

# Multi Layer Ferrite Power Beads

## Type CZP

ISO 9001:2000  
CERTIFIED  
TS-16949  
CERTIFIED

### 1. General

- Designed to reduce noise at high frequencies
- Standard EIA Packages: 1J, 2A, 2B
- Nickel barrier with solder overcoat for excellent solderability
- Magnetically shielded

### 2. Dimensions



Table 1

Dimensions - inches (mm)				
Part	L	W	t	d
<b>1J</b> <b>(0603)</b>	0.063±0.006 (1.60±0.15)	0.031±0.006 (0.80±0.15)	0.031±0.006 (0.80±0.15)	0.014±0.006 (0.36±0.15)
<b>2A</b> <b>(0805)</b>	0.079±0.008 (2.00±0.20)	0.049±0.008 (1.25±0.20)	0.035±0.008 (0.90±0.20)	0.020±0.010 (0.51±0.25)
<b>2B</b> <b>(1206)</b>	0.126±0.008 (3.20±0.20)	0.063±0.008 (1.60±0.20)	0.043±0.008 (1.10±0.20)	0.020±0.010 (0.51±0.25)

### 3. Type Designation

The type designation shall be in the following form:

#### New Type



## 4. Standard Applications

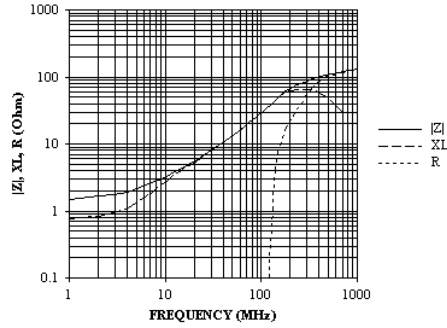
Part Designation	Impedance @ 100MHz ( )	DC Resistance Maximum ( )	Allowable DC Current Maximum (mA)	Operating Temperature Range
CZP1JFTTD300P	30	0.03	3000	-55°C to +125°C
CZP1JFTTD600P	60	0.04		
CZP1JFTTD121P	120	0.10		
CZP1JFTTD301P	300	0.10		
CZP2AFTTD300P	30	0.015	3000	-55°C to +125°C
CZP2AFTTD400P	40	0.03	2000	
CZP2AFTTD450P	45			
CZP2AFTTD600P	60	0.025	3000	
CZP2AFTTD800P	80	0.04	2000	
CZP2AFTTD221P	220	0.05		
CZP2AFTTD301P	300	0.15	1000	
CZP2AFTTD601P	600	0.20		
CZP2AFTTD102P	1000			
CZP2BFTTE190P	19	0.02	3000	
CZP2BFTTE260P	26			
CZP2BFTTE300P	30			
CZP2BFTTE310P	31			
CZP2BFTTE500P	50	0.025	2000	
CZP2BFTTE650P	65	0.03		
CZP2BFTTE700P	70			
CZP2BFTTE800P	80			
CZP2BFTTE900P	90			
CZP2BFTTE101P	100	0.10	1000	
CZP2BFTTE121P	120			
CZP2BPTTE700P	70	0.20	3000	
CZP2BFTTE601P	600		1000	
CZP2BPTTE101P	100	0.03	3000	
CZP2BPTTE121P	120	0.04	1500	
CZP2BPTTE601P	600	0.10		

## 5. 0603 (1J) Graphs

CZP1JF121



CZP1JF300



CZP1JF301



CZP1JF600



**5. 0805 (2A) Graphs**



**5. 1206 (2B) Graphs**



5. 1206 (2B)Graphs (continued)



## 5. Characteristics

Item	Requirement	Conditions												
Operating Temperature	-55°C ~ +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	<b>Change in Impedance:</b> Relative to value before test $\pm 20\%$ . <b>Appearance:</b> There shall be no cracking <b>Solder Coverage:</b> More than 75% of the terminal electrode shall be covered with solder.	<b>Flux:</b> 5-10 sec dip <b>After Flux:</b> Air dry for 15 sec <b>Preheat:</b> 150°C $\pm 10^\circ\text{C}$ <b>Preheat Time:</b> 60 sec <b>Solder Temp:</b> 260°C $\pm 5^\circ\text{C}$ <b>Dip Time:</b> 10 $\pm 1$ sec												
Solderability	<b>Solder Coverage:</b> More than 95% of the termination shall be covered with solder.	<b>Flux:</b> 5-10 sec dip <b>After Flux:</b> Air dry for 15 sec <b>Solder Temp:</b> 245°C $\pm 5^\circ\text{C}$ <b>Dip Time:</b> 5 $\pm 0.5$ sec												
Leach Resistance	<b>Appearance:</b> There shall be no visible signs of physical or mechanical damage (i.e. no cracks). <b>Terminations:</b> 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) <b>Flux:</b> 5-10 sec 2) <b>After Flux:</b> Air dry for 15 sec 3) <b>Solder Temp:</b> 230°C $\pm 5^\circ\text{C}$ 4) <b>Dip Time:</b> 5 $\pm 0.5$ sec 5) <b>Cool:</b> Air cool for 60 seconds												
Insulation Resistance	<b>Insulation Resistance:</b> Min 1G ohms													
Solvent Resistance	<b>Change in Impedance:</b> Relative to value before test $\pm 10\%$ .	Cleaning by: <b>Washer:</b> Ultrasonic washer (100W) <b>Solvent:</b> Isopropyl alcohol <b>Time:</b> 3 minutes												
Terminal Strength (hanging test)	<b>Appearance:</b> The terminal electrode shall not break off, nor shall there be damage to the body.	<table border="1"> <thead> <tr> <th>Type</th> <th>W(kgf)</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1J</td> <td>0.5</td> <td>30 sec <math>\pm 2</math> sec</td> </tr> <tr> <td>2A</td> <td>1.0</td> <td>30 sec <math>\pm 2</math> sec</td> </tr> <tr> <td>2B</td> <td>1.5</td> <td>30 sec <math>\pm 2</math> sec</td> </tr> </tbody> </table>	Type	W(kgf)	Time	1J	0.5	30 sec $\pm 2$ sec	2A	1.0	30 sec $\pm 2$ sec	2B	1.5	30 sec $\pm 2$ sec
Type	W(kgf)	Time												
1J	0.5	30 sec $\pm 2$ sec												
2A	1.0	30 sec $\pm 2$ sec												
2B	1.5	30 sec $\pm 2$ sec												
Terminal Strength (push test)	<b>Appearance:</b> There shall be no evidence of mechanical degradations to terminals or body.	<table border="1"> <thead> <tr> <th>Type</th> <th>W(kgf)</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1J</td> <td>1.4</td> <td>60 sec</td> </tr> <tr> <td>2A</td> <td>1.8</td> <td>60 sec</td> </tr> <tr> <td>2B</td> <td>2.3</td> <td>60 sec</td> </tr> </tbody> </table>	Type	W(kgf)	Time	1J	1.4	60 sec	2A	1.8	60 sec	2B	2.3	60 sec
Type	W(kgf)	Time												
1J	1.4	60 sec												
2A	1.8	60 sec												
2B	2.3	60 sec												
Bending Strength	<b>Appearance:</b> There shall be no physical or mechanical damage. <b>Impedance:</b> Relative to initial value before test $\pm 10\%$ .	<b>Board:</b> 90x40x1.6mm <b>Bend:</b> 1mm <b>Time:</b> 5 sec												

## 5. Characteristics (continued)

Item	Requirement	Conditions																		
Mechanical Shock	<p><b>Appearance:</b> There shall be no physical or mechanical damage.</p> <p><b>Impedance:</b> Relative to initial value before test <math>\pm 10\%</math>.</p>	<p><b>Force:</b> 50G</p> <p><b>Time:</b> 11 msec</p> <p>There shall be 3 shocks in each of 6 directions (18 shocks total).</p>																		
Vibration	<p><b>Impedance:</b> Relative to initial value <math>\pm 10\%</math>.</p>	<p>Only endurance conditioning by sweeping shall be made. The entire frequency range from 10-2,000Hz and return to 10Hz in 20 minutes (this shall constitute one cycle). Amplitude: 1.5mm</p> <p>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).</p>																		
Thermal Shock	<p><b>Appearance:</b> There shall be no physical or mechanical damage.</p> <p><b>Impedance:</b> Relative to initial value <math>\pm 20\%</math>.</p> <p><b>DCR:</b> The DCR shall not exceed initial specified value.</p> <p>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.</p>	<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1-start</td> <td>-40°C <math>\pm 2^\circ\text{C}</math></td> <td>_____</td> </tr> <tr> <td>2-hold</td> <td>-40°C <math>\pm 2^\circ\text{C}</math></td> <td>30 min <math>\pm 5</math> min</td> </tr> <tr> <td>3-transfer</td> <td>_____</td> <td>0.5 min max.</td> </tr> <tr> <td>4-hold</td> <td>+105°C <math>\pm 2^\circ\text{C}</math></td> <td>30 min <math>\pm 5</math> min</td> </tr> <tr> <td>5-transfer</td> <td>_____</td> <td>0.5 min max.</td> </tr> </tbody> </table> <p>Steps 1 thru 5 constitute one complete cycle and the test shall consist of a total of 500 cycles.</p>	Step	Temperature	Time	1-start	-40°C $\pm 2^\circ\text{C}$	_____	2-hold	-40°C $\pm 2^\circ\text{C}$	30 min $\pm 5$ min	3-transfer	_____	0.5 min max.	4-hold	+105°C $\pm 2^\circ\text{C}$	30 min $\pm 5$ min	5-transfer	_____	0.5 min max.
Step	Temperature	Time																		
1-start	-40°C $\pm 2^\circ\text{C}$	_____																		
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3-transfer	_____	0.5 min max.																		
4-hold	+105°C $\pm 2^\circ\text{C}$	30 min $\pm 5$ min																		
5-transfer	_____	0.5 min max.																		
Load Humidity	<p><b>Appearance:</b> There shall be no physical or mechanical damage.</p> <p><b>Impedance:</b> Relative to initial value <math>\pm 15\%</math>.</p> <p>Measurements shall be taken at 0 hours, 250 hours, 500 hours and 1,000 hours and shall meet the conditions stated above.</p>	<p><b>Temperature:</b> 85°C <math>\pm 2^\circ\text{C}</math></p> <p><b>Relative Humidity:</b> 85%</p> <p><b>Time:</b> 1,000 hours total</p> <p><b>Apply:</b> 100% rated current</p>																		
Life Test	<p><b>Appearance:</b> There shall be no physical or mechanical damage</p> <p><b>Impedance:</b> Relative to initial value <math>\pm 15\%</math></p> <p>Measurements shall be taken at 0 hours, 250 hours, 500 hours and 1,000 hours and shall meet the conditions stated above.</p>	<p><b>Temperature:</b> 85°C <math>\pm 2^\circ\text{C}</math></p> <p><b>Time:</b> 1,000 hours total</p> <p><b>Apply:</b> 100% rated current</p>																		



## 6. Packaging Specifications

KOA's multilayer components are provided on tape-and-reel for use in pick-and-place machines. The reel size is 7 inch.

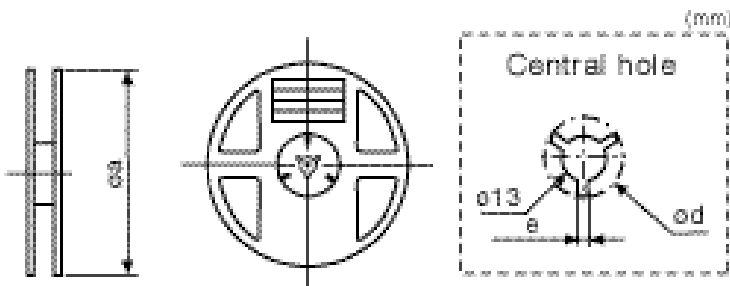
## 7. Dimensions - inches (mm)



Dimensions - inches (mm)

Tape	A	B	W	P <sub>1</sub>	T <sub>1</sub>
<b>1J 0603</b>	0.075±0.002 (1.9±0.1)	0.043±0.002 (1.1±0.1)	0.318±0.002 (8.1±0.1)	0.157±0.004 (4.0±0.1)	0.043±0.002 (1.1±0.1)
<b>2A 0805</b>	0.093±0.002 (2.4±0.1)	0.063±0.002 (1.6±0.1)	0.318±0.002 (8.1±0.1)	0.157±0.004 (4.0±0.1)	0.046±0.002 (1.2±0.1)
<b>2B 1206</b>	0.138±0.002 (3.5±0.1)	0.071±0.002 (1.8±0.1)	0.318±0.002 (8.1±0.1)	0.157±0.004 (4.0±0.1)	0.071±0.002 (1.8±0.1)

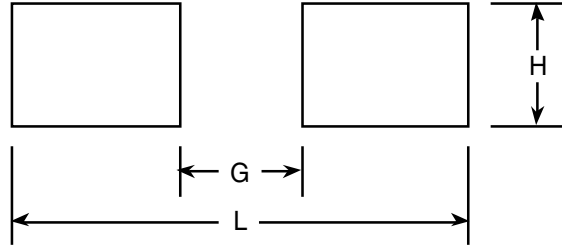
Dimensions - inches (mm)



Tape	øa	ød	e
<b>1J 0603</b>			
<b>2A 0805</b>	7 (178)	0.827 (21)	0.079 (2.0)
<b>2B 1206</b>			

## 9. Recommended PC Board Land Patterns - mm (inches)

Chip Size	L	G	H
1J (0603)	2.6 (0.102)	0.6 (0.023)	0.8 (0.031)
2A (0805)	3.0 (0.118)	1.0 (0.039)	1.0 (0.039)
2B (1206)	4.4 (0.173)	2.2 (0.087)	1.4 (0.055)



## 10. Recommended Temperature Profiles for Soldering

Recommended Temperature Profile for Wave Soldering



Recommended Temperature Profile for Reflow Soldering





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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