

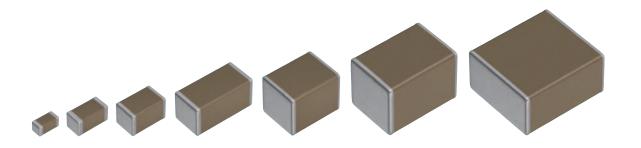
# MULTILAYER CERAMIC CHIP CAPACITORS

Automotive grade, mid voltage (100 to 630V)

# CGA series

CGA2	1005 [0402 inch]
CGA3	1608 [0603 inch]
CGA4	2012 [0805 inch]
CGA5	3216 [1206 inch]
CGA6	3225 [1210 inch]
CGA8	4532 [1812 inch]
CGA9	5750 [2220 inch]

<sup>\*</sup> Dimensions code: JIS[EIA]





# REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

## SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using this products.



#### REMINDERS

1. The products listed in this specification are intended for use in automotive applications under normal operation and usage conditions.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality requires a more stringent level of safety or reliability, or whose failure, malfunction or defect could cause serious damage to society, person or

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet. If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in this specification, please contact us.

- (1) Aerospace/aviation equipment
- (2) Transportation equipment (electric trains, ships, etc.)
- (3) Medical equipment (excepting Pharmaceutical Affairs Law classification Class1,2)
- (4) Power-generation control equipment
- (5) Atomic energy-related equipment
- (6) Seabed equipment
- (7) Transportation control equipment

- (8) Public information-processing equipment
- (9) Military equipment
- (10) Electric heating apparatus, burning equipment
- (11) Disaster prevention/crime prevention equipment
- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

In addition, although the products listed in this specification are intended for use in automotive applications as described above, they are not prohibited to use in general electronic equipment, whose performance and/or quality doesn't require a more stringent level of safety or reliability, or whose failure, malfunction or defect could not cause serious damage to society, person or property. Therefore, the description of this caution will be applied, when the products are used in general electronic equipment under a normal operation and usage conditions.

- 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.

Notice: Effective January 2013, TDK will use a new catalog number which adds product thickness and packaging specification detail. This new catalog number should be referenced on all catalog orders going forward, and is not applicable for OEM part number orders.

Please be aware the last five digits of the catalog number will differ from the item description (internal control number) on the

Contact your local TDK Sales representative for more information.

#### (Example)

Catalog issued date	Catalog number	Item description (on delivery label)
Prior to January 2013	C1608C0G1E103J(080AA)	C1608C0G1E103JT000N
January 2013 and later	C1608C0G1E103J080AA	C1608C0G1E103JT000N



# **CGA** series

# Mid voltage (100 to 630V)







Type: CGA2/1005 [0402 inch], CGA3/1608 [0603 inch], CGA4/2012 [0805 inch], CGA5/3216 [1206 inch], CGA6/3225 [1210 inch], CGA8/4532 [1812 inch], CGA9/5750 [2220 inch]

#### **SERIES OVERVIEW**

Middle voltage CGA series, automotive grade of TDK's multilayer ceramic chip capacitor, is a product which has the high withstanding voltage characteristics. Voltage rating of 100V to 630V with capacitance range up to 15µF has been realized.

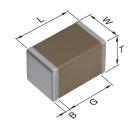
#### **FEATURES**

- Voltage rating of 100V, 250V, 450V and 630V
- Operating temperature range: -55 to +125°C
- · COG temperature characteristic which has excellent stable temperature and DC-bias characteristcs is applicable.
- AEC-Q200 compliant.

#### APPLICATIONS

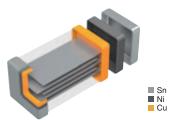
- Wireless Charging units such as DC-DC converter, Inverter, On board
- · Decoupling, smoothing, snubber and resonant circuit and so on of high voltage circuit.

#### SHAPE & DIMENSIONS



L	Body length
W	Body width
Т	Body height
В	Terminal width
G	Terminal spacing

#### PRODUCT STRUCTURE



The structure which multiple sheets of dielectric and conductive material are layered alternately. The superior mechanical strength and reliability are realized by the monolithic and simple structure.

#### Dimensions in mm

CGA2         1.00±0.05         0.50±0.05         0.50±0.05         0.10 min.         0.30 min.           CGA3         1.60±0.10         0.80±0.10         0.80±0.10         0.20 min.         0.30 min.           CGA4         2.00±0.20         1.25±0.20         1.25±0.20         0.20 min.         0.50 min.           CGA5         3.20±0.20         1.60±0.20         1.60±0.20         0.20 min.         1.00 min.           CGA6         3.20±0.40         2.50±0.30         2.50±0.30         0.20 min.         —           CGA8         4.50±0.40         3.20±0.40         2.50±0.30         0.20 min.         —           CGA9         5.70±0.40         5.00±0.40         2.50±0.30         0.20 min.         —	Type	L	W	Т	В	G
CGA4       2.00±0.20       1.25±0.20       1.25±0.20       0.20 min.       0.50 min.         CGA5       3.20±0.20       1.60±0.20       1.60±0.20       0.20 min.       1.00 min.         CGA6       3.20±0.40       2.50±0.30       2.50±0.30       0.20 min.       —         CGA8       4.50±0.40       3.20±0.40       2.50±0.30       0.20 min.       —	CGA2	1.00±0.05	0.50±0.05	0.50±0.05	0.10 min.	0.30 min.
CGA5       3.20±0.20       1.60±0.20       1.60±0.20       0.20 min.       1.00 min.         CGA6       3.20±0.40       2.50±0.30       2.50±0.30       0.20 min.       —         CGA8       4.50±0.40       3.20±0.40       2.50±0.30       0.20 min.       —	CGA3	1.60±0.10	0.80±0.10	0.80±0.10	0.20 min.	0.30 min.
CGA6       3.20±0.40       2.50±0.30       2.50±0.30       0.20 min.       —         CGA8       4.50±0.40       3.20±0.40       2.50±0.30       0.20 min.       —	CGA4	2.00±0.20	1.25±0.20	1.25±0.20	0.20 min.	0.50 min.
<b>CGA8</b> 4.50±0.40 3.20±0.40 2.50±0.30 0.20 min. —	CGA5	3.20±0.20	1.60±0.20	1.60±0.20	0.20 min.	1.00 min.
	CGA6	3.20±0.40	2.50±0.30	2.50±0.30	0.20 min.	_
<b>CGA9</b> 5.70±0.40 5.00±0.40 2.50±0.30 0.20 min. —	CGA8	4.50±0.40	3.20±0.40	2.50±0.30	0.20 min.	_
	CGA9	5.70±0.40	5.00±0.40	2.50±0.30	0.20 min.	_

<sup>\*</sup>Dimensional tolerances are typical values.

#### **MULTILAYER CERAMIC CHIP CAPACITORS**



#### **CATALOG NUMBER CONSTRUCTION**

CGA	9	Р	3	X7S	2 <b>A</b>	156	M	250	K	В	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	

#### (1) Series

#### (2) Dimensions L x W (mm)

Code	EIA	Length	Width	Terminal width
2	CC0402	1.00	0.50	0.10
3	CC0603	1.60	0.80	0.20
4	CC0805	2.00	1.25	0.20
5	CC1206	3.20	1.60	0.20
6	CC1210	3.20	2.50	0.20
8	CC1812	4.50	3.20	0.20
9	CC2220	5.70	5.00	0.20

#### (3) Thickness code

Code	Thickness
В	0.50 mm
С	0.60 mm
E	0.80 mm
F	0.85 mm
Н	1.15 mm
J	1.25 mm
K	1.30 mm
L	1.60 mm
М	2.00 mm
N	2.30 mm
Р	2.50 mm
Q	2.80 mm
R	3.20 mm

#### (4) Voltage condition for life test

Symbol	Condition
1	1 × R.V.
2	2 × R.V.
3	1.5 × R.V.
4	1.2 × R.V.

#### (5) Temperature characteristics

Temperature characteristics	Temperature coefficient or capacitance change	Temperature range
C0G	0±30 ppm/°C	–55 to +125°C
X7R	±15%	–55 to +125°C
X7S	±22%	–55 to +125°C
X7T	+22,-33%	−55 to +125°C

#### (6) Rated voltage (DC)

Code	Voltage (DC)
2A	100V
2E	250V
2W	450V
2J	630V

#### (7) Nominal capacitance (pF)

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.

(Example)0R5 = 0.5pF 101 = 100pF 225 = 2,200,000pF = 2.2µF

#### (8) Capacitance tolerance

Code	Tolerance
С	±0.25pF
D	±0.50pF
J	±5%
K	±10%
М	±20%

#### (9) Thickness

` '		
Code	Thickness	
050	0.50 mm	
060	0.60 mm	
080	0.80 mm	
085	0.85 mm	
115	1.15 mm	
125	1.25 mm	
130	1.30 mm	
160	1.60 mm	
200	2.00 mm	
230	2.30 mm	
250	2.50 mm	
280	2.80 mm	
320	3.20 mm	

#### (10) Packaging style

Code	Style
A	178mm reel, 4mm pitch
В	178mm reel, 2mm pitch
K	178mm reel, 8mm pitch

#### (11) Special reserved code

Code	Description	
A,B,C,N	TDK internal code	



CGA2/1005 [0402 inch]

Capacitar	nce	C0	G	X7S	
(pF)	Code	2 <i>i</i> (100		2A (100V)	)
100	101				
120	121				
150	151				
180	181				
220	221				
270	271				
330	331				_
390	391				
470	471				_
560	561				
680	681				
820	821				
1,000	102				
1,500	152				
2,200	222				
3,300	332				
4,700	472				
6,800	682				ĺ
10,000	103				
Standard thickn	ess		0	.50mm	

<sup>■</sup> Please refer to the capacitance range table at P-11 and after for the details such as product thickness and capacitance tolerance.



CGA3/1608 [0603 inch]

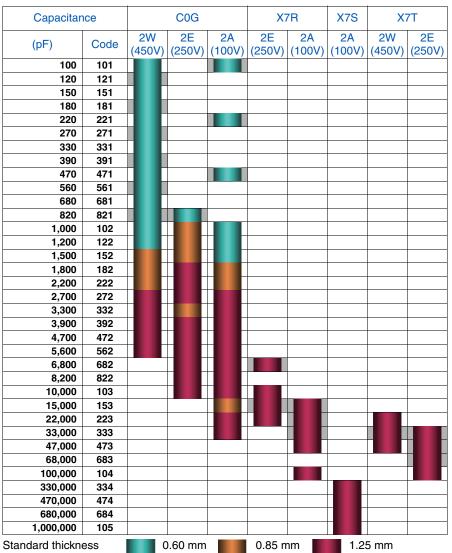
Capacitar	200	C	nG	X7R	X7S
Capacitai	ice		,		
(pF)	Code	2E (250V)	2A (100V)	2A (100V)	2A (100V)
1	010				
1.5	1R5				
2	020				
2.2	2R2				
3	030				
3.3	3R3 040				
4.7	4R7				
5	050		-		
6	060		-		
6.8	6R8				
7	070				
8	080				
9	090				
10	100				
12	120				
15	150				
18	180				
22	220				
27	270				
33	330				
39	390				
47	470				
56	560				
68	680				
82 100	820 101		-		
120	121	-			
150	151	-	-		
180	181	_			
220	221				
270	271				
330	331				
390	391				
470	471				
560	561				
680	681				
820	821				
1,000	102	-	-		
1,200	122	-	-	_	
1,500	152	+			
1,800 2,200	182 222	+			
2,700	272		-		
3,300	332		-		
3,900	392		-		
4,700	472				
5,600	562				
6,800	682				
8,200	822				
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				
68,000	683				
100,000	104				
Standard thickn	ess	C	.80mm		

Background gray: The product which is not recommended to a new design.

<sup>■</sup> Please refer to the capacitance range table at P-11 and after for the details such as product thickness and capacitance tolerance.



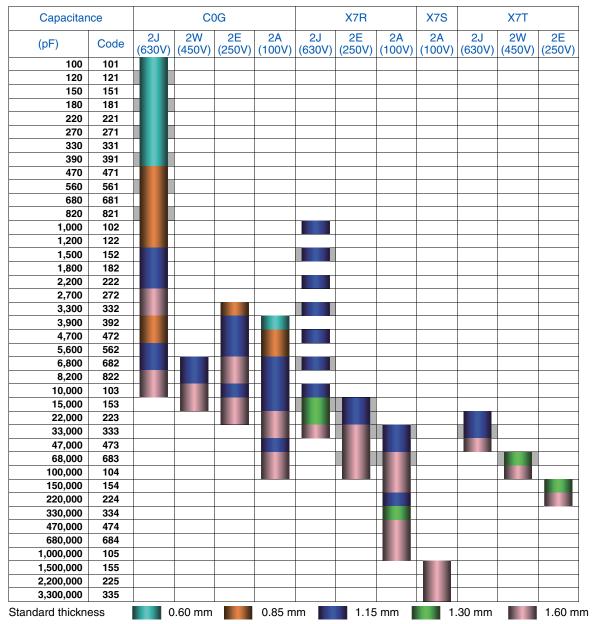
#### CGA4/2012 [0805 inch]



<sup>■</sup> Please refer to the capacitance range table at P-11 and after for the details such as product thickness and capacitance tolerance.



### CGA5/3216 [1206 inch]

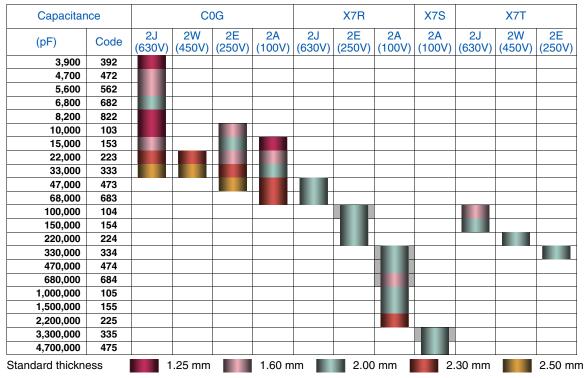


Background gray: The product which is not recommended to a new design.

<sup>■</sup> Please refer to the capacitance range table at P-11 and after for the details such as product thickness and capacitance tolerance.



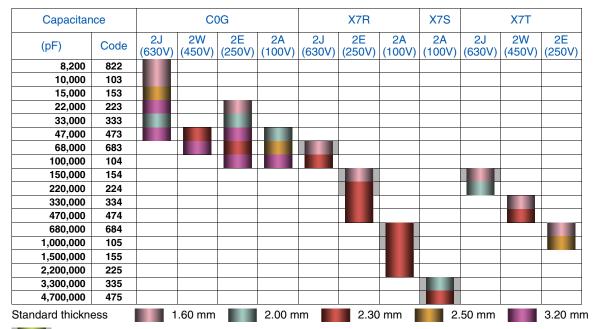
#### CGA6/3225 [1210 inch]



<sup>■</sup> Please refer to the capacitance range table at P-11 and after for the details such as product thickness and capacitance tolerance.



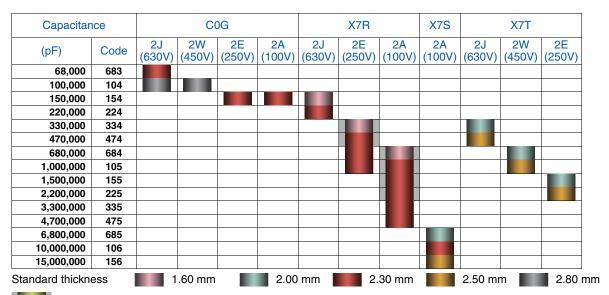
### CGA8/4532 [1812 inch]



Background gray: The product which is not recommended to a new design.

## Capacitance range chart

#### CGA9/5750 [2220 inch]



<sup>■</sup> Please refer to the capacitance range table at P-11 and after for the details such as product thickness and capacitance tolerance.

<sup>■</sup> Please refer to the capacitance range table at P-11 and after for the details such as product thickness and capacitance tolerance.

Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.



# Temperature characteristics: C0G (-55 to +125°C, 0±30ppm/°C)

Capacitance	Dimensions	Thickness	Capacitance	Catalog number			
•		(mm)	tolerance	Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
1pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A010C080AA
1.5pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A1R5C080AA
2pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A020C080AA
2.2pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A2R2C080AA
3pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A030C080AA
3.3pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A3R3C080AA
4pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A040C080AA
4.7pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A4R7C080AA
5pF	1608	0.80±0.10	±0.25pF				CGA3E2C0G2A050C080AA
6pF	1608	0.80±0.10	±0.50pF				CGA3E2C0G2A060D080AA
6.8pF	1608	0.80±0.10	±0.50pF				CGA3E2C0G2A6R8D080AA
7pF	1608	0.80±0.10	±0.50pF				CGA3E2C0G2A070D080AA
8pF	1608	0.80±0.10	±0.50pF				CGA3E2C0G2A080D080AA
9pF	1608	0.80±0.10	±0.50pF				CGA3E2C0G2A090D080AA
10pF	1608	0.80±0.10	±0.50pF				CGA3E2C0G2A100D080AA
12pF	1608	0.80±0.10	±5%				CGA3E2C0G2A120J080AA
15pF	1608	0.80±0.10	±5%				CGA3E2C0G2A150J080AA
	1608		±5%				
18pF		0.80±0.10					CGA3E2C0G2A180J080AA
22pF	1608	0.80±0.10	±5%				CGA3E2C0G2A220J080AA
27pF	1608	0.80±0.10	±5%				CGA3E2C0G2A270J080AA
33pF	1608	0.80±0.10	±5%				CGA3E2C0G2A330J080AA
39pF	1608	0.80±0.10	±5%				CGA3E2C0G2A390J080AA
47pF	1608	0.80±0.10	±5%				CGA3E2C0G2A470J080AA
56pF	1608	0.80±0.10	±5%				CGA3E2C0G2A560J080AA
68pF	1608	0.80±0.10	±5%				CGA3E2C0G2A680J080AA
82pF	1608	0.80±0.10	±5%				CGA3E2C0G2A820J080AA
	1005	0.50±0.05	±5%				CGA2B2C0G2A101J050BA
	1608	0.80±0.10	±5%			CGA3E3C0G2E101J080AA	CGA3E2C0G2A101J080AA
100pF	2012	0.60±0.15	±5%		CGA4C4C0G2W101J060AA		CGA4C2C0G2A101J060AA
-	3216	0.60±0.15	±5%	CGA5C4C0G2J101J060AA			
	1005	0.50±0.05	±5%				CGA2B2C0G2A121J050BA
-	1608	0.80±0.10	±5%			CGA3E3C0G2E121J080AA	CGA3E2C0G2A121J080AA
120pF	2012	0.60±0.15	±5%		CGA4C4C0G2W121J060AA	04/102004221210000/01	OG/TOLLOGGL/TTL TOUGH TT
-	3216			CCAEC4C0C2   121   1060AA	CGA4C4C0G2W1213000AA		
		0.60±0.15	±5%	CGA5C4C0G2J121J060AA			CCA0D0C0C0A1E1 I0E0DA
·	1005	0.50±0.05	±5%			0010500005151100011	CGA2B2C0G2A151J050BA
150pF	1608	0.80±0.10	±5%			CGA3E3C0G2E151J080AA	CGA3E2C0G2A151J080AA
	2012	0.60±0.15	±5%		CGA4C4C0G2W151J060AA		
	3216	0.60±0.15	±5%	CGA5C4C0G2J151J060AA			
-	1005	0.50±0.05	±5%				CGA2B2C0G2A181J050BA
180pF	1608	0.80±0.10	±5%			CGA3E3C0G2E181J080AA	CGA3E2C0G2A181J080AA
. сор.	2012	0.60±0.15	±5%		CGA4C4C0G2W181J060AA		
	3216	0.60±0.15	±5%	CGA5C4C0G2J181J060AA			
	1005	0.50±0.05	±5%				CGA2B2C0G2A221J050BA
220nE	1608	0.80±0.10	±5%			CGA3E3C0G2E221J080AA	CGA3E2C0G2A221J080AA
220pF	2012	0.60±0.15	±5%		CGA4C4C0G2W221J060AA		CGA4C2C0G2A221J060AA
·-	3216	0.60±0.15	±5%	CGA5C4C0G2J221J060AA			
	1005	0.50±0.05	±5%				CGA2B2C0G2A271J050BA
=	1608	0.80±0.10	±5%			CGA3E3C0G2E271J080AA	CGA3E2C0G2A271J080AA
270pF	2012	0.60±0.15	±5%		CGA4C4C0G2W271J060AA		
	3216	0.60±0.15	±5%	CGA5C4C0G2J271J060AA			
	1005	0.50±0.15	±5%	00/100-1000Z0Z/10000AA			CGA2B2C0G2A331J050BA
	1608	0.80±0.05				CGA3E3C0G2E331J080AA	
330pF			±5%		00.4.0.4.0.0.0.0.4.0.0.4.10.0.4.4	CGASESCOGZESSTSOOOAA	CGA3E2C0G2A331J080AA
-	2012	0.60±0.15	±5%	00.450.400.00.400.4.400.4.4	CGA4C4C0G2W331J060AA		
	3216	0.60±0.15	±5%	CGA5C4C0G2J331J060AA			
-	1005	0.50±0.05	±5%				CGA2B2C0G2A391J050BA
390pF	1608	0.80±0.10	±5%			CGA3E3C0G2E391J080AA	CGA3E2C0G2A391J080AA
	2012	0.60±0.15	±5%		CGA4C4C0G2W391J060AA		
	3216	0.60±0.15	±5%	CGA5C4C0G2J391J060AA			
	1005	0.50±0.10	±5%				CGA2B2C0G2A471J050BA
	1608	0.80±0.10	±5%			CGA3E3C0G2E471J080AA	CGA3E2C0G2A471J080AA
470c F	1000		. E0/		CGA4C4C0G2W471J060AA		CGA4C2C0G2A471J060AA
470pF	2012	0.60±0.15	±5%				
470pF		0.60±0.15 0.85±0.15	±5%	CGA5F4C0G2J471J085AA			
470pF	2012 3216	0.85±0.15	±5%	CGA5F4C0G2J471J085AA			CGA2B1C0G2A561J050BC
· .	2012 3216 1005	0.85±0.15 0.50±0.05	±5% ±5%	CGA5F4C0G2J471J085AA		CGA3E3C0G2F561.I080AA	CGA2B1C0G2A561J050BC CGA3E2C0G2A561J080AA
470pF 560pF	2012 3216	0.85±0.15	±5%	CGA5F4C0G2J471J085AA	CGA4C4C0G2W561J060AA	CGA3E3C0G2E561J080AA	CGA2B1C0G2A561J050BC CGA3E2C0G2A561J080AA

 $<sup>\</sup>blacksquare$  Gray item: The product which is not recommended to a new design.



# Temperature characteristics: C0G (-55 to +125°C, 0±30ppm/°C)

Capacitance	Dimensions	Thickness	Capacitance	Catalog number	Databasha - Eda 450V	Data de altre e Ede 050V	Data de allera Ede 400V
		(mm)	tolerance	Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
	1005	0.50±0.05	±5%			0040500005004 100044	CGA2B1C0G2A681J050BC
680pF	1608	0.80±0.10	±5%		00.1.0.10.000.1100.1.1000.1.1	CGA3E3C0G2E681J080AA	CGA3E2C0G2A681J080AA
	2012	0.60±0.15	±5%	0045540000 1004 100544	CGA4C4C0G2W681J060AA		
	3216 1005	0.85±0.15	±5% ±5%	CGA5F4C0G2J681J085AA			CCA0B4C0C0A004 I0F0BC
	1608	0.50±0.05 0.80±0.10	±5%			CGA3E3C0G2E821J080AA	CGA2B1C0G2A821J050BC CGA3E2C0G2A821J080AA
820pF	2012	0.60±0.10	±5%		CGA4C4C0G2W821J060AA	CGA4C3C0G2E821J060AA	CGASEZCUGZAOZ IJUOUAA
	3216	0.85±0.15	±5%	CGA5F4C0G2J821J085AA	CGA4C4C0G2W621J060AA	CGA4C3CUGZE6Z1JU6UAA	
	1005	0.50±0.15	±5%	OUASI 4000200210003AA			CGA2B1C0G2A102J050BC
	1608	0.80±0.10	±5%			CGA3E3C0G2E102J080AA	CGA3E2C0G2A102J080AA
1nF	1000	0.60±0.15	±5%		CGA4C4C0G2W102J060AA	CANCESCUALITIES	CGA4C2C0G2A102J060AA
••••	2012 -	0.85±0.15	±5%		04/4040042111020000/1/1	CGA4F3C0G2E102J085AA	Carti-020002/11020000/11
	3216	0.85±0.15	±5%	CGA5F4C0G2J102J085AA		0 47 11 000 422 1020 007 11	
	1608	0.80±0.10	±5%			CGA3E3C0G2E122J080AA	CGA3E2C0G2A122J080AA
		0.60±0.15	±5%		CGA4C4C0G2W122J060AA	04,1020004211220000711	CGA4C2C0G2A122J060AA
1.2nF	2012 -	0.85±0.15	±5%			CGA4F3C0G2E122J085AA	
	3216	0.85±0.15	±5%	CGA5F4C0G2J122J085AA			-
	1608	0.80±0.10	±5%			CGA3E3C0G2E152J080AA	CGA3E2C0G2A152J080AA
		0.60±0.15	±5%				CGA4C2C0G2A152J060AA
1.5nF	2012 -	0.85±0.15	±5%		CGA4F4C0G2W152J085AA	CGA4F3C0G2E152J085AA	
	3216	1.15±0.15	±5%	CGA5H4C0G2J152J115AA			
	1608	0.80±0.10	±5%			CGA3E3C0G2E182J080AA	CGA3E2C0G2A182J080AA
		0.85±0.15	±5%		CGA4F4C0G2W182J085AA		CGA4F2C0G2A182J085AA
1.8nF	2012 -	1.25±0.20	±5%			CGA4J3C0G2E182J125AA	
	3216	1.15±0.15	±5%	CGA5H4C0G2J182J115AA			
		0.80±0.10	±5%				CGA3E2C0G2A222J080AA
	1608 -	0.80±0.20	±5%			CGA3E3C0G2E222J080AA	
2.2nF	2010	0.85±0.15	±5%		CGA4F4C0G2W222J085AA		CGA4F2C0G2A222J085AA
	2012 -	1.25±0.20	±5%			CGA4J3C0G2E222J125AA	
	3216	1.15±0.15	±5%	CGA5H4C0G2J222J115AA			
	1608	0.80±0.20	±5%				CGA3E2C0G2A272J080AA
2.7nF	2012	1.25±0.20	±5%		CGA4J4C0G2W272J125AA	CGA4J3C0G2E272J125AA	CGA4J2C0G2A272J125AA
	3216	1.60±0.20	±5%	CGA5L4C0G2J272J160AA			
	1608	0.80±0.20	±5%				CGA3E2C0G2A332J080AA
	2012 -	0.85±0.15	±5%			CGA4F3C0G2E332J085AA	
3.3nF	2012	1.25±0.20	±5%		CGA4J4C0G2W332J125AA		CGA4J2C0G2A332J125AA
	3216 -	0.85±0.15	±5%			CGA5F3C0G2E332J085AA	
	0210	1.60±0.20	±5%	CGA5L4C0G2J332J160AA			
	1608	0.80±0.10	±5%				CGA3E1C0G2A392J080AC
	2012	1.25±0.20	±5%		CGA4J4C0G2W392J125AA	CGA4J3C0G2E392J125AA	CGA4J2C0G2A392J125AA
3.9nF	-	0.60±0.15	±5%				CGA5C2C0G2A392J060AA
	3216	0.85±0.15	±5%	CGA5F4C0G2J392J085AA			
		1.15±0.15	±5%			CGA5H3C0G2E392J115AA	
	3225	1.25±0.20	±5%	CGA6J4C0G2J392J125AA			
	1608	0.80±0.10	±5%				CGA3E1C0G2A472J080AC
	2012	1.25±0.20	±5%		CGA4J4C0G2W472J125AA	CGA4J3C0G2E472J125AA	CGA4J2C0G2A472J125AA
4.7nF	3216 -	0.85±0.15	±5%	CGA5F4C0G2J472J085AA		004511000005	CGA5F2C0G2A472J085AA
		1.15±0.15	±5%	004014000511=51151		CGA5H3C0G2E472J115AA	
	3225	1.60±0.20	±5%	CGA6L4C0G2J472J160AA			00405400004500100045
	1608	0.80±0.10	±5%		0044140000045001405	00441000005500140511	CGA3E1C0G2A562J080AC
F.C	2012	1.25±0.20	±5%		CGA4J4C0G2W562J125AA	CGA4J3C0G2E562J125AA	CGA4J2C0G2A562J125AA
5.6nF	3216 -	0.85±0.15	±5%	OCAELI40000 1500 1445 * *		OCAEH000000E500 H455 *	CGA5F2C0G2A562J085AA
	2005	1.15±0.15	±5%	CGA5H4C0G2J562J115AA		CGA5H3C0G2E562J115AA	
	3225	1.60±0.20	±5%	CGA6L4C0G2J562J160AA			CCA9E1C0C0A000 1000A0
	1608	0.80±0.10	±5%			CCA4 19C0C0Ec00 140E	CGA413C0G2A682J080AC
6 0×E	2012	1.25±0.20	±5%	CCAEH4C0C0 1000 1445 A A	CCAEH4C0C0\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	CGA4J3C0G2E682J125AA	CGA4J2C0G2A682J125AA
6.8nF	3216 -	1.15±0.15	±5%	CGA5H4C0G2J682J115AA	CGA5H4C0G2W682J115AA	OO AEL 20000E2222 H2011	CGA5H2C0G2A682J115AA
	2005	1.60±0.20	±5%	CCACMACOCO ICCO ICCO 1		CGA5L3C0G2E682J160AA	
	3225	2.00±0.20	±5%	CGA6M4C0G2J682J200AA			00405100004000100040
	1608	0.80±0.10	±5%			00441000005000140511	CGA3E1C0G2A822J080AC
	2012	1.25±0.20	±5%		OCAELIA00000M000 H45**	CGA4J3C0G2E822J125AA	CGA4J2C0G2A822J125AA
8.2nF	3216 -	1.15±0.15	±5%	OCAEL 40000 1000 1400 1	CGA5H4C0G2W822J115AA	OOAEI 00000E000 H0011	CGA5H2C0G2A822J115AA
	0005	1.60±0.20	±5%	CGA5L4C0G2J822J160AA		CGA5L3C0G2E822J160AA	
	3225	1.25±0.20	±5%	CGA6J4C0G2J822J125AA			
	4532	1.60±0.20	±5%	CGA8L4C0G2J822J160KA			

<sup>■</sup> Gray item: The product which is not recommended to a new design.



# Temperature characteristics: C0G (-55 to +125°C, 0±30ppm/°C)

0	Dimensione	Thickness	Capacitance	Catalog number			
Capacitance	Dimensions	(mm)	tolerance	Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
	1608	0.80±0.10	±5%				CGA3E1C0G2A103J080AC
	2012	1.25±0.20	±5%			CGA4J3C0G2E103J125AA	CGA4J2C0G2A103J125AA
	3216	1.15±0.15	±5%			CGA5H3C0G2E103J115AA	CGA5H2C0G2A103J115AA
10nF	3210	1.60±0.20	±5%	CGA5L4C0G2J103J160AA	CGA5L4C0G2W103J160AA		
	3225	1.25±0.20	±5%	CGA6J4C0G2J103J125AA			
	3223	1.60±0.20	±5%			CGA6L3C0G2E103J160AA	
	4532	1.60±0.20	±5%	CGA8L4C0G2J103J160KA			
	2012	0.85±0.15	±5%				CGA4F1C0G2A153J085AC
		1.15±0.15	±5%				CGA5H2C0G2A153J115AA
	3216	1.60+0.30,-0.10	±5%		CGA5L4C0G2W153J160AA		
45.5		1.60±0.20	±5%			CGA5L3C0G2E153J160AA	
15nF	-	1.25±0.20	±5%				CGA6J2C0G2A153J125AA
	3225	1.60±0.20	±5%	CGA6L4C0G2J153J160AA			
		2.00±0.20	±5%			CGA6M3C0G2E153J200AA	
	4532	2.50±0.30	±5%	CGA8P4C0G2J153J250KA			
	2012	1.25±0.20	±5%				CGA4J1C0G2A223J125AC
		1.60+0.30,-0.10	±5%			CGA5L3C0G2E223J160AA	
	3216	1.60±0.20	±5%				CGA5L2C0G2A223J160AA
22nF		1.60±0.20	±5%			CGA6L3C0G2E223J160AA	CGA6L2C0G2A223J160AA
	3225	2.30±0.20	±5%	CGA6N4C0G2J223J230AA	CGA6N4C0G2W223J230AA		
		1.60±0.20	±5%			CGA8L3C0G2E223J160KA	
	4532	3.20±0.30	±5%	CGA8R4C0G2J223J320KA			
	2012	1.25±0.20	±5%				CGA4J1C0G2A333J125AC
	3216	1.60+0.30,-0.10					CGA5L2C0G2A333J160AA
		2.00±0.20	±5%				CGA6M2C0G2A333J200AA
33nF	3225	2.30±0.20	±5%			CGA6N3C0G2E333J230AA	
		2.50±0.30	±5%	CGA6P4C0G2J333J250AA	CGA6P4C0G2W333J250AA		
	4532	2.00±0.20	±5%	CGA8M4C0G2J333J200KA		CGA8M3C0G2E333J200KA	
	3216	1.15±0.15	±5%				CGA5H1C0G2A473J115AC
		2.30±0.20	±5%				CGA6N2C0G2A473J230AA
	3225	2.50±0.30	±5%			CGA6P3C0G2E473J250AA	
47nF		2.00±0.20	±5%				CGA8M2C0G2A473J200KA
	4532	2.30±0.20	±5%		CGA8N4C0G2W473J230KA		
	.002	3.20±0.30	±5%	CGA8R4C0G2J473J320KA	0 47 67 7 60 42 7 7 7 60 20 7 7 7	CGA8R3C0G2E473J320KA	
	3216	1.60±0.20	±5%	34,611,334231,33525131		0 47 101 10 00 0422 17 00 02 01 01	CGA5L1C0G2A683J160AC
	3225	2.30±0.20	±5%				CGA6N2C0G2A683J230AA
		2.30±0.20	±5%			CGA8N4C0G2E683J230KN	04/10/420042/10000200/17
68nF	4532	2.50±0.30	±5%			Cartoracoaccoaccontr	CGA8P2C0G2A683J250KA
	1002	3.20±0.30	±5%		CGA8R4C0G2W683J320KA		Janor LougzhoudesonA
	5750	2.30±0.20	±5%	CGA9N1C0G2J683J230KC	3.3.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		
	3216	1.60±0.20	±5%	CARDINI COUZUUDOUZUUNO			CGA5L1C0G2A104J160AC
100nF	4532	3.20±0.20	±5%			CGA8R4C0G2E104J320KN	CGA8R2C0G2A104J320KA
100111	5750	2.80±0.30	±5%	CGA9Q1C0G2J104J280KC	CGA9Q4C0G2W104J280KA	OGAGINGOUGZE 1040320KN	OGRONZOUGZATU40320KA
150nF	5750	2.30±0.30	±5% ±5%	OGA9Q100G201040200NO	OGRAGHOUGZW 1040Z0UNA	CGA9N4C0G2E154J230KN	CGA9N2C0G2A154J230KA
ISUIIF	5750	∠.3U±U.∠U	±370			CGASIN4CUGZE 134JZ3UKIN	GGASINZGUGZA I D4JZSUKA



# Temperature characteristics: X7R (-55 to +125°C, ±15%)

Capacitance	Dimensions	Thickness	Capacitance	Catalog number		
Оараспанос	Dimensions	(mm)	tolerance	Rated voltage Edc: 630V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
	1608	0.80±0.10	±10% ±20%			CGA3E2X7R2A102K080AA CGA3E2X7R2A102M080AA
1nF			±20%	CGA5H4X7R2J102K115AA		COASEZATRZATOZINOOOAA
	3216	1.15±0.15	±20%	CGA5H4X7R2J102M115AA		
	1608	0.80±0.10	±10%			CGA3E2X7R2A152K080AA
1.5nF	1000	0.00±0.10	±20%			CGA3E2X7R2A152M080AA
	3216	1.15±0.15	±10%	CGA5H4X7R2J152K115AA		
			±20% ±10%	CGA5H4X7R2J152M115AA		CGA3E2X7R2A222K080AA
	1608	0.80±0.10	±20%			CGA3E2X7R2A222M080AA
2.2nF	2010	1.15.0.15	±10%	CGA5H4X7R2J222K115AA		
	3216	1.15±0.15	±20%	CGA5H4X7R2J222M115AA		
	1608	0.80±0.10	±10%			CGA3E2X7R2A332K080AA
3.3nF			±20%	CGA5H4X7R2J332K115AA		CGA3E2X7R2A332M080AA
	3216	1.15±0.15	±10% ±20%	CGA5H4X7R2J332M115AA		
	1000	202 242	±10%			CGA3E2X7R2A472K080AA
4.7nF	1608	0.80±0.10	±20%			CGA3E2X7R2A472M080AA
4./11	3216	1.15±0.15	±10%	CGA5H4X7R2J472K115AA		
		111020110	±20%	CGA5H4X7R2J472M115AA		
	1608	0.80±0.10	±10% ±20%			CGA3E2X7R2A682K080AA CGA3E2X7R2A682M080AA
			±20%		CGA4J3X7R2E682K125AA	CGASLZX/NZA00ZIVIOOOAA
6.8nF	2012	1.25±0.20	±20%		CGA4J3X7R2E682M125AA	
	3216	1.15±0.15	±10%	CGA5H4X7R2J682K115AA		
	3210	1.15±0.15	±20%	CGA5H4X7R2J682M115AA		
	1608	0.80±0.10	±10%			CGA3E2X7R2A103K080AA
			±20%		CGA4J3X7R2E103K125AA	CGA3E2X7R2A103M080AA
10nF	2012	1.25±0.20	±10% ±20%		CGA4J3X7R2E103M125AA	
	2012	4.45.045	±10%	CGA5H4X7R2J103K115AA	0 07/1007/11/12/100/11/2070/1	
	3216	1.15±0.15	±20%	CGA5H4X7R2J103M115AA		
	1608	0.80±0.10	±10%			CGA3E2X7R2A153K080AA
			±20%		00441077707450740544	CGA3E2X7R2A153M080AA
	2012	1.25±0.20	±10% ±20%		CGA4J3X7R2E153K125AA CGA4J3X7R2E153M125AA	CGA4J2X7R2A153K125AA CGA4J2X7R2A153M125AA
15nF			±20%		CGA5H3X7R2E153K115AA	OGA402X/HZA100W120AA
	0040	1.15±0.15	±20%		CGA5H3X7R2E153M115AA	
	3216 -	1.30±0.20	±10%	CGA5K4X7R2J153K130AA		
		1.00±0.20	±20%	CGA5K4X7R2J153M130AA		
	1608	0.80±0.10	±10%			CGA3E2X7R2A223K080AA
			±20% ±10%		CGA4J3X7R2E223K125AA	CGA3E2X7R2A223M080AA CGA4J2X7R2A223K125AA
	2012	1.25±0.20	±20%		CGA4J3X7R2E223M125AA	CGA4J2X7R2A223M125AA
22nF		1.15.0.15	±10%		CGA5H3X7R2E223K115AA	
	3216 -	1.15±0.15	±20%		CGA5H3X7R2E223M115AA	
	0210	1.30±0.20	±10%	CGA5K4X7R2J223K130AA		
			±20%	CGA5K4X7R2J223M130AA		CC
	2012	1.25±0.20	±10% ±20%			CGA4J2X7R2A333K125AA CGA4J2X7R2A333M125AA
			±10%			CGA5H2X7R2A333K115AA
33nF	2016	1.15±0.15	±20%			CGA5H2X7R2A333M115AA
	3216 -	1.60±0.20	±10%	CGA5L4X7R2J333K160AA	CGA5L3X7R2E333K160AA	
		110020120	±20%	CGA5L4X7R2J333M160AA	CGA5L3X7R2E333M160AA	
	2012	1.25±0.20	±10% ±20%			CGA4J2X7R2A473K125AA
			±20%			CGA4J2X7R2A473M125AA CGA5H2X7R2A473K115AA
	0010	1.15±0.15	±20%			CGA5H2X7R2A473M115AA
47nF	3216 -	1.60±0.20	±10%		CGA5L3X7R2E473K160AA	
		1.00±0.20	±20%		CGA5L3X7R2E473M160AA	
	3225	2.00±0.20	±10%	CGA6M4X7R2J473K200AA		
			±20%	CGA6M4X7R2J473M200AA	CGAELSY7DSEcopV1ccAA	CGAELOV7DOAGOOM160AA
	3216	1.60±0.20	±10% ±20%		CGA5L3X7R2E683K160AA CGA5L3X7R2E683M160AA	CGA5L2X7R2A683K160AA CGA5L2X7R2A683M160AA
00. =	0007	0.00 0.00	±10%	CGA6M4X7R2J683K200AA		
68nF	3225	2.00±0.20	±20%	CGA6M4X7R2J683M200AA		
	4532	1.60±0.20	±10%	CGA8L4X7R2J683K160KA		
	*		±20%	CGA8L4X7R2J683M160KA		

<sup>■</sup> Gray item: The product which is not recommended to a new design.



# Temperature characteristics: X7R (-55 to +125°C, ±15%)

Canacitance	Dimensions	Thickness	Capacitance	Catalog number		
Сараспансе	Difficusions	(mm)	tolerance	Rated voltage Edc: 630V	Rated voltage Edc: 250V	Rated voltage Edc: 100V
	2012	1.25±0.20	±10%			CGA4J2X7R2A104K125AA
			±20%			CGA4J2X7R2A104M125AA
	3216	1.60±0.20	±10%		CGA5L3X7R2E104K160AA	CGA5L2X7R2A104K160AA
100nF			±20%		CGA5L3X7R2E104M160AA	CGA5L2X7R2A104M160AA
	3225	2.00±0.20	±10%		CGA6M3X7R2E104K200AA	
			±20%	CCARNAY7B2 H04K220KA	CGA6M3X7R2E104M200AA	
	4532	2.30±0.20	±10%	CGA8N4X7R2J104K230KA		
			±20% ±10%	CGA8N4X7R2J104M230KA		CGA5L2X7R2A154K160AA
	3216	1.60±0.20	±10%			CGA5L2X7R2A154M160AA
			±10%		CGA6M3X7R2E154K200AA	OGASEZATTIZATSHITTOGAA
	3225	2.00±0.20	±20%		CGA6M3X7R2E154M200AA	
150nF			±10%		CGA8L3X7R2E154K160KA	
	4532	1.60±0.20	±20%		CGA8L3X7R2E154M160KA	
		100.000	±10%	CGA9L4X7R2J154K160KA		
	5750	1.60±0.20	±20%	CGA9L4X7R2J154M160KA		
	2010	1.15.0.15	±10%			CGA5H2X7R2A224K115AA
	3216	1.15±0.15	±20%			CGA5H2X7R2A224M115AA
	3225	2.00±0.20	±10%		CGA6M3X7R2E224K200AA	
220nF	3223	2.00±0.20	±20%		CGA6M3X7R2E224M200AA	
220111	4532	2.30±0.20	±10%		CGA8N3X7R2E224K230KA	
	4302	2.00±0.20	±20%		CGA8N3X7R2E224M230KA	
	5750	2.30±0.20	±10%	CGA9N4X7R2J224K230KA		
			±20%	CGA9N4X7R2J224M230KA		
	3216	1.30±0.20	±10%			CGA5K2X7R2A334K130AA
			±20%			CGA5K2X7R2A334M130AA
	3225	2.00±0.20	±10%			CGA6M2X7R2A334K200AA
330nF			±20%		004010/77075004/000//4	CGA6M2X7R2A334M200AA
	4532	4532 2.30±0.20	±10%		CGA8N3X7R2E334K230KA	
			±20%		CGA8N3X7R2E334M230KA	
	5750	1.60±0.20	±10%		CGA9L3X7R2E334K160KA	
			±20%		CGA9L3X7R2E334M160KA	CC AEL OVZDOA 474K160A A
	3216	1.60±0.20	±10% ±20%			CGA5L2X7R2A474K160AA CGA5L2X7R2A474M160AA
			±20%			CGA6M2X7R2A474W100AA
	3225	2.00±0.20	±20%			CGA6M2X7R2A474M200AA
470nF			±10%		CGA8N3X7R2E474K230KA	OG/TOWE/T/TIE/T-T-WILDO/W
	4532	2.30±0.20	±20%		CGA8N3X7R2E474M230KA	
			±10%		CGA9N3X7R2E474K230KA	
	5750	2.30±0.20	±20%		CGA9N3X7R2E474M230KA	
			±10%			CGA5L2X7R2A684K160AA
	3216	1.60±0.20	±20%			CGA5L2X7R2A684M160AA
		4.00.000	±10%			CGA6L2X7R2A684K160AA
	3225	1.60±0.20	±20%			CGA6L2X7R2A684M160AA
000-F	4500	0.00.000	±10%			CGA8N2X7R2A684K230KA
680nF	4532	2.30±0.20	±20%			CGA8N2X7R2A684M230KA
		1.60 - 0.20	±10%			CGA9L2X7R2A684K160KA
	5750 <del>-</del>	1.60±0.20	±20%			CGA9L2X7R2A684M160KA
	3730	2.30±0.20	±10%		CGA9N3X7R2E684K230KA	
		2.30±0.20	±20%		CGA9N3X7R2E684M230KA	
	3216	1.60±0.20	±10%			CGA5L2X7R2A105K160AA
		1.00±0.20	±20%			CGA5L2X7R2A105M160AA
	3225	2.00±0.20	±10%			CGA6M2X7R2A105K200AA
1μF			±20%			CGA6M2X7R2A105M200AA
	4532	2.30±0.20	±10%			CGA8N2X7R2A105K230KA
	-		±20%		004010/707	CGA8N2X7R2A105M230KA
	5750	2.30±0.20	±10%		CGA9N3X7R2E105K230KA	CGA9N2X7R2A105K230KA
			±20%		CGA9N3X7R2E105M230KA	CGA9N2X7R2A105M230KA
	3225	2.00±0.20	±10%			CGA6M3X7R2A155K200AE
	-		±20%			CGA6M3X7R2A155M200AE
1.5µF	4532	2.30±0.20	±10%			CGA8N2X7R2A155K230KA
			±20%			CGA8N2X7R2A155M230KA
	5750	2.30±0.20	±10%			CGA9N2X7R2A155K230KA
<u> </u>			±20%			CGA9N2X7R2A155M230KA

<sup>■</sup> Gray item: The product which is not recommended to a new design.



Temperature characteristics: X7R (-55 to +125°C, ±15%)

Capacitance	Dimensions	Thickness	Capacitance	Catalog number
Сараспансе	Dimensions	(mm)	tolerance	Rated voltage Edc: 100V
	3225	2.30+0.20	±10%	CGA6N3X7R2A225K230AB
	3225	2.30±0.20	±20%	CGA6N3X7R2A225M230AB
2.2µF	4532 5750	2.30+0.20	±10%	CGA8N2X7R2A225K230KA
2.2μΓ		2.30±0.20	±20%	CGA8N2X7R2A225M230KA
		2.30+0.20	±10%	CGA9N2X7R2A225K230KA
		2.30±0.20	±20%	CGA9N2X7R2A225M230KA
3.3µF	5750	2.30+0.20	±10%	CGA9N2X7R2A335K230KA
э.эµг	3730	2.30±0.20	±20%	CGA9N2X7R2A335M230KA
4.7µF	5750	2.30+0.20	±10%	CGA9N2X7R2A475K230KA
4.7µF	3/30	2.30±0.20	±20%	CGA9N2X7R2A475M230KA

<sup>■</sup> Gray item: The product which is not recommended to a new design.



Temperature characteristics: X7S (-55 to +125°C, ±22%)

1nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A102M0500BB           1.5nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A102M050BB           2.2nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A152M050BB           3.3nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A222M050BB           4.7nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A32M050BB           4.7nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A472M050BB           6.8nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A472M050BB           10nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A682M050BB           33nF         1608         0.80±0.05         ±20%         CGA2B3X7S2A403M050BB           33nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A33M050BB           47nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A33M050BB           47nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A63M050BB           47nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A63M050BB           330nF         2012         1.25±0.20 <td< th=""><th>Capacitance</th><th>Dimensions</th><th>Thickness (mm)</th><th>Capacitance tolerance</th><th>Catalog number Rated voltage Edc: 100V</th></td<>	Capacitance	Dimensions	Thickness (mm)	Capacitance tolerance	Catalog number Rated voltage Edc: 100V
1.5nF   1005   0.50±0.05   ±10%   CGA2B3X752A152M050BB   ±20%   CGA2B3X752A152M050BB   ±20%   CGA2B3X752A152M050BB   ±20%   CGA2B3X752A222M050BB   ±20%   CGA2B3X752A222M050BB   ±20%   CGA2B3X752A222M050BB   ±20%   CGA2B3X752A222M050BB   ±20%   CGA2B3X752A322M050BB   ±20%   CGA2B3X752A32M050BB   ±20%   CGA2B3X752A32M050BB   ±20%   CGA2B3X752A472M050BB   ±20%   CGA2B3X752A472M050BB   ±20%   CGA2B3X752A472M050BB   ±20%   CGA2B3X752A472M050BB   ±20%   CGA2B3X752A472M050BB   ±20%   CGA2B3X752A472M050BB   ±20%   CGA2B3X752A682M050BB   ±20%   CGA2B3X752A682M050BB   ±20%   CGA2B3X752A682M050BB   ±20%   CGA2B3X752A33M080AB   ±20%   CGA3E3X752A33M080AB   ±20%   CGA3E3X752A33M080AB   ±20%   CGA3E3X752A33M080AB   ±20%   CGA3E3X752A33M080AB   ±20%   CGA3E3X752A33M080AB   ±20%   CGA3E3X752A473M080AB   ±20%   CGA3E3X752A683M080AB   ±20%   CGA4J3X752A34M155AB   ±20%   CGA4J3X752A34M155AB   ±20%   CGA4J3X752A684M125AB   ±20%   CGA5L3X752A165K125AB   ±20%   CGA5L3X752A165K125AB   ±20%   CGA5L3X752A165K125AB   ±20%   CGA5L3X752A35M160AB   ±20%   CGA5L3X752A35M160AB   ±20%   CGA5L3X752A35M160AB   ±20%   CGA5L3X752A35M160AB   ±20%   CGA5L3X752A35M160AB   ±20%   CGA6M3X752A335M160AB   ±20%   CGA6M3X752A335	1.5	100E	0.50.005	±10%	CGA2B3X7S2A102K050BB
1.5nF   1005   0.50±0.05   ±20%   CGA2B3X7S2A152M050BB     2.2nF   1005   0.50±0.05   ±10%   CGA2B3X7S2A222M050BB     3.3nF   1005   0.50±0.05   ±10%   CGA2B3X7S2A32X050BB     4.7nF   1005   0.50±0.05   ±10%   CGA2B3X7S2A472K050BB     4.7nF   1005   0.50±0.05   ±10%   CGA2B3X7S2A47ZK050BB     6.8nF   1005   0.50±0.05   ±10%   CGA2B3X7S2A47ZK050BB     6.8nF   1005   0.50±0.05   ±10%   CGA2B3X7S2A47ZK050BB     10nF   1005   0.50±0.05   ±10%   CGA2B3X7S2A47ZK050BB     120%   CGA2B3X7S2A103K050BB     120%   CGA2B3X7S2A103K050BB     120%   CGA2B3X7S2A103K050BB     120%   CGA2B3X7S2A103K050BB     120%   CGA3E3X7S2A103K050BB     120%   CGA3E3X7S2A103K050BB     120%   CGA3E3X7S2A33M080AB     120%   CGA3E3X7S2A473K080AB     120%   CGA3E3X7S2A473K080AB     120%   CGA3E3X7S2A473K080AB     120%   CGA3E3X7S2A473K080AB     120%   CGA3E3X7S2A683K080AB     120%   CGA3E3X7S2A683K080AB     120%   CGA3E3X7S2A683K080AB     120%   CGA3E3X7S2A104K080AB     120%   CGA3E3X7S2A104K080AB     120%   CGA3E3X7S2A104K080AB     120%   CGA4J3X7S2A334K125AB     120%   CGA4J3X7S2A334K125AB     120%   CGA4J3X7S2A334K125AB     120%   CGA4J3X7S2A334K125AB     120%   CGA4J3X7S2A684K125AB     120%   CGA6M3X7S2A685K200AB     120%	ШЕ	1005	0.50±0.05	±20%	CGA2B3X7S2A102M050BB
### ### #############################	1 En E	100E	0.50.005	±10%	CGA2B3X7S2A152K050BB
2.2nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A32ZM050BB           3.3nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A33ZM050BB           4.7nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A3ZM050BB           4.7nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A47ZM050BB           6.8nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A68ZM050BB           10nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A68ZM050BB           33nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A333M080AB           47nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A333M080AB           47nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A683M080AB           68nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A683M080AB           100nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A683M080AB           330nF         2012         1.25±0.20         ±10%         CGA3E3X7S2A683M080AB           470nF         2012         1.25±0.20         ±20%         CGA4J3X7S2A334M125AB           470nF         2012         1.25±0.20	1.5nF	1005	0.50±0.05	±20%	CGA2B3X7S2A152M050BB
#20%	0.0nF	100E	0.50.005	±10%	CGA2B3X7S2A222K050BB
4.7nF   1005   0.50±0.05   ±20%   CGA2B3X752A332M050BB	2.211	1005	0.50±0.05	±20%	CGA2B3X7S2A222M050BB
#20%	2 2nE	1005	0.50.0.05	±10%	CGA2B3X7S2A332K050BB
4.7nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A472M050BB           6.8nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A682K050BB           10nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A103K050BB           33nF         1608         0.80±0.10         ±10%         CGA2B3X7S2A133M080AB           47nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A333M080AB           420%         CGA3E3X7S2A683K080AB         ±20%         CGA3E3X7S2A683K080AB           68nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A683K080AB           100nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A683M080AB           330nF         2012         1.25±0.20         ±10%         CGA3E3X7S2A104K080AB           330nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A374K125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A334K125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A3474K125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X7S2A364M125AB           1µF         2012         1.25±0.20         ±10% </td <td>3.311</td> <td>1005</td> <td>0.50±0.05</td> <td>±20%</td> <td>CGA2B3X7S2A332M050BB</td>	3.311	1005	0.50±0.05	±20%	CGA2B3X7S2A332M050BB
±20%         CGA2EBX7S2A472M050BB           10nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A682M050BB           10nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A103M050BB           33nF         1608         0.80±0.10         ±10%         CGA2B3X7S2A103M050BB           47nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A333M080AB           420%         CGA3E3X7S2A473K080AB         ±20%         CGA3E3X7S2A473M080AB           48nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A473M080AB           420%         CGA3E3X7S2A473M080AB         ±20%         CGA3E3X7S2A104M080AB           420%         CGA3E3X7S2A104M080AB         ±20%         CGA3E3X7S2A104M080AB           420%         CGA3E3X7S2A104M080AB         ±20%         CGA4J3X7S2A334M125AB           330nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A334K125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A3474M125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A3474M125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X7S2A315K125AB           1.5µF         3216	4.7nE	1005	0.50.0.05	±10%	CGA2B3X7S2A472K050BB
6.8nF         1005         0.50±0.05         ±20%         CGA2B3X7S2A682M050BB           10nF         1005         0.50±0.05         ±10%         CGA2B3X7S2A103M050BB           33nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A333M080AB           47nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A33M080AB           68nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A683M080AB           100nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A683M080AB           330nF         2012         1.25±0.20         ±10%         CGA3E3X7S2A104K080AB           470nF         2012         1.25±0.20         ±20%         CGA4J3X7S2A104K080AB           470nF         2012         1.25±0.20         ±20%         CGA4J3X7S2A104K080AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A34M125AB           480nF         2012         1.25±0.20         ±20%         CGA4J3X7S2A684K125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X7S2A684K125AB           1µF         2012         1.25±0.20         ±20%         CGA4J3X7S2A35K125AB           1µF         3216         1.60±0.20	4.711	1005	0.50±0.05	±20%	CGA2B3X7S2A472M050BB
#20%	6.05	1005	0.50.0.05	±10%	CGA2B3X7S2A682K050BB
100F   1005   0.50±0.05   ±20%   CGA2B3X7S2A103M050BB   ±20%   CGA3E3X7S2A33K080AB   ±20%   CGA3E3X7S2A33K080AB   ±20%   CGA3E3X7S2A473K080AB   ±20%   CGA3E3X7S2A473K080AB   ±20%   CGA3E3X7S2A473K080AB   ±20%   CGA3E3X7S2A473M080AB   ±20%   CGA3E3X7S2A473M080AB   ±20%   CGA3E3X7S2A473M080AB   ±20%   CGA3E3X7S2A683K080AB   ±20%   CGA3E3X7S2A683K080AB   ±20%   CGA3E3X7S2A683K080AB   ±20%   CGA3E3X7S2A683K080AB   ±20%   CGA3E3X7S2A104K080AB   ±20%   CGA3E3X7S2A104K080AB   ±20%   CGA3E3X7S2A104K080AB   ±20%   CGA4J3X7S2A334K125AB   ±20%   CGA4J3X7S2A334K125AB   ±20%   CGA4J3X7S2A434K125AB   ±20%   CGA4J3X7S2A474K125AB   ±20%   CGA4J3X7S2A474K125AB   ±20%   CGA4J3X7S2A164K125AB   ±20%   CGA4J3X7S2A105K125AB   ±20%   CGA4J3X7S2A105K125AB   ±20%   CGA4J3X7S2A105K125AB   ±20%   CGA4J3X7S2A105K125AB   ±20%   CGA5L3X7S2A155K160AB   ±20%   CGA5L3X7S2A155K160AB   ±20%   CGA5L3X7S2A255K160AB   ±20%   CGA5L3X7S2A255K160AB   ±20%   CGA5L3X7S2A255K160AB   ±20%   CGA5L3X7S2A235K160AB   ±20%   CGA5L3X7S2A35K160AB   ±20%   CGA5L3X7S2A35K160AB   ±20%   CGA5L3X7S2A35K160AB   ±20%   CGA6M3X7S2A35K200AB   ±20%   CGA6M3X7S2A475K230KB   ±20%   CGA6M3X7S2A668K230KB   ±20%   CGA6M3X7S2A668K230KB   ±20%   CGA6M3X7S2A668K230KB   ±20%   CGA6M3X7S2A668K230KB   ±	0.011	1005	0.50±0.05	±20%	CGA2B3X7S2A682M050BB
33nF         1608         0.80±0.10         ±10%         CGA2B3X7S2A103M050BB           47nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A333M080AB           68nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A473M080AB           100nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A683K080AB           100nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A104K080AB           330nF         2012         1.25±0.20         ±10%         CGA3E3X7S2A104K080AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A34K125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A34K125AB           480nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A34K125AB           480nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A15M125AB           490%         CGA4J3X7S2A105K125AB         ±20%         CGA4J3X7S2A105K125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X7S2A105K125AB           1.5µF         3216         1.60±0.20         ±10%         CGA5L3X7S2A35K106AB           2.2µF         3216         1.60±0.20         ±0%	105	1005	0.50.0.05	±10%	CGA2B3X7S2A103K050BB
33nF   1608   0.80±0.10   ±20%   CGA3E3X7S2A33M080AB     47nF   1608   0.80±0.10   ±10%   CGA3E3X7S2A473K080AB     68nF   1608   0.80±0.10   ±10%   CGA3E3X7S2A683K080AB     ±20%   CGA3E3X7S2A683M080AB     ±20%   CGA3E3X7S2A683M080AB     ±20%   CGA3E3X7S2A683M080AB     ±20%   CGA3E3X7S2A683M080AB     ±20%   CGA3E3X7S2A104K080AB     ±20%   CGA3E3X7S2A104K080AB     ±20%   CGA4J3X7S2A334K125AB     ±20%   CGA4J3X7S2A334K125AB     ±20%   CGA4J3X7S2A334K125AB     ±20%   CGA4J3X7S2A374M125AB     ±20%   CGA4J3X7S2A474K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A105K125AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A255K160AB     ±20%   CGA5L3X7S2A255K160AB     ±20%   CGA5L3X7S2A255K160AB     ±20%   CGA5L3X7S2A255K160AB     ±20%   CGA5L3X7S2A35K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A35M200KB     ±20%   CGA6M3X7S2A475K200AB     ±20%   CGA6M3X7S2A475K200AB     ±20%   CGA6M3X7S2A475K200AB     ±20%   CGA9M3X7S2A475K200AB     ±20%   CGA9M3X7S2A475K200AB     ±20%   CGA9M3X7S2A475K200AB     ±20%   CGA9M3X7S2A4685K200KB     ±20%   CGA9M3X7S2A685K200KB     ±20%   CGA9M3X7S2A685M200KB     ±20%   CGA9M3X7S2A685M200KB     ±20%   CGA9M3X7S2A685M200KB     ±20%   CGA9M3X7S2A166K230KB     ±20%   CGA9M3X7	TOTIF	1005	0.50±0.05	±20%	CGA2B3X7S2A103M050BB
#20%	225	1600	0.00.0.10	±10%	CGA3E3X7S2A333K080AB
47nF         1608         0.80±0.10         ±20%         CGA3E3X7S2A473M080AB           68nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A683K080AB           100nF         1608         0.80±0.10         ±10%         CGA3E3X7S2A104K080AB           330nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A34K125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A34K125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A474M125AB           680nF         2012         1.25±0.20         ±10%         CGA4J3X7S2A684K125AB           ±20%         CGA4J3X7S2A684M125AB         ±20%         CGA4J3X7S2A105K125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X7S2A105K125AB           1.5µF         3216         1.60±0.20         ±10%         CGA5L3X7S2A155K160AB           2.2µF         3216         1.60±0.20         ±10%         CGA5L3X7S2A225K160AB           2.2µF         3216         1.60±0.20         ±10%         CGA5L3X7S2A335K160AB           2.2µF         3216         1.60±0.20         ±10%         CGA5L3X7S2A335K160AB           ±20%         CGA5L3X7S2A335K160AB         ±20%	3311	1000	0.80±0.10	±20%	CGA3E3X7S2A333M080AB
68nF         1608         0.80±0.10         ±10%         CGA3E3X752A683K080AB           100nF         1608         0.80±0.10         ±10%         CGA3E3X752A683M080AB           330nF         2012         1.25±0.20         ±10%         CGA3E3X752A104M080AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X752A334K125AB           470nF         2012         1.25±0.20         ±10%         CGA4J3X752A474K125AB           ±20%         CGA4J3X752A474K125AB         ±20%         CGA4J3X752A474M125AB           680nF         2012         1.25±0.20         ±10%         CGA4J3X752A684K125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X752A684M125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X752A684M125AB           1µF         2012         1.25±0.20         ±10%         CGA4J3X752A684M125AB           1.5µF         3216         1.60±0.20         ±10%         CGA5L3X752A155K160AB           2.2µF         3216         1.60±0.20         ±20%         CGA5L3X752A225K160AB           2.2µF         3216         1.60±0.20         ±10%         CGA5L3X752A355K160AB           ±20%         CGA5L3X752A355K160AB         ±20%	47.5	1000	0.00.040	±10%	CGA3E3X7S2A473K080AB
100nF 1608 0.80±0.10 ±20% CGA3E3X7S2A683M080AB ±10% CGA3E3X7S2A104K080AB ±20% CGA3E3X7S2A104K080AB ±20% CGA3E3X7S2A104M080AB ±20% CGA4J3X7S2A334K125AB ±20% CGA4J3X7S2A334K125AB ±20% CGA4J3X7S2A34M125AB ±20% CGA4J3X7S2A474K125AB ±20% CGA4J3X7S2A474K125AB ±20% CGA4J3X7S2A684K125AB ±20% CGA4J3X7S2A684K125AB ±20% CGA4J3X7S2A684K125AB ±20% CGA4J3X7S2A684M125AB ±20% CGA4J3X7S2A684M125AB ±20% CGA4J3X7S2A684M125AB ±20% CGA4J3X7S2A684M125AB ±20% CGA4J3X7S2A165M125AB ±20% CGA4J3X7S2A165M125AB ±20% CGA4J3X7S2A105K125AB ±20% CGA4J3X7S2A105K125AB ±20% CGA4J3X7S2A105K125AB ±20% CGA5L3X7S2A155K160AB ±20% CGA5L3X7S2A155K160AB ±20% CGA5L3X7S2A255M160AB ±20% CGA5L3X7S2A255M160AB ±20% CGA5L3X7S2A255M160AB ±20% CGA5L3X7S2A35K160AB ±20% CGA5L3X7S2A35K160AB ±20% CGA6M3X7S2A335K160AB ±20% CGA6M3X7S2A335K160AB ±20% CGA6M3X7S2A335M200AB ±20% CGA6M3X7S2A35M200AB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7	4/11	1000	0.80±0.10	±20%	CGA3E3X7S2A473M080AB
#20%	60.5	1600	0.00.0.10	±10%	CGA3E3X7S2A683K080AB
100nF   1608   0.80±0.10   ±20%   CGA3E3X7S2A104M080AB     330nF   2012   1.25±0.20   ±10%   CGA4J3X7S2A334K125AB     470nF   2012   1.25±0.20   ±10%   CGA4J3X7S2A34M125AB     470nF   2012   1.25±0.20   ±20%   CGA4J3X7S2A474K125AB     680nF   2012   1.25±0.20   ±10%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684M125AB     ±20%   CGA4J3X7S2A684M125AB     ±20%   CGA4J3X7S2A684M125AB     ±20%   CGA4J3X7S2A105K125AB     ±20%   CGA4J3X7S2A105K125AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A255K160AB     ±20%   CGA5L3X7S2A25K160AB     ±20%   CGA5L3X7S2A355K160AB     ±20%   CGA5L3X7S2A335K160AB     ±20%   CGA5L3X7S2A335K160AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A35K200AB     ±20%   CGA6M3X7S2A475K200AB     ±20%	OOIIF	1000	0.80±0.10	±20%	CGA3E3X7S2A683M080AB
#20%	1005	1600	0.00.040	±10%	CGA3E3X7S2A104K080AB
330nF   2012   1.25±0.20   ±20%   CGA4J3X7S2A334M125AB     470nF   2012   1.25±0.20   ±10%   CGA4J3X7S2A474K125AB     ±20%   CGA4J3X7S2A474K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684M125AB     ±20%   CGA4J3X7S2A684M125AB     ±20%   CGA4J3X7S2A684M125AB     ±20%   CGA4J3X7S2A105K125AB     ±20%   CGA4J3X7S2A105K125AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A155M160AB     ±20%   CGA5L3X7S2A225K160AB     ±20%   CGA5L3X7S2A225K160AB     ±20%   CGA5L3X7S2A225K160AB     ±20%   CGA5L3X7S2A335K160AB     ±20%   CGA5L3X7S2A335K160AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200KB     ±20%   CGA6M3X7S2A335M200AB     ±20%   CGA6M3X7S2A35M200AB     ±20%   CGA6M3X7S2A475K200AB     ±20%   CGA6M3X7S2A475K230KB     ±20%	TOUTH	1000	0.80±0.10	±20%	CGA3E3X7S2A104M080AB
#20%	22055	2012	1.05 . 0.00	±10%	CGA4J3X7S2A334K125AB
470nF   2012   1.25±0.20   ±20%   CGA4J3X7S2A474M125AB     680nF   2012   1.25±0.20   ±10%   CGA4J3X7S2A684K125AB     ±20%   CGA4J3X7S2A684M125AB     ±20%   CGA4J3X7S2A105K125AB     ±20%   CGA4J3X7S2A105K125AB     ±20%   CGA4J3X7S2A105M125AB     ±20%   CGA5L3X7S2A155K160AB     ±20%   CGA5L3X7S2A155M160AB     ±20%   CGA5L3X7S2A25K160AB     ±20%   CGA5L3X7S2A25K160AB     ±20%   CGA5L3X7S2A225K160AB     ±20%   CGA5L3X7S2A225M160AB     ±20%   CGA5L3X7S2A335K160AB     ±20%   CGA5L3X7S2A335K160AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200AB     ±20%   CGA6M3X7S2A335K200KB     ±20%   CGA6M3X7S2A335K200KB     ±20%   CGA6M3X7S2A35K200KB     ±20%   CGA6M3X7S2A35K200KB     ±20%   CGA6M3X7S2A475K200AB     ±20%   CGA6M3X7S2A475M200AB     ±20%   CG	33011	2012	1.25±0.20	±20%	CGA4J3X7S2A334M125AB
#20%	470nF	2012	4.05.0.00	±10%	CGA4J3X7S2A474K125AB
1μF 2012 1.25±0.20 ±20% CGA4J3X7S2A684M125AB ±20% CGA4J3X7S2A6B4M125AB ±20% CGA4J3X7S2A105K125AB ±20% CGA4J3X7S2A105K125AB ±20% CGA4J3X7S2A105M125AB ±20% CGA5L3X7S2A155K160AB ±20% CGA5L3X7S2A155K160AB ±20% CGA5L3X7S2A225K160AB ±20% CGA5L3X7S2A225K160AB ±20% CGA5L3X7S2A225K160AB ±20% CGA5L3X7S2A225K160AB ±20% CGA5L3X7S2A235K160AB ±20% CGA5L3X7S2A35K160AB ±20% CGA5L3X7S2A35K160AB ±20% CGA6M3X7S2A335K160AB ±20% CGA6M3X7S2A335K200AB ±20% CGA6M3X7S2A335K200AB ±20% CGA6M3X7S2A335K200AB ±20% CGA6M3X7S2A35K200AB ±20% CGA6M3X7S2A35K200AB ±20% CGA6M3X7S2A35K200AB ±20% CGA6M3X7S2A35K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K230KB ±20% CGA6M3X7S2A475K230KB ±20% CGA6M3X7S2A475M20AB ±20% CGA6M3X7S2A475M20AB ±20% CGA6M3X7S2A475M20AB ±20% CGA6M3X7S2A475M20AB ±20% CGA6M3X7S2A475M20AB ±20% CGA6M3X7S2A475M230KB ±20% CGA6M3X7S2A4665K200KB ±20% CGA6M3X7S2A665K200KB	47011	2012	1.25±0.20	±20%	CGA4J3X7S2A474M125AB
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	690nE	2012	1.05 . 0.00	±10%	CGA4J3X7S2A684K125AB
	OOUT	2012	1.25±0.20	±20%	CGA4J3X7S2A684M125AB
1.5μF 3216 1.60±0.20 ±10% CGA5L3X7S2A15SM160AB ±20% CGA5L3X7S2A15SM160AB ±20% CGA5L3X7S2A15SM160AB ±20% CGA5L3X7S2A25SM160AB ±20% CGA5L3X7S2A225M160AB ±20% CGA5L3X7S2A225M160AB ±20% CGA5L3X7S2A235M160AB ±20% CGA5L3X7S2A335M160AB ±20% CGA5L3X7S2A335M160AB ±20% CGA5L3X7S2A335M200AB ±20% CGA6M3X7S2A335M200AB ±20% CGA6M3X7S2A335M200AB ±20% CGA6M3X7S2A335M200AB ±20% CGA6M3X7S2A335M200AB ±20% CGA6M3X7S2A335M200AB ±20% CGA6M3X7S2A335M200AB ±20% CGA6M3X7S2A35M200AB ±20% CGA6M3X7S2A35M200AB ±20% CGA6M3X7S2A35M200KB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M230KB ±20% CGA9M3X7S2A685M200KB ±20% CGA9M3X7S2A685M200KB ±20% CGA9M3X7S2A685M200KB ±20% CGA9M3X7S2A685M200KB ±20% CGA9M3X7S2A6685M200KB ±20% CGA9M3X7S2A6685M200KB ±20% CGA9M3X7S2A106M230KB	1	2012	1.05 . 0.00	±10%	CGA4J3X7S2A105K125AB
1.5μF 3216 1.60±0.20 ±20% CGA5L3X7S2A155M160AB  2.2μF 3216 1.60±0.20 ±10% CGA5L3X7S2A225K160AB  ±20% CGA5L3X7S2A225M160AB  ±20% CGA5L3X7S2A225M160AB  ±20% CGA5L3X7S2A335K160AB  ±20% CGA5L3X7S2A335K160AB  ±20% CGA5L3X7S2A335K160AB  ±20% CGA6M3X7S2A335K200AB  ±20% CGA6M3X7S2A335K200AB  ±20% CGA6M3X7S2A335K200AB  ±20% CGA6M3X7S2A335K200AB  ±20% CGA6M3X7S2A335K200AB  ±20% CGA6M3X7S2A35K200AB  ±20% CGA6M3X7S2A35K200AB  ±20% CGA6M3X7S2A475K200AB  ±20% CGA6M3X7S2A475K200AB  ±20% CGA6M3X7S2A475K200AB  ±20% CGA6M3X7S2A475K200AB  ±20% CGA6M3X7S2A475M200AB  ±20% CGA9M3X7S2A475M230KB  ±20% CGA9M3X7S2A475M230KB  ±20% CGA9M3X7S2A685K200KB  ±20% CGA9M3X7S2A685K200KB  ±20% CGA9M3X7S2A685K200KB  ±20% CGA9M3X7S2A685M20KB  ±20% CGA9M3X7S2A6685M20KB  ±20% CGA9M3X7S2A6685M20KB  ±20% CGA9M3X7S2A106K230KB  ±20% CGA9M3X7S2A106K230KB	тµг	2012	1.25±0.20	±20%	CGA4J3X7S2A105M125AB
2.2μF 3216 1.60±0.20 ±10% CGA5L3X7S2A25SM160AB ±20% CGA5L3X7S2A225K160AB ±20% CGA5L3X7S2A225K160AB ±20% CGA5L3X7S2A225K160AB ±20% CGA5L3X7S2A35K160AB ±20% CGA5L3X7S2A335K160AB ±20% CGA5L3X7S2A335K160AB ±20% CGA6M3X7S2A335K200AB ±20% CGA6M3X7S2A335K200AB ±20% CGA6M3X7S2A335K200AB ±20% CGA6M3X7S2A335K200KB ±20% CGA6M3X7S2A35K200KB ±20% CGA6M3X7S2A35K200KB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200AB ±20% CGA6M3X7S2A475K200KB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M200AB ±20% CGA6M3X7S2A475M200KB ±20% CGA9M3X7S2A475M230KB ±20% CGA9M3X7S2A6685K200KB ±20% CGA9M3X7S2A6685K200KB ±20% CGA9M3X7S2A6685M200KB ±20% CGA9M3X7S2A6685M200KB ±20% CGA9M3X7S2A106K230KB ±20% CGA9N3X7S2A106K230KB	1 55	2016	1 60 . 0 20	±10%	CGA5L3X7S2A155K160AB
3216	1.5μι	3210	1.00±0.20	±20%	CGA5L3X7S2A155M160AB
3216	2.005	2016	1 60 . 0 20	±10%	CGA5L3X7S2A225K160AB
3216   1.60+0.30,-0.10   ±20%   CGA5L3X7S2A335M160AB     3225   2.00±0.20   ±10%   CGA6M3X7S2A335K200AB     4532   2.00±0.20   ±10%   CGA6M3X7S2A335K200KB     ±20%   CGA6M3X7S2A335K200KB     ±20%   CGA6M3X7S2A335K200KB     ±20%   CGA6M3X7S2A35K200KB     ±20%   CGA6M3X7S2A475K200AB     ±20%   CGA6M3X7S2A475K200AB     ±20%   CGA6M3X7S2A475K230KB     ±20%   CGA6M3X7S2A475K230KB     ±20%   CGA9M3X7S2A475K230KB     ±20%   CGA9M3X7S2A475K230KB     ±20%   CGA9M3X7S2A685K200KB     ±20%   CGA9M3X7S2A685K200KB     ±20%   CGA9M3X7S2A685M200KB     ±20%   CGA9M3X7S2A685M200KB     ±20%   CGA9M3X7S2A685M200KB     ±20%   CGA9M3X7S2A665M200KB     ±20%   CGA9M3X7S2A665M200KB     ±20%   CGA9M3X7S2A665M200KB     ±20%   CGA9M3X7S2A106K230KB     ±20%   CGA9M3X7S2A106M230KB	2.2μΓ	3210	1.00±0.20	±20%	CGA5L3X7S2A225M160AB
$3.3 \mu F \qquad 3225 \qquad 2.00 \pm 0.20 \qquad \frac{\pm 20\%}{\pm 20\%} \qquad \frac{\text{CGA51.3X752A335M160AB}}{\text{CGA6M3X752A335K200AB}} \\ 4532 \qquad 2.00 \pm 0.20 \qquad \frac{\pm 10\%}{\pm 20\%} \qquad \frac{\text{CGA6M3X752A335K200AB}}{\text{CGA8M3X752A335M200KB}} \\ 4.7 \mu F \qquad 3225 \qquad 2.00 \pm 0.20 \qquad \frac{\pm 10\%}{\pm 20\%} \qquad \frac{\text{CGA6M3X752A475K200AB}}{\text{CGA6M3X752A475K200AB}} \\ 4532 \qquad 2.30 \pm 0.20 \qquad \frac{\pm 10\%}{\pm 20\%} \qquad \frac{\text{CGA6M3X752A475K200AB}}{\text{CGA8M3X752A475K230KB}} \\ 6.8 \mu F \qquad 5750 \qquad 2.00 \pm 0.20 \qquad \frac{\pm 10\%}{\pm 20\%} \qquad \frac{\text{CGA9M3X752A475M230KB}}{\text{CGA9M3X752A685K200KB}} \\ 10 \mu F \qquad 5750 \qquad 2.30 \pm 0.20 \qquad \frac{\pm 10\%}{\pm 20\%} \qquad \frac{\text{CGA9M3X752A685M200KB}}{\text{CGA9M3X752A106K230KB}} \\ 10 \mu F \qquad 5750 \qquad 2.30 \pm 0.20 \qquad \frac{\pm 10\%}{\pm 20\%} \qquad \frac{\text{CGA9N3X752A106K230KB}}{\text{CGA9N3X752A106M230KB}} \\ $		2016	1 60+0 30 -0 10	±10%	CGA5L3X7S2A335K160AB
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		3210	1.00+0.30,-0.10	±20%	CGA5L3X7S2A335M160AB
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3 3uE	3225	2 00+0 20	±10%	CGA6M3X7S2A335K200AB
4532     2.00±0.20     ±20%     CGA8M3X7S2A335M200KB       4.7μF     3225     2.00±0.20     ±10%     CGA6M3X7S2A475K200AB       ±20%     CGA6M3X7S2A475M200AB       ±20%     CGA8N3X7S2A475M200AB       ±20%     CGA8N3X7S2A475K230KB       ±20%     CGA8N3X7S2A475M230KB       ±20%     CGA9M3X7S2A685K200KB       ±20%     CGA9M3X7S2A685K200KB       ±20%     CGA9M3X7S2A685M200KB       ±20%     CGA9N3X7S2A106K230KB       ±20%     CGA9N3X7S2A106K230KB       ±20%     CGA9N3X7S2A106M230KB	3.5μι	3223	2.00±0.20	±20%	CGA6M3X7S2A335M200AB
±20%     CGA8M3X752A335M200KB       4.7μF     3225     2.00±0.20     ±10%     CGA6M3X752A475K200AB       ±20%     CGA6M3X752A475M200AB     ±20%     CGA6M3X752A475M200AB       ±50%     ±20%     CGA8N3X752A475K230KB       ±20%     CGA9M3X752A475M230KB       ±20%     CGA9M3X752A685K200KB       ±20%     CGA9M3X752A685K200KB       ±20%     CGA9M3X752A685M200KB       ±20%     CGA9N3X752A106K230KB       ±20%     CGA9N3X752A106K230KB       ±20%     CGA9N3X752A106M230KB		4532	2 00+0 20	±10%	CGA8M3X7S2A335K200KB
$\begin{array}{c} 4.7 \mu F \\ \hline 4.532 \\ \hline 2.00 \pm 0.20 \\ \hline \\ 4532 \\ \hline 2.30 \pm 0.20 \\ \hline \\ 2.30 \pm 0.20 \\ \hline \\ 2.00 \pm 0.2$		4302	2.00±0.20	±20%	CGA8M3X7S2A335M200KB
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		3225	2 00+0 20	±10%	CGA6M3X7S2A475K200AB
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	4 7uE	3223	2.00±0.20	±20%	CGA6M3X7S2A475M200AB
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	+. <i>ι</i> μΓ	4532	2 30+0 20	±10%	CGA8N3X7S2A475K230KB
6.8μF     5750     2.00±0.20     ±20%     CGA9M3X7S2A685M200KB       10μF     5750     2.30±0.20     ±10%     CGA9N3X7S2A106K230KB       ±20%     CGA9N3X7S2A106M230KB		7002	2.00±0.20	±20%	CGA8N3X7S2A475M230KB
$\frac{\pm 20\%}{10\mu F} = \frac{\pm 20\%}{5750} = \frac{\pm 10\%}{2.30\pm 0.20} = \frac{\pm 10\%}{\pm 20\%} = \frac{\text{CGA9N3X7S2A106K230KB}}{\text{CGA9N3X7S2A106M230KB}}$	6 8uF	5750	2 00+0 20	±10%	CGA9M3X7S2A685K200KB
10μF 5750 2.30±0.20 ±20% CGA9N3X7S2A106M230KB		3730	2.00±0.20		CGA9M3X7S2A685M200KB
±20% CGA9N3X7S2A106M230KB	10uF	5750	2 30+0 20	±10%	CGA9N3X7S2A106K230KB
15μF 5750 2.50±0.30 ±20% CGA9P3X7S2A156M250KB			2.0020.20		
	15μF	5750	2.50±0.30	±20%	CGA9P3X7S2A156M250KB

<sup>■</sup> Gray item: The product which is not recommended to a new design.



# Temperature characteristics: X7T (-55 to +125°C, +22, -33%)

Canaditanaa	Dimensions	Thickness	Capacitance	Catalog number		
Japachance	Dimensions	(mm)	tolerance	Rated voltage Edc: 630V	Rated voltage Edc: 450V	Rated voltage Edc: 250V
	2012	1.25±0.20	±10%		CGA4J4X7T2W223K125AA	
22nF	2012	1.25±0.20	±20%		CGA4J4X7T2W223M125AA	
22115	3216	1.15±0.15	±10%	CGA5H1X7T2J223K115AC		
	3210	1.15±0.15	±20%	CGA5H1X7T2J223M115AC		
	2012	1.25±0.20	±10%		CGA4J4X7T2W333K125AA	CGA4J3X7T2E333K125AA
۰۰- ۳	2012	1.25±0.20	±20%		CGA4J4X7T2W333M125AA	CGA4J3X7T2E333M125A
33nF	2010	1.15.0.15	±10%	CGA5H1X7T2J333K115AC		
	3216	1.15±0.15	±20%	CGA5H1X7T2J333M115AC		
	2012	1.25±0.20	±10%		CGA4J4X7T2W473K125AA	CGA4J3X7T2E473K125AA
47nF	2012	1.25±0.20	±20%		CGA4J4X7T2W473M125AA	CGA4J3X7T2E473M125A/
47111	3216	1.60±0.20	±10%	CGA5L1X7T2J473K160AC		
	3210	1.00±0.20	±20%	CGA5L1X7T2J473M160AC		
	2012	1.25±0.20	±10%			CGA4J3X7T2E683K125AA
68nF	2012	1.25±0.20	±20%			CGA4J3X7T2E683M125A/
OOH	3216	1.30±0.20	±10%		CGA5K4X7T2W683K130AA	
	3210	1.30±0.20	±20%		CGA5K4X7T2W683M130AA	
	2012	1.25±0.20	±10%			CGA4J3X7T2E104K125AA
	2012	1.25±0.20	±20%			CGA4J3X7T2E104M125A/
100nF	3216	1.60±0.20	±10%		CGA5L4X7T2W104K160AA	
100111	3210	1.00±0.20	±20%		CGA5L4X7T2W104M160AA	
	3225	1.60±0.20	±10%	CGA6L1X7T2J104K160AC		
	3223	1.60±0.20	±20%	CGA6L1X7T2J104M160AC		
	3216	1.30±0.20	±10%			CGA5K3X7T2E154K130A/
	3210	1.30±0.20	±20%			CGA5K3X7T2E154M130A
150nE	3225 2.00±0.20	±10%	CGA6M1X7T2J154K200AC			
150nF 3225	3223	2.0010.20	±20%	CGA6M1X7T2J154M200AC		
4500	4532	1.60±0.20	±10%	CGA8L1X7T2J154K160KC		
	4332	1.00±0.20	±20%	CGA8L1X7T2J154M160KC		
	3216	1.60±0.20	±10%			CGA5L3X7T2E224K160AA
	3210	1.00±0.20	±20%			CGA5L3X7T2E224M160A
220nF	3225	2.00±0.20	±10%		CGA6M4X7T2W224K200AA	
220111	3223	2.00±0.20	±20%		CGA6M4X7T2W224M200AA	
	4532	2.00±0.20	±10%	CGA8M1X7T2J224K200KC		
	4332	2.00±0.20	±20%	CGA8M1X7T2J224M200KC		
	3225	2.00±0.20	±10%			CGA6M3X7T2E334K200A
	3223	2.00±0.20	±20%			CGA6M3X7T2E334M200A
330nF	4532	1.60±0.20	±10%		CGA8L4X7T2W334K160KA	
330111	4332	1.00±0.20	±20%		CGA8L4X7T2W334M160KA	
	5750	2.00±0.20	±10%	CGA9M1X7T2J334K200KC		
	3730	2.00±0.20	±20%	CGA9M1X7T2J334M200KC		
	4532	2.30±0.20	±10%		CGA8N4X7T2W474K230KA	
470nF	4332	2.30±0.20	±20%		CGA8N4X7T2W474M230KA	
470111	5750	2.50±0.30	±10%	CGA9P1X7T2J474K250KC		
	3730	2.50±0.50	±20%	CGA9P1X7T2J474M250KC		
	4522	1.60±0.20	±10%			CGA8L3X7T2E684K160KA
4532 680nF ————————————————————————————————————	1.00±0.20	±20%			CGA8L3X7T2E684M160K/	
	2.00±0.20	±10%		CGA9M4X7T2W684K200KA		
	3730	2.00±0.20	±20%		CGA9M4X7T2W684M200KA	
	4532	2.50±0.30	±10%			CGA8P3X7T2E105K250K/
4532 1µF ————	7002	2.50±0.50	±20%			CGA8P3X7T2E105M250K
·μ·	5750	2.50±0.30	±10%		CGA9P4X7T2W105K250KA	
	3730	2.50±0.50	±20%		CGA9P4X7T2W105M250KA	
1.5µF	5750	2.00±0.20	±10%			CGA9M3X7T2E155K200K
1.υμΓ	3730	2.00±0.20	±20%			CGA9M3X7T2E155M200K
2 20-5	5750	2.50±0.30	±10%			CGA9P3X7T2E225K250KA
2.2µF	3/30	∠.50±0.30	±20%			CGA9P3X7T2E225M250KA

<sup>■</sup> Gray item: The product which is not recommended to a new design.

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NMC0402X7R103J25TRPF NMC0402X7R153K16TRPF NMC0603NPO1R8C50TRPF NMC0603NPO20J50TRPF
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NMC0805X7R224K16TRPLPF NMC0805X7R224K25TRPF NMC1206X7R102K50TRPF NMC1206X7R106K10TRPLPF
NMC1206X7R475K10TRPLPF NMC-H0805X7R472K250TRPF NMC-L0402NPO7R0C50TRPF NMC-L0603NPO2R2B50TRPF NMC-Q0402NPO8R2D200TRPF C1206C101J1GAC C1608C0G2A221J C1608X7R1E334K C2012C0G2A472J 2220J2K00562KXT
1812J2K00332KXT CDR31BX103AKWR CDR33BX104AKUR CDR33BX683AKUS CGA2B2C0G1H010C CGA2B2C0G1H040C
CGA2B2C0G1H050C CGA2B2C0G1H060D CGA2B2C0G1H070D CGA2B2C0G1H120J CGA2B2C0G1H391J
CGA2B2C0G1H3R3C