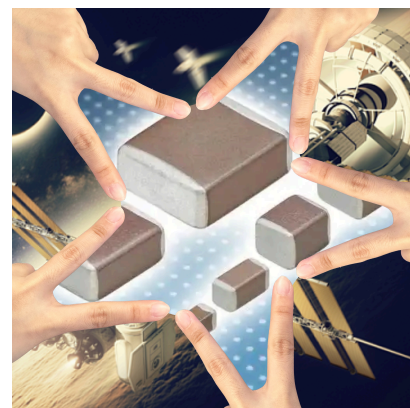


## CCAЕ

### ■ Characteristics and Applications

- ◆ Square, without outer sealing layer, suitable for surface mounting;
- ◆ The medium is Class I ceramic, with good frequency characteristics and high capacitance stability;
- ◆ Each batch of products undergoes 100% temperature shock screening and high-temperature electrical load screening;
- ◆ Suitable for resonant circuits, coupling circuits, and circuits that require low loss, high capacitance stability, and high insulation resistance in various military electronic devices.



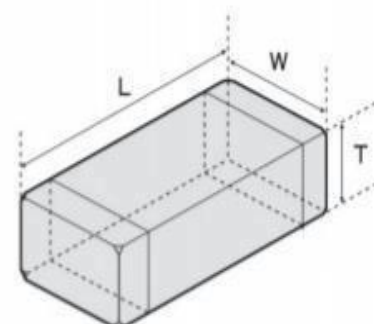
### ■ Part number Example

CCAЕ	0805	CG	101	J	1H	J
Series	External dimensions	Temperature coefficient	capacitance	Tolerance	Rated voltage	Quality Grade
SMD MLCC	Size code	CG:0±30ppm/°C H:0±60ppm/°C -55~+125°C .....	Numerical method, 101 is 100pF	According to the table below	0J 6.3V 1A 10V 1C 16V 1D 20V 1E 25V 1H 50V 1J 63V 2A 100V .....	According to the table below

### ■ Comparison Table of Quality Levels and Execution Standards

Quality Grade	Quality grade code	Implement detailed specifications	Refer to the general standard for execution
Seven specialties plus	G+	QJ/PWV411-2012 I dielectric QJ/PWV412-2012 II dielectric	QZJ840624 Ceramic Capacitor "Seven Specialized" Technical Conditions
Seven specialties	G	QJ/PWV415-2012 I dielectric QJ/PWV416-2012 II dielectric	QZJ840624 Ceramic Capacitor "Seven Specialized" Technical Conditions
Military screening	S	QJ/PWV401-2010 I dielectric QJ/PWV402-2010 II dielectric	GJB192A-1998
General military	J	QJ/PWV419-2012 I dielectric QJ/PWV420-2012 II dielectric	GJB192A-1998

Size Code	Dimensions mm		
	L	W	Tmax
0402	1.00±0.15	0.50±0.05	0.55
0603	1.60±0.15	0.80±0.15	0.95
0805	2.00±0.20	1.25±0.20	1.40
1206	3.20±0.20	1.60±0.20	1.90
1210	3.20±0.40	2.50±0.30	2.80
1812	4.50±0.50	3.20±0.40	3.50
2220	5.70±0.50	5.00±0.50	5.20
2225	5.70±0.50	6.30±0.50	6.20
3035	7.60±0.60	6.30±0.60	6.20



■ Temperature coefficient

Temperature coefficient	Nominal temperature coefficient	Working temperature range
COG/NPO / CG / N	0±30 ppm/°C	-55°C~+125°C
COH / H	0± 60 ppm/°C	-55°C~+125°C
X7R / B	±15%	-55°C~+125°C
X7S / K	±22%	-55°C~+125°C
X7T / C	+22% ~ -33%	-55°C~+125°C
X6S / Q	±22%	-55°C~+105°C
X6T / D	+22% ~ -33%	-55°C~+105°C
X5R / X	±15%	-55°C~+85°C
2R1 / E	±15%	-55°C~+125°C
2R2 / G	±15%	55°C~+85°C
2C1 / P	±20%	-55°C~+125°C
2C2 / V	±20%	-55°C~+85°C
2X1 / W	±15%	-55°C~+125°C

■ Allowable deviation of capacitance

Capacitance range	Allowable deviation range	code
0.1 pF~0.9 pF	±0.10pF, ±0.25pF, ±0.50pF	B, C, D
1.0 pF~8.2 pF	±0.10pF, ±0.25pF ±0.50pF, ±1%	B, C, D, F
C <sub>R</sub> ≥10pF	±1%	F
	±2%	G
	±5%	J
	±10%	K
	±20%	M

I dielectric	Test conditions	performance index
Capacitance C <sub>R</sub>	Test frequency: C <sub>R</sub> ≤ 1000pF, 1MHz ± 10%; C <sub>R</sub> > 1000pF, 1KHz ± 10% Test voltage: 1.0V ± 0.2Vrms	When C <sub>R</sub> ≥ 50pF, tg δ ≤ 15×10 <sup>-4</sup>
Tangent of the loss Angle Tgδ		When C <sub>R</sub> < 50pF, tgδ ≤ 1.5x(150/C <sub>R</sub> +7)x10 <sup>-4</sup>
Insulation resistance IR	Test voltage: rated voltage U <sub>R</sub> ; Test time: 1min±5s	IR ≥ 1x10 <sup>5</sup> MΩ or 1000 · μ F, whichever is smaller
Voltage endurance	Test voltage: 2.5U <sub>R</sub> ; Test time: 5s±1s	No breakdown, arcing or visible damage

II dielectric	Test conditions	performance index
Capacitance C <sub>R</sub>	C <sub>R</sub> ≤ 10uF 1KHz ± 10%; 1.0V ± 0.2Vrms; 10uF < C <sub>R</sub> < 470uF 120Hz ± 10% 0.5V ± 0.2Vrms; 470uF ≤ C <sub>R</sub> < 2000uF 50Hz ± 10% 0.5V ± 0.1Vrms; 2000uF ≤ C <sub>R</sub> ≤ 4700uF 25Hz ± 10% 0.25V ± 0.1Vrms;	1, size ≤ 0603 or C <sub>R</sub> ≥ 1uF tgδ ≤ 1200x10 <sup>-4</sup>
Tangent of the loss Angle Tgδ		2, U <sub>R</sub> ≤ 16V tgδ ≤ 1000x10 <sup>-4</sup> 16V < U <sub>R</sub> ≤ 50V tgδ ≤ 500x10 <sup>-4</sup> 50V < U <sub>R</sub> ≤ 200V tgδ ≤ 250x10 <sup>-4</sup>
Insulation resistance IR		3, C <sub>R</sub> ≥ 100uF tgδ ≤ 1500x10 <sup>-4</sup>
Voltage endurance	Test voltage: 2.5U <sub>R</sub> ; Test time: 5s±1s	C <sub>R</sub> < 0.47uF IR ≥ 1x10 <sup>4</sup> MΩ or 500 MΩ · μ F, the lesser C <sub>R</sub> ≥ 0.47uF IR ≥ 100 MΩ · μ F, No breakdown, arcing or visible damage

I dielectric CG、CH capacitance sheet

size		0402	0603			0805			1206			1210			1812			2220		2225		
CR	UR(V)	50	50	100	200	50	100	200	50	100	200	50	100	200	50	100	200	50	100	50	100	
CAP(pF)	code																					
0.5	OR5																					
1.0	1R0																					
1.2	1R2																					
1.5	1R5																					
1.8	1R8																					
2.2	2R2																					
2.7	2R7																					
3.3	3R3																					
3.9	3R9																					
4.7	4R7																					
5.6	5R6																					
6.8	6R8																					
8.2	8R2																					
10	100																					
12	120																					
15	150																					
18	180																					
22	220																					
27	270																					
33	330																					
39	390																					
47	470																					
56	560																					
68	680																					
82	820																					
100	101																					
110	111																					
120	121																					
130	131																					
150	151																					
180	181																					
200	201																					
220	221																					
270	271																					
330	331																					
390	391																					
470	471																					
560	561																					
680	681																					
820	821																					
910	911																					
1000	102																					
1200	122																					
1500	152																					
1800	182																					
2200	222																					
2700	272																					
3300	332																					
3900	392																					
4700	472																					
5600	562																					
6800	682																					
8200	822																					
10000	103																					
12000	123																					
15000	153																					
18000	183																					
22000	223																					
27000	273																					
33000	333																					
39000	393																					
47000	473																					
56000	563																					
68000	683																					
82000	823																					
100000	104																					
120000	124																					
150000	154																					
180000	184																					
220000	224																					



