



Multilayer Ferrite Chip Beads - CKGB

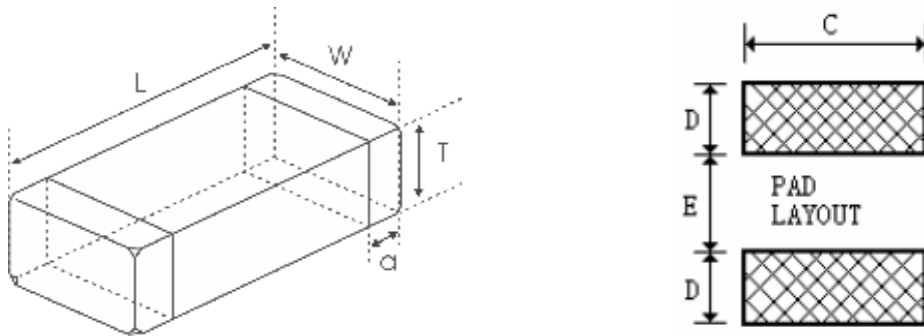
■ Features

1. Can be used in a wide range of frequency to suppress EMI.
2. Excellent solderability.
3. Can be mounted with surface mounting equipment.

■ Applications

Noise wuppression in digital equipment such as computer and its peripheral devices, VCR, VCD, DVD, camera, OA equipments, etc.

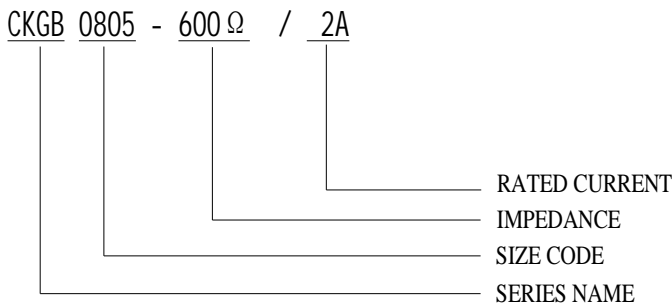
■ Dimensions and Construction



Dimensions in mm

TYPE	L	W	T	a	C	D	E
0402	1.0±0.15	0.5±0.15	0.5±0.15	0.25±0.1	0.5	0.5	0.4
0603	1.6±0.20	0.8±0.20	0.8±0.20	0.3±0.2	0.8	0.6	0.8
0805	2.0±0.20	1.2±0.20	0.9±0.20	0.5±0.3	1.2	0.8	1.0
1206	3.2±0.20	1.6±0.20	1.0±0.30	0.5±0.3	1.6	0.8	2.0

■ Part Numbering System



■ Electrical Characteristics

- (1) Operating Temperature Ranges: -25~85°C.
- (2) Rated Current: DC current that causes the temperature rise ($\Delta T \leq 30^\circ \text{C}$) from 20° C ambient.

■ Electrical Parameters



■CKGB0402 Series

Part No.	Impedance (Ω)	Tolerance	Test Frequency (MHz)	DCR (Ω) Max	Rated Current (mA) Max	Remark
CKGB0402-10 Ω /1A	10	$\pm 30\%$	100	0.025	1000	
CKGB0402-10 Ω /2A	10	$\pm 30\%$	100	0.03	2000	
CKGB0402-30 Ω /500mA	30	$\pm 25\%$	100	0.2	500	
CKGB0402-30 Ω /1.7A	30	$\pm 25\%$	100	0.05	1700	
CKGB0402-33 Ω /3A	33	$\pm 25\%$	100	0.022	3000	
CKGB0402-40 Ω /500mA	40	$\pm 25\%$	100	0.2	500	
CKGB0402-60 Ω /500mA	60	$\pm 25\%$	100	0.2	500	
CKGB0402-60 Ω /1.5A	60	$\pm 25\%$	100	0.075	1500	
CKGB0402-60 Ω /2.5A	60	$\pm 25\%$	100	0.032	2500	
CKGB0402-80 Ω /1.2A	80	$\pm 25\%$	100	0.09	1200	
CKGB0402-80 Ω /2.3A	80	$\pm 25\%$	100	0.038	2300	
CKGB0402-100 Ω /500mA	100	$\pm 25\%$	100	0.25	500	
CKGB0402-120 Ω /500mA	120	$\pm 25\%$	100	0.25	500	
CKGB0402-120 Ω /1.2A	120	$\pm 25\%$	100	0.09	1200	
CKGB0402-120 Ω /2A	120	$\pm 25\%$	100	0.055	2000	
CKGB0402-150 Ω /900mA	150	$\pm 25\%$	100	0.14	900	
CKGB0402-180 Ω /1.5A	180	$\pm 25\%$	100	0.09	1500	
CKGB0402-220 Ω /400mA	220	$\pm 25\%$	100	0.4	400	
CKGB0402-220 Ω /580mA	220	$\pm 25\%$	100	0.18	580	
CKGB0402-220 Ω /1.4A	220	$\pm 25\%$	100	0.1	1400	
CKGB0402-300 Ω /300mA	300	$\pm 25\%$	100	0.5	300	
CKGB0402-330 Ω /1.2A	330	$\pm 25\%$	100	0.15	1200	
CKGB0402-470 Ω /300mA	470	$\pm 25\%$	100	0.5	300	
CKGB0402-600 Ω /300mA	600	$\pm 25\%$	100	0.6	300	
CKGB0402-600 Ω /420mA	600	$\pm 25\%$	100	0.34	420	
CKGB0402-1000 Ω /200mA	1000	$\pm 25\%$	100	0.95	200	
CKGB0402-1000 Ω /300mA	1000	$\pm 25\%$	100	0.65	300	
CKGB0402-1000 Ω /350mA	1000	$\pm 25\%$	100	0.49	350	
CKGB0402-1500 Ω /100mA	1500	$\pm 25\%$	100	1.15	100	
CKGB0402-1800 Ω /100mA	1800	$\pm 25\%$	100	1.4	100	
CKGB0402-2200 Ω /100mA	2200	$\pm 25\%$	100	1.4	100	
CKGB0402-2500 Ω /100mA	2500	$\pm 25\%$	100	1.8	100	



■ CKGB0603 Series

Part No.	Impedance (Ω)	Tolerance	Test Frequency (MHz)	DCR (Ω) Max	Rated Current (mA) Max	Remark
CKGB0603-10 Ω /4A	10	$\pm 30\%$	100	0.02	4000	
CKGB0603-10 Ω /5A	10	$\pm 30\%$	100	0.01	5000	
CKGB0603-30 Ω /400mA	30	$\pm 25\%$	100	0.1	400	
CKGB0603-30 Ω /3A	30	$\pm 25\%$	100	0.03	3000	
CKGB0603-30 Ω /4.5A	30	$\pm 25\%$	100	0.015	4500	
CKGB0603-40 Ω /3A	40	$\pm 25\%$	100	0.035	3000	
CKGB0603-60 Ω /400mA	60	$\pm 25\%$	100	0.1	400	
CKGB0603-60 Ω /3A	60	$\pm 25\%$	100	0.04	3000	
CKGB0603-60 Ω /4A	60	$\pm 25\%$	100	0.02	4000	
CKGB0603-80 Ω /400mA	80	$\pm 25\%$	100	0.15	400	
CKGB0603-100 Ω /3A	100	$\pm 25\%$	100	0.03	3000	
CKGB0603-120 Ω /400mA	120	$\pm 25\%$	100	0.25	400	
CKGB0603-120 Ω /2.5A	120	$\pm 25\%$	100	0.08	2500	
CKGB0603-120 Ω /3A	120	$\pm 25\%$	100	0.03	3000	
CKGB0603-150 Ω /2A	150	$\pm 25\%$	100	0.085	2000	
CKGB0603-180 Ω /2A	180	$\pm 25\%$	100	0.09	2000	
CKGB0603-220 Ω /300mA	220	$\pm 25\%$	100	0.3	300	
CKGB0603-220 Ω /2A	220	$\pm 25\%$	100	0.095	2000	
CKGB0603-220 Ω /2.5A	220	$\pm 25\%$	100	0.04	2500	
CKGB0603-300 Ω /400mA	300	$\pm 25\%$	100	0.4	400	
CKGB0603-300 Ω /1.5A	300	$\pm 25\%$	100	0.12	1500	
CKGB0603-470 Ω /400mA	470	$\pm 25\%$	100	0.4	400	
CKGB0603-470 Ω /1.2A	470	$\pm 25\%$	100	0.15	1200	
CKGB0603-600 Ω /400mA	600	$\pm 25\%$	100	0.4	400	
CKGB0603-600 Ω /1A	600	$\pm 25\%$	100	0.2	1000	
CKGB0603-1000 Ω /300mA	1000	$\pm 25\%$	100	0.6	300	
CKGB0603-1000 Ω /800mA	1000	$\pm 25\%$	100	0.25	800	
CKGB0603-1200 Ω /800mA	1200	$\pm 25\%$	100	0.25	800	
CKGB0603-1500 Ω /300mA	1500	$\pm 25\%$	100	0.6	300	
CKGB0603-1500 Ω /500mA	1500	$\pm 25\%$	100	0.4	500	
CKGB0603-1800 Ω /200mA	1800	$\pm 25\%$	100	1	200	
CKGB0603-2200 Ω /200mA	2200	$\pm 25\%$	100	1	200	
CKGB0603-2500 Ω /200mA	2500	$\pm 25\%$	100	1	200	
CKGB0603-2700 Ω /200mA	2700	$\pm 25\%$	100	1	200	



■ CKGB0805 Series

Part No.	Impedance (Ω)	Tolerance	Test Frequency (MHz)	DCR (Ω) Max	Rated Current (mA) Max	Remark
CKGB0805-10 Ω /6A	10	$\pm 30\%$	100	0.01	6000	
CKGB0805-15 Ω /6A	15	$\pm 25\%$	100	0.012	6000	
CKGB0805-22 Ω /6A	22	$\pm 25\%$	100	0.012	6000	
CKGB0805-30 Ω /4A	30	$\pm 25\%$	100	0.015	4000	
CKGB0805-30 Ω /6A	30	$\pm 25\%$	100	0.012	6000	
CKGB0805-50 Ω /3A	50	$\pm 25\%$	100	0.025	3000	
CKGB0805-50 Ω /6A	50	$\pm 25\%$	100	0.015	6000	
CKGB0805-60 Ω /500mA	60	$\pm 25\%$	100	0.15	500	
CKGB0805-60 Ω /3A	60	$\pm 25\%$	100	0.03	3000	
CKGB0805-60 Ω /6A	60	$\pm 25\%$	100	0.018	6000	
CKGB0805-80 Ω /3A	80	$\pm 25\%$	100	0.04	3000	
CKGB0805-80 Ω /6A	80	$\pm 25\%$	100	0.02	6000	
CKGB0805-100 Ω /5A	100	$\pm 25\%$	100	0.02	5000	
CKGB0805-120 Ω /300mA	120	$\pm 25\%$	100	0.25	300	
CKGB0805-120 Ω /3A	120	$\pm 25\%$	100	0.04	3000	
CKGB0805-120 Ω /5A	120	$\pm 25\%$	100	0.02	5000	
CKGB0805-220 Ω /300mA	220	$\pm 25\%$	100	0.3	300	
CKGB0805-220 Ω /2A	220	$\pm 25\%$	100	0.08	2000	
CKGB0805-220 Ω /3A	220	$\pm 25\%$	100	0.04	3000	
CKGB0805-300 Ω /300mA	300	$\pm 25\%$	100	0.3	300	
CKGB0805-300 Ω /2A	300	$\pm 25\%$	100	0.08	2000	
CKGB0805-300 Ω /3A	300	$\pm 25\%$	100	0.05	3000	
CKGB0805-470 Ω /300mA	470	$\pm 25\%$	100	0.3	300	
CKGB0805-470 Ω /2A	470	$\pm 25\%$	100	0.1	2000	
CKGB0805-600 Ω /300mA	600	$\pm 25\%$	100	0.4	300	
CKGB0805-600 Ω /2A	600	$\pm 25\%$	100	0.1	2000	
CKGB0805-1000 Ω /200mA	1000	$\pm 25\%$	100	0.5	200	
CKGB0805-1000 Ω /1.5A	1000	$\pm 25\%$	100	0.12	1500	
CKGB0805-1500 Ω /200mA	1500	$\pm 25\%$	100	0.6	200	
CKGB0805-1500 Ω /1A	1500	$\pm 25\%$	100	0.3	1000	
CKGB0805-2000 Ω /200mA	2000	$\pm 25\%$	100	0.7	200	
CKGB0805-2500 Ω /200mA	2500	$\pm 25\%$	100	0.7	200	
CKGB0805-2700 Ω /200mA	2700	$\pm 25\%$	100	0.7	200	



■CKGB1206 Series

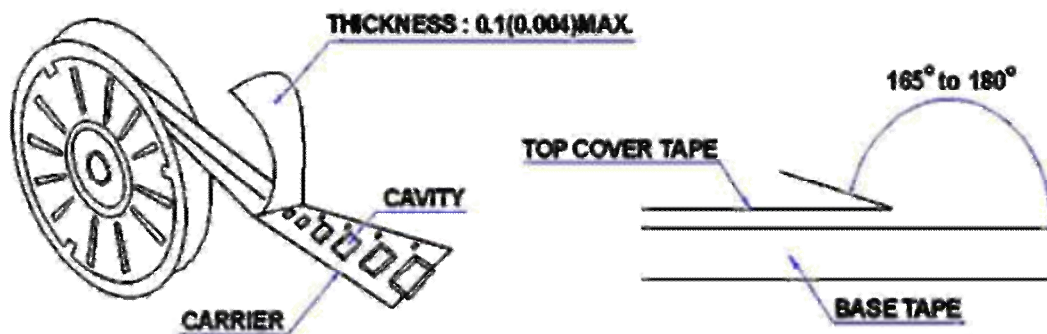
Part No.	Impedance (Ω)	Tolerance	Test Frequency (MHz)	DCR (Ω) Max	Rated Current (mA)Max	Remark
CKGB1206-10 Ω /6A	10	$\pm 30\%$	100	0.015	6000	
CKGB1206-30 Ω /4A	30	$\pm 25\%$	100	0.015	4000	
CKGB1206-30 Ω /6A	30	$\pm 25\%$	100	0.012	6000	
CKGB1206-60 Ω /500mA	60	$\pm 25\%$	100	0.1	500	
CKGB1206-60 Ω /3A	60	$\pm 25\%$	100	0.025	3000	
CKGB1206-60 Ω /6A	60	$\pm 25\%$	100	0.012	6000	
CKGB1206-80 Ω /6A	80	$\pm 25\%$	100	0.012	6000	
CKGB1206-90 Ω /500mA	90	$\pm 25\%$	100	0.15	500	
CKGB1206-100 Ω /3A	100	$\pm 25\%$	100	0.03	3000	
CKGB1206-100 Ω /6A	100	$\pm 25\%$	100	0.012	6000	
CKGB1206-120 Ω /500mA	120	$\pm 25\%$	100	0.15	500	
CKGB1206-120 Ω /3A	120	$\pm 25\%$	100	0.03	3000	
CKGB1206-120 Ω /6A	120	$\pm 25\%$	100	0.012	6000	
CKGB1206-180 Ω /4.5A	180	$\pm 25\%$	100	0.02	4500	
CKGB1206-220 Ω /2A	220	$\pm 25\%$	100	0.05	2000	
CKGB1206-220 Ω /4.5A	220	$\pm 25\%$	100	0.02	4500	
CKGB1206-300 Ω /2A	300	$\pm 25\%$	100	0.06	2000	
CKGB1206-470 Ω /400mA	470	$\pm 25\%$	100	0.2	400	
CKGB1206-600 Ω /400mA	600	$\pm 25\%$	100	0.3	400	
CKGB1206-600 Ω /2A	600	$\pm 25\%$	100	0.1	2000	
CKGB1206-1000 Ω /200mA	1000	$\pm 25\%$	50	0.4	200	
CKGB1206-1000 Ω /1.2A	1000	$\pm 25\%$	50	0.15	1200	
CKGB1206-1200 Ω /200mA	1200	$\pm 25\%$	50	0.4	200	
CKGB1206-1500 Ω /200mA	1500	$\pm 25\%$	50	0.45	200	
CKGB1206-1500 Ω /800mA	1500	$\pm 25\%$	50	0.2	800	



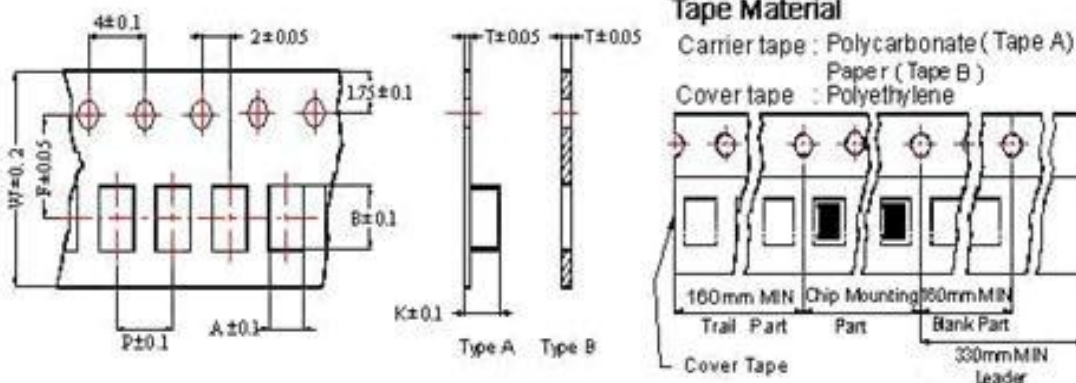
■ Packaging

1. Packaging -Cover Tape

The force for tearing off cover tape is 10 to 100 grams in the arrow direction.

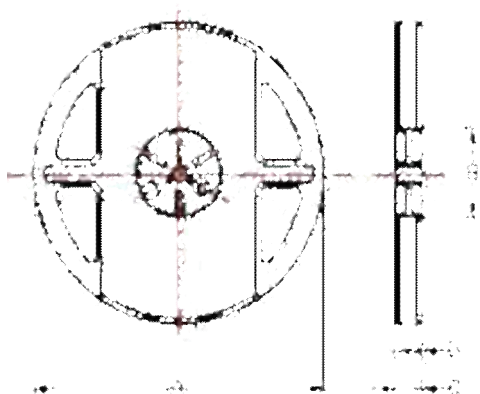


2. Tape Dimensions(Unit:mm)



Type	A	B	T	W	P	F	K	Tape Type
0402	0.62	1.12	0.60	8	2	3.5	/	B
0603	1.05	1.85	0.95	8	4	3.5	/	B
0805	1.50	2.30	0.97	8	4	3.5	/	B
1206	1.88	3.50	0.22	8	4	3.5	1.27	A

3. Reel Dimensions (Unit:mm)



	A	A	B	C	D
0402	178	60	12	2	2
0603	178	60	12	2	2
0805	178	60	12	2	2
1206	178	60	12	2	2

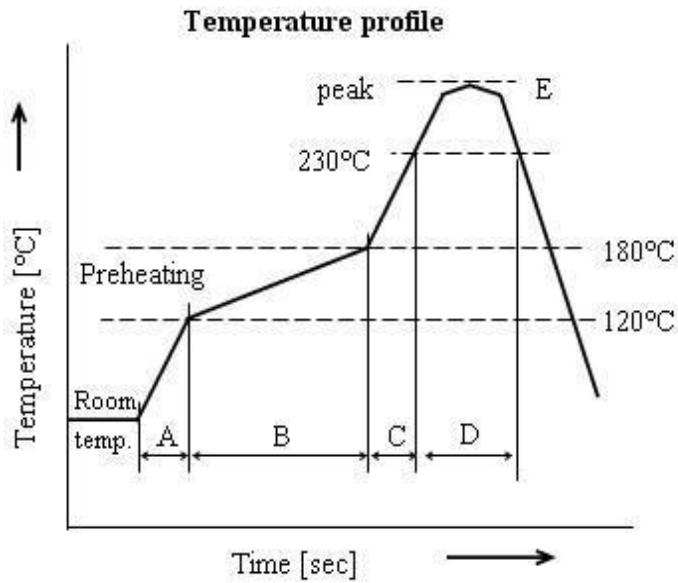


4. Packaging Quantity

Type	Pcs/Reel
0402	10,000
0603	4,000
0805	4,000
1206	3,000

■ Soldering

Reflow Soldering



A	Temp. rise gradient	1~5 °C/sec
B	Heating time	50~150 sec
	Heating temperature	120~180 °C
C	Temp. rise gradient	1~5 °C/sec
D	Time over 230°C	70 sec
E	Peak temperature	260 °C
	Peak-temp. hold time	Momentary
Soldering		2 times



■ Reliability

No.	Item	Specification	Test Method															
1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec *For 100505, substrate dimension is 100x40x0.8mm															
2	Vibration		Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs															
3	Resistance to Soldering Heat Appearance: No damage	More than 75% of the terminal Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) electrode should be covered with solder. Inductance: within $\pm 15\%$ of initial value	Pre-heating: 150°C, 1min Solder Temperature: 260 ± 5 °C Immersion Time: 10 ± 1 sec															
4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245 ± 5 °C (Pb-Free) Immersion Time: 4 ± 1 sec															
5	Temperature Cycle	Appearance: No damage Inductance: within $\pm 10\%$ of initial value Q change: within $\pm 30\%$ of initial value	One cycle:															
			<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25± 3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25± 2</td> <td>3</td> </tr> <tr> <td>3</td> <td>85± 3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25± 2</td> <td>3</td> </tr> </tbody> </table>	Step	Temperature (°C)	Time (min)	1	-25 ± 3	30	2	25 ± 2	3	3	85 ± 3	30	4	25 ± 2	3
Step	Temperature (°C)		Time (min)															
1	-25 ± 3		30															
2	25 ± 2		3															
3	85 ± 3	30																
4	25 ± 2	3																
		Total: 100cycles Measured after exposure in the room condition for 24hrs																
6	Humidity Resistance	Temperature: 40 ± 2 °C Relative Humidity: 90 ~ 95% / Time: 1000hrs Measured after exposure in the room condition for 24hrs																
7	High Temperature Resistance	Temperature: 85 ± 3 °C Relative Humidity: 20% Applied Current: Rated Current / Time: 1000hrs Measured after exposure in the room condition for 24hrs																
8	Low Temperature Resistance	Temperature: -25 ± 3 °C Relative Humidity: 0% / Time: 1000hrs Measured after exposure in the room condition for 24hrs																