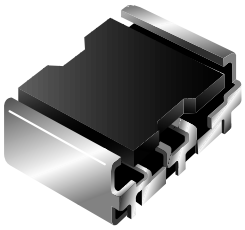
Chip Bead Cores

Type: EXCCL



■ Features

- 2A rated current
- High impedance
- No need of ground pattern
- Suitable for flow soldering and reflow soldering
- Three kinds of characteristics, depending on strength of noise
- ISO-9001 approved

■ Recommended Applications

- Digital equipment such as personal computers, word processors, printers, HDD, PPC, and communications equipment
- Digital audio and video equipment
- Power supply equipment such as AC adapters and switching power supplies
- Electronic automotive equipment such as engine controls, panels, and audio systems
- Electric musical equipment and other digital devices

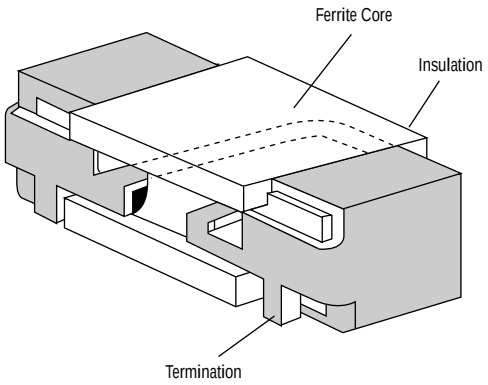
■ Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11
E	X	C	C	L	3	2	2	5	U	1
Product Code			Type	Part Name	Size				Suffix for Packaging	Suffix
L-C Network			Chip Type	EMI Bead Core						

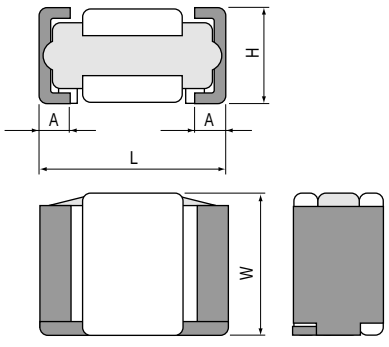
Size	
3216	3.2 x 1.6 x 1.6
3225	3.2 x 2.5 x 1.6
4532	4.5 x 3.2 x 1.8

Suffix for Packaging	
U	Taping

■ Construction



■ Dimensions in mm (not to scale)



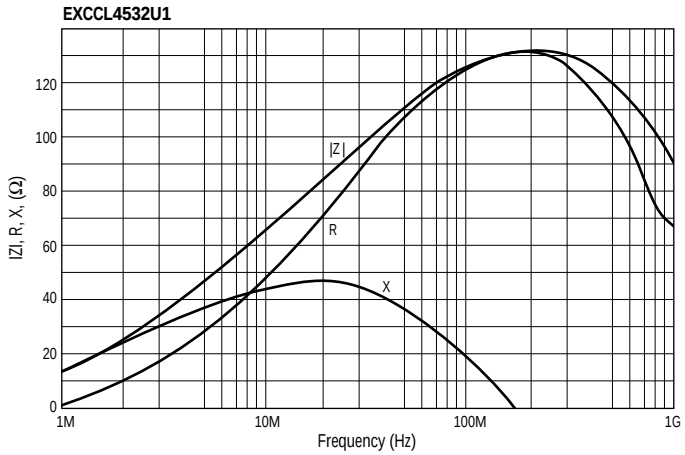
	Dimensions			
	L	**W**	**H**	**A**
4532	4.5 ± 0.4	3.2 ± 0.3	1.8 ± 0.2	0.5 ± 0.2
3225	3.2 ± 0.3	2.5 ± 0.3	1.6 ± 0.2	0.5 ± 0.2
3216	3.2 ± 0.3	1.6 ± 0.3	1.6 ± 0.2	0.5 ± 0.2

■ Ratings

Type	Impedance |Z| (Ω) at 100 MHz	Rated Current (A DC)	DC Resistance (Ω)
4532	115 ± 25%	2	0.10 max.
3225	45 ± 25%	2	0.05 max.
3216	25 ± 25%	2	0.05 max.

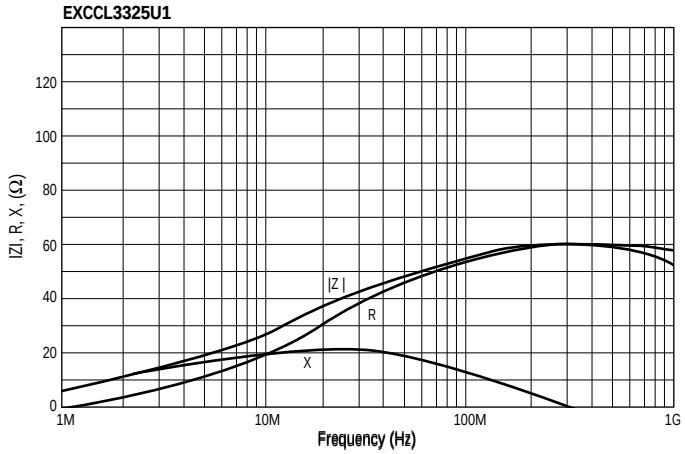
■ Impedance Characteristics (Reference Data)

4532 Type

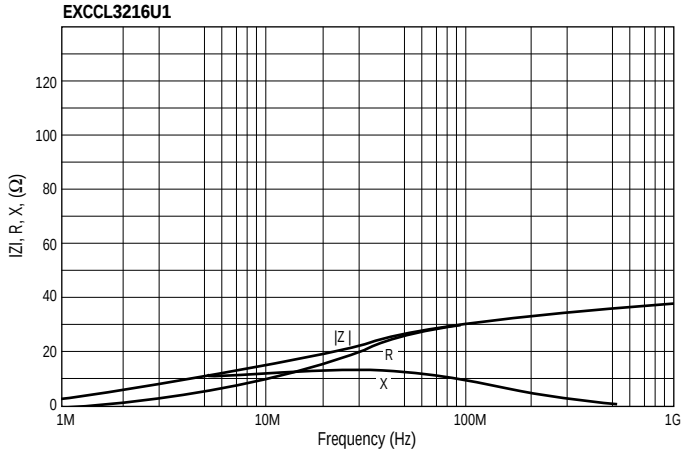


|Z|: Impedance (Ω)
R: Resistance (Ω)
X: Reactance (Ω)

3225 Type



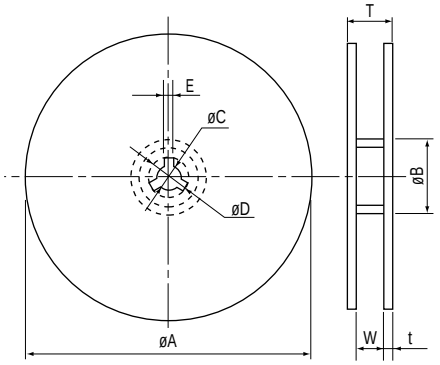
3216 Type



■ Standard Packaging

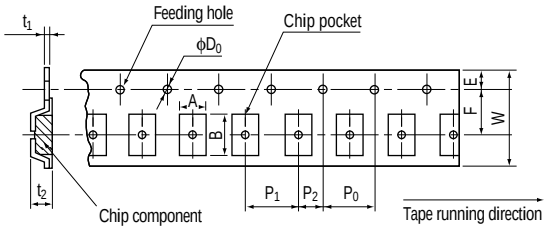
Appearance	Embossed Taping	Weight
EXCCL3216U1	2,000 pcs./reel	37.0 mg./pcs.
EXCCL3225U1	2,000 pcs./reel	60.5 mg./pcs.
EXCCL4532U1	1,000 pcs./reel	125.8 mg./pcs.

Standard Reel Dimensions in mm (not to scale)



	Dimensions							
	øA	øB	øC	øD	E	W	T	t
3216 3225	$178^{\pm2}$	$60^{\pm1}$	$13.0^{\pm0.5}$	$21.0^{\pm0.8}$	$2.0^{\pm0.5}$	$9.5^{+0.5}_{-1.0}$	13.0 max.	$1.2^{\pm0.5}$
4532	$178^{\pm2}$	$60^{\pm1}$	$13.0^{\pm0.5}$	$21.0^{\pm0.8}$	$2.0^{\pm0.5}$	$13.0^{+0.5}_{-1.0}$	16.5 max.	$1.2^{\pm0.5}$

Embossed Carrier Dimensions in mm (not to scale)



	Dimensions					
	A	B	W	F	E	P_1
3216	$2.0^{\pm0.2}$	$3.6^{\pm0.2}$	$8.0^{\pm0.2}$	$3.50^{\pm0.05}$	$1.75^{\pm0.10}$	$4.0^{\pm0.1}$
3225	$2.9^{\pm0.2}$	$3.6^{\pm0.2}$	$8.0^{\pm0.2}$	$3.50^{\pm0.05}$	$1.75^{\pm0.10}$	$4.0^{\pm0.1}$
4532	$3.6^{\pm0.2}$	$4.9^{\pm0.2}$	$12.0^{\pm0.2}$	$3.50^{\pm0.05}$	$1.75^{\pm0.10}$	$8.0^{\pm0.1}$

	P_2	P_0	$øD_0$	t_1	t_2
3216	$2.0^{\pm0.1}$	$4.0^{\pm0.1}$	$1.5^{+0.1}_{0}$	$0.20^{\pm0.05}$	2.1 max.
3225	$2.0^{\pm0.1}$	$4.0^{\pm0.1}$	$1.5^{+0.1}_{0}$	$0.20^{\pm0.05}$	2.1 max.
4532	$2.0^{\pm0.1}$	$4.0^{\pm0.1}$	$1.5^{+0.1}_{0}$	$0.20^{\pm0.05}$	2.4 max.

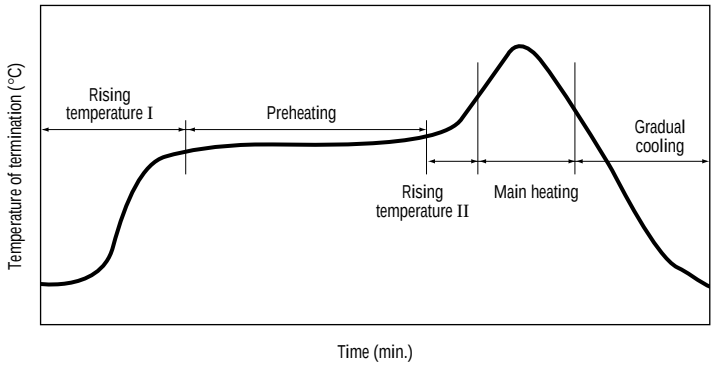
■ Soldering Conditions

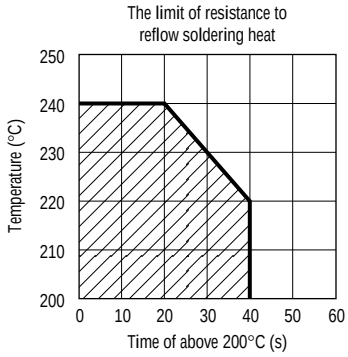
- Please consult us when you use different conditions. Please measure the temperature of terminations and study the solderability of every type of board before actual use.

  (Reflow soldering shall be within two times.)

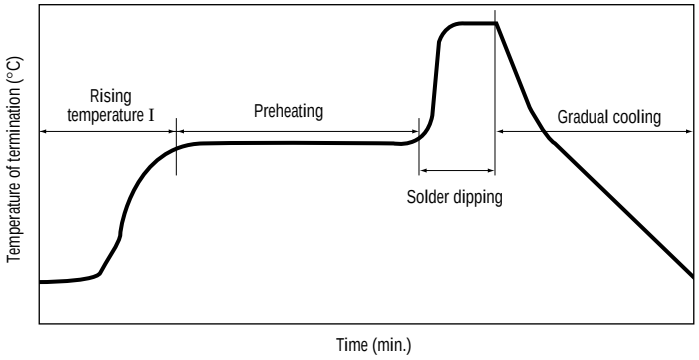
Rising temperature I	The normal to preheating temp.	30 to 60 s
Preheating	140° to 160°C	60 to 120 s
Rising temperature II	Preheating to 200°C	20 to 40 s
Main heating	*(cf. The limits of resistance to reflow soldering heat)*	
Gradual cooling	200 to 100°C	1 to 4 °C/s

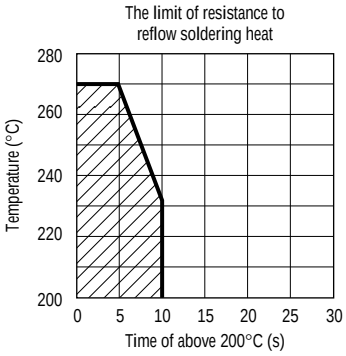
Recommended Reflow Soldering Temperature





Recommended Flow Soldering Temperature—Wave Type



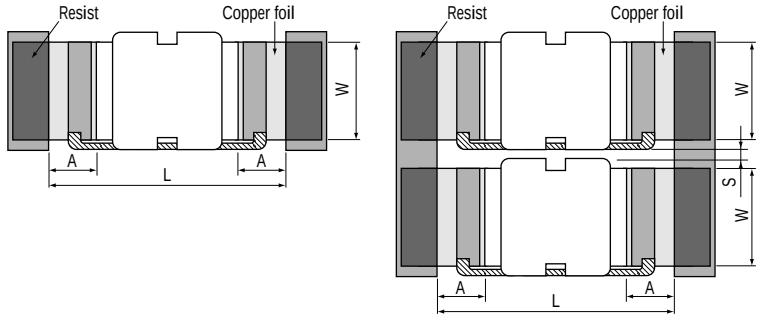


Rising temperature I	The normal to preheating temp.	30 to 60 s
Preheating	100° to 160°C	60 to 120 s
Solder dipping	*(cf. The limit of resistance to flow soldering heat)*	
Gradual cooling	Solder dipping to 100°C	1 to 4°C/s

(Repair with hand soldering.)

- Allow enough preheating with a blast of hot air or similar method. Use a soldering iron with tip temperature of 280°C or less. Solder for 10 seconds or less for each termination.
- Never touch this product with the tip of the soldering iron.

■ Recommended Land Pattern Dimensions in mm (not to scale)



Dimensions					
	L	A	W	B	S
4532	5.4	1.2	2.8	1.4 min.	1 min.
3225	4.1	1.2	2.1	1.4 min.	1 min.
3216	4.1	1.2	1.2	1.4 min.	1 min.

Suitable for flow soldering and reflow soldering

■ Safety Precautions

1. In the case of flow soldering, place the cores so that the distance between them is at least 1mm.
2. Flux: Use rosin type or non-halogen type flux.
3. Cleaning agent: Use alcohol type. Inquire about other types of cleaning agents.
4. Excessive mechanical stress may damage the components. Take care when handling.
5. Store under temperature –5° to +40°C and relative humidity 40 to 60%. Avoid rapid changes of temperature and humidity.
6. Use the components within one year after the date of inspection for shipment.

This catalog shows the quality and performance of a unit component. For quality assurance, exchange the delivery specification with us. Before adoption, be sure to evaluate and verify the product mounting in your product.