

# Multi Layer Ferrite Power Beads

## Type CZP

ISO 9001:2000  
TS-16949

### 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



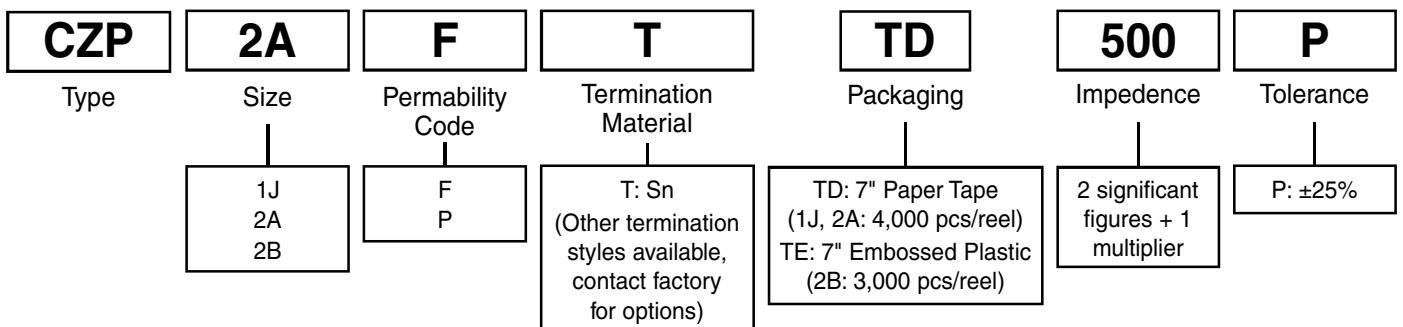
Table 1

Dimensions - inches (mm)				
Part	L	W	t	d
<b>1J (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 (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 (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		-55°C to +125°C
CZP2BFTTE260P	26				
CZP2BFTTE300P	30				
CZP2BFTTE310P	31				
CZP2BFTTE500P	50	0.025	2000		
CZP2BFTTE650P	65	0.03			
CZP2BFTTE700P	70				
CZP2BFTTE800P	80				
CZP2BFTTE900P	90			0.10	
CZP2BFTTE101P	100				
CZP2BFTTE121P	120				
CZP2BPTTE700P	70	0.20	3000		
CZP2BFTTE601P	600		1000		
CZP2BPTTE101P	100	0.03	3000		
CZP2BPTTE121P	120	0.04			
CZP2BPTTE601P	600	0.10		1500	

**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)

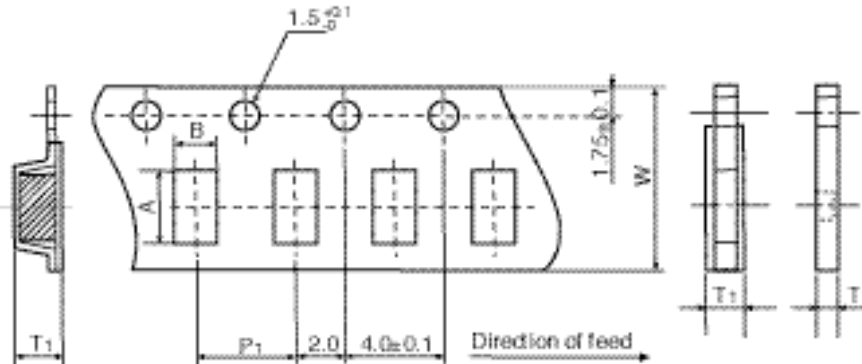
Item	Requirement	Conditions																		
Mechanical Shock	<p><b>Appearance:</b> There shall be no physical or mechanical damage.</p> <p><b>Impedance:</b> Relative to initial value before test <math>\pm 10\%</math>.</p>	<p><b>Force:</b> 50G</p> <p><b>Time:</b> 11 msec</p> <p>There shall be 3 shocks 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.

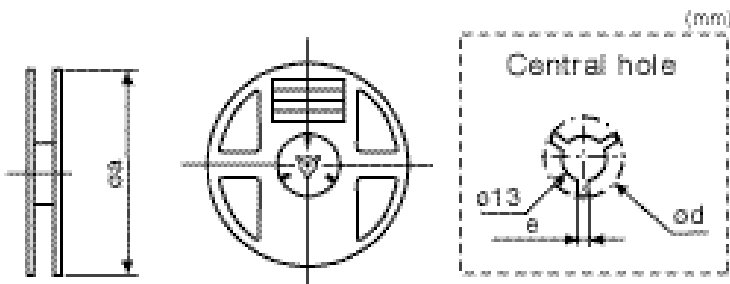
## 7. Dimensions - inches (mm)



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)

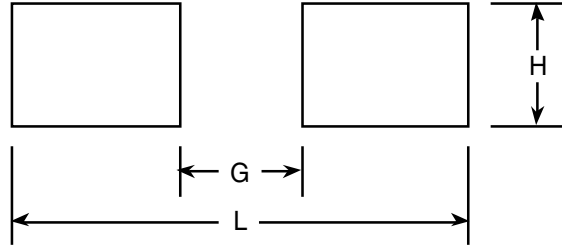
Dimensions - inches (mm)



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 «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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