Multilayer Ceramic Chip Capacitors

For automobile(General use)

CGA series

Type: **CGA2(C1005[EIA CC0402])**
CGA3(C1608[EIA CC0603])
CGA4(C2012[EIA CC0805])
CGA5(C3216[EIA CC1206])
CGA6(C3225[EIA CC1210])

Issue date: August 2011

- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

REMINDERS

Please read this before using the product.

SAFETY REMINDERS

⚠ REMINDERS

1. If you intend to use a product listed in this catalog for a purpose that may cause loss of life or other damage, you must contact our company's sales window.
2. We may modify products or discontinue production of a product listed in this catalog without prior notification.
3. We provide "Delivery Specification" that explain precautions for the specifications and safety of each product listed in this catalog. We strongly recommend that you exchange these delivery specifications with customers that use one of these products.
4. If you plan to export a product listed in this catalog, keep in mind that it may be a restricted item according to the "Foreign Exchange and Foreign Trade Control Law". In such cases, it is necessary to acquire export permission in harmony with this law.
5. Any reproduction or transferring of the contents of this catalog is prohibited without prior permission from our company.
6. We are not responsible for problems that occur related to the intellectual property rights or other rights of our company or a third party when you use a product listed in this catalog. We do not grant license of these rights.
7. This catalog only applies to products purchased through our company or one of our company's official agencies. This catalog does not apply to products that are purchased through other third parties.
8. The descriptions in this catalog apply as of August, 2011.

Multilayer Ceramic Chip Capacitors For Automobile(General Use)

Conformity to RoHS Directive

CGA Series

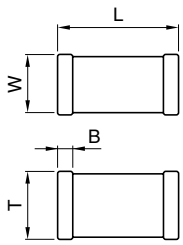
FEATURES

- An electrostatic capacity has been obtained that reaches the electrolytic capacitor range through precision technology that enables the use of multiple thinner ceramic dielectric layers.
- Since these capacitors are composed of only ceramics and metals and have a monolithic structure, they offer a long service life and high reliability.
- Small parasitic inductance and excellent frequency characteristics allows for circuit design that closely conforms to theoretical values.
- Low self-heating and high ripple resistance due to low ESR.

APPLICATION EXAMPLES

- Decoupling and smoothing circuits of various on-board units
- Time constant, resonance and coupling circuits (Products with CH or C0G temperature characteristics are recommended.)

SHAPES AND DIMENSIONS



DIMENSIONS

The dimensions of each product are described within the product name.

Dimensions L×W

The fourth digit number in the product name corresponds to the dimensions of L×W.
Refer to the table below for specific values.

Dimensions in mm

Dimension code	L	W	B
2	1.0±0.05	0.5±0.05	0.1min.
3	1.6±0.1	0.8±0.1	0.2min.
4	2.0±0.2	1.25±0.2	0.2min.
5	3.2±0.2	1.6±0.2	0.2min.
6	3.2±0.4	2.5±0.3	0.2min.

• Dimension tolerances are typical values.

Product's Thickness T

The value in parentheses at the end of the product name corresponds to thickness T.
Refer to the table of "CAPACITANCE RANGES" for specific values.

- For more information about the products of other capacitance or data, please contact us.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

PRODUCT IDENTIFICATION

CGA	2	B	2	X7R	1H	103	K	(	050	B	B	)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(9)	(10)	(11)	

(1) Series name

(2) Dimensions L×W

2	1.0×0.5mm
3	1.6×0.8mm
4	2.0×1.25mm
5	3.2×1.6mm
6	3.2×2.5mm

(3) Dimensions T

B	0.50mm
C	0.60mm
E	0.80mm
F	0.85mm
G	1.10mm
H	1.15mm
J	1.25mm
K	1.30mm
L	1.60mm
M	2.00mm
N	2.30mm
P	2.50mm

• Overlaps with (9).

(4) Test voltage of the high temperature load test (guaranteed voltage)

1	1× the rated voltage
2	2×the rated voltage
3	1.5×the rated voltage
4	1.2×the rated voltage
5	1.1×the rated voltage

(5) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
C0G	0±30ppm/°C	–55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
X7R	±15%	–55 to +125°C
X7S	±22%	–55 to +125°C

(6) Rated voltage Edc

1C	16V
1E	25V
1V	35V
1H	50V

(7) Nominal capacitance

The capacitance is expressed in three digit codes and in units of pico farads (pF).
The first and second digits identify the first and second significant figures of the capacitance.
The third digit identifies the multiplier.
R designates a decimal point.

010	1pF
100	10pF
471	470pF
102	1,000pF
333	33,000pF
474	470,000pF
225	2,200,000pF (2.2µF)

(8) Capacitance tolerance

Symbol	Tolerance	Applicable capacitance range
C	±0.25pF	10pF or less
D	±0.5pF	
J	±5%	Over 10pF
K	±10%	
M	±20%	

• Overlaps with (3).

(9) Dimensions T

Expressed by a three-digit number in mm units.
The second and third digits denote the first and second decimal places, respectively.

050	0.50mm
085	0.85mm
125	1.25mm

(10) Packaging style

A	ø178mm reel with 4mm-pitch
B	ø178mm reel with 2mm-pitch
C	ø178mm reel with 1mm-pitch
D	ø330mm reel with 4mm-pitch
E	ø330mm reel with 2mm-pitch
F	ø330mm reel with 1mm-pitch
H	Bulk(bag)
J	ø330mm reel with 8mm-pitch
K	ø178mm reel with 8mm-pitch

(11) TDK internal code

In brochures issued in August, 2011 and later, the product thickness and packing specifications are described at the end of the ordering name [the product name described in brochures] in parentheses.
Since the existing ordering name could not clearly express the product thickness and packing specifications, it has been changed to a new product description method that solves this inconvenience.

Please be aware that the last five digits of the ordering name on the delivery label and those in the brochure differ.
No changes have been made to the delivery name.

(Example)

Brochure issued date	Ordering name (description in the brochure)	Delivery name (description on the delivery label)
Prior to July, 2011	C1608X5R1C105K	C1608X5R1C105KT000N
August, 2011 or later	C1608X5R1C105K(080AA)	C1608X5R1C105KT000N

- For more information about the products of other capacitance or data, please contact us.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)

TEMPERATURE CHARACTERISTICS: C0G(0±30ppm/°C)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No. Rated voltage Edc: 50V	Rated voltage Edc: 35V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
1pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H010C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H010C(080AA)			
1.5pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H1R5C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H1R5C(080AA)			
2pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H020C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H020C(080AA)			
2.2pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H2R2C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H2R2C(080AA)			
3pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H030C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H030C(080AA)			
3.3pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H3R3C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H3R3C(080AA)			
4pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H040C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H040C(080AA)			
4.7pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H4R7C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H4R7C(080AA)			
5pF	1005	0.50±0.05	±0.25pF	CGA2B2C0G1H050C(050BA)			
	1608	0.80±0.10	±0.25pF	CGA3E2C0G1H050C(080AA)			
6pF	1005	0.50±0.05	±0.5pF	CGA2B2C0G1H060D(050BA)			
	1608	0.80±0.10	±0.5pF	CGA3E2C0G1H060D(080AA)			
6.8pF	1005	0.50±0.05	±0.5pF	CGA2B2C0G1H6R8D(050BA)			
	1608	0.80±0.10	±0.5pF	CGA3E2C0G1H6R8D(080AA)			
7pF	1005	0.50±0.05	±0.5pF	CGA2B2C0G1H070D(050BA)			
	1608	0.80±0.10	±0.5pF	CGA3E2C0G1H070D(080AA)			
8pF	1005	0.50±0.05	±0.5pF	CGA2B2C0G1H080D(050BA)			
	1608	0.80±0.10	±0.5pF	CGA3E2C0G1H080D(080AA)			
9pF	1005	0.50±0.05	±0.5pF	CGA2B2C0G1H090D(050BA)			
	1608	0.80±0.10	±0.5pF	CGA3E2C0G1H090D(080AA)			
10pF	1005	0.50±0.05	±0.5pF	CGA2B2C0G1H100D(050BA)			
	1608	0.80±0.10	±0.5pF	CGA3E2C0G1H100D(080AA)			
12pF	1005	0.50±0.05	±5%	CGA2B2C0G1H120J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H120J(080AA)			
15pF	1005	0.50±0.05	±5%	CGA2B2C0G1H150J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H150J(080AA)			
18pF	1005	0.50±0.05	±5%	CGA2B2C0G1H180J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H180J(080AA)			
22pF	1005	0.50±0.05	±5%	CGA2B2C0G1H220J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H220J(080AA)			
27pF	1005	0.50±0.05	±5%	CGA2B2C0G1H270J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H270J(080AA)			
33pF	1005	0.50±0.05	±5%	CGA2B2C0G1H330J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H330J(080AA)			
39pF	1005	0.50±0.05	±5%	CGA2B2C0G1H390J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H390J(080AA)			
47pF	1005	0.50±0.05	±5%	CGA2B2C0G1H470J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H470J(080AA)			
56pF	1005	0.50±0.05	±5%	CGA2B2C0G1H560J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H560J(080AA)			
68pF	1005	0.50±0.05	±5%	CGA2B2C0G1H680J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H680J(080AA)			
82pF	1005	0.50±0.05	±5%	CGA2B2C0G1H820J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H820J(080AA)			
100pF	1005	0.50±0.05	±5%	CGA2B2C0G1H101J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H101J(080AA)			
120pF	1005	0.50±0.05	±5%	CGA2B2C0G1H121J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H121J(080AA)			
150pF	1005	0.50±0.05	±5%	CGA2B2C0G1H151J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H151J(080AA)			
180pF	1005	0.50±0.05	±5%	CGA2B2C0G1H181J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H181J(080AA)			
220pF	1005	0.50±0.05	±5%	CGA2B2C0G1H221J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H221J(080AA)			

- For more information about the products of other capacitance or data, please contact us.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)

TEMPERATURE CHARACTERISTICS: C0G(0±30ppm/°C)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No. Rated voltage Edc: 50V	Rated voltage Edc: 35V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
270pF	1005	0.50±0.05	±5%	CGA2B2C0G1H271J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H271J(080AA)			
330pF	1005	0.50±0.05	±5%	CGA2B2C0G1H331J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H331J(080AA)			
390pF	1005	0.50±0.05	±5%	CGA2B2C0G1H391J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H391J(080AA)			
470pF	1005	0.50±0.05	±5%	CGA2B2C0G1H471J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H471J(080AA)			
560pF	1005	0.50±0.05	±5%	CGA2B2C0G1H561J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H561J(080AA)			
680pF	1005	0.50±0.05	±5%	CGA2B2C0G1H681J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H681J(080AA)			
820pF	1005	0.50±0.05	±5%	CGA2B2C0G1H821J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H821J(080AA)			
1nF	1005	0.50±0.05	±5%	CGA2B2C0G1H102J(050BA)			
	1608	0.80±0.10	±5%	CGA3E2C0G1H102J(080AA)			
1.2nF	1608	0.80±0.10	±5%	CGA3E2C0G1H122J(080AA)			
1.5nF	1608	0.80±0.10	±5%	CGA3E2C0G1H152J(080AA)			
1.8nF	1608	0.80±0.10	±5%	CGA3E2C0G1H182J(080AA)			
2.2nF	1608	0.80±0.10	±5%	CGA3E2C0G1H222J(080AA)			
2.7nF	1608	0.80±0.10	±5%	CGA3E2C0G1H272J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H272J(060AA)			
3.3nF	1608	0.80±0.10	±5%	CGA3E2C0G1H332J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H332J(060AA)			
3.9nF	1608	0.80±0.10	±5%	CGA3E2C0G1H392J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H392J(060AA)			
4.7nF	1608	0.80±0.10	±5%	CGA3E2C0G1H472J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H472J(060AA)			
	3216	0.60±0.15	±5%	CGA5C2C0G1H472J(060AA)			
5.6nF	1608	0.80±0.10	±5%	CGA3E2C0G1H562J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H562J(060AA)			
	3216	0.60±0.15	±5%	CGA5C2C0G1H562J(060AA)			
6.8nF	1608	0.80±0.10	±5%	CGA3E2C0G1H682J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H682J(060AA)			
	3216	0.60±0.15	±5%	CGA5C2C0G1H682J(060AA)			
8.2nF	1608	0.80±0.10	±5%	CGA3E2C0G1H822J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H822J(060AA)			
	3216	0.60±0.15	±5%	CGA5C2C0G1H822J(060AA)			
10nF	1608	0.80±0.10	±5%	CGA3E2C0G1H103J(080AA)			
	2012	0.60±0.15	±5%	CGA4C2C0G1H103J(060AA)			
	3216	0.60±0.15	±5%	CGA5C2C0G1H103J(060AA)			
15nF	2012	0.85±0.15	±5%	CGA4F2C0G1H153J(085AA)			
	3216	0.60±0.15	±5%	CGA5C2C0G1H153J(060AA)			
22nF	2012	1.25±0.20	±5%	CGA4J2C0G1H223J(125AA)			
	3216	0.60±0.15	±5%	CGA5C2C0G1H223J(060AA)			
	3225	1.25±0.20	±5%	CGA6J2C0G1H223J(125AA)			
33nF	2012	1.25±0.20	±5%	CGA4J2C0G1H333J(125AA)			
	3216	0.85±0.15	±5%	CGA5F2C0G1H333J(085AA)			
	3225	1.60±0.20	±5%	CGA6L2C0G1H333J(160AA)			
47nF	3216	1.15±0.15	±5%	CGA5H2C0G1H473J(115AA)			
	3225	2.00±0.20	±5%	CGA6M2C0G1H473J(200AA)			
68nF	3216	1.60±0.20	±5%	CGA5L2C0G1H683J(160AA)			
	3225	2.00±0.20	±5%	CGA6M2C0G1H683J(200AA)			
100nF	3216	1.60±0.20	±5%	CGA5L2C0G1H104J(160AA)			
	3225	2.50±0.30	±5%	CGA6P2C0G1H104J(250AA)			

- For more information about the products of other capacitance or data, please contact us.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

CAPACITANCE RANGES: CLASS 2
TEMPERATURE CHARACTERISTICS: X7R(±15%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No. Rated voltage Edc: 50V	Rated voltage Edc: 35V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
220pF	1005	0.50±0.05	±10%	CGA2B2X7R1H221K(050BA)			
330pF	1005	0.50±0.05	±10%	CGA2B2X7R1H331K(050BA)			
470pF	1005	0.50±0.05	±10%	CGA2B2X7R1H471K(050BA)			
680pF	1005	0.50±0.05	±10%	CGA2B2X7R1H681K(050BA)			
1nF	1005	0.50±0.05	±10%	CGA2B2X7R1H102K(050BA)			
	1608	0.80±0.10	±10%	CGA3E2X7R1H102K(080AA)			
1.5nF	1005	0.50±0.05	±10%	CGA2B2X7R1H152K(050BA)			
	1608	0.80±0.10	±10%	CGA3E2X7R1H152K(080AA)			
2.2nF	1005	0.50±0.05	±10%	CGA2B2X7R1H222K(050BA)			
	1608	0.80±0.10	±10%	CGA3E2X7R1H222K(080AA)			
3.3nF	1005	0.50±0.05	±10%	CGA2B2X7R1H332K(050BA)			
	1608	0.80±0.10	±10%	CGA3E2X7R1H332K(080AA)			
4.7nF	1005	0.50±0.05	±10%	CGA2B2X7R1H472K(050BA)			
	1608	0.80±0.10	±10%	CGA3E2X7R1H472K(080AA)			
6.8nF	1005	0.50±0.05	±10%	CGA2B2X7R1H682K(050BA)			
	1608	0.80±0.10	±10%	CGA3E2X7R1H682K(080AA)			
10nF	1005	0.50±0.05	±10%			CGA2B2X7R1E103K(050BA)	
		0.50±0.05	±10%	CGA2B3X7R1H103K(050BB)	CGA2B3X7R1V103K(050BB)		
	1608	0.80±0.10	±10%	CGA3E2X7R1H103K(080AA)			
15nF	1005	0.50±0.05	±10%			CGA2B2X7R1E153K(050BA)	
		0.50±0.05	±10%	CGA2B3X7R1H153K(050BB)	CGA2B3X7R1V153K(050BB)		
	1608	0.80±0.10	±10%	CGA3E2X7R1H153K(080AA)			
22nF	1005	0.50±0.05	±10%			CGA2B2X7R1E223K(050BA)	
		0.50±0.05	±10%	CGA2B3X7R1H223K(050BB)	CGA2B3X7R1V223K(050BB)		
	1608	0.80±0.10	±10%	CGA3E2X7R1H223K(080AA)			
33nF	1005	0.50±0.05	±10%			CGA2B1X7R1E333K(050BC)	
		0.50±0.05	±10%				CGA2B2X7R1C333K(050BA)
			±10%	CGA2B3X7R1H333K(050BB)	CGA2B3X7R1V333K(050BB)		
	1608	0.80±0.10	±10%	CGA3E2X7R1H333K(080AA)			
47nF	1005	0.50±0.05	±10%			CGA2B1X7R1E473K(050BC)	
		0.50±0.05	±10%				CGA2B2X7R1C473K(050BA)
			±10%	CGA2B3X7R1H473K(050BB)	CGA2B3X7R1V473K(050BB)		
	1608	0.80±0.10	±10%	CGA3E2X7R1H473K(080AA)			
68nF	1005	0.50±0.05	±10%				CGA2B1X7R1C683K(050BC)
		0.50±0.05	±10%			CGA2B3X7R1E683K(050BB)	
	1608	0.80±0.10	±10%	CGA3E2X7R1H683K(080AA)			
100nF	1005	0.50±0.05	±10%				CGA2B1X7R1C104K(050BC)
		0.50±0.05	±10%			CGA2B3X7R1E104K(050BB)	
	1608	0.80±0.10	±10%	CGA3E2X7R1H104K(080AA)			
150nF	1608	0.80±0.10	±10%			CGA3E2X7R1E154K(080AA)	
	2012	1.25±0.20	±10%	CGA4J2X7R1H154K(125AA)			
220nF	1608	0.80±0.10	±10%			CGA3E1X7R1E224K(080AC)	
		0.80±0.10	±10%				CGA3E2X7R1C224K(080AA)
	2012	1.25±0.20	±10%	CGA4J2X7R1H224K(125AA)			
330nF	1608	0.80±0.10	±10%				CGA3E1X7R1C334K(080AC)
		0.80±0.10	±10%			CGA3E3X7R1E334K(080AB)	
	2012	1.25±0.20	±10%	CGA4J2X7R1H334K(125AA)			
470nF	1608	0.80±0.10	±10%				CGA3E1X7R1C474K(080AC)
		0.80±0.10	±10%			CGA3E3X7R1E474K(080AB)	
	2012	1.25±0.20	±10%			CGA4J2X7R1E474K(125AA)	
		1.25±0.20	±10%	CGA4J3X7R1H474K(125AB)	CGA4J3X7R1V474K(125AB)		
	3216	1.60±0.20	±10%	CGA5L2X7R1H474K(160AA)			
680nF	1608	0.80±0.10	±10%				CGA3E1X7R1C684K(080AC)
	2012	1.25±0.20	±10%				CGA4J2X7R1C684K(125AA)
		1.25±0.20	±10%	CGA4J3X7R1H684K(125AB)	CGA4J3X7R1V684K(125AB)	CGA4J3X7R1E684K(125AB)	
	3216	1.60±0.20	±10%	CGA5L2X7R1H684K(160AA)			

- For more information about the products of other capacitance or data, please contact us.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

CAPACITANCE RANGES: CLASS 2

TEMPERATURE CHARACTERISTICS: X7R(±15%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No. Rated voltage Edc: 50V	Rated voltage Edc: 35V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
1μF	2012	1.25±0.20	±10%				CGA4J2X7R1C105K(125AA)
		1.25±0.20	±10%	CGA4J3X7R1H105K(125AB)	CGA4J3X7R1V105K(125AB)	CGA4J3X7R1E105K(125AB)	
	3216	1.60±0.20	±10%			CGA5L2X7R1E105K(160AA)	
		1.60±0.20	±10%	CGA5L3X7R1H105K(160AB)			
	3225	1.60±0.20	±10%	CGA6L2X7R1H105K(160AA)			
1.5μF	2012	1.25±0.20	±10%			CGA4J3X7R1E155K(125AB)	CGA4J3X7R1C155K(125AB)
	3216	1.60±0.20	±10%			CGA5L2X7R1E155K(160AA)	
		1.60±0.20	±10%	CGA5L3X7R1H155K(160AB)	CGA5L3X7R1V155K(160AB)		
	3225	2.00±0.20	±10%	CGA6M2X7R1H155K(200AA)			
2.2μF	2012	1.25±0.20	±10%			CGA4J3X7R1E225K(125AB)	CGA4J3X7R1C225K(125AB)
	3216	1.60±0.20	±10%			CGA5L2X7R1E225K(160AA)	
		1.60±0.20	±10%	CGA5L3X7R1H225K(160AB)	CGA5L3X7R1V225K(160AB)		
	3225	2.00±0.20	±10%	CGA6M3X7R1H225K(200AB)			
3.3μF	2012	1.25±0.20	±10%				CGA4J1X7R1C335K(125AC)
	3216	1.60±0.20	±10%			CGA5L1X7R1E335K(160AC)	
	3225	1.60±0.20	±10%			CGA6L2X7R1E335K(160AA)	
		2.50±0.30	±10%	CGA6P3X7R1H335K(250AB)			
4.7μF	2012	1.25±0.20	±10%				CGA4J1X7R1C475K(125AC)
	3216	1.60±0.20	±10%			CGA5L1X7R1E475K(160AC)	
		1.60±0.20	±10%				CGA5L3X7R1C475K(160AB)
	3225	2.00±0.20	±10%			CGA6M2X7R1E475K(200AA)	
6.8μF	3216	1.60±0.20	±10%				CGA5L1X7R1C685K(160AC)
	3225	2.50±0.30	±10%			CGA6P3X7R1E685K(250AB)	
10μF	3225	2.00±0.20	±10%				CGA6M3X7R1C106K(200AB)
		2.50±0.30	±10%			CGA6P1X7R1E106K(250AC)	
15μF	3225	2.50±0.30	±20%				CGA6P3X7R1C156M(250AB)
22μF	3225	2.50±0.30	±20%				CGA6P1X7R1C226M(250AC)

TEMPERATURE CHARACTERISTICS: X7S(±22%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No. Rated voltage Edc: 50V	Rated voltage Edc: 35V	Rated voltage Edc: 25V	Rated voltage Edc: 16V
4.7μF	3225	2.30±0.20	±10%	CGA6N3X7S1H475K(230AB)			
6.8μF	3225	2.50±0.30	±10%	CGA6P3X7S1H685K(250AB)			
10μF	3225	2.50±0.30	±10%	CGA6P3X7S1H106K(250AB)			

- For more information about the products of other capacitance or data, please contact us.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.