer s hundreds of m ulti-layered ferr ite chip beads with var ious sizes, frequency characteristics, and a wide range of impedance values to provide powerful solutions for EMI problems.

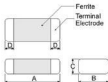
Three formulas of ferrite compose several types of EMI s uppression chip beads that are classified into six categories- ESB, EGB, EPB, EUPB, ENB, and HF series.

Product Identification



- Product Symbol: ESB, EGB, EPB, EUPB, ENB, EHF
- Packaging: T : Tape and Reel ; B : Bulk
- Tolerance: Y = $\pm 25\%$; M = $\pm 20\%$; T: $\pm 30\%$
- Note: RoHS Compliant

Shapes and Dimensions



Dimensions in mm

TYPE	A	B	C	D
①060303	0.6 $\pm$ 0.03	0.30 $\pm$ 0.03	0.3 $\pm$ 0.03	0.15 $\pm$ 0.05
①100505	1.0 $\pm$ 0.10	0.50 $\pm$ 0.10	0.5 $\pm$ 0.10	0.25 $\pm$ 0.10
①160808	1.6 $\pm$ 0.15	0.80 $\pm$ 0.15	0.8 $\pm$ 0.15	0.3 $\pm$ 0.2
②201209	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	0.9 $\pm$ 0.20	0.5 $\pm$ 0.3
②201212	2.0 $\pm$ 0.20	1.25 $\pm$ 0.20	1.25 $\pm$ 0.20	0.5 $\pm$ 0.3
③321611	3.2 $\pm$ 0.20	1.60 $\pm$ 0.20	1.1 $\pm$ 0.20	0.5 $\pm$ 0.3
③321616	3.2 $\pm$ 0.20	1.60 $\pm$ 0.20	1.6 $\pm$ 0.20	0.5 $\pm$ 0.3
③322513	3.2 $\pm$ 0.20	2.50 $\pm$ 0.20	1.3 $\pm$ 0.20	0.5 $\pm$ 0.3
④451616	4.5 $\pm$ 0.25	1.60 $\pm$ 0.20	1.6 $\pm$ 0.20	0.5 $\pm$ 0.3
④453215	4.5 $\pm$ 0.25	3.20 $\pm$ 0.20	1.5 $\pm$ 0.20	0.5 $\pm$ 0.3

① : ESB/EPB ② : ESB/EPB/ENB/EHF ③ : ESB/EPB/ENB/EGB/EUPB

④ : ESB/EPB/ENB/EGB/EUPB/EHF ⑤ : EUPB ⑥ : ESB/EGB

⑦ : ESB/EPB/EGB ⑧ : ESB/EPB/EGB/EUPB

Dimension Conversion

Code	Dimension in mm (AxBxC)	EIA
060303	0.6X0.3X0.3	0201
100505	1.0X0.5X0.5	0402
160808	1.6x0.8x0.8	0603
201209	2.0x1.2x0.9	0805
321611	3.2x1.6x1.1	1206
321616	3.2x1.6x1.6	1206
322513	3.2x2.5x1.3	1210
451616	4.5x1.6x1.6	1806
453215	4.5x3.2x1.5	1812

Recommended Pattern



Dimensions in mm

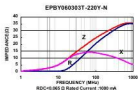
TYPE	A	B	C
①060303	0.2 ~ 0.3	0.75 ~ 1.05	0.3
①100505	0.4	1.2 ~ 1.4	0.5
①160808	0.7 ~ 0.8	1.8 ~ 2.0	0.8 ~ 0.8
②201209	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
②201212	1.0 ~ 1.2	2.6 ~ 4.0	1.0 ~ 1.2
③321611	2.0	4.2 ~ 5.2	1.2
③321616	2.0	4.2 ~ 5.2	1.2
③322513	2.0	5.5 ~ 6.5	1.8
④451616	3.0	5.5 ~ 6.5	1.2
④453215	3.0	5.5 ~ 6.5	2.4

- * Don't apply narrower pattern than listed above to EPBY and EUPB. Narrow pattern might cause excessive heat or open circuit.

Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	D.C. Resistance (Ω) Max	Rated current (mA) Max
EPBY060303T-220Y-N	100	22	0.065	1000
EPBY060303T-330Y-N	100	33	0.090	750
EPBY060303T-470Y-N	100	47	0.120	500

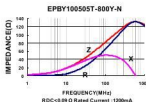
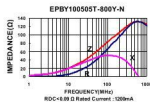
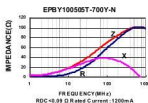
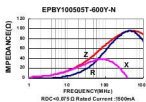
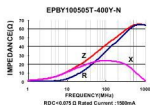
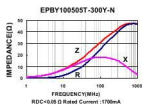
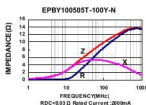
Test Instruments : HP4291A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	D.C. Resistance (Ω) Max	Rated current (mA) Max
EPBY100505T-070Y-N	100	7	0.03	2000
EPBY100505T-100Y-N	100	10	0.03	2000
EPBY100505T-300Y-N	100	30	0.05	1700
EPBY100505T-400Y-N	100	40	0.075	1500
EPBY100505T-600Y-N	100	60	0.075	1500
EPBY100505T-700Y-N	100	70	0.09	1200
EPBY100505T-800Y-N	100	80	0.09	1200
EPBY100505T-121Y-N	100	120	0.09	1200

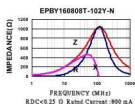
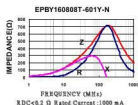
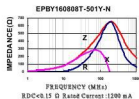
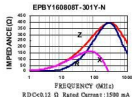
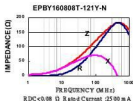
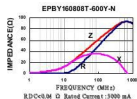
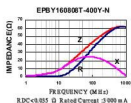
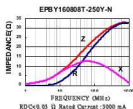
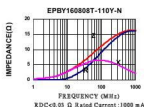
Test Instruments : HP4291A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	D.C. Resistance (Ω) Max	Rated current (mA) Max
EPBY160808T-060Y-N	100	6	0.080	2500
EPBY160808T-070Y-N	100	7	0.085	2000
EPBY160808T-110Y-N	100	11	0.020	4000
EPBY160808T-250Y-N	100	25	0.030	3000
EPBY160808T-400Y-N	100	40	0.035	3000
EPBY160808T-600Y-N	100	60	0.040	3000
EPBY160808T-121Y-N	100	120	0.080	2500
EPBY160808T-151Y-N	100	150	0.085	2000
EPBY160808T-181Y-N	100	180	0.090	2000
EPBY160808T-201Y-N	100	200	0.095	2000
EPBY160808T-301Y-N	100	300	0.120	1500
EPBY160808T-501Y-N	100	500	0.150	1200
EPBY160808T-601Y-N	100	600	0.200	1000
EPBY160808T-102Y-N	100	1000	0.250	800
EPBY160808T-122Y-N	100	1200	0.250	800
EPBY160808T-152Y-N	100	1500	0.400	500

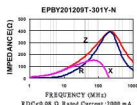
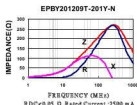
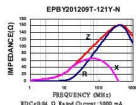
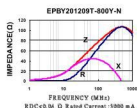
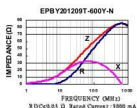
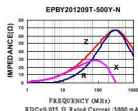
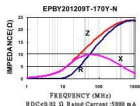
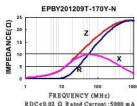
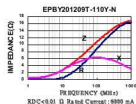
Test Instruments : HP4291A Impedance / Material Analyzer



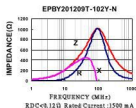
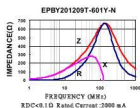
Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	D.C. Resistance (Ω) Max	Rated current (mA) Max
EPBY201209T-070Y-N	100	7	0.01	6000
EPBY201209T-110Y-N	100	11	0.01	6000
EPBY201209T-170Y-N	100	17	0.02	5000
EPBY201209T-300Y-N	100	30	0.015	4000
EPBY201209T-500Y-N	100	50	0.025	3000
EPBY201209T-600Y-N	100	60	0.03	3000
EPBY201209T-800Y-N	100	80	0.04	3000
EPBY201209T-121Y-N	100	120	0.04	3000
EPBY201209T-221Y-N	100	220	0.05	2500
EPBY201209T-301Y-N	100	300	0.08	2000
EPBY201209T-401Y-N	100	400	0.10	2000
EPBY201209T-601Y-N	100	600	0.10	2000
EPBY201209T-751Y-N	100	750	0.12	1500
EPBY201209T-102Y-N	100	1000	0.12	1500
EPBY201209T-152Y-N	100	1500	0.30	1000

Test Instruments : HP4291A Impedance / Material Analyzer



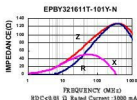
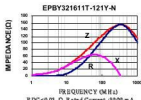
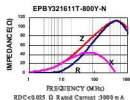
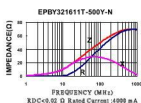
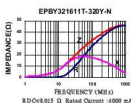
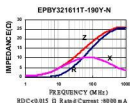
Test Instruments : HP4291A Impedance / Material Analyzer



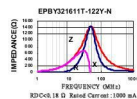
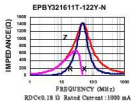
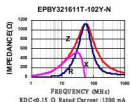
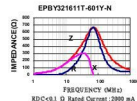
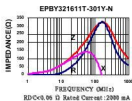
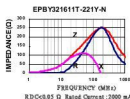
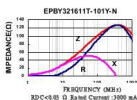
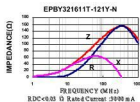
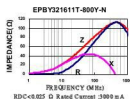
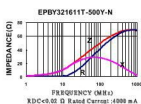
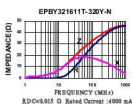
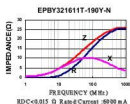
Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance (Ω) 125%	DC Resistance (Ω) Max	Rated current (mA) Max
EPBY321611T-080Y-N	100	8	0.015	6000
EPBY321611T-110Y-N	100	11	0.015	6000
EPBY321611T-190Y-N	100	19	0.015	6000
EPBY321611T-320Y-N	100	32	0.015	4000
EPBY321611T-500Y-N	100	50	0.020	4000
EPBY321611T-800Y-N	100	80	0.025	3000
EPBY321611T-101Y-N	100	100	0.030	3000
EPBY321611T-121Y-N	100	120	0.030	3000
EPBY321611T-221Y-N	100	220	0.050	2000
EPBY321611T-301Y-N	100	300	0.060	2000
EPBY321611T-601Y-N	100	600	0.100	2000
EPBY321611T-102Y-N	50	1000	0.150	1200
EPBY321611T-122Y-N	50	1200	0.180	1000
EPBY321611T-152Y-N	50	1500	0.200	800

Test Instruments : HP4291A Impedance / Material Analyzer



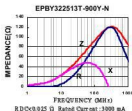
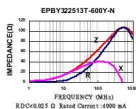
Test Instruments : HP4291A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	D.C. Resistance (Ω) Max	Rated current (mA) Max
EPBY322513T-190Y-N	100	19	0.025	4000
EPBY322513T-300Y-N	100	30	0.025	4000
EPBY321611T-320Y-N	100	32	0.025	4000
EPBY321611T-500Y-N	100	50	0.025	4000
EPBY322513T-600Y-N	100	60	0.025	4000
EPBY322513T-900Y-N	100	90	0.025	3000
EPBY322513T-121Y-N	100	120	0.030	2500

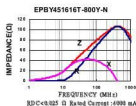
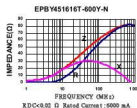
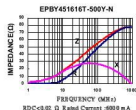
Test Instruments : HP4291A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	D.C. Resistance (Ω) Max	Rated current (mA) Max
EPBY451616T-190Y-N	100	19	0.020	6000
EPBY451616T-400Y-N	100	40	0.020	6000
EPBY451616T-500Y-N	100	50	0.020	6000
EPBY451616T-600Y-N	100	60	0.020	5000
EPBY451616T-800Y-N	100	80	0.025	4000
EPBY451616T-900Y-N	100	90	0.100	2000
EPBY451616T-151Y-N	100	150	0.100	2000
EPBY451616T-301Y-N	100	300	0.100	2000
EPBY451616T-471Y-N	100	470	0.100	2000
EPBY451616T-601Y-N	100	600	0.100	2000
EPBY451616T-102Y-N	100	1000	0.100	2000
EPBY451616T-132Y-N	100	1300	0.100	2000

Test Instruments : HP4291A Impedance / Material Analyzer



Electrical Characteristics

Part Number	Test Frequency (MHz)	Impedance ($\Omega \pm 25\%$)	D.C. Resistance (Ω) Max	Rated current (mA) Max
EPBY453215T-190Y-N	100	19	0.030	6000
EPBY453215T-300Y-N	100	30	0.030	6000
EPBY453215T-500Y-N	100	50	0.030	6000
EPBY453215T-600Y-N	100	60	0.030	6000
EPBY453215T-700Y-N	100	70	0.030	6000
EPBY453215T-121Y-N	100	120	0.030	4000
EPBY453215T-151Y-N	100	150	0.030	4000
EPBY453215T-601Y-N	100	600	0.028	4000
EPBY453215T-132Y-N	100	1300	0.150	1500

Test Instruments : HP4291A Impedance / Material Analyzer

