Ultra Power Line Series

❖ Features

- High Current characteristics
- Low Rdc characteristics
- Good reliability (Monolithic structure)
- Magnetically shielded
- Fast mounting speed
- RoHS compliant

❖ Applications

- PDP/LCD Monitor, Digital TV/VCR etc.

❖ General Code

CB	2012	U	A	300	T
1	2	3	4	5	6

1 Series Code
CB : Chip Ferrite Beads

2 Dimension Code
The first two digits : length(mm)
The last two digits : width(mm)

3 Application Code
G : Signal Line
P : High Current Line
U : Ultra High Current Line

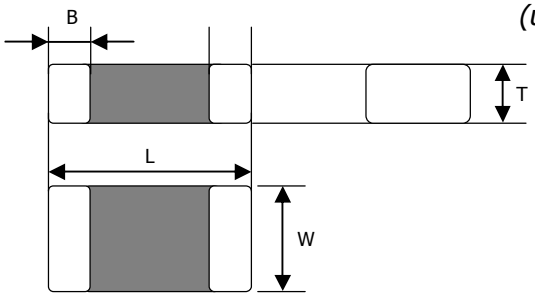
4 Material Code
A: General Frequency
K,J: Medium Frequency
M: High Frequency
V: Very High Frequency

5 Impedance Value Code
The first two digits represents significant
The last digit is the number of zeros following
ex) 300 = 30 (Ω)

6 Packaging Code
T : Reel paper packaging
E : Reel embossed tape packaging

❖ Dimensions

(unit : mm)

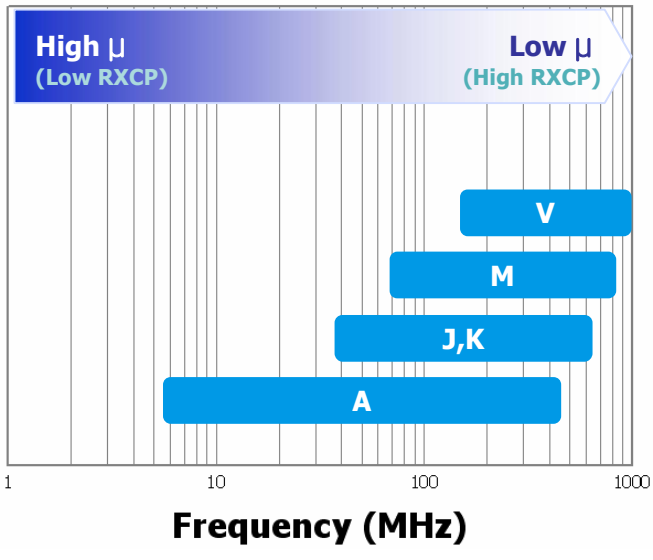


Size	L	W	T	B
1005	1.0±0.10	0.5±0.10	0.5±0.10	0.25±0.1
1608	1.6±0.15	0.8±0.15	0.8±0.15	0.3±0.2
2012	2.0±0.20	1.25±0.2	0.85±0.2	0.5±0.3
3216	3.2±0.20	1.6±0.20	1.1±0.20	0.5±0.3
4516	4.5±0.25	1.6±0.20	1.3±0.20	0.5±0.3
4532	4.5±0.25	3.2±0.25	1.5±0.25	0.5±0.3

❖ Temperature Range

- Operating Temp. -55 ~ +125℃
- Storage Temp. -10 ~ +40 ℃

❖ Typical Material Characteristics



❖ 1608~4532 SIZE

Samwha P/N	Impedance (Ω) ±25%	DC Resistance (Ω) max.	Rated Current (mA) max.	Test Frequency (MHz)
CB1608UA101	100	0.030	4000	100
CB1608UK500	50	0.025	4000	
CB1608UK600	60	0.030	4000	
CB2012UA300	30	0.010	5000	
CB2012UA600	60	0.015	5000	
CB2012UA101	100	0.020	4000	
CB2012UA121	120	0.030	4000	
CB2012UK121	120	0.030	4000	
CB2012UJ121	120	0.030	4000	
CB2012UM121	120	0.030	4000	
CB3216UA121	120	0.020	6000	
CB3216UM600	60	0.010	6000	
CB3216UM121	120	0.200	6000	
CB4516UM600	60	0.010	6000	
CB4532UK121	120	0.030	6000	
CB4532UK401	400	0.045	4000	

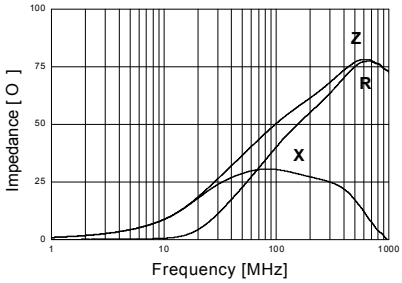
※ Measuring Equipment

-. Z : HP4291B / E4991A

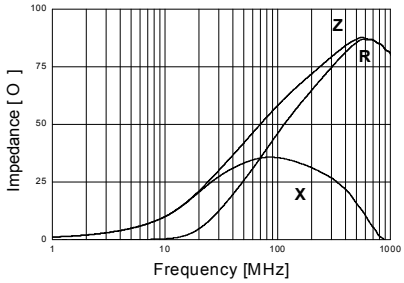
-. Rdc : HP4338B

❖ 1608~4532 SIZE

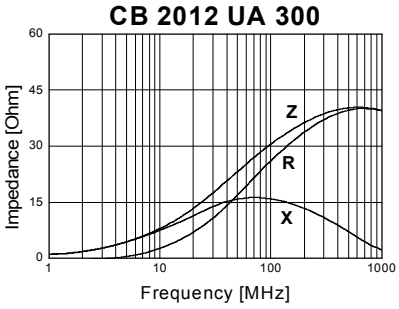
CB 1608 UK 500



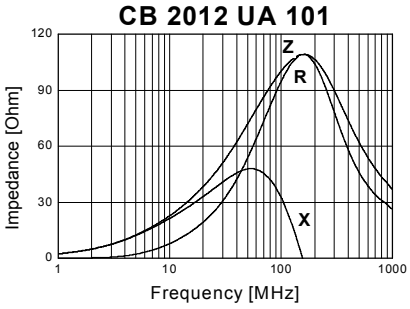
CB 1608 UK 600



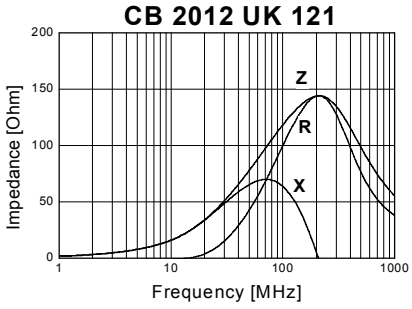
CB 2012 UA 300



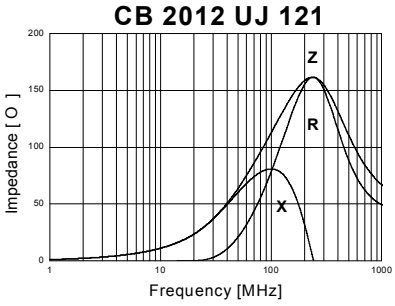
CB 2012 UA 101



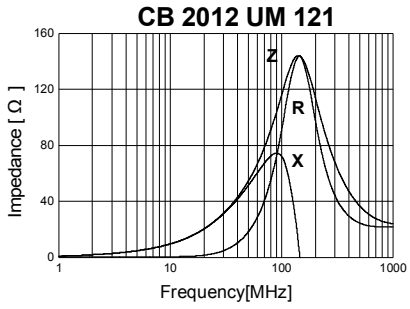
CB 2012 UK 121



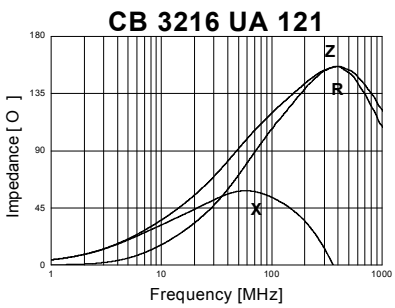
CB 2012 UJ 121



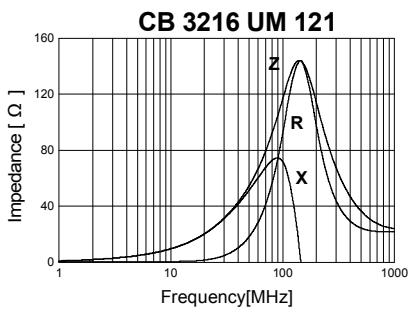
CB 2012 UM 121



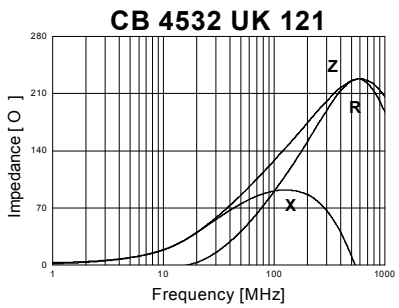
CB 3216 UA 121



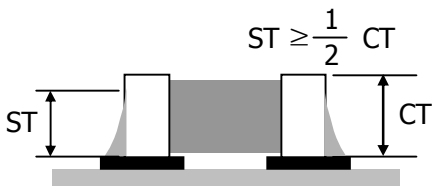
CB 3216 UM 121



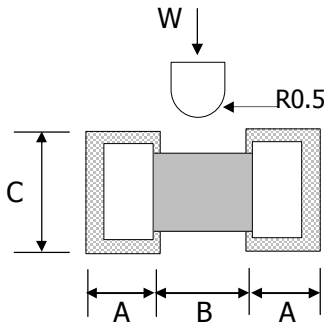
CB 4532 UK 121



Reliability & Test Condition

Item	Requirements	Test Conditions
Operating temperature range	- 55 ℃ ~ + 125 ℃	-
Storage temperature range	40 ℃ max., 70% RH max.	at packing condition
Solderability	More than 90% of the terminal electrode shall be covered with new solder	Preheat temperature : 100 ~ 150 ℃ Preheat time : 60 sec. Solder temperature : 245 ± 5 ℃ Soldering time : 10 ± 1 sec.
Resistance to soldering heat	1. No damage such as cracks should be caused in chip element 2. More than 75% of the terminal electrode shall be covered with new solder 3. Impedance shall not change more than ±30 %	Preheat temperature : 100 ~ 150 ℃ Preheat time : 60 sec. Solder temperature : 270 ± 10 ℃ Soldering time : 10 ± 0.5 sec.
Reflow soldering	More than 50% of the terminal electrode shall be covered with new solder 	Preheat temperature : 150 ℃ Preheat time : 60 sec. Solder temperature : 245 ± 5 ℃ Soldering time : 10 sec. max. (Reflow soldering profile)
High temperature resistance	1. No mechanical damage 2. Impedance shall not change more than ±30 %	Temperature : 125 ± 3 ℃ Time : 500 ± 12 hours Measurement at room ambient temperature after placing for 24 hours
High temperature load resistance		Temperature : 125 ± 3 ℃ Applied current : rated current Time : 1000 ± 12 hours Measurement at room ambient temperature after placing for 24 hours
Humidity resistance		Temperature : 40 ± 2 ℃ Humidity : 90 ± 2 % RH Time : 500 ± 12 hours Measurement at room ambient temperature after placing for 24 hours

Reliability & Test Condition

<table>
<tr><th>Item</th><th>Requirements</th><th>Test Conditions</th></tr>
<tr><td>Humidity load resistance</td><td rowspan="5">1. No mechanical damage
2. Impedance shall not change more than ±30 %</td><td>Temperature : 40 ± 2 ℃
Humidity : 90 ± 2 % RH
Applied current : rated current
Time : 500 ± 12 hours
Measurement at room ambient temperature after placing for 24 hours</td></tr>
<tr><td>Low temperature resistance</td><td>Temperature : -55 ± 3 ℃
Time : 1000 ± 12 hours
Measurement at room ambient temperature after placing for 24 hours</td></tr>
<tr><td>Thermal shock</td><td>1. -55 ± 3℃ for 30 minutes
2.125 ± 3 ℃ for 30 minutes
3. repeat 100 cycle</td></tr>
<tr><td>Vibration</td><td>Frequency : 10 ~ 55 Hz
Amplitude : 1.5 mm
Direction : X, Y, Z
Sweep time : 2 hours for each axis</td></tr>
<tr><td>Drop</td><td>Drop 10 times on a concrete floor from a height of 100 cm</td></tr>
<tr><td>Flexure strength</td><td>No mechanical damage
<table>
<tr><th>ITEM</th><th>1005</th><th>1608</th><th>2012</th><th>3216</th><th>4516</th><th>4532</th></tr>
<tr><td>A (mm)</td><td>0.7</td><td>1.0</td><td>1.0</td><td>1.3</td><td>1.5</td><td>1.5</td></tr>
<tr><td>B (mm)</td><td>0.5</td><td>0.8</td><td>1.0</td><td>1.5</td><td>3.6</td><td>3.6</td></tr>
<tr><td>C (mm)</td><td>0.7</td><td>1.3</td><td>1.3</td><td>3.0</td><td>3.0</td><td>3.8</td></tr>
<tr><td>W (kgf)</td><td>0.7</td><td>2.0</td><td>4.0</td><td>5.0</td><td>5.0</td><td>5.0</td></tr>
</table></td><td> 
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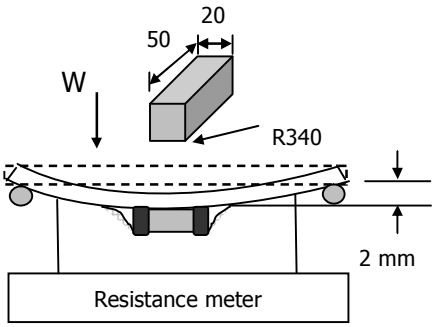
<tr><td>Bending strength</td><td>The terminal electrode shall be neither break off nor the chip damage</td><td> 
</td></tr>
</table>

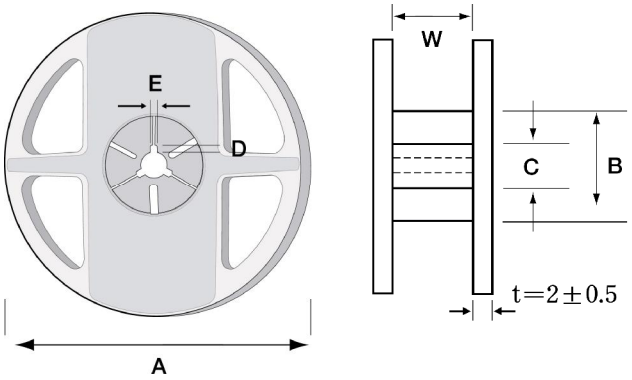
CHIP BEAD, Reliability & Test Condition

Packaging

❖ Standard Quantity

Size	Q'TY(PCS)	Remarks
1005	10,000	
1608	4,000	
2012	4,000	0.85 T size
3216	3,000	
4516	2,000	
4532	1,000	

❖ Reel Dimension

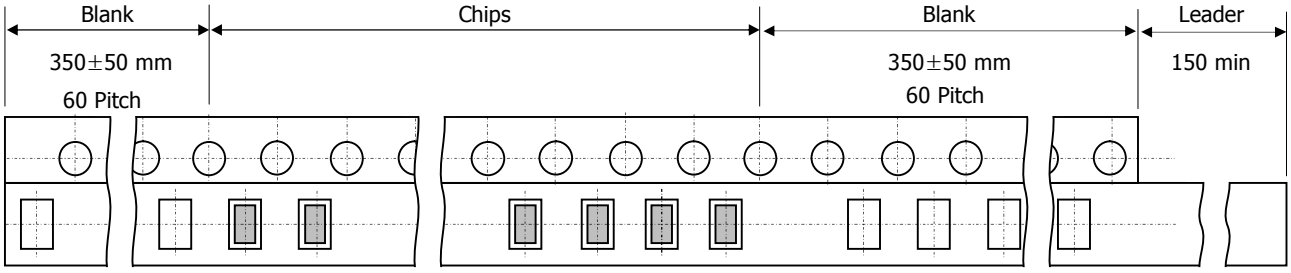


(Unit:mm)

A	B	C
Φ178±2	Φ50 min.	Φ13±0.5
D	**E**	**W**
4±0.8	2±0.2	9±1.5

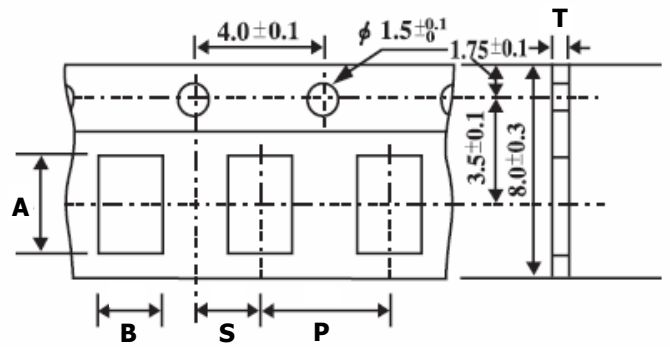
❖ Leader & Blank Portion

(Unit:mm)



Packaging

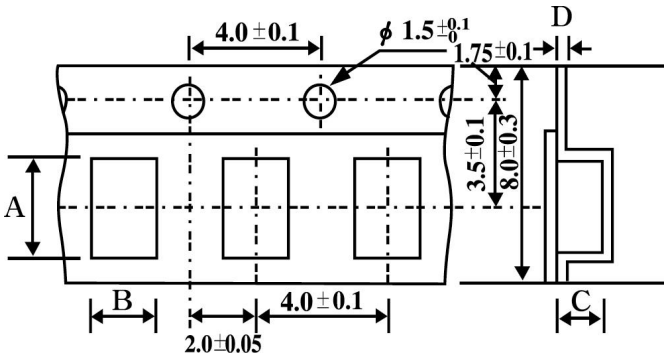
❖ Taping Dimensions (Paper tape)



(Unit:mm)

Type	A ±0.1	B ±0.1	P ±0.1	S ±0.1	T (Max.)
1005	1.15	0.65	2.0	1.0	0.8
1608	1.80	1.00	4.0	2.0	1.1
2012	2.30	1.55	4.0	2.0	1.1

❖ Taping Dimensions (Emboss tape)

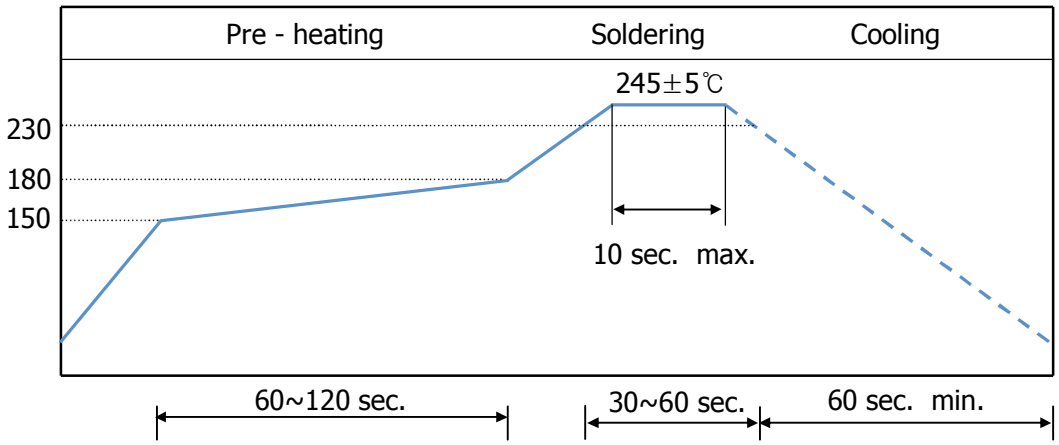


(Unit:mm)

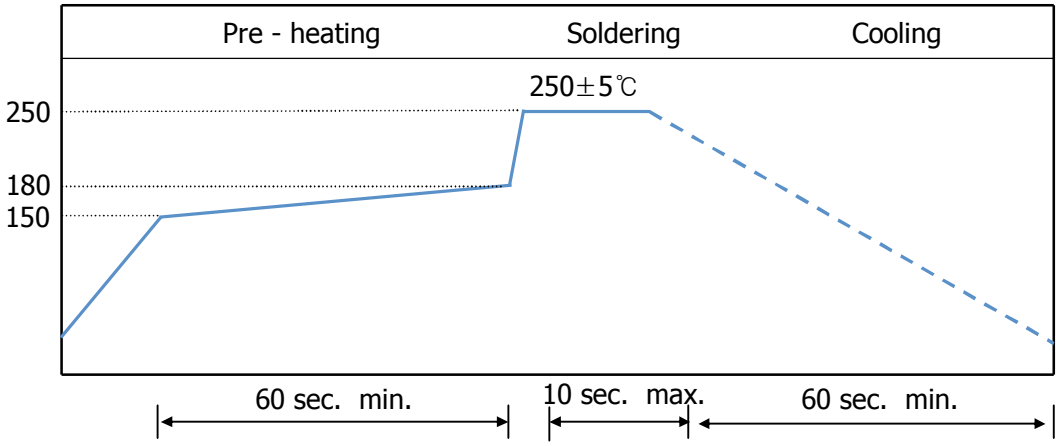
Type	A ±0.1	B ±0.1	C ±0.1	D ±0.1
2012	2.25	1.45	1.50	0.23
3216	3.50	1.85	1.25	0.23
4516	4.90	1.90	1.35	0.30
4532	4.85	3.60	1.40	0.30

Soldering Profile

❖ Reflow Soldering



❖ Flow Soldering



❖ Manual Soldering