

Power Line Series

❖ Features

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

❖ Applications

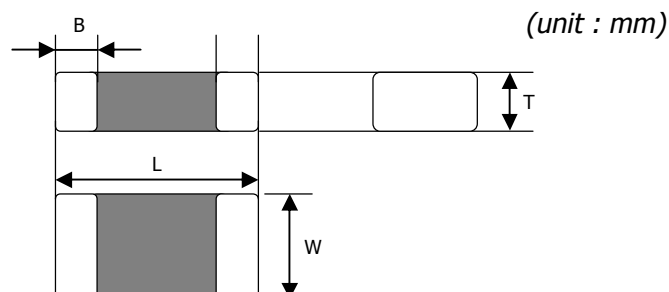
- PDP/LCD Monitor, Digital TV/VCR etc.

❖ General Code

CB	2012	P	J	601	T
1	2	3	4	5	6

- Series Code**
CB : Chip Ferrite Beads
- Dimension Code**
The first two digits : length(mm)
The last two digits : width(mm)
- Application Code**
G : Signal Line
P : High Current Line
U : Ultra High Current Line
- Material Code**
A: General Frequency
K,J: Medium Frequency
M: High Frequency
V: Very High Frequency
- Impedance Value Code**
The first two digits represents significant
The last digit is the number of zeros following
ex) 601 = 600 (Ω)
- Packaging Code**
T : Reel paper packaging
E : Reel embossed tape packaging

❖ Dimensions

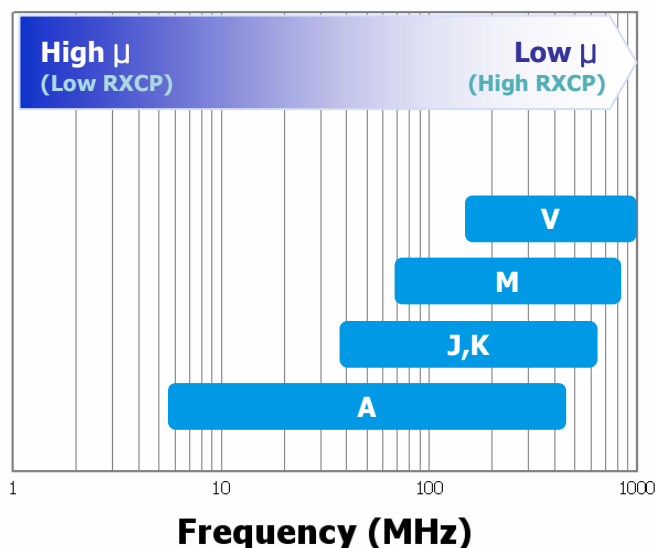


Size	L	W	T	B
1005	1.0±0.10	0.5±0.10	0.5±0.10	0.25±0.1
1608	1.6±0.15	0.8±0.15	0.8±0.15	0.3±0.2
2012	2.0±0.20	1.25±0.2	0.85±0.2	0.5±0.3
3216	3.2±0.20	1.6±0.20	1.1±0.20	0.5±0.3
4516	4.5±0.25	1.6±0.20	1.3±0.20	0.5±0.3
4532	4.5±0.25	3.2±0.25	1.5±0.25	0.5±0.3

❖ Temperature Range

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

❖ Typical Material Characteristics



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❖ 1608 SIZE

Samwha P/N	Impedance (Ω) $\pm 25\%$	DC Resistance (Ω) max.	Rated Current (mA) max.	Test Frequency (MHz)
CB1608PA100	10	0.05	2000	100
CB1608PA300	30	0.05	2000	
CB1608PA600	60	0.08	1000	
CB1608PA121	120	0.10	800	
CB1608PA181	180	0.12	800	
CB1608PK100	10	0.05	2000	
CB1608PK300	30	0.05	2000	
CB1608PK600	60	0.08	1000	
CB1608PK121	120	0.10	800	
CB1608PK181	180	0.12	800	
CB1608PJ300	30	0.05	2000	
CB1608PJ600	60	0.10	1000	
CB1608PJ121	120	0.12	1000	
CB1608PM300	30	0.06	1500	
CB1608PM600	60	0.08	1000	
CB1608PM121	120	0.12	800	

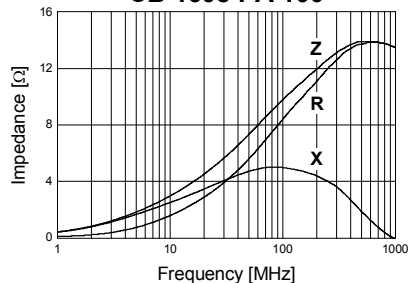
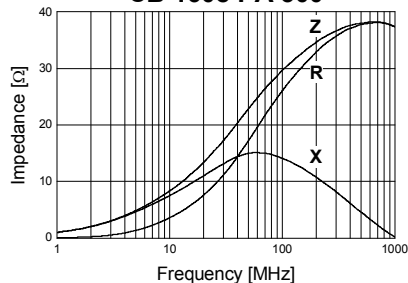
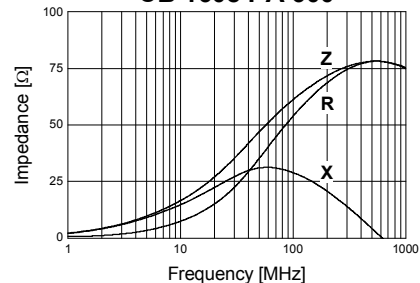
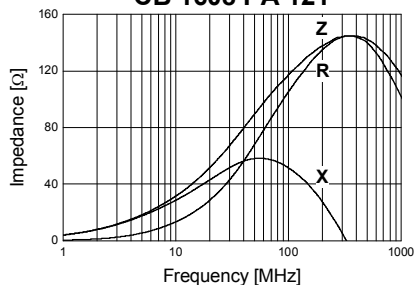
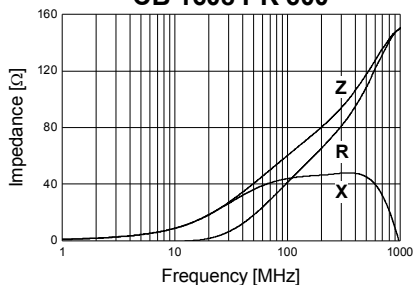
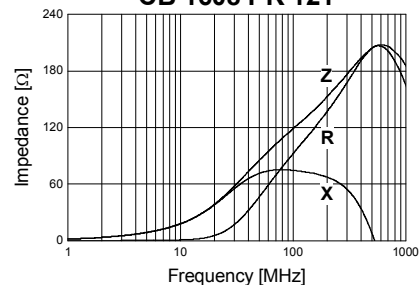
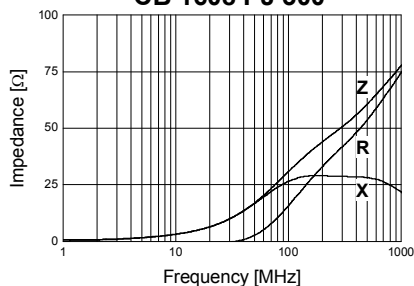
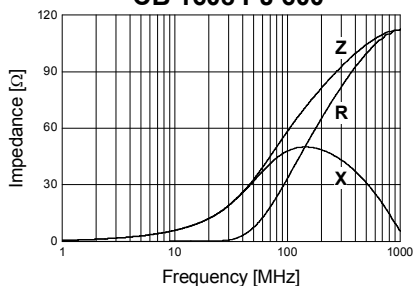
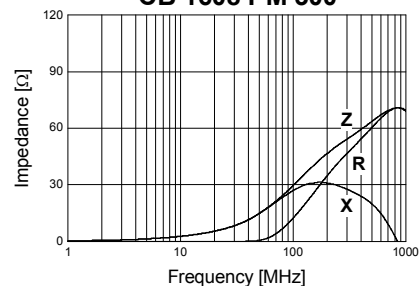
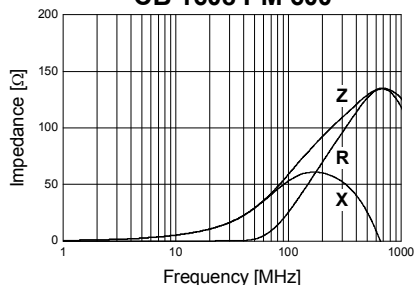
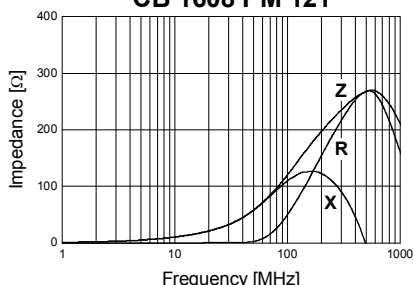
※ Measuring Equipment

-. Z : HP4291B / E4991A

-. Rdc : HP4338B

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❖ 1608 SIZE

CB 1608 PA 100

CB 1608 PA 300

CB 1608 PA 600

CB 1608 PA 121

CB 1608 PK 600

CB 1608 PK 121

CB 1608 PJ 300

CB 1608 PJ 600

CB 1608 PM 300

CB 1608 PM 600

CB 1608 PM 121

CHIP BEAD, Power Line Series

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❖ 2012 SIZE

Samwha P/N	Impedance (Ω) $\pm 25\%$	DC Resistance (Ω) max.	Rated Current (mA) max.	Test Frequency (MHz)
CB2012PA110	11	0.007	3000	100
CB2012PA300	30	0.015	3000	
CB2012PA600	60	0.025	3000	
CB2012PA121	120	0.050	2500	
CB2012PA221	220	0.050	2000	
CB2012PA301	300	0.100	2000	
CB2012PA601	600	0.130	1500	
CB2012PK150	15	0.080	2000	
CB2012PK300	30	0.015	3000	
CB2012PK600	60	0.025	3000	
CB2012PK121	120	0.050	2500	
CB2012PK181	180	0.050	2000	
CB2012PK221	220	0.050	2000	
CB2012PK301	300	0.070	2000	
CB2012PK601	600	0.130	1500	
CB2012PK102	1000	0.250	1000	70
CB2012PK202	2000	0.300	500	
CB2012PJ601	600	0.100	1500	100
CB2012PJ801	800	0.150	1500	
CB2012PM600	60	0.020	3000	
CB2012PM121	120	0.050	2500	
CB2012PM221	220	0.050	2000	
CB2012PM301	300	0.070	2000	
CB2012PM601	600	0.130	1500	

CHIP BEAD, Power Line Series

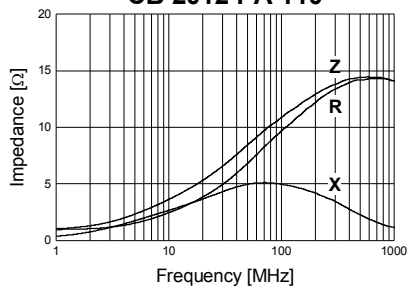
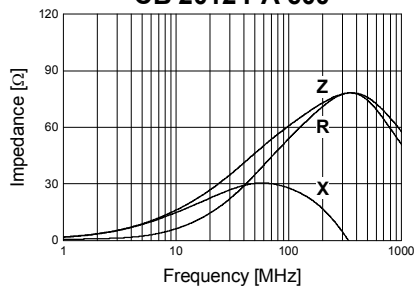
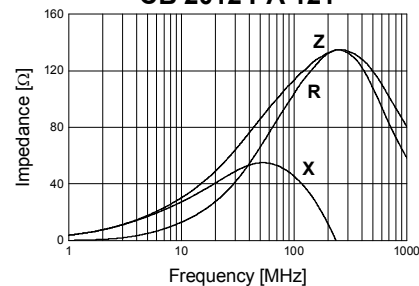
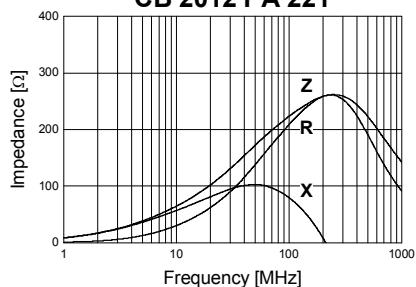
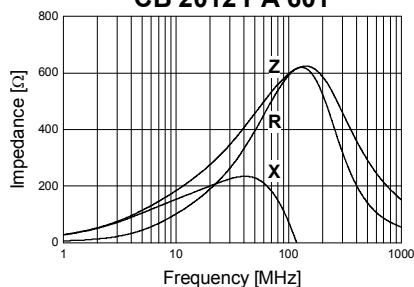
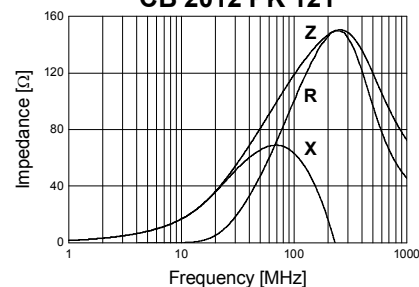
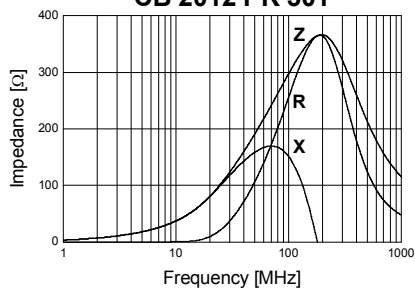
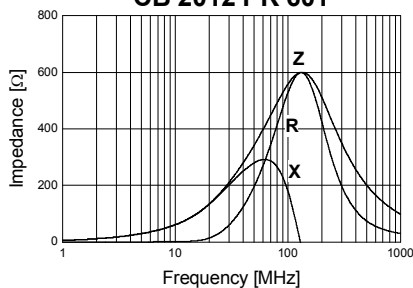
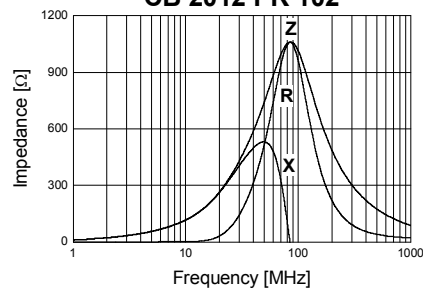
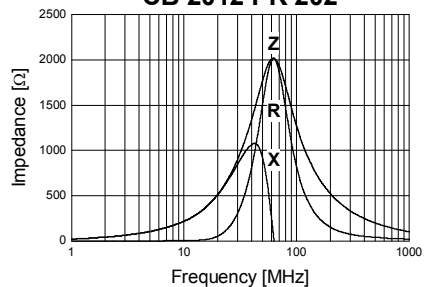
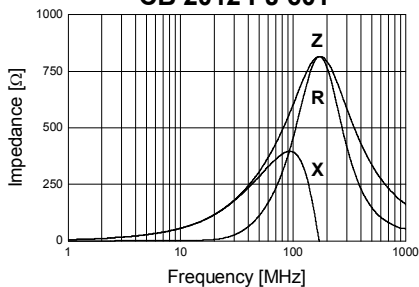
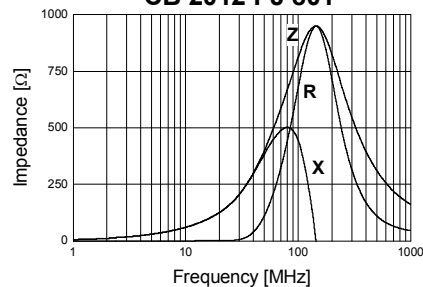
※ Measuring Equipment

-. Z : HP4291B / E4991A

-. Rdc : HP4338B

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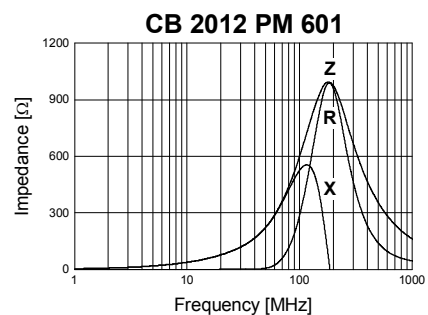
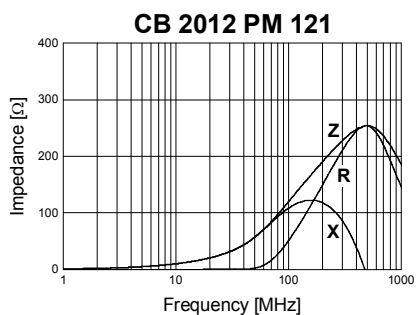
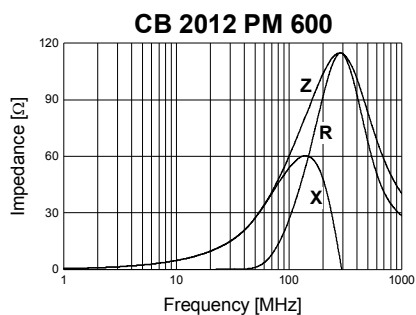
❖ 2012 SIZE

CB 2012 PA 110

CB 2012 PA 600

CB 2012 PA 121

CB 2012 PA 221

CB 2012 PA 601

CB 2012 PK 121

CB 2012 PK 301

CB 2012 PK 601

CB 2012 PK 102

CB 2012 PK 202

CB 2012 PJ 601

CB 2012 PJ 801


CHIP BEAD, Power Line Series

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❖ 2012 SIZE



❖ 3216 SIZE

Samwha P/N	Impedance (Ω) $\pm 25\%$	DC Resistance (Ω) max.	Rated Current (mA) max.	Test Frequency (MHz)
CB3216PA310	31	0.03	3000	100
CB3216PA350	35	0.03	3000	
CB3216PA500	50	0.03	3000	
CB3216PA600	60	0.03	3000	
CB3216PA700	70	0.03	3000	
CB3216PA900	90	0.03	3000	
CB3216PA101	100	0.03	3000	
CB3216PA121	120	0.03	3000	
CB3216PA151	150	0.03	3000	
CB3216PA301	300	0.06	3000	
CB3216PA501	500	0.06	3000	
CB3216PA601	600	0.06	3000	
CB3216PK501	500	0.06	3000	
CB3216PK601	600	0.06	3000	
CB3216PJ601	600	0.06	3000	
CB3216PM121	120	0.03	3000	
CB3216PM601	600	0.06	3000	

CHIP BEAD, Power Line Series

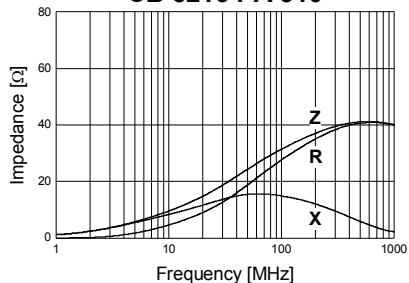
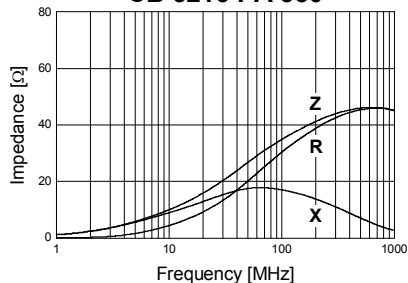
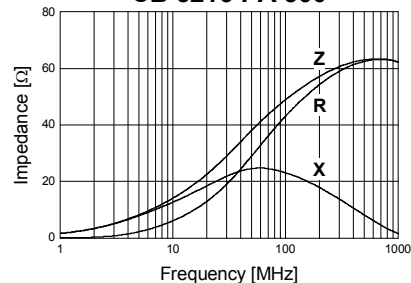
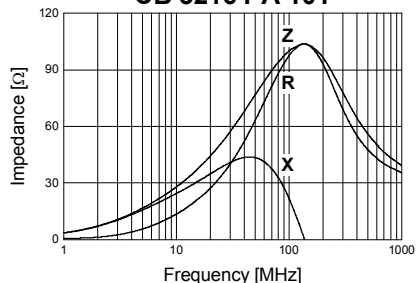
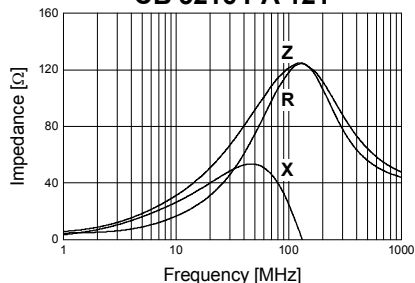
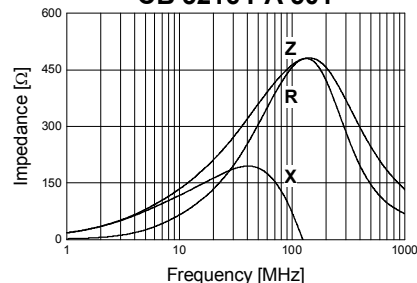
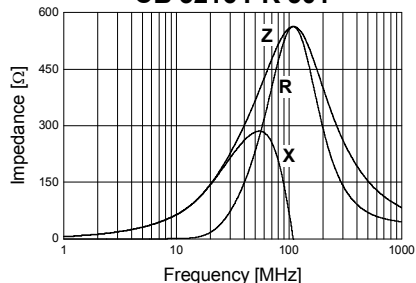
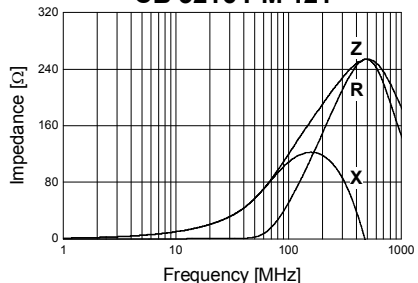
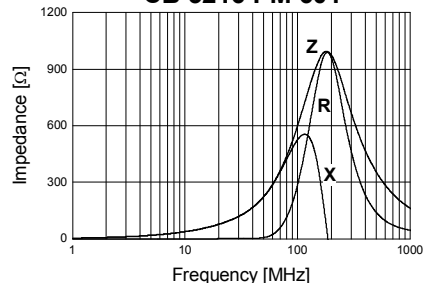
※ Measuring Equipment

-. Z : HP4291B / E4991A

-. Rdc : HP4338B

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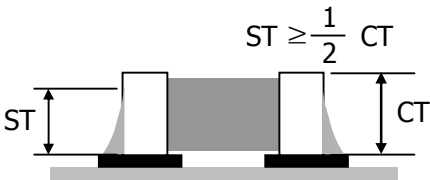
❖ 3216 SIZE

CB 3216 PA 310

CB 3216 PA 350

CB 3216 PA 500

CB 3216 PA 101

CB 3216 PA 121

CB 3216 PA 501

CB 3216 PK 501

CB 3216 PM 121

CB 3216 PM 601


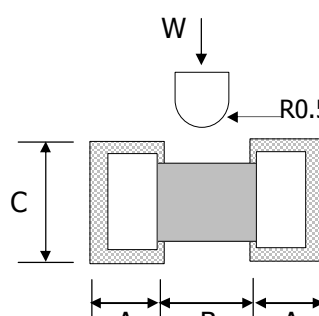
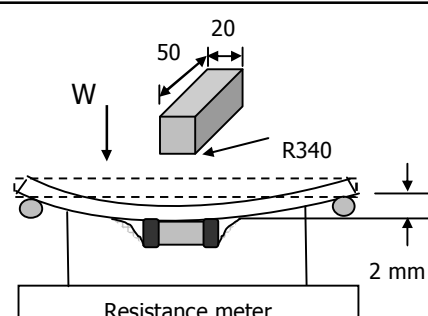
CHIP BEAD, Power Line Series

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Reliability & Test Condition

Item	Requirements	Test Conditions
Operating temperature range	- 55 °C ~ + 125 °C	-
Storage temperature range	40 °C 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 °C Preheat time : 60 sec. Solder temperature : 245 ± 5 °C 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 °C Preheat time : 60 sec. Solder temperature : 270 ± 10 °C Soldering time : 10 ± 0.5 sec.
Reflow soldering	More than 50% of the terminal electrode shall be covered with new solder 	Preheat temperature : 150 °C Preheat time : 60 sec. Solder temperature : 245 ± 5 °C 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 °C Time : 500 ± 12 hours Measurement at room ambient temperature after placing for 24 hours
High temperature load resistance		Temperature : 125 ± 3 °C Applied current : rated current Time : 1000 ± 12 hours Measurement at room ambient temperature after placing for 24 hours
Humidity resistance		Temperature : 40 ± 2 °C Humidity : 90 ± 2 % RH Time : 500 ± 12 hours Measurement at room ambient temperature after placing for 24 hours

Reliability & Test Condition

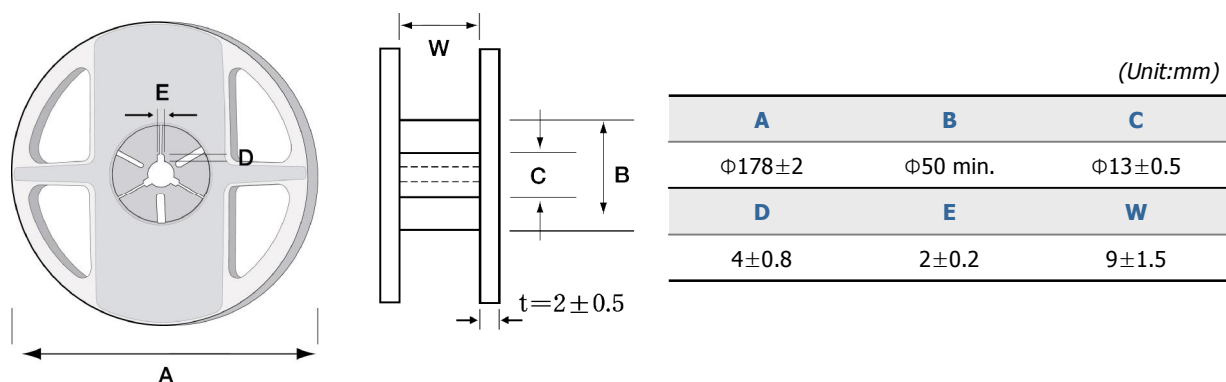
Item	Requirements	Test Conditions						
Humidity load resistance	1. No mechanical damage 2. Impedance shall not change more than $\pm 30\%$	Temperature : $40 \pm 2\text{ }^{\circ}\text{C}$ Humidity : $90 \pm 2\%$ RH Applied current : rated current Time : 500 ± 12 hours Measurement at room ambient temperature after placing for 24 hours						
Low temperature resistance		Temperature : $-55 \pm 3\text{ }^{\circ}\text{C}$ Time : 1000 ± 12 hours Measurement at room ambient temperature after placing for 24 hours						
Thermal shock		1. $-55 \pm 3\text{ }^{\circ}\text{C}$ for 30 minutes 2. $125 \pm 3\text{ }^{\circ}\text{C}$ for 30 minutes 3. repeat 100 cycle						
Vibration		Frequency : $10 \sim 55\text{ Hz}$ Amplitude : 1.5 mm Direction : X, Y, Z Sweep time : 2 hours for each axis						
Drop		Drop 10 times on a concrete floor from a height of 100 cm						
Flexure strength	No mechanical damage							
	ITEM	1005	1608	2012	3216	4516	4532	
	A (mm)	0.7	1.0	1.0	1.3	1.5	1.5	
	B (mm)	0.5	0.8	1.0	1.5	3.6	3.6	
	C (mm)	0.7	1.3	1.3	3.0	3.0	3.8	
	W (kgf)	0.7	2.0	4.0	5.0	5.0	5.0	
Bending strength	The terminal electrode shall be neither break off nor the chip damage							

Packaging

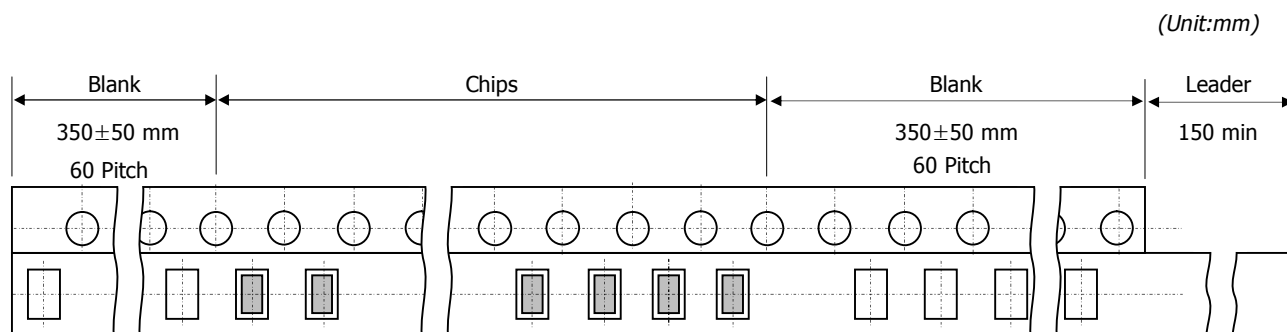
❖ Standard Quantity

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



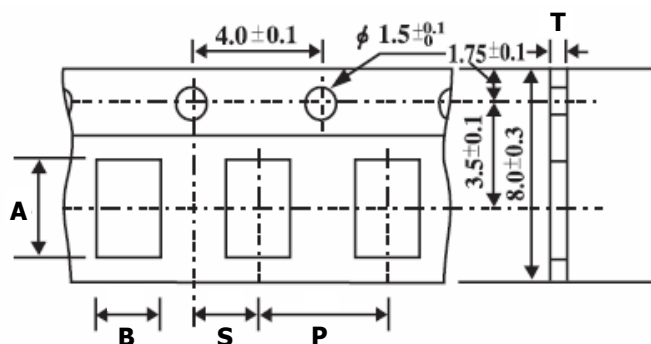
❖ Leader & Blank Portion



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Packaging

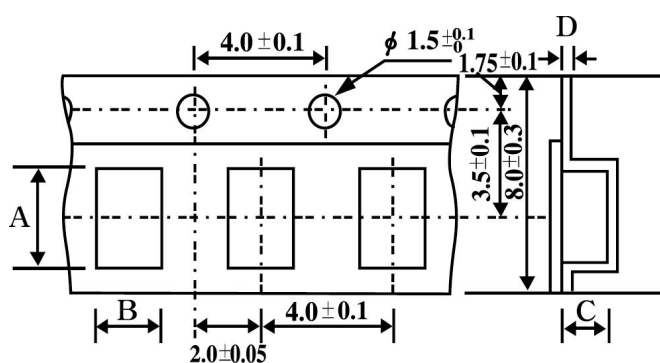
❖ Taping Dimensions (Paper tape)



(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)



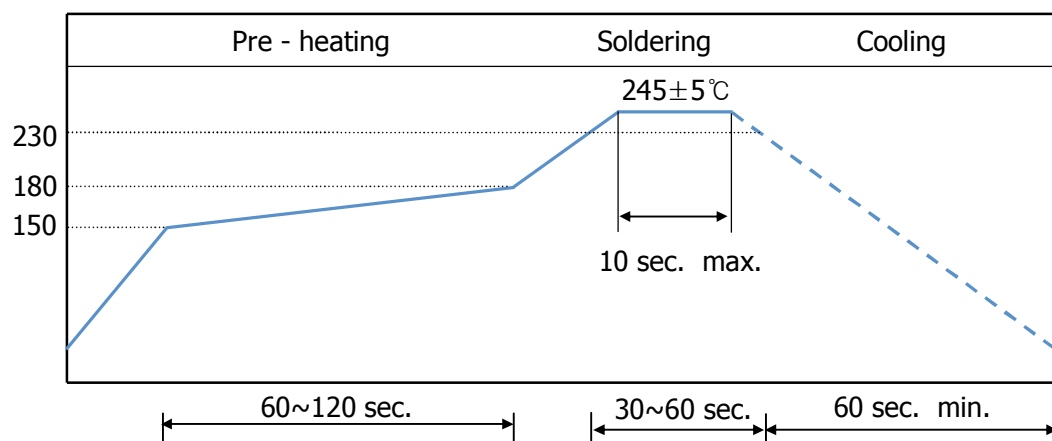
(Unit:mm)

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

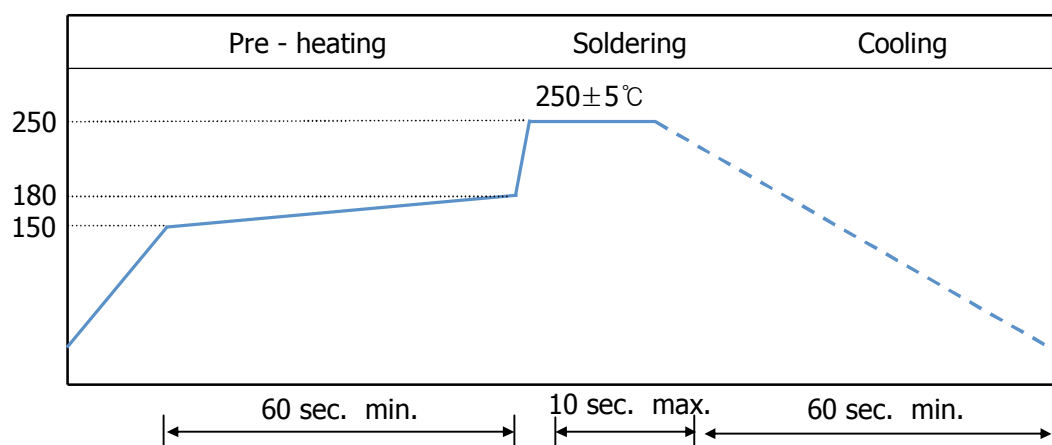
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Soldering Profile

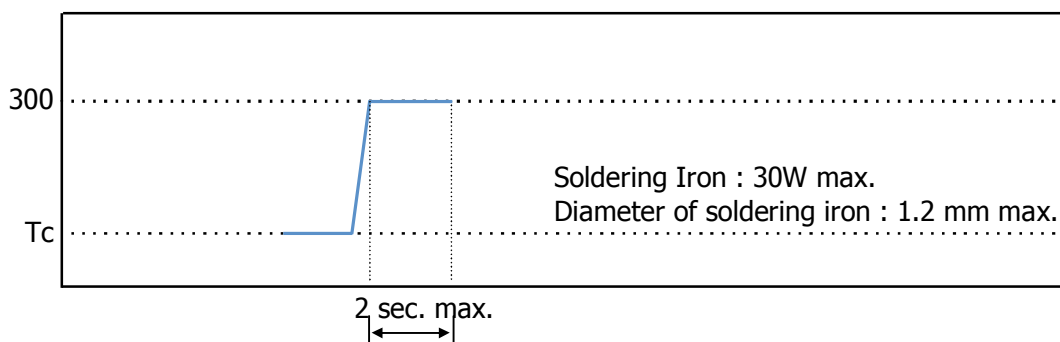
❖ Reflow Soldering



❖ Flow Soldering



❖ Manual Soldering



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