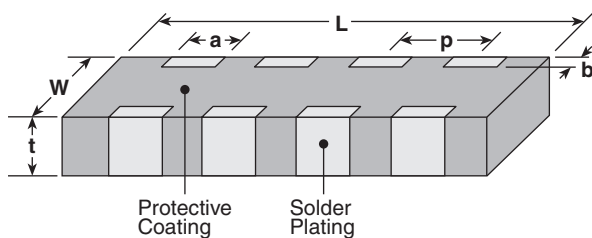


features

- Noise suppression in signal I/O lines and other circuits that require multiple chip beads for noise suppression
- Multiple circuits in a single package
- Marking: Black body color with no marking
- Products with lead-free terminations meet EU RoHS requirements

dimensions and construction

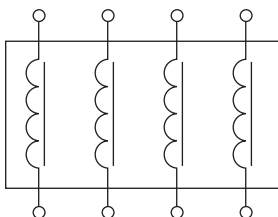


Type (Inch Size Code)	Dimensions inches (mm)					
	L	W	t	a	b	p
1J (0603)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.031±.008 (0.8±0.2)	.016±.008 (0.40±0.2)	.012±.008 (0.3±0.2)	.031±.008 (0.8±0.2)

ordering information

New Part #	FBA	1J	4	A	T	TE	300	P
	Type	Size	Circuits	Characteristics	Termination Material	Packaging	Impedance	Tolerance
		1J: 0603	Number of circuits	A: Standard B: High speed	T: Sn	TE: 7" embossed plastic (3,000 pieces/reel)	2 significant figures + 1 multiplier Ex: 300 = 30Ω	P: ±25%

circuit schematic



For further information on packaging, please refer to Appendix A.

applications and ratings

Part Designation	Impedance @ 100MHz (Ω)	DC Resistance Maximum (Ω)	Allowable DC Current Per Element Maximum (mA)	Operating Temperature Range
FBA1J4ATTE300P	30	0.1	200	-55°C to +125°C
FBA1J4ATTE600P	60	0.25	400	
FBA1J4ATTE121P	120	0.3	350	
FBA1J4ATTE221P	220		250	
FBA1J4ATTE301P	300	0.4	100	
FBA1J4ATTE601P	600	0.5		
FBA1J4ATTE102P	1000	0.7	200	
NEW FBA1J4BTTE300P	30	0.25	400	
FBA1J4BTTE600P	60	0.3	350	
FBA1J4BTTE121P	120	0.4	100	
FBA1J4BTTE221P	220	0.45		
NEW FBA1J4BTTE301P	300	0.50	150	
FBA1J4BTTE601P	600	0.65	100	

environmental applications

Performance Characteristics

Parameter	Requirement	Test Method
Operating Temperature	-55°C to +125°C	
Storage Temperature	40°C @ 70% humidity	Sealed plastic bags with desiccant shall be used to reduce the potential of oxidation on the terminations during storage.
Resistance to Solder Heat	Change in Impedance: Relative to value before test ±20% Appearance: There shall be no cracking. Solder Coverage: More than 75% of the terminal electrode shall be covered with solder.	Flux: 5 - 10 second dip After Flux: Air dry for 15 seconds Preheat: 150°C ± 10°C Preheat Time: 60 seconds Solder Temperature: 260°C ± 5°C Dip Time: 10 ± 1 second
Solderability	Solder Coverage: More than 95% of the termination shall be covered with solder.	Flux: 5 - 10 second dip After Flux: Air dry for 15 seconds Solder Temperature: 245°C ± 5°C Dip Time: 5 ± 0.5 second
Leach Resistance	Appearance: There shall be no visible signs of physical or mechanical damage (i.e. no cracks). Terminations: Termination must not be leached away for more than 5%.	The bead shall be subjected to the following 5 steps for the period of time shown below. The 5 steps constitute one (1) rotation. 4 rotations shall be carried out. 1) Flux: 5 - 10 seconds 2) After Flux: Air dry for 15 seconds 3) Solder Temperature: 230°C ± 5°C 4) Dip Time: 5 ± 0.5 second 5) Cool: Air cool for 60 seconds

environmental applications (continued)

Performance Characteristics

Parameter	Requirement	Test Method
Insulation Resistance	Insulation Resistance: Min. 1G ohms	
Solvent Resistance	Change in Impedance: Relative to value before test $\pm 10\%$	Cleaning by: Washer: Ultrasonic washer (100W) Solvent: Isopropyl alcohol Time: 3 minutes
Terminal Strength (hanging test)	Appearance: The terminal electrode shall not break off, nor shall there be damage to the body.	Type: W(kgf): Time: 1206 1.5 30 seconds ± 2 seconds
Terminal Strength (push test)	Appearance: There shall be no evidence of mechanical degradations to terminals or body.	Type: W(kgf): Time: 1206 2.3 60 seconds
Bending Strength	Appearance: There shall be no physical or mechanical damage. Impedance: Relative to initial value before test $\pm 10\%$	Board: 90 x 40 x 1.6mm Bend: 1mm Time: 5 sec
Mechanical Shock	Appearance: There shall be no physical or mechanical damage. Impedance: Relative to initial value before test $\pm 10\%$	Force: 50G Time: 11 msec There shall be 3 shocks in each of 6 directions (18 shocks total)
Vibration	Impedance: Relative to initial value $\pm 10\%$	Only endurance conditioning by sweeping shall be made. The entire frequency range from 10 - 2,000 Hz, return to 10 Hz in 20 minutes (this will constitute one cycle). Amplitude: 15G The test shall have a 15G peak and shall be applied for a period of 4 hours (12 cycles) in each of 3 mutually perpendicular directions (a total of 36 cycles within a total of 12 hours).
Thermal Shock	Appearance: There shall be no physical or mechanical damage. Impedance: Relative to initial value $\pm 20\%$ DCR: The DCR shall not exceed initial specified value. Testing of the parts will be made at 0 hours, 250 hours and 500 hours. Before testing, the parts shall be allowed to cool to room temperature for 24 hours.	Step: Temperature: Time: 1-start -40°C $\pm 2^\circ\text{C}$ — 2-hold -40°C $\pm 2^\circ\text{C}$ 30 minutes ± 5 minutes 3-transfer — 0.5 minutes maximum 4-hold $\pm 105^\circ\text{C} \pm 2^\circ\text{C}$ 30 minutes ± 5 minutes 5-transfer — 0.5 minutes maximum Steps 1 thru 5 constitute one complete cycle and the test shall consist of a total of 500 cycles.
Load Humidity	Appearance: There shall be no physical or mechanical damage. Impedance: Relative to initial value $\pm 15\%$ Measurements shall be taken at 0 hours, 250 hours, 500 hours and 1,000 hours and shall meet the conditions stated above.	Temperature: $\pm 85^\circ\text{C} \pm 2^\circ\text{C}$ Relative Humidity: 85% Time: 1,000 hours total Apply: 100% rated current
Life Test	Appearance: There shall be no physical or mechanical damage. Impedance: Relative to initial value $\pm 15\%$ Measurements shall be taken at 0 hours, 250 hours, 500 hours and 1,000 hours and shall meet the conditions stated above.	Temperature: $\pm 85^\circ\text{C} \pm 2^\circ\text{C}$ Time: 1,000 hours total Apply: 100% rated current