# Axial Leaded, Epoxy Coated Multilayer Ceramic Capacitors

## Description

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 axial leaded components.

## How To Order :

Part number are designed as :

| A | 15 | Z5U | 104 | Z | A | A | T | 05 | A |
|---|---|---|---|---|---|---|---|---|---|

**Product Type:**
A:Mono Axial

**Size Code:**
See size chart for available size by value and voltage

**Temperature Characteristic:**
NPO=COG
X7R
Z5U

**Capacitance (pf):**
The first two digits are significant of capacitance.
The last digit is multiplier
0=*1 4=*10000
1=*10 5=*100000
2=*100 9=*0.1
3=*1000

**Capacitance Tolerance:**
C=+/-0.25PF K=+/-10%
D=+/-0.5PF M=+/-20%
G=+/-2% Z=+80%,-20%
J =+/-5% P=+100%,-0%

**Lead Spacing:**
A: Axial style [ Standard ]
5 = 5.08mm
6 = 6.35mm
7 = 7.62mm

**Lead Style:**
A: Axial style [ Standard ]
B: Forming style

**Lead Length:**
4=4mm 8=8mm
5=5mm 9=9mm
7=7mm 0=10mm
C=4.5mm F=7.5mm
D=5.5mm G=8.5mm
E=6.5mm H=9.5mm
R=Tape & Reel
T=Tape & AMMO Pack

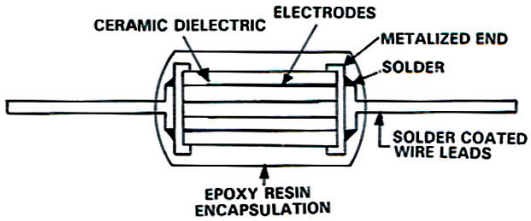
**Working Voltage:**
02= 25V
05= 50V
10=100V
20=200V

**Taping width:**
A=52mm [ Standard ]
S=26mm
X=Forming style

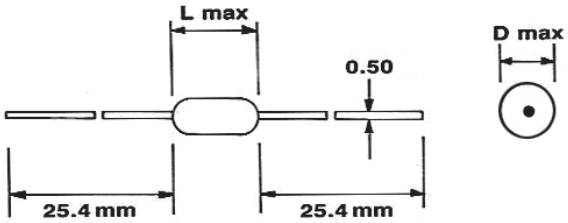
## Capacitance Range Of Mono Axial

| Spec.\\T.C. | | NPO | | | | X7R | | | | Z5U | | Y5V | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SIZE | | A15 | | A20 | | A15 | | A20 | | A15 | A20 | A15 | A20 |
| CAP \ WVDC | | 50 | 100 | 50 | 100 | 50 | 100 | 50 | 100 | 50 | | 50 | |
| 1 PF | 1 PF | | | | | | | | | | | | |
| to 100 | to 100 | | | | | | | | | | | | |
| 120 pF | 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 | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | |
| 1.00 | 105 | | | | | | | | | | | | |
| 1.50 | 155 | | | | | | | | | | | | |
| 2.20 | 225 | | | | | | | | | | | | |

## Monolithic Construction




## Case Size




## Size Code And Dimensiions: (millineter)

| SIZE CODE | L | D | LEAD DIA | LEAD LENGTH |
|---|---|---|---|---|
| A15 | 3.81 Max. | 2.54 Max. | 0.50 | 25.4 |
| A20 | 5.08 Max. | 3.81 Max. | 0.50 | 25.4 |

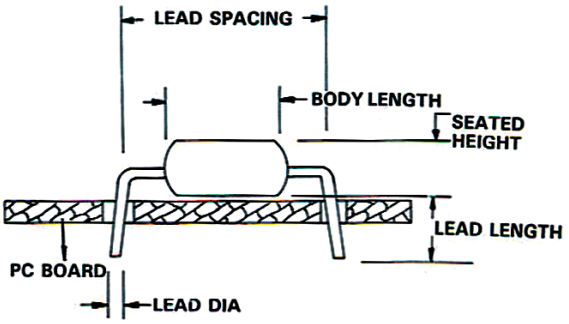
## Axial Forming Type:

Our axial-leaded capacitors can be supplied in forming type. Which can only be in bulk package. 1.000pcs per bag.

| LEAD SPACING | TOL:+/- [0.8mm] |
|---|---|
| 5=5.08mm | 7=7.62mm |
| 6=6.35mm | 8=8.90mm |

| LEAD LENGTH | TOL:+/- [0.8mm] |
|---|---|
| 4=4.0mm | O=10.0mm |
| 5=5.0mm | C=4.50mm |
| 6=6.0mm | D=6.50mm |
| 7=7.0mm | E=6.50mm |
| 8=8.0mm | F=7.50mm |
| 9=9.0mm | G=8.50mm |

The dimensions are illustrated as the following:




## Marking

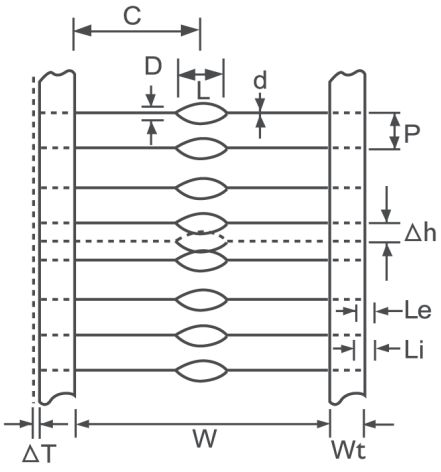
- First line marked the Capacitance value.
- Second line marked the TOL. WVDC. & T.C.
- TOL : J=±5%, K=±10%, M=±20%, Z=+80/-20%.
- WVDC : 2=25V, 5=50V, A=100V, B=200V.
- T.C.: N=NPO[COG], X=X7R, Z=Z5U

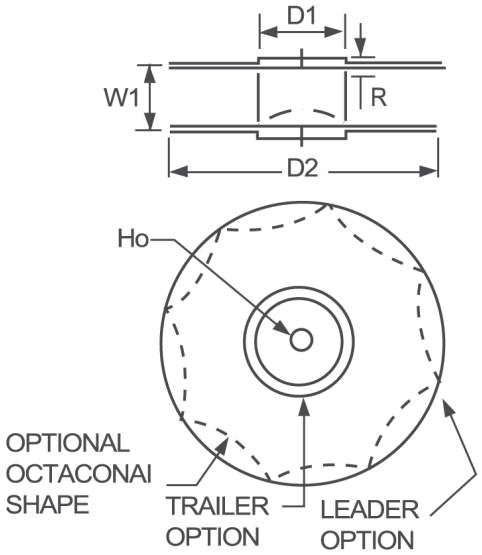

| SIZE CODE | Capacitance | Tolerance | Rated. Voltage | Tenp. Char. |
|---|---|---|---|---|
| A15 | √ | - | - | - |
| A20 | √ | √ | √ | √ |

## Axial Tape & Reel:

Our axial-leaded capacitors can be supplied taped and reeled. A 12 inch leader of tape starts and ends each reel. A layer of 50/60lb.Kraft paper separates each layer of components and a layer of corrugated cardboard over the last layer protects the contents of the reel. Reels are to EIA standards [RS-296E Class. I. Level I]

## Dimensiions: (millineter)




Dimensiions: (unit mm)

| Description | Symbol | Dimensions | Description | Symbol | Dimensions |
|---|---|---|---|---|---|
| Pitch of Component | P | 5.08±0.51 | Centered | C | 26.2±0.76 |
| Cumulative Tolerance of P over 5 consecutive units | | ±0.15 | Core Diameter | $D_1$ | 34.90-92.10 |
| Tape width | Wt | 6.0±1.0 | Reel Diameter | $D_2$ | 360MAX |
| Lead Wire Protrusion | Le | 1.57MAX | Core Width | $W_1$ | 69.85±1.52 |
| Lead Extension into Tape | Li | 3.96MAX | Recess Depth | R | 9.5MIN |
| Offset Between Tapes | ΔT | 0.8MAX | Arbor Hole | Ho | 15.5 – 18.0 |
| Width Between Tapes | W | 52.4±1.5 | Deflection from Nominal position | Δh | 1.2MAX |

## Packaging Quantity

| Size Code | Taping Type | | Bulk Type |
|---|---|---|---|
| | Quantity per reel | Quantity per box | Quantity per bag |
| A15 | 10,000 | 5,000 | 1,000 |
| A20 | 8,000 | 4,000 | 1,000 |