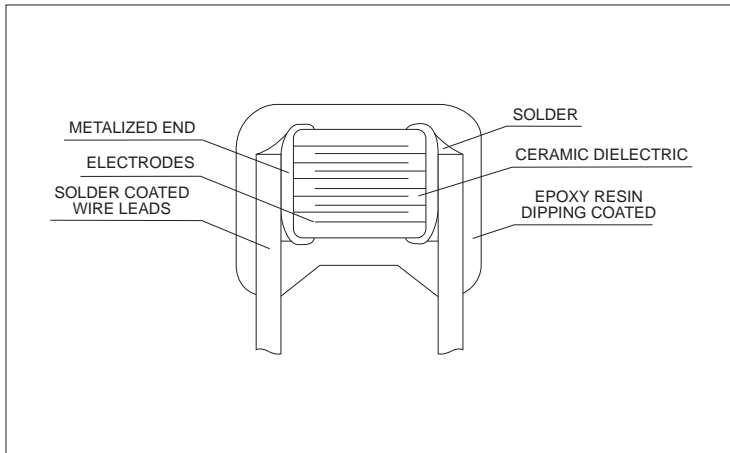




# Multilayer Ceramic Capacitors

Radial-Leaded, Epoxy • Dipped



## 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.

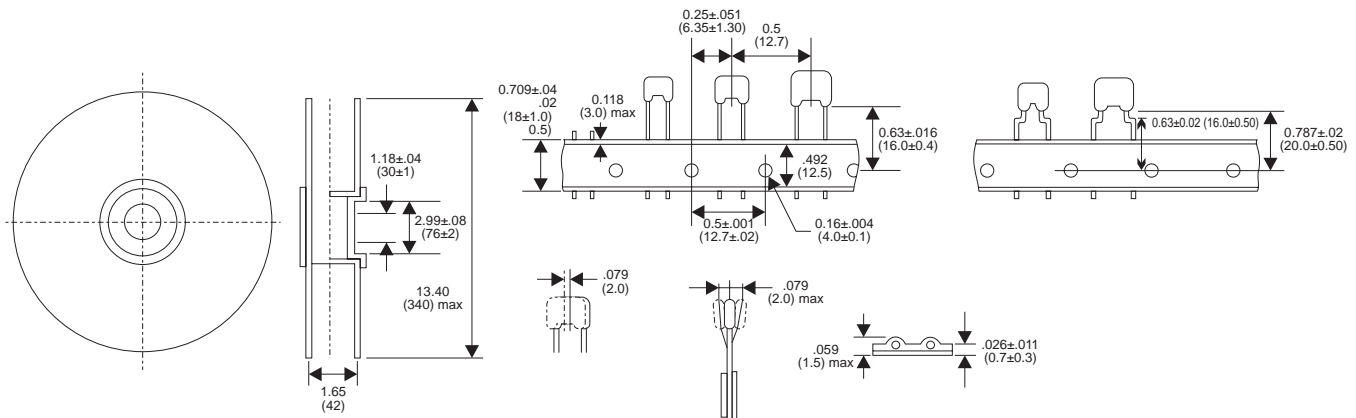
## Features

- 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	Δ C±15% maximum over -55°C to +125°C	Δ C+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

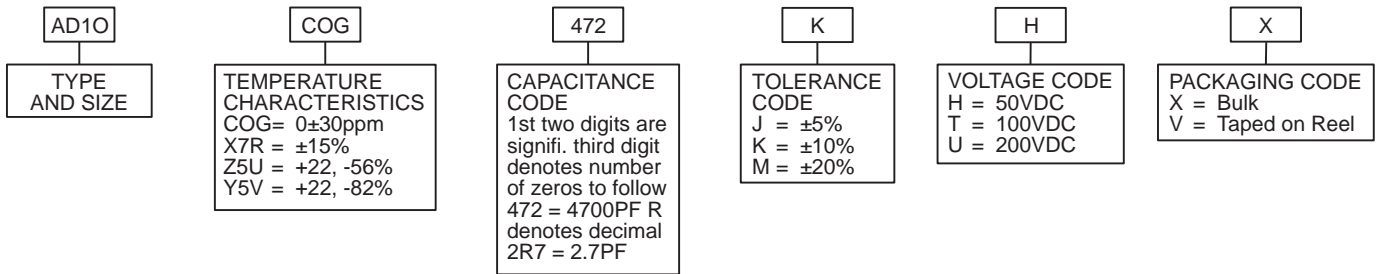
## Tape & Reel Dimensions: in.(mm)



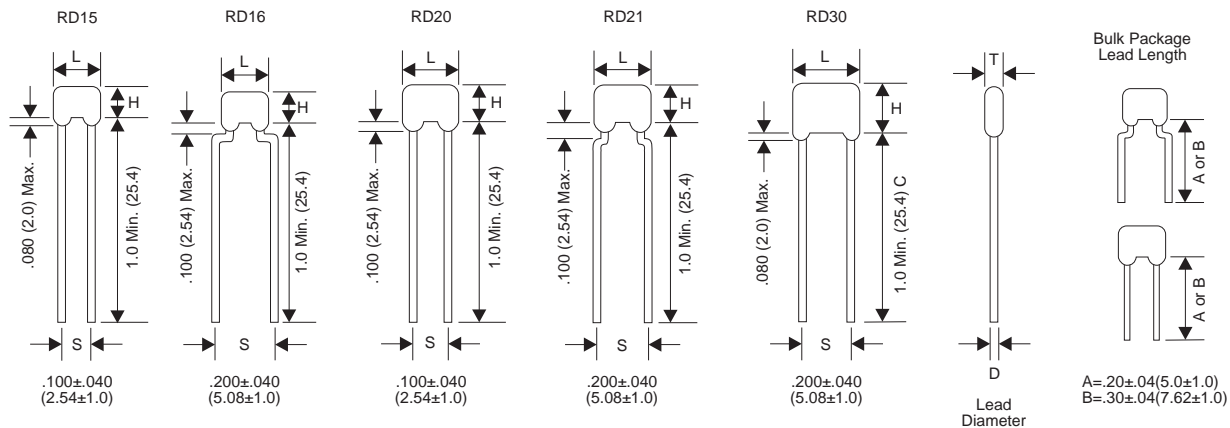


# Multilayer Ceramic Capacitors

## Part Number System



### Type and Size Dimensions Inches (Millimeters)



### Size

Style	L max	H max	T max	S max	D
RD 15	.150" (3.81)	.150" (3.81)	.100" (2.54)	.100" (2.54)	.020" (0.508)
RD 16	.150" (3.81)	.150" (3.81)	.100" (2.54)	.200" (5.08)	.020" (0.508)
RD 20	.200" (5.08)	.200" (5.08)	.125" (3.18)	.100" (2.54)	.020" (0.508)
RD 21	.200" (5.08)	.200" (5.08)	.125" (3.18)	.200" (5.08)	.020" (0.508)
RD 30	.300" (7.62)	.300" (7.62)	.150" (3.81)	.200" (5.08)	.020" (0.508)

### 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.
RD15, RD16, RD18	0	-----	-----	-----
RD20, RD21, RD23	0	0	0	-----
RD30	0	0	0	0



# Multilayer Ceramic Capacitors

## Capacitance Range

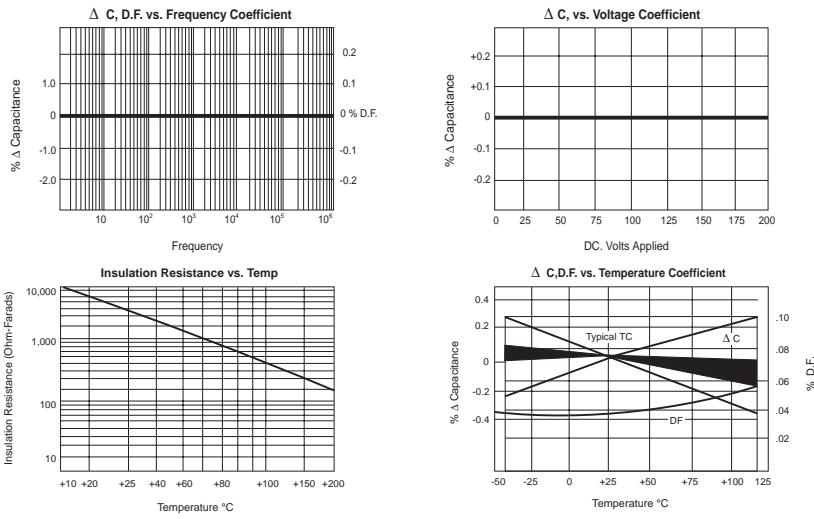
Dielectric Code		COG						X7R						Z5U		Z5U Y5V		Y5V		
Size Code		RD15	RD16	RD20	RD21	RD30		RD15	RD16	RD20	RD21	RD30		RD15	RD16	RD20	RD21	RD30		
Cap	W V.DC	50	100	50	100	50	100	50	100	50	100	50	100	25	50	25	50	25	50	
10	100																			
12	120																			
15	150																			
18	180																			
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																			
.56	564																			
.68	684																			
.82	824																			
1.0	105																			
1.2	125																			
1.5	155																			
2.0	205																			



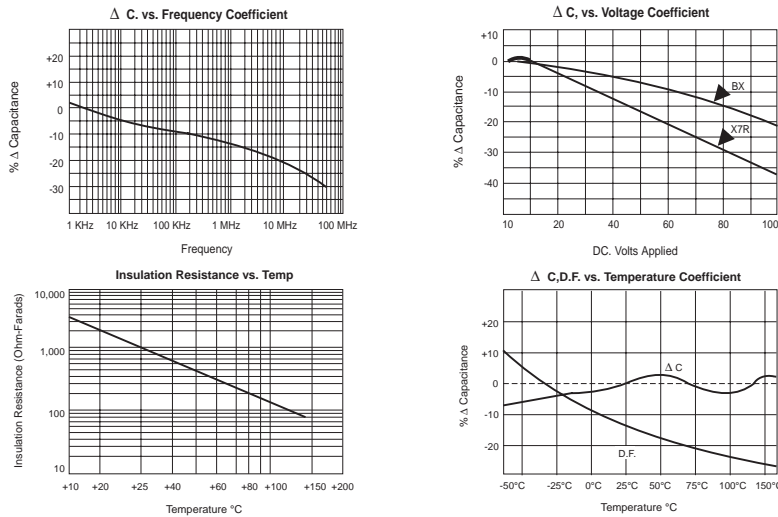
# Multilayer Ceramic Capacitors

## Dielectric Characteristics

NPO/COG



BX/X7R



Z5U/Y5V

