

# **Multilayer Ceramic Chip Capacitors**

For automobile(Mid voltage)

# **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: October 2011

<sup>•</sup> All specifications are subject to change without notice.

<sup>•</sup> 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

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- 8. The descriptions in this catalog apply as of October, 2011.



# Multilayer Ceramic Chip Capacitors For Automobile(Mid Voltage)

Conformity to RoHS Directive

# **CGA Series**

#### **FEATURES**

 A series of small SMD products with rated voltages ranging from 100V to 630V

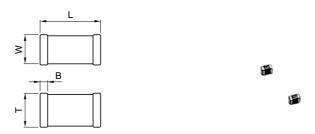
The series has achieved a high capacitance, and is suited for size and thickness reduction of devices.

- A lineup with wide-ranging rated voltages that enables selections that are suitable for needs.
- Features a wide operating temperature range from –55 to +125°C.

### **APPLICATION EXAMPLES**

- Countermeasure against voltage surge and noise in connectors
- Application in decoupling, smoothing, and snubber circuits of inverters or DC to DC converters of HEVs or EVs
- · Surge removal of various motors

#### 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 $\times$ W.

Refer to the table below for specific values.

			Dimensions in mm
Dimension code	L	W	В
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.

<sup>•</sup> 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.
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# **&TDK**

#### PRODUCT IDENTIFICATION

 $\frac{\text{CGA}}{(1)} \ \frac{2}{(2)} \ \frac{\text{B}}{(3)} \ \frac{2}{(4)} \ \frac{\text{X7R}}{(5)} \ \frac{1\text{H}}{(6)} \ \frac{103}{(7)} \ \frac{\text{K}}{(8)} \ (\frac{050}{(9)} \ \frac{\text{B}}{(10)} \ \frac{\text{B}}{(11)}$ 

#### (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

3) Dimensions 1		
В	0.50mm	
С	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	

<sup>•</sup> 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
X7T	+22, -33%	−55 to +125°C

# (6) Rated voltage Edc

` '	5
2A	100V
2E	250V
2W	450V
2J	630V

## (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
Symbol	Tolerance	range
J	±5%	Over 10pF
K	±10%	Over TopP

## (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.

030	0.30mm	
050	0.50mm	
085	0.85mm	
125	1.25mm	

<sup>•</sup> Overlaps with (3).

### (10) Packaging style

A	ø178mm reel with 4mm-pitch
В	ø178mm reel with 2mm-pitch
С	ø178mm reel with 1mm-pitch
D	ø330mm reel with 4mm-pitch
E	ø330mm reel with 2mm-pitch
F	ø330mm reel with 1mm-pitch
Н	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

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- All specifications are subject to change without notice.



# 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: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
	1608	0.80±0.10	±5%				CGA3E2C0G2A101J(080AA)
100pF	1000	0.80±0.10	±5%			CGA3E3C0G2E101J(080AB)	
	3216	0.60±0.15	±5%	CGA5C4C0G2J101J(060AA)	<u> </u>		
120pF	1608	0.80±0.10	±5%				CGA3E2C0G2A121J(080AA)
	1000	0.80±0.10	±5%			CGA3E3C0G2E121J(080AB)	
	3216	0.60±0.15	±5%	CGA5C4C0G2J121J(060AA)	1		
	1608	0.80±0.10	±5%				CGA3E2C0G2A151J(080AA)
150pF	1000	0.80±0.10	±5%			CGA3E3C0G2E151J(080AB)	
	3216	0.60±0.15	±5%	CGA5C4C0G2J151J(060AA)	1		
	1608	0.80±0.10	±5%				CGA3E2C0G2A181J(080AA)
180pF		0.80±0.10	±5%			CGA3E3C0G2E181J(080AB)	
	3216	0.60±0.15	±5%	CGA5C4C0G2J181J(060AA)	<u> </u>		
	1608	0.80±0.10	±5%				CGA3E2C0G2A221J(080AA)
220pF	1000	0.80±0.10	±5%			CGA3E3C0G2E221J(080AB)	
	3216	0.60±0.15	±5%	CGA5C4C0G2J221J(060AA)			
	1600	0.80±0.10	±5%				CGA3E2C0G2A271J(080AA)
270pF	1608	0.80±0.10	±5%			CGA3E3C0G2E271J(080AB)	
	3216	0.60±0.15	±5%	CGA5C4C0G2J271J(060AA)			
	1000	0.80±0.10	±5%				CGA3E2C0G2A331J(080AA)
330pF	1608	0.80±0.10	±5%			CGA3E3C0G2E331J(080AB)	
	3216	0.60±0.15	±5%	CGA5C4C0G2J331J(060AA)	l		
	1000	0.80±0.10	±5%				CGA3E2C0G2A391J(080AA)
390pF	1608	0.80±0.10	±5%			CGA3E3C0G2E391J(080AB)	-
·	3216	0.60±0.15	±5%	CGA5C4C0G2J391J(060AA)	1	, ,	
		0.80±0.10	±5%				CGA3E2C0G2A471J(080AA)
470pF	1608	0.80±0.10	±5%			CGA3E3C0G2E471J(080AB)	,
	3216	0.85±0.15	±5%	CGA5F4C0G2J471J(085AA)		,	
		0.80±0.10	±5%				CGA3E2C0G2A561J(080AA)
560pF	1608	0.80±0.10	±5%			CGA3E3C0G2E561J(080AB)	0 0.102200027.00.10(0007.1.1)
	3216	0.85±0.15	±5%	CGA5F4C0G2J561J(085AA)			
	02.0	0.80±0.10	±5%	0 47 101 100 4 2000 10 (0007 11)			CGA3E2C0G2A681J(080AA)
680pF	1608	0.80±0.10	±5%			CGA3E3C0G2E681J(080AB)	0 0. 102200027 100 10(0007 2 1)
осор.	3216	0.85±0.15	±5%	CGA5F4C0G2J681J(085AA)		0 0.7 (0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	1608	0.80±0.10	±5%				CGA3E2C0G2A821J(080AA)
820pF	2012	0.60±0.15	±5%			CGA4C3C0G2E821J(060AB)	0 0.10220002110210(0007111)
020p.	3216	0.85±0.15	±5%	CGA5F4C0G2J821J(085AA)		0 07 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	·
	1608	0.80±0.10	±5%	0 0.101 100 0.202 10(000.11)			CGA3E2C0G2A102J(080AA)
	1000	0.60±0.15	±5%				CGA4C2C0G2A102J(060AA)
1nF	2012	0.85±0.15	±5%			CGA4F3C0G2E102J(085AB)	04/1/020042/1/020(000/1/)
	3216	0.85±0.15	±5%	CGA5F4C0G2J102J(085AA)		00A41 0000ZE 1020(003AB)	
	1608	0.80±0.10	±5%	04/101-1004251025(000/1/)			CGA3E2C0G2A122J(080AA)
	1000	0.60±0.15	±5%				CGA4C2C0G2A122J(060AA)
1.2nF	2012	0.85±0.15	±5%			CGA4F3C0G2E122J(085AB)	04/1/020042/1/220(000/1/)
	3216	0.85±0.15	±5%	CGA5F4C0G2J122J(085AA)		OGA-1 000GZE 1220(003AB)	
	0210	0.60±0.15	±5%	OGASI 400GZ81ZZ8(003AA)			CGA4C2C0G2A152J(060AA)
1.5nF	2012	0.85±0.15	±5%			CGA4F3C0G2E152J(085AB)	CGA4C2C0G2A1525(000AA)
1.5111	3216	1.15±0.15		CGA5H4C0G2J152J(115AA)		CGA41 3C0G2E 1323(063AB)	
	3210		±5%	CGA3F14C0G23T323(TT3AA)			CGA4F2C0G2A182J(085AA)
1.05	2012	0.85±0.15	±5%			CCA4 (2C0C2E192 (/12EAB)	CGA4F2C0G2A162J(065AA)
1.8nF	0010	1.25±0.20	±5%	CCAELIACOCO 1400 1/44 FAA		CGA4J3C0G2E182J(125AB)	
	3216	1.15±0.15	±5%	CGA5H4C0G2J182J(115AA)			CC 4 4F0C0C0 4 000 1/00F 4 4
0.0	2012	0.85±0.15	±5%			00.44.10000055000.1/405450	CGA4F2C0G2A222J(085AA)
2.2nF	0010	1.25±0.20	±5%	OOAEI 140000 1000 1/44 = 1.11		CGA4J3C0G2E222J(125AB)	
	3216	1.15±0.15	±5%	CGA5H4C0G2J222J(115AA)	)		0011100005:
	2012	1.25±0.20	±5%			004410000======	CGA4J2C0G2A272J(125AA)
2.7nF		1.25±0.20	±5%			CGA4J3C0G2E272J(125AB)	
	3216	1.60±0.20	±5%	CGA5L4C0G2J272J(160AA)			
	2012	1.25±0.20	±5%				CGA4J2C0G2A332J(125AA)
3.3nF	3216	0.85±0.15	±5%			CGA5F3C0G2E332J(085AB)	
		1.60±0.20	±5%	CGA5L4C0G2J332J(160AA)			

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# 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: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V		
,	2012	1.25±0.20	±5%				CGA4J2C0G2A392J(125AA)		
2 0nE	3216	0.60±0.15	±5%				CGA5C2C0G2A392J(060AA)		
3.9nF	3216	1.15±0.15	±5%			CGA5H3C0G2E392J(115AB)			
	3225	1.25±0.20	±5%	CGA6J4C0G2J392J(125AA)					
	2012	1.25±0.20	±5%				CGA4J2C0G2A472J(125AA)		
4.7nF	2016	0.85±0.15	±5%				CGA5F2C0G2A472J(085AA)		
4./11	3216	1.15±0.15	±5%			CGA5H3C0G2E472J(115AB)			
	3225	1.60±0.20	±5%	CGA6L4C0G2J472J(160AA)					
	3216	0.85±0.15	±5%				CGA5F2C0G2A562J(085AA)		
5.6nF		1.15±0.15	±5%			CGA5H3C0G2E562J(115AB)			
	3225	1.60±0.20	±5%	CGA6L4C0G2J562J(160AA)					
	3216	1.15±0.15	±5%				CGA5H2C0G2A682J(115AA)		
6.8nF		1.60±0.20	±5%			CGA5L3C0G2E682J(160AB)			
	3225	2.00±0.20	±5%	CGA6M4C0G2J682J(200AA)					
8.2nF	3216	1.15±0.15	±5%				CGA5H2C0G2A822J(115AA)		
0.211		1.60±0.20	±5%			CGA5L3C0G2E822J(160AB)			
10nF	3216	1.15±0.15	±5%				CGA5H2C0G2A103J(115AA)		
TOTIF	3225	1.60±0.20	±5%			CGA6L3C0G2E103J(160AB)			
15nF	3225	1.25±0.20	±5%				CGA6J2C0G2A153J(125AA)		
ISH		2.00±0.20	±5%			CGA6M3C0G2E153J(200AB)			
22nF	3225	1.60±0.20	±5%				CGA6L2C0G2A223J(160AA)		
33nF	3225	2.00±0.20	±5%				CGA6M2C0G2A333J(200AA)		
47nF	3225	2.30±0.20	±5%				CGA6N2C0G2A473J(230AA)		

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

Capacitance	L×W	Thickness T(mm)	Capacitance tolerance	Part No. Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
	1608	0.80±0.10	±10%				CGA3E2X7R2A102K(080AA)
1nF	2012	0.85±0.15 0.85±0.15	±10% ±10%			CGA4F3X7R2E102K(085AB)	CGA4F2X7R2A102K(085AA)
	3216	1.15±0.15	±10%	CGA5H4X7R2J102K(115AA)	<u> </u>	CGA4F3X/HZE10ZK(063AB)	
	1608	0.80±0.10	±10%	Od/10111//11201021(110/01)	·		CGA3E2X7R2A152K(080AA)
		0.85±0.15	±10%				CGA4F2X7R2A152K(085AA)
1.5nF	2012	0.85±0.15	±10%			CGA4F3X7R2E152K(085AB)	, (,
	3216	1.15±0.15	±10%	CGA5H4X7R2J152K(115AA)	)	, ,	
	1608	0.80±0.10	±10%				CGA3E2X7R2A222K(080AA)
2.2nF	2012	0.85±0.15	±10%				CGA4F2X7R2A222K(085AA)
2.2111		0.85±0.15	±10%			CGA4F3X7R2E222K(085AB)	
	3216	1.15±0.15	±10%	CGA5H4X7R2J222K(115AA)			
	1608	0.80±0.10	±10%				CGA3E2X7R2A332K(080AA)
3.3nF	2012	0.85±0.15	±10%				CGA4F2X7R2A332K(085AA)
	0010	0.85±0.15	±10%	000000000000000000000000000000000000000		CGA4F3X7R2E332K(085AB)	
	3216	1.15±0.15	±10%	CGA5H4X7R2J332K(115AA)			CC 42E2V7D2 4472V (090 4 4)
	1608	0.80±0.10 0.85±0.15	±10% ±10%				CGA3E2X7R2A472K(080AA) CGA4F2X7R2A472K(085AA)
4.7nF	2012	0.85±0.15	±10%			CGA4F3X7R2E472K(085AB)	CGA4F2X/H2A4/2K(063AA)
	3216	1.15±0.15	±10%	CGA5H4X7R2J472K(115AA)	<u> </u>	COATI SATIZETZR(00SAB)	
-	1608	0.80±0.10	±10%	OGASTIFATTIZOTTZIK(TTOAA)			CGA3E2X7R2A682K(080AA)
		0.85±0.15	±10%				CGA4F2X7R2A682K(085AA)
6.8nF	2012	1.25±0.20	±10%			CGA4J3X7R2E682K(125AB)	
	3216	1.15±0.15	±10%	CGA5H4X7R2J682K(115AA)	1	,	
	1608	0.80±0.10	±10%				CGA3E2X7R2A103K(080AA)
10	0010	0.85±0.15	±10%				CGA4F2X7R2A103K(085AA)
10nF	2012	1.25±0.20	±10%			CGA4J3X7R2E103K(125AB)	
	3216	1.15±0.15	±10%	CGA5H4X7R2J103K(115AA)			
	1608	0.80±0.10	±10%				CGA3E2X7R2A153K(080AA)
	2012	1.25±0.20	±10%				CGA4J2X7R2A153K(125AA)
15nF		1.25±0.20	±10%			CGA4J3X7R2E153K(125AB)	
	3216	1.15±0.15	±10%			CGA5H3X7R2E153K(115AB)	<u> </u>
		1.30±0.20	±10%	CGA5K4X7R2J153K(130AA)	<u> </u>		
	1608	0.80±0.10	±10%				CGA3E2X7R2A223K(080AA)
00.5	2012	1.25±0.20	±10%			00 4 4 10 17 70 70 70 17 (4 0 7 4 7)	CGA4J2X7R2A223K(125AA)
22nF		1.25±0.20 1.15±0.15	±10% ±10%			CGA4J3X7R2E223K(125AB) CGA5H3X7R2E223K(115AB)	
	3216	1.15±0.15 1.30±0.20	±10% ±10%	CGA5K4X7R2J223K(130AA)	1	CGASH3A/H2E223K(115AB)	!
	2012	1.25±0.20	±10%	OUASIN4X/1123223IN(130AA)	<u> </u>		CGA4J2X7R2A333K(125AA)
	2012	1.15±0.15	±10%				CGA5H2X7R2A333K(115AA)
33nF	3216		±10%			CGA5L3X7R2E333K(160AB)	,
		1.60±0.20	±10%	CGA5L4X7R2J333K(160AA)		,	
	2012	1.25±0.20	±10%	,			CGA4J2X7R2A473K(125AA)
47 [	0010	1.15±0.15	±10%				CGA5H2X7R2A473K(115AA)
47nF	3216	1.60±0.20	±10%			CGA5L3X7R2E473K(160AB)	
	3225	2.00±0.20	±10%	CGA6M4X7R2J473K(200AA	)		
	2012	0.85±0.15	±10%				CGA4F2X7R2A683K(085AA)
68nF	3216	1.60±0.20	±10%				CGA5L2X7R2A683K(160AA)
OOM		1.60±0.20	±10%			CGA5L3X7R2E683K(160AB)	
	3225	2.00±0.20	±10%	CGA6M4X7R2J683K(200AA	)		
	2012	1.25±0.20	±10%				CGA4J2X7R2A104K(125AA)
100nF	3216	1.60±0.20	±10%			00 451 01/700540 41/40040	CGA5L2X7R2A104K(160AA)
	0005	1.60±0.20	±10%			CGA5L3X7R2E104K(160AB)	
	3225	2.00±0.20	±10%			CGA6M3X7R2E104K(200AB)	
150nF	3216 3225	1.60±0.20 2.00±0.20	±10% ±10%			CGA6M3X7R2E154K(200AB)	CGA5L2X7R2A154K(160AA)
	3216	1.15±0.15	±10%			CGAGINISA/RZE154K(200AB)	) CGA5H2X7R2A224K(115AA)
220nF	3225	2.00±0.20	±10%			CGA6M3X7R2E224K(200AB)	· · · · · ·
330nF	3216	1.30±0.20	±10%			O SA TOMONT HELEETING TO AND	CGA5K2X7R2A334K(130AA)
	3225	2.00±0.20	±10%				CGA6M2X7R2A334K(200AA)
	3216	1.60±0.20	±10%				CGA5L2X7R2A474K(160AA)
470nF	3225	2.00±0.20	±10%				CGA6M2X7R2A474K(200AA)
000.5	3216	1.60±0.20	±10%				CGA5L2X7R2A684K(160AA)
680nF	3225	1.60±0.20	±10%				CGA6L2X7R2A684K(160AA)
1	3216	1.60±0.20	±10%				CGA5L2X7R2A105K(160AA)
1μF	3225	2.00±0.20	±10%				CGA6M2X7R2A105K(200AA)
1.5µF	3225	2.00±0.20	±10%				CGA6M3X7R2A155K(200AB)
2.2µF	3225	2.30±0.20	±10%				CGA6N3X7R2A225K(230AB)

- 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.

<sup>•</sup> All specifications are subject to change without notice.



# CAPACITANCE RANGES: CLASS 2

# TEMPERATURE CHARACTERISTICS: X7S(±22%)

Canasitanas	Dimension	Thickness	Capacitance	Part No.			
Capacitance	$L \times W$	T(mm)	tolerance	Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
1nF	1005	0.50±0.05	±10%				CGA2B3X7S2A102K(050BB)
1.5nF	1005	0.50±0.05	±10%				CGA2B3X7S2A152K(050BB)
2.2nF	1005	0.50±0.05	±10%				CGA2B3X7S2A222K(050BB)
3.3nF	1005	0.50±0.05	±10%				CGA2B3X7S2A332K(050BB)
4.7nF	1005	0.50±0.05	±10%				CGA2B3X7S2A472K(050BB)
6.8nF	1005	0.50±0.05	±10%				CGA2B3X7S2A682K(050BB)
10nF	1005	0.50±0.05	±10%				CGA2B3X7S2A103K(050BB)
33nF	1608	0.80±0.10	±10%				CGA3E3X7S2A333K(080AB)
47nF	1608	0.80±0.10	±10%				CGA3E3X7S2A473K(080AB)
68nF	1608	0.80±0.10	±10%				CGA3E3X7S2A683K(080AB)
100nF	1608	0.80±0.10	±10%				CGA3E3X7S2A104K(080AB)
150nF	2012	0.85±0.15	±10%				CGA4F3X7S2A154K(085AB)
220nF	2012	0.85±0.15	±10%				CGA4F3X7S2A224K(085AB)
330nF	2012	1.25±0.20	±10%				CGA4J3X7S2A334K(125AB)
470nF	2012	1.25±0.20	±10%				CGA4J3X7S2A474K(125AB)
680nF	2012	1.25±0.20	±10%				CGA4J3X7S2A684K(125AB)
1μF	2012	1.25±0.20	±10%				CGA4J3X7S2A105K(125AB)
1.5µF	3216	1.60±0.20	±10%				CGA5L3X7S2A155K(160AB)
2.2µF	3216	1.60±0.20	±10%				CGA5L3X7S2A225K(160AB)
3.3µF	3225	2.00±0.20	±10%				CGA6M3X7S2A335K(200AB)

# TEMPERATURE CHARACTERISTICS: X7T(+22, -33%)

Capacitance	Dimension L×W	Thickness T(mm)	Capacitance tolerance	Part No.				
				Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V	
10nF	2012	0.85±0.15	±10%		CGA4F4X7T2W103K(085AA)			
	3216	0.85±0.15	±10%	CGA5F1X7T2J103K(085AC)				
15nF	2012	0.85±0.15	±10%		CGA4F4X7T2W153K(085AA)			
Jili	3216	0.85±0.15	±10%	CGA5F1X7T2J153K(085AC)				
2nF	2012	1.25±0.20	±10%		CGA4J4X7T2W223K(125AA)			
.2111	3216	1.15±0.15	±10%	CGA5H1X7T2J223K(115AC)				
	2012	1.25±0.20	±10%			CGA4J3X7T2E333K(125AB)		
33nF	2012	1.25±0.20	±10%		CGA4J4X7T2W333K(125AA)			
	3216	1.15±0.15	±10%	CGA5H1X7T2J333K(115AC)				
	2012	1.25±0.20	±10%			CGA4J3X7T2E473K(125AB)		
ŀ7nF		1.25±0.20	±10%		CGA4J4X7T2W473K(125AA)			
	3216	1.60±0.20	±10%	CGA5L1X7T2J473K(160AC)				
8nF	2012	1.25±0.20	±10%			CGA4J3X7T2E683K(125AB)		
JOH	3216	1.30±0.20	±10%		CGA5K4X7T2W683K(130AA)	l .		
	2012	1.25±0.20	±10%			CGA4J3X7T2E104K(125AB)		
00nF	3216	1.60±0.20	±10%		CGA5L4X7T2W104K(160AA)			
	3225	1.60±0.20	±10%	CGA6L1X7T2J104K(160AC)				
150nF	3216	1.30±0.20	±10%			CGA5K3X7T2E154K(130AB)		
	3225	2.00±0.20	±10%	CGA6M1X7T2J154K(200AC)				
220nF	3216	1.60±0.20	±10%	·	·	CGA5L3X7T2E224K(160AB)	<u> </u>	
	3225	2.00±0.20	±10%	·	CGA6M4X7T2W224K(200AA	)		

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