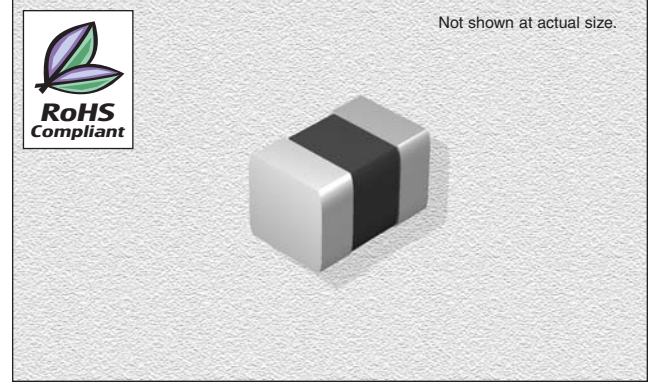


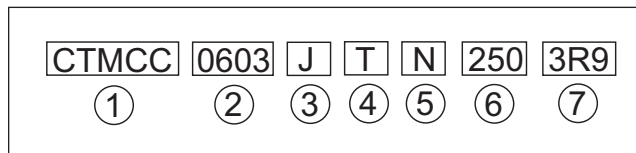
CTMCC Series

FEATURES

- Wide capacitance range, extremely compact size.
- Low inductance of capacitor for high frequency application.
- Excellent solderability and resistance to soldering heat, suitable for flow and reflow soldering.
- Adaptable to high-speed surface mount assembly
- Conforms to EIA-RC3402, and also compatible with EIA-RS198 and IEC PUB. 384-10



PART NUMBERING



1. Product Type

Product Type	
CTMCC	General Capacitors, Ultra-small Capacitors, Middle and High Voltage Capacitors

2. Dimensions (LxW)

EIA	Dimensions(LxW)
0201	0.6x0.3mm
0402	1.0x0.5mm
0603	1.6x0.8mm
0805	2.0x1.25mm
1206	3.2x1.6mm
1210	3.2x2.5mm
1808	4.5x2.03mm
1812	4.5x3.2mm

3. Capacitance Tolerance

Codes	Capacitance Tolerance	Capacitance Tolerance		
		NPO	X7R	Y5V
B	±0.1pF (cap≤5pF)	v		
C	±0.25pF (cap≤5pF)	v		
D	±0.5pF (5pF<Cap<10pF)	v		
F	±1.0%	v		
G	±2.0%	v		
J	±5.0%	v	v	
K	±10%	v	v	
M	±20%		v	v
Z	-20%/+80%			v

*Storage Temperature: 25±3°C; >80%RH
 Termination: Ag/Ni/Sn for NPO dielectric
 Cu/Ni/Sn for X7R, Y5V, X5R and X5S dielectric

4. Packaging

Codes	Type
T	Tape & Reel

5. Dielectric

Codes	Type
N	COG(NPO)
B	X7R
F	Y5V
X	X5R
S	X6S

6. Voltage

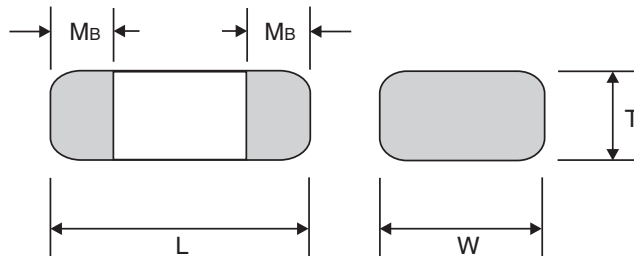
Codes	Voltage
6V3	6.3V
100	10V
160	16V
250	25V
500	50V
101	100V
102	1000V
202	2000V
302	3000V

7. Capacitance

Codes	Capacitance
3R9	3.9pF
150	15pF
181	180pF
225	2.2μF
476	47μF

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DIMENSIONS & PACKAGING



SIZE Inch (mm)	L (mm)	W (mm)	T / Symbol (mm)		Mb	Packaging (7" Reel)	
						Paper tape	Plastic tape
0201 (0603)	0.6±0.03	0.3±0.03	0.3±0.03	L	0.15±0.05	15K	
0402 (1005)	1.00±0.05	0.50±0.05	0.50±0.05	N	0.25 +0.05 / -0.10	10K	
0603 (1608)	1.60±0.10	0.80±0.10	0.80±0.07	S	0.40±0.15	4K	
	1.60 +0.15 / -0.10	0.80 +0.15 / -0.10	0.80 +0.05 / -0.10	X		4K	
0805 (2012)	2.00±0.15	1.25±0.10	0.60±0.10	A	0.50±0.20	4K	
			0.80±0.10	B		4K	
			1.25±0.10	D			3K
	2.00±0.20	1.25±0.20	1.25±0.20	I			3K
1206 (3216)	3.20±0.15	1.60±0.15	0.80±0.10	B	0.60±0.20	4K	
			0.95±0.10	C			3K
			1.15±0.15	J			3K
			1.25±0.10	D			3K
			1.60±0.20	G			2K
	3.20 +0.30 / -0.10	1.60 +0.30 / -0.10	1.60 +0.30 / -0.10	P			
1210 (3225)	3.20±0.30	2.50±0.20	0.95±0.10	C	0.75±0.25		3K
			1.25±0.10	D			3K
			1.60±0.20	G			2K
	3.20±0.40	2.50±0.30	2.00±0.20	K			1K
			2.50±0.30	M			1K
1808 (4520)	4.50±0.40	2.03±0.25	1.25±0.10	D	0.50±0.25*		2K
			2.00±0.20	K			1K
			1.25±0.10	D			1K
1812 (4532)	4.50±0.40	3.20±0.30	2.00±0.20	K	0.50±0.25*		1K

* For Middle and High Voltage Capacitors

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CTMCC Series

CAPACITANCE & VOLTAGE (NPO)

DIELECTRIC		NPO																										
EIA	Size	0402					0603					0805					1206					1210					1812	
Code	VDCW	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	50V	100V
0R5	0.5pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A												
0R6	0.6pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A												
0R7	0.7pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A												
0R8	0.8pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A												
0R9	0.9pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A												
1R0	1.0	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A												
1R2	1.2	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A												
1R5	1.5	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
1R8	1.8	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
2R2	2.2	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
2R7	2.7	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
3R3	3.3	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
3R9	3.9	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
4R7	4.7	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
5R6	5.6	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
6R8	6.8	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
8R2	8.2	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B							
100	10pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B					C	D	
120	12	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B					C	D	
150	15	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B					C	D	
180	18	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B					C	D	
220	22	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
270	27	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
330	33	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
390	39	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
470	47	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
560	56	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
680	68	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
820	82	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
101	100pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
121	120	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
151	150	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
181	180	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
221	220	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
271	270	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
331	330	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A	B	B	B	B	B	C	C	C	C	C	C	D
391	390	N	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
471	470	N	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
561	560						S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
681	680				N		S	S	S	S		B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
821	820						S	S	S	S		B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
102	1000pF						S	S	S	S		B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
122	1200						S	S	S	S		B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
152	1500						S	S	S	S		B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
182	1800						S	S	S	S		B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
222	2200						S	S	S	S		B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	D
272	2700						S	S				D	D	D	D	D	B	B	B	B	B	C	C	C	C	C	C	D
332	3300						S	S				D	D	D	D	D	B	B	B	B	B	C	C	C	C	C	C	D
392	3900											D	D	D	D	D	B	B	B	B	B	C	C	C	C	C	C	D
472	4700											D	D	D	D		B	B	B	B	B	C	C	C	C	C	C	D
562	5600											D	D				B	B	B	B	B	C	C	C	C	C	C	D
682	6800											D	D		I		C	C	C	C	C	C	C	C	C	C	C	D
822	8200											D	D		I		C	C	C	C	C	C	C	C	C	C	C	D
103	0.010µF											D	D		I		D	D	D	D		C	C	C	C	C	C	D
123	0.012											D	D				D	D	P	P		C	C	D	D	D	D	D
153	0.015																D	D	P	P		C	C	D	D	D	D	D
183	0.018																D	D									D	D
223	0.022																D	D									D	D
273	0.027																D	D									D	D
333	0.033																D	D									D	D
393	0.039																G	G									D	D

The letter in each cell represent the symbol of the product thickness

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Manufacturer of Inductors, Chokes, Coils, Beads, Transformers & Toroids

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CTMCC Series

CAPACITANCE & VOLTAGE (NPO 200V~3KV)

DIELECTRIC		NPO																											
EIA	Size	0603		0805				1206					1210					1808			1812								
Code	VDCW	200	250	200	250	500	630	200	250	500	630	1000	2000	200	250	500	630	1000	2000	1000	2000	3000	200	250	500	630	1000	2000	3000
0R5	0.5pF			A	A	A	A																						
1R0	1			A	A	A	A																						
1R2	1.2			A	A	A	A																						
1R5	1.5			A	A	A	A	B	B	B	B	B	B																
1R8	1.8			A	A	A	A	B	B	B	B	B	B																
2R2	2.2			A	A	A	A	B	B	B	B	B	B							D	D	D							
2R7	2.7			A	A	A	A	B	B	B	B	B	B							D	D	D							
3R3	3.3			A	A	A	A	B	B	B	B	B	B							D	D	D							
3R9	3.9			A	A	A	A	B	B	B	B	B	B							D	D	D							
4R7	4.7			A	A	A	A	B	B	B	B	B	B							D	D	D							
5R6	5.6			A	A	A	A	B	B	B	B	B	B							D	D	D							
6R8	6.8			A	A	A	A	B	B	B	B	B	B							D	D	D							
8R2	8.2			A	A	A	A	B	B	B	B	B	B							D	D	D							
100	10pF			A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
120	12			A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
150	15			A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
180	18			A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
220	22	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
270	27	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
330	33	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
390	39	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
470	47	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D
560	56	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D
680	68	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D
820	82	S	S	A	A	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D
101	100pF	S	S	A	A	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D
121	120			A	A	D	D	B	B	B	B	B	D	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D
151	150			B	B	D	D	B	B	B	B	C	D	C	C	C	C	C	D	D	D	D	D	D	D	D	D	D	D
181	180			B	B	D	D	B	B	B	B	C	G	C	C	C	C	C	D	D	D	K	D	D	D	D	D	D	D
221	220			D	D	D	D	B	B	B	B	D	G	C	C	C	C	C	D	D	D	K	D	D	D	D	D	D	D
271	270			D	D	D	D	B	B	C	C	D		C	C	C	C	C		D	D	K	D	D	D	D	D	D	K
331	330			D	D	D	D	B	B	C	C	G		C	C	C	C	D		D	D	K	D	D	D	D	D	D	K
391	390			D	D	D	D	B	B	C	C	G		C	C	C	C	D		D	K		D	D	D	D	D	D	K
471	470			D				C	C	C	C	G		C	C	C	C	D		D	K		D	D	D	D	D	D	K
561	560			D				C	C	C	C			C	C	C	C			K	K		D	D	D	D	D	D	
681	680			D				C	C	C	C			C	C	C	C			K	K		D	D	D	D	D	D	K
821	820			D				C	D	D	D			C	C	C	C			K			D	D	D	D	D	D	K
102	1000pF							C	G	G	G			C	C	C	C			K			D	D	D	D	K	K	
122	1200							C						D	D	D	D						D	D	D	D	K		
152	1500							C						D	D	D	D						D	D	D	D	K		
182	1800							D						D	D	D	D						D	D	D	D			
222	2200							D						D	D								D	D	D	D			
272	2700													D	D								D	D	D	D			
332	3300													D									D	D	D	D			
392	3900													D									D						
472	4700																						D						
562	5600																						D						
682	6800																						D						
822	8200																						D						
103	0.01μF																												
123	0.012																												
153	0.015																												
183	0.018																												
223	0.022																												
273	0.027																												
333	0.033μF																												

The letter in cell is expressed the symbol of product thickness.

02.26.07



Manufacturer of Inductors, Chokes, Coils, Beads, Transformers & Toroids

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CTMCC Series

CAPACITANCE & VOLTAGE (X7R)

DIELECTRIC		X7R																												
EIA	Size	0402				0603					0805					1206					1210					1812				
Code	VDCW	10V	16V	25V	50V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
101	100pF	N	N	N	N	S	S	S	S	S	B	B	B	B	B															
121	120	N	N	N	N	S	S	S	S	S	B	B	B	B	B															
151	150	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
181	180	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
221	220	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
271	270	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
331	330	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
391	390	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
471	470	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
561	560	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
681	680	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
821	820	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B									
102	1000pF	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
122	1200	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
152	1500	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
182	1800	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
222	2200	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
272	2700	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
332	3300	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
392	3900	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
472	4700	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
562	5600	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
682	6800	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
822	8200	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
103	0.01µF	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
123	0.012	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
153	0.015	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
183	0.018	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
223	0.022	N	N	N	N	S	S	S	S	S	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
273	0.027	N	N	N	N	S	S	S	S	S	B	B	B	B	B	D	B	B	B	B	B	C	C	C	C	C	D	D	D	D
333	0.033	N	N	N	N	S	S	S	X	S	B	B	B	B	D	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
393	0.039	N	N	N	N	S	S	S	X	S	B	B	B	B	D	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
473	0.047	N	N	N	N	S	S	S	X	S	B	B	B	B	D	B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
563	0.056	N	N	N	N	S	S	S	X	S	B	B	B	B		B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
683	0.068	N	N	N	N	S	S	S	X	S	B	B	B	B		B	B	B	B	B	B	C	C	C	C	C	D	D	D	D
823	0.082	N	N	N	N	S	S	S	X	S	B	B	B	B		B	B	B	B	B	D	C	C	C	C	C	D	D	D	D
104	0.10µF	N	N	N	N	S	S	S	X	S	B	B	B	B		B	B	B	B	D		C	C	C	C	C	D	D	D	D
124	0.12	N	N	N	N	S	S	S		S	B	B	B	D		B	B	B	B	D		C	C	C	C	C	D	D	D	D
154	0.15	N	N	N	N	S	S	X		S	D	D	D	D		C	C	C	C	G		C	C	C	C	D	D	D	D	
184	0.18	N	N	N	N	S	S			S	D	D	D	I		C	C	C	C	G		C	C	C	C	D	D	D	D	
224	0.22	N	N	N	N	S	S	X		S	D	D	D	I		C	C	C	C	G		C	C	C	C	D	D	D	D	
274	0.27	N	N	N	N	X				S	D	D	D			C	C	C	D			C	C	C	G	D	D	D	D	
334	0.33	N	N	N	N	X	X			S	D	D	D	I		C	C	C	D			C	C	D	D	G	D	D	D	
394	0.39	N	N	N	N	X				S	D	D	D			C	C	J	P			C	C	D	D	M	D	D	D	D
474	0.47	N	N	N	N	X	X			S	D	D	D			J	J	J	P			C	C	D	D	M	D	D	D	K
564	0.56	N	N	N	N					S	D	D	D			J	J	J	P			D	D	D	D	M	D	D	D	K
684	0.68	N	N	N	N	X	X			S	D	D	D			J	J	J	P			D	D	D	D		D	D	D	K
824	0.82	N	N	N	N					S	D	D	D			J	J	J	P			D	D	D	D		D	D	D	K
105	1.0µF	N	N	N	N	X				S	D	D	D			J	J	J	P			D	D	D	D		D	D	D	K
225	2.2	N	N	N	N					S						J	J	P				G								
335	3.3	N	N	N	N					S						P														
475	4.7	N	N	N	N					S						P														

The letter in each cell represent the symbol of the product thickness

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CTMCC Series

CAPACITANCE & VOLTAGE (X7R 200V~3KV)

DIELECTRIC		X7R																											
EIA	Size	0805				1206				1210				1808				1812											
Code	VDCW	200	250	500	630	200	250	500	630	1000	1500	2000	200	250	500	630	1000	1000	1500	2000	3000	200	250	500	630	1000	2000	3000	
101	100pF	B	B	B ^A	B ^A																								
121	120	B	B	B ^A	B ^A																								
151	150	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	B ^A	B ^A							D ^A	D ^A	D ^A	D ^A							
181	180	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	B ^A	B ^A							D ^A	D ^A	D ^A	D ^A							
221	220	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	B ^A	B ^A							D ^A	D ^A	D ^A	D ^A							
271	270	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	B ^A	B ^A							D ^A	D ^A	D ^A	D ^A			D ^A	D ^A			
331	330	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	B ^A	B ^A							D ^A	D ^A	D ^A	K ^A			D ^A	D ^A			
391	390	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	B ^A	C ^A							D ^A	D ^A	D ^A	K ^A			D ^A	D ^A			
471	470	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	B ^A	C ^A							D ^A	D ^A	D ^A	K ^A			D ^A	D ^A			
561	560	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	C ^A	C ^A							D ^A	D ^A	D ^A	K ^A			D ^A	D ^A			
681	680	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	C ^A	C ^A							D ^A	D ^A	D ^A	K ^A			D ^A	D ^A	K ^A		
821	820	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	G ^A	G ^A							D ^A	D ^A	D ^A	K ^A			D ^A	D ^A	K ^A		
102	1000pF	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	G ^A	G ^A	C	C	C ^A	C ^A	C ^A	D ^A	D ^A	K ^A	K ^A	D	D	D ^A	D ^A	D ^A	D ^A	K ^A	
122	1200	B	B	B ^A	B ^A	B	B	B ^A	B ^A	B ^A	G ^A		C	C	C ^A	C ^A	C ^A	D ^A	D ^A	K ^A		D	D	D ^A	D ^A	D ^A	D ^A		
152	1500	B	B	B ^A	B ^A	B	B	B ^A	B ^A	C ^A	G ^A		C	C	C ^A	C ^A	C ^A	D ^A	D ^A	K ^A		D	D	D ^A	D ^A	D ^A	D ^A		
182	1800	B	B	B ^A	B ^A	B	B	B ^A	B ^A	C ^A	G ^A		C	C	C ^A	C ^A	C ^A	D ^A	D ^A	K ^A		D	D	D ^A	D ^A	D ^A	D ^A		
222	2200	B	B	B ^A	B ^A	B	B	B ^A	B ^A	D ^A	G ^A		C	C	C ^A	C ^A	C ^A	D ^A	D ^A	K ^A		D	D	D ^A	D ^A	D ^A	D ^A		
272	2700	B	B	B ^A	B ^A	B	B	B ^A	B ^A	G ^A			C	C	C ^A	C ^A	C ^A	D ^A	D ^A			D	D	D ^A	D ^A	D ^A	D ^A		
332	3300	B	B	B ^A	B ^A	B	B	B ^A	B ^A	G ^A			C	C	C ^A	C ^A	D ^A	D ^A	K ^A			D	D	D ^A	D ^A	D ^A	K ^A		
392	3900	B	B			B	B	B ^A	B ^A	G ^A			C	C	C ^A	C ^A	G ^A	D ^A				D	D	D ^A	D ^A	D ^A	K ^A		
472	4700	B	B			B	B	B ^A	B ^A				C	C	C ^A	C ^A	G ^A	D ^A				D	D	D ^A	D ^A	D ^A	K ^A		
562	5600	D	D			B	B	B ^A	B ^A				C	C	C ^A	C ^A	G ^A	K ^A				D	D	D ^A	D ^A	D ^A			
682	6800	D	D			B	B	B ^A	B ^A				C	C	C ^A	C ^A	M ^A	K ^A				D	D	D ^A	D ^A	D ^A			
822	8200	D	D			B	B	C ^A	C ^A				C	C	C ^A	C ^A	M ^A	K ^A				D	D	D ^A	D ^A	D ^A			
103	0.010µF	D	D			B	B	C ^A	C ^A				C	C	C ^A	C ^A	M ^A	K ^A				D	D	D ^A	D ^A	D ^A			
123	0.012	D	D			B	B	D ^A	D ^A				C	C	C ^A	C ^A						D	D	D ^A	D ^A	K ^A			
153	0.015	D	D			C	C	D ^A	D ^A				C	C	C ^A	C ^A						D	D	D ^A	D ^A	K ^A			
183	0.018	D	D			C	C	D ^A	D ^A				C	C	C ^A	C ^A						D	D	D ^A	D ^A				
223	0.022	D	D			C	C	G ^A	G ^A				C	C	D ^A	D ^A						D	D	D ^A	D ^A				
273	0.027					C	C	G ^A	G ^A				C	C	G ^A	G ^A						D	D	D ^A	D ^A				
333	0.033					G	G	G ^A	G ^A				C	C	G ^A	G ^A						D	D	D ^A	D ^A				
393	0.039					G	G						C	C	G ^A	G ^A						D	D	D ^A	D ^A				
473	0.047					G	G						D	D	G ^A	G ^A						D	D	D ^A	D ^A				
563	0.056					G	G						D	D	G ^A	G ^A						D	D	K ^A	K ^A				
683	0.068					G	G						G	G								D	D	K ^A	K ^A				
823	0.082					G	G						G	G								D	D	K ^A	K ^A				
104	0.10µF					G	G						G	G								D	D	K ^A	K ^A				
124	0.12												G	G								D	D						
154	0.15												M	M								K	K						
184	0.18												M	M								K	K						
224	0.22												M	M								K	K						
274	0.27																					K	K						
334	0.33																					K	K						
394	0.39																					K	K						
474	0.47																					K	K						

The letter in cell is expressed the symbol of product thickness.

The "A" mark is expressed product with Ag/Ni/Sn.



CTMCC Series

CAPACITANCE & VOLTAGE (X5R)

DIELECTRIC		X6S	X5R								
EIA	Size	0402			0603			0805	1206		
Code	VDCW	6.3V	10V	16V	6.3V	10V	16V	6.3V	6.3V	10V	16V
273	0.027 μ F			N							
333	0.033			N							
393	0.039			N							
473	0.047			N							
563	0.056		N	N							
683	0.068		N	N							
823	0.082		N	N							
104	0.10 μ F		N	N							
154	0.15										
224	0.22	N									
334	0.33					X	X				
474	0.47					X	X				
684	0.68				X	X	X				
105	1.0 μ F				X	X					
155	1.5										J
225	2.2							I		J	J
335	3.3									P	P
475	4.7							I		P	P
685	6.8								P	P	
106	10 μ F							I	P	P	
226	22 μ F										
476	47 μ F										

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CTMCC Series

CAPACITANCE & VOLTAGE (Y5V)

DIELECTRIC		Y5V																													
EIA	Size	0402				0603				0805					1206					1210					1812						
Code	VDCW	6.3	10V	16V	25V	50V	10V	16V	25V	50V	10V	16V	25V	50V	100	10V	16V	25V	50V	100	10V	16V	25V	50V	100	10V	16V	25V	50V	100	
103	0.010µF		N	N	N	N	S	S	S	S	A	A	A	A	B	B	B	B	B	B					C					D	
153	0.015		N	N	N	N	S	S	S	S	A	A	A	A	B	B	B	B	B	B					C					D	
223	0.022		N	N	N	N	S	S	S	S	A	A	A	A	B	B	B	B	B	B					C					D	
333	0.033		N	N	N	N	S	S	S	S	A	A	A	A	B	B	B	B	B	B					C					D	
473	0.047		N	N	N		S	S	S	S	A	A	A	A	B	B	B	B	B	B					C					D	
683	0.068		N	N	N		S	S	S	S	A	A	A	A	B	B	B	B	B	B					C					D	
104	0.10µF		N	N	N		S	S	S	S	A	A	A	A	B	B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D
154	0.15		N				S	S	S	S	A	A	A	A		B	B	B	B	B	C	C	C	C	C	C	D	D	D	D	D
224	0.22		N				S	S	S	S	A	A	A	A		B	B	B	B	C	C	C	C	C	C	D	D	D	D	D	
334	0.33	N	N				S	S	S		B	B	B	B		B	B	B	B		C	C	C	C	C	D	D	D	D	D	
474	0.47	N	N				S	S	S		B	B	B	B		B	B	B	B		C	C	C	C		D	D	D	D	D	
684	0.68	N					S	X			B	B	D			B	B	B	B		C	C	C	C		D	D	D	D	D	
105	1.0µF	N	N				S	X	X		B	B	D	I		C	C	C	C		C	C	C	C		D	D	D	D	D	
155	1.5						S				D	D					C	C						C					D		
225	2.2						S				D	D					C	C						C					D		
335	3.3										D	D				J	J	J						C					D		
475	4.7										D	D				J	J	J						C	D				D		
685	6.8										I					J	J							C	G				D		
106	10µF										I					J	J							D	G				D		
226	22µF															P								K							
476	47µF																							K							

The letter in each cell represent the symbol of the product thickness

CAPACITANCE & VOLTAGE (Y5V 200V~250V)

DIELECTRIC		Y5V							
EIA	Size	0805		1206		1210		1812	
Code	VDCW	200	250	200	250	200	250	200	250
103	0.010µF	B	B	B	B	C	C	D	D
153	0.015	B	B	B	B	C	C	D	D
223	0.022	B	B	B	B	C	C	D	D
333	0.033	B	B	B	B	C	C	D	D
473	0.047	B	B	B	B	C	C	D	D
683	0.068	B	B	B	B	C	C	D	D
104	0.10µF			B	B	C	C	D	D
154	0.15			C	C	C	C	D	D
224	0.22							D	D
334	0.33							D	D
474	0.47							D	D
684	0.68							D	D
105	1µF								

The letter in cell is expressed the symbol of product thickness.



ELECTRICAL DATA

Dielectric	NPO	X7R	Y5V
Size	0402,0603,0805,1206,1210,1808,1812		
Capacitance*	0.5pF~0.039uF	100pF~1uF	10nF~1uF
Capacitance tolerance	Cap≤5pF:B(±0.1pF), C(±0.25pF) 5pF<Cap<10pF:C(±0.25%), D(±0.50pF) Cap≥10pF:F(±0.1%), G(±2%), J(±5%)	J (±5%) K (±10%)	M (±20%) Z (-20 / +80%)
Rated voltage (WVDC)	16V,25V,50V,100V	10V,16V,25V,50V,100V	
Q*	Cap<30pF:Q≥400 +20C Cap≥30pF:Q≥ 1000	Note: 1	
Insulation resistance at Ur**	≥10GΩ	≥10GΩ or RxC≥500Ω-F Whichever is less	
Operating temperature	-55°C to +125°C		-25°C to +85°C
Capacitance change	±30 ppm	±15%	+30/-80%
Termination	Ni/Sn(lead-free termination)		

* Measured at the condition of 30-70% related humidity

NPO: Apply 1.0±0.2Vrms, 1.0MHz±10% for Cap≤1000pF and 1.0±0.2Vrms, 1.0kHz±10% for Cap>1000pF, 25° ambient temp.

X7R: Apply 1.0±0.2Vrms, 1.0kHz±10% at the condition of 25°C ambient temperature

Y5V: Apply 1.0±0.2Vrms, 1.0kHz±10% at the condition of 20°C ambient temperature

Note 1:
X7R / X5R

Y5V

Rated vol.	D.F.	EXCEPTION OF D.F.		Rated vol.	D.F.	EXCEPTION OF D.F.	
≤50V	≤2.5%	≤3%	0603≥0.047uF;0805≥0.18uF 1206≥0.47uF	≥50V	≤5.0%	-----	-----
25V	≤3.5%	≤5%	0805≥1uF;1210≥10uF	25V	≤5.0%	≤7%	0603≥0.1uF;0805≥0.33uF 1206≥1uF;1210≥4.7uF
		≤7%	0603≥0.33uF			≤9%	0402≥0.068uF
16V	≤3.5%	≤5%	0402≥0.033uF;0603≥0.15uF 0805≥0.68uF;1206≥2.2uF	16V(C<1.0uF)	≤7.0%	≤9%	0402≥0.068uF;0603≥0.68uF
		≤10%	1210≥22uF	16V(C≥1.0uF)	≤9.0%	≤12.5%	0805≥4.7uF;1206≥10uF 1210≥22uF;1812≥47uF
10V	≤5.0%	≤10%	0603≥1uF;0805≥2.2uF 1210≥22uF	10V	≤12.5	-----	-----

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