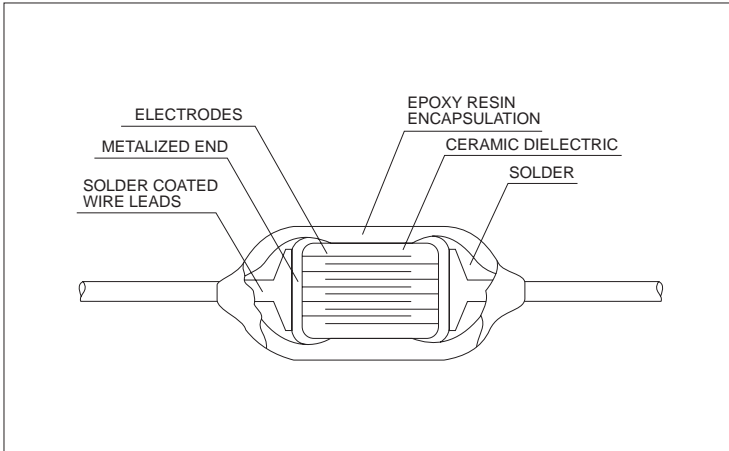




# Multilayer Ceramic Capacitors

Axial-Leaded, Epoxy • Coated



## Introduction

T.S.C. Axial-Leaded Epoxy coated multilayer ceramic chip capacitors are manufactured with modern proven technology exchanged with a U.S. based manufacturer. The process features a high degree of mechanization, operating under precise control while using the highest quality material. A continuous quality assurance program is also maintained to ensure consistent high quality capacitors. T.S.C. capacitors feature superior humidity characteristics, longer life, lower inductance.

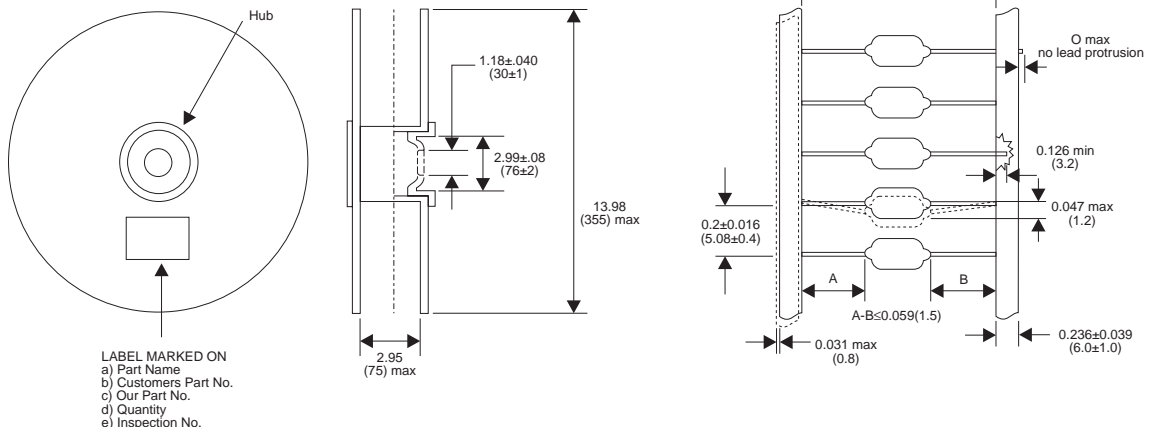
## Features

- Wide capacitance, T.C., voltage and tolerance range
- Industry standard sizes
- Tape and Reel available for auto-insertion
- Marking standard or to customer specification

## General Specifications

Code Dielectric EIA	COG	X7R	Z5U/Y5V
Temperature Characteristics	0±30ppm/°C, C>20 pF 0+120ppm/°C, C≤20pF -40	DC±15% maximum over -55°C to +125°C	DC+22%, -56 maximum over +10°C to +85°C
Category (Operating) Temperature Range	-55°C to +125°C	-55°C to +125°C	-25°C to +85°C
Measuring Conditions for Capacitance and D.F.	1MHz, 1 Vrms, C≤1000pF 1KHz, 1 Vrms, C>1000pF	1KHz, 1 Vrms	1KHz, 0.5 Vrms
Dissipation Factor (D.F.) and Tangent of Loss Angle (tan ∞)	≤0.15%	≤2.5%	≤4.0%
Insulation Resistance (I.R.) after 60 secs charging at rated Voltage 25°C	≥100 Gohms or ≤1,000 MΩ • μF whichever is less	≥100 Gohms or ≤1,000 MΩ • μF whichever is less	≥100 Gohms or ≤1,000 MΩ • μF whichever is less
Voltage Proof, 25°C	2.5xRated Voltage	2.5xRated Voltage	2.5xRated Voltage
Capacitance Aging	0	=1.5% per decade hour	=5% per decade hour

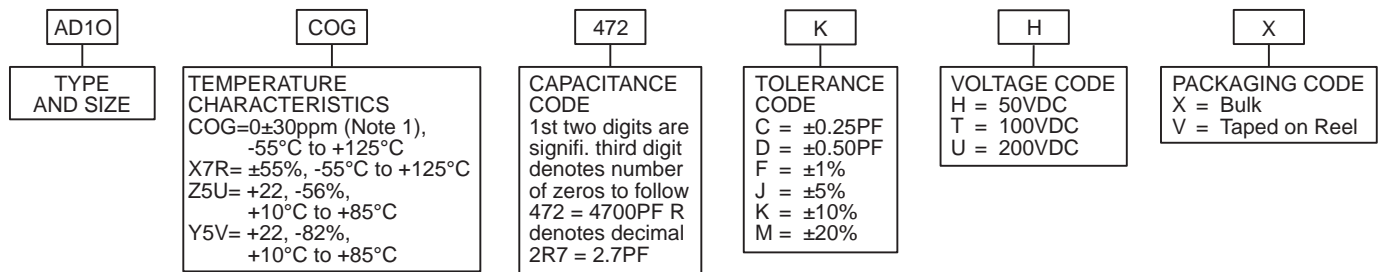
## Tape & Reel Dimensions: in.(mm)



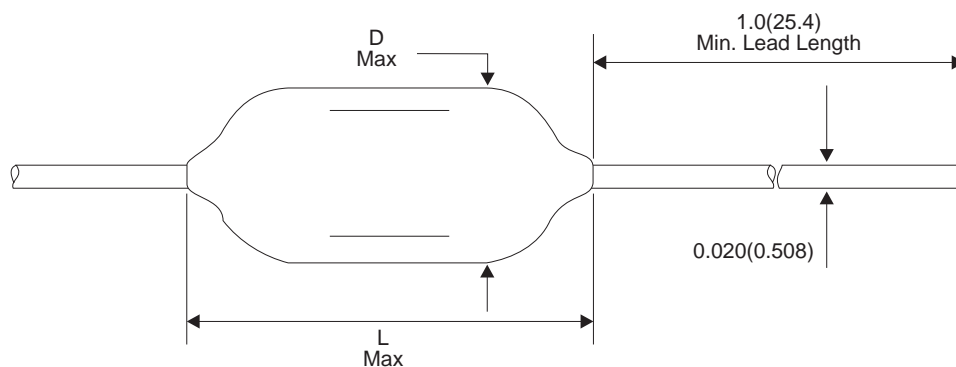


# Multilayer Ceramic Capacitors

## Part Number System



### Dimensions Inches (Millimeters)



EIA Characteristics	Dimensions: Inches (Millimeters)		
Type and Size	AD10	AD20	AD30
Length L	.170 (4.32)	.260 (6.60)	.290 (7.37)
Diameter D	.100 (2.54)	.100 (2.54)	.150 (3.81)

### Marking

- Capacitance are marked in 3 digits for capacitance above 100PF, and marked in actual value for capacitance 100PF and below
- Capacitance tolerance are marked in code symbol.
- Temperature Characteristics: **C=COG, X=X7R, Z=Z5U, Y=Y5V**

SIZE CODE	Capacitance	Tolerance	Rated Voltage	Temp. Char.
AD 10	0	-----	-----	-----
AD 20	0	0	0	-----
AD 30	0	0	0	0



# Multilayer Ceramic Capacitors

## Capacitance Range

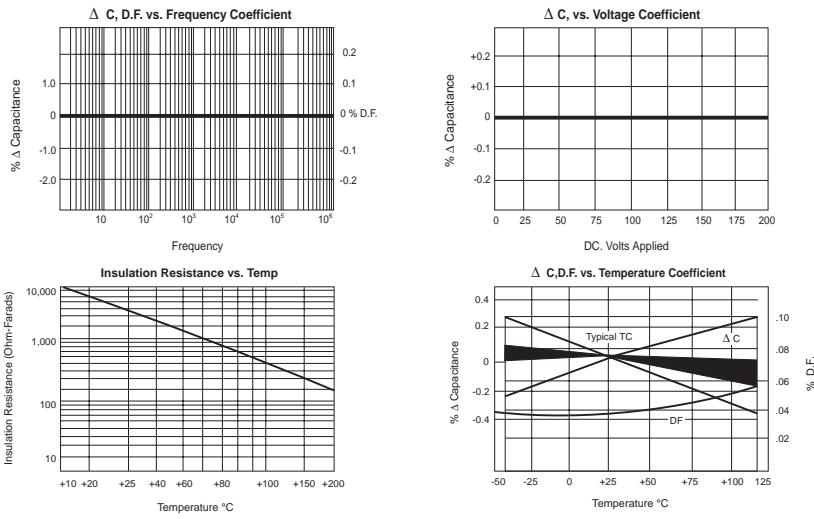
Dielectric Code		COG						X7R						<input type="checkbox"/> Z5U <input type="checkbox"/> Z5U Y5V <input type="checkbox"/> Y5V							
Size Code		AD10		AD20		AD30		AD10		AD20		AD30		AD10		AD20		AD30			
W V.DC		50	100	50	100	50	100	50	100	50	100	50	100	50	100	25	50	25	50	25	50
Cap																					
10	100																				
12	120																				
15	150																				
18	180																				
22	220																				
27	270																				
33	330																				
39	390																				
47	470																				
56	560																				
68	680																				
82	820																				
100	101																				
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																				
.01	103																				
.012	123																				
.015	153																				
.018	183																				
.022	223																				
.027	273																				
.033	333																				
.047	473																				
.056	563																				
.068	683																				
.082	823																				
.1	104																				
.12	124																				
.15	154																				
.18	184																				
.22	224																				
.27	274																				
.33	334																				
.39	394																				
.47	474																				



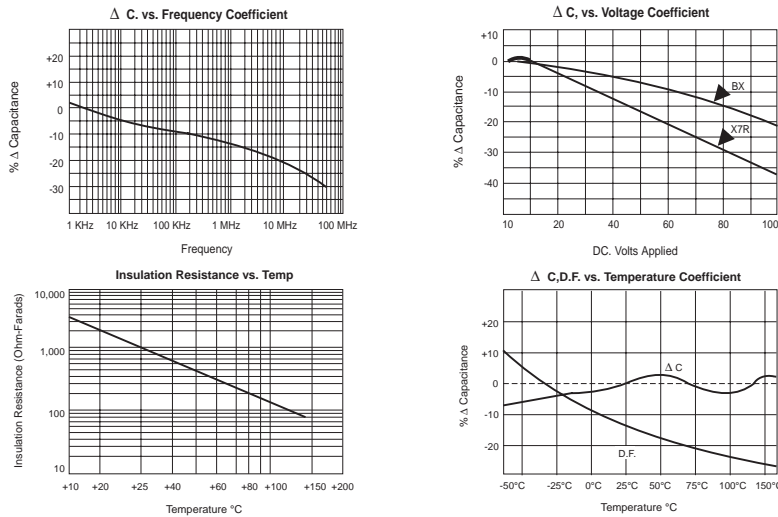
# Multilayer Ceramic Capacitors

## Dielectric Characteristics

NPO/COG



BX/X7R



Z5U/Y5V

