

Multilayer Ceramic Capacitor
Type CMA

Δ Application

- Guaranteed long life (2,000 hours at 85° C)

Our Axial leaded, Epoxy Coated Multilayer Ceramic Capacitors are built by superior moisture and shock resistant epoxy coating. These capacitors are supplied in both bulk or taping and reel package for automatic insertion and sequencing with any leaded components.

Δ Ordering Code

<u>CMA</u>	<u>101</u>	<u>CG</u>	<u>1H</u>	<u>J</u>
1	2	3	4	5

1. TYPE

CMA	AXIAL MULTILAYER CERAMIC CAPACITOR
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2. RATED CAPACITANCE

CODE	
1D5	1.5
102	1,000
223	22,000
104	100,000

3. TEMPERATURE CHARACTERISTICS

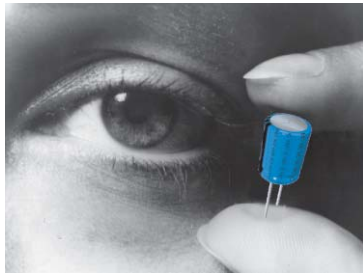
CODE	NPO	CODE	X7R	Z5U	Y5V
TEMP COEFF. (PPM/°C)	0±30	CAP CHANGE (%)	±15	+22, -56	+22, -82

4. RATED VOLTAGE

CODE	
1C	16V
1E	25V
1H	50V
1F	63V
2A	100V
2B	200V
2H	500V

5. TOLERANCE

CODE		CODE	
B	±0.1PF	J	±5%
C	±0.25PF	K	±10%
D	±0.5PF	M	±20%
F	±1PF	Z	+80% -20%
G	±2PF	P	+100% -0%



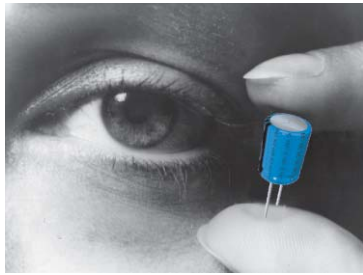
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Spec. \ T.C.		NPO				X7R				Z5U		Y5V	
Size		R15		R18		R15		R18		R15	R18	R15	R18
CAP / WVDC		50	100	50	100	50	100	50	100	50		50	
1-100pF	1-100pF	Available	Available			Available	Available						
120	121												
150	151												
180	181												
220	221												
270	271												
330	331												
390	391												
470	471												
560	561												
680	681												
820	821												
1000	102												
1200	122												
1500	152												
1800	182												
2200	222												
2700	272												
3300	332												
3900	392												
4700	472												
5600	562												
6800	682												
8200	822												
0.01uF	103									Available		Available	
0.012	123												
0.015	153												
0.018	183												
0.022	223												
0.027	273												
0.033	333												
0.039	393												
0.047	473												
0.056	563												
0.068	683												
0.082	823												
0.10	104												
0.12	124												
0.15	154												
0.18	184												
0.22	224												
0.33	334												
0.47	474												
0.56	564												
0.68	684												
0.82	824												
1.0	105												
1.5	155												
2.2	225												

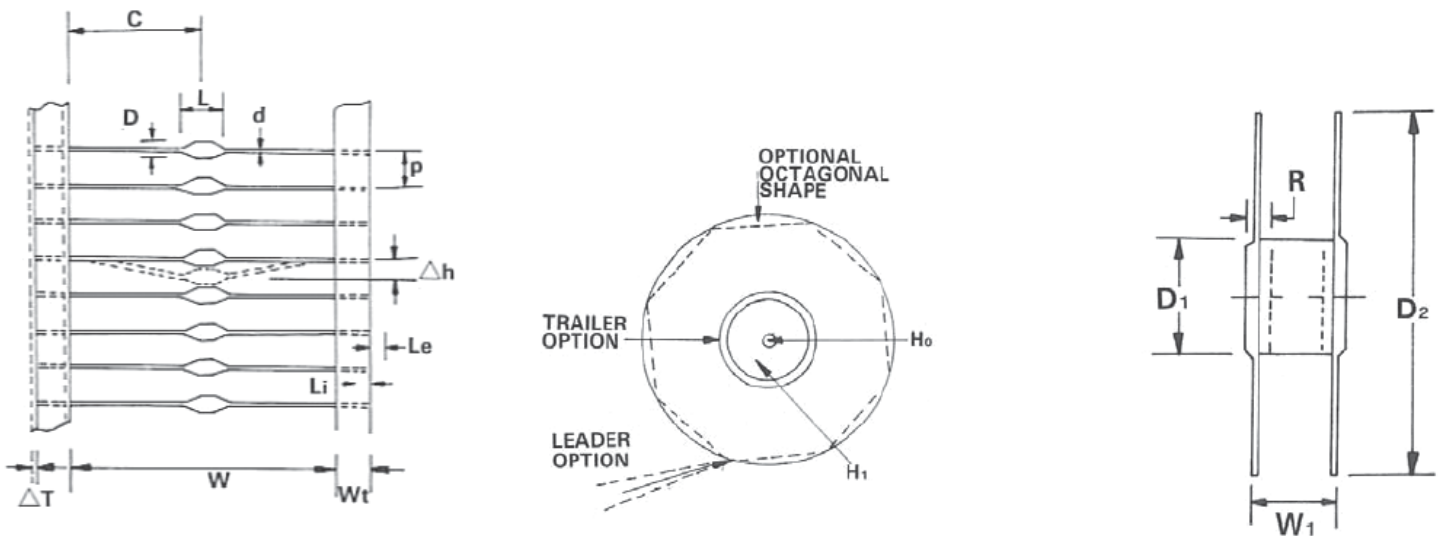
Available
Not Available

Fixed Component Capacitors



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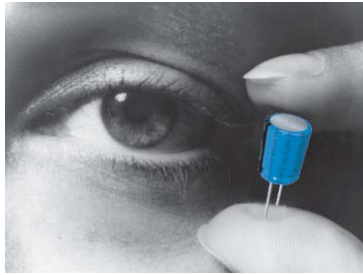
Δ Dimensions



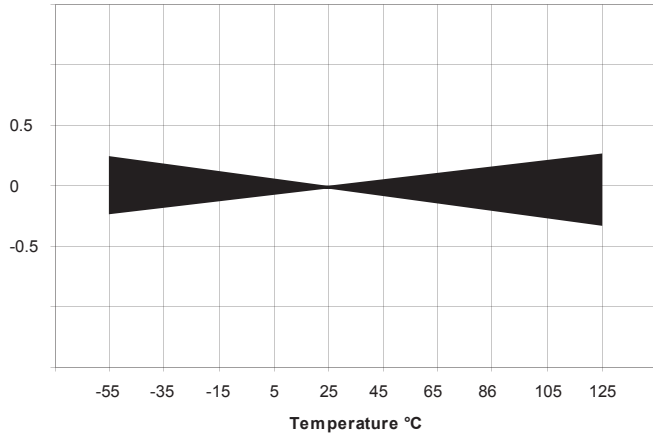
Description	Symbol	Dimensions in [mm]
Pitch of Component	P	0.200±0.020 [5.08±0.51]
Cumulative Tolerance of P over 5 consecutive units		±0.0059 [±0.15]
Tape Width	Wt	0.236±0.039 [6.0±1.0]
Lead Wire Protrusion	Le	0.236±0.039 [6.0±1.0]
Lead Extensions into Tape	Li	0.062 max [0.8]
Offset Between Tapes	ΔT	0.031 max [0.8]
Width Between Tapes	Wt	2.06±0.062 [52.37±1.57]
Pilot Hole DIA	H ₁	0.315 [8.0]
Centered	C	±0.030 [±0.76]
Core Diameter	D ₁	1.3756-3.260 [34.90-92.10]
Reel Diameter	D ₂	14 max [355.60]
Core Width	W ₁	2.750±0.060 [69.85±1.52]
Recess Width	R	0.374 min [9.5]
Arbor Hole	H ₀	0.510-0.608 [15.5-18.0]
Deflection From Nominal Position	ΔH	0.074 max [1.19]
Leader Option	L	12 min [304.8]

Δ Packaging Quantity

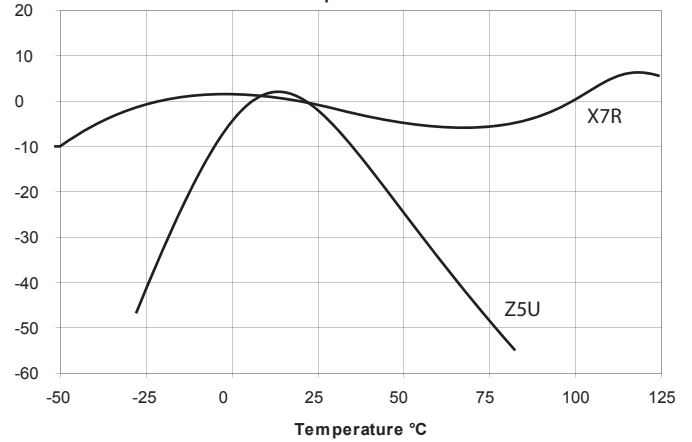
Size Code	Taping Type		Bulk Type
	Quantity/Reel	Quantity/Box	Quantity/Bag
R15	8,000	5,000	1,000
R20	8,000	5,000	1,000



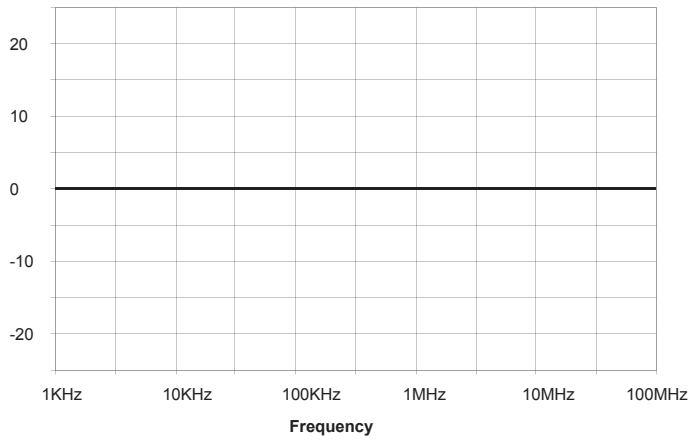
NPO Temperature Coefficient



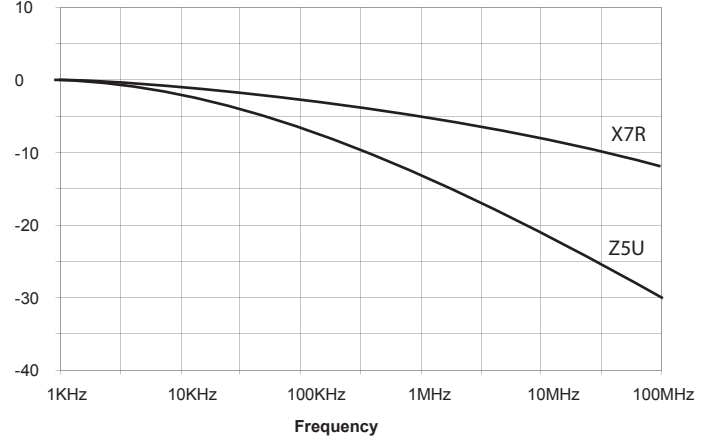
X7R/Z5U Temperature Coefficient



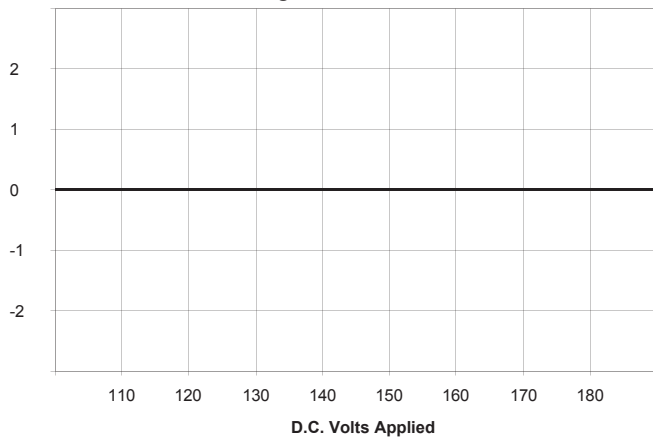
NPO Δ Capacitance vs. Frequency



X7R/Z5U Δ Capacitance vs. Frequency



NPO Voltage Coefficient



X7R/Z5U Voltage Coefficient

