MULTILAYER CERAMIC CAPACITOR
AD Series (C0G/NPO): Axial Leaded

RoHS

INTRODUCTION

Radial Leaded Multilayer Ceramic Capacitors are made with a superior epoxy coating for moisture and mechanical protection. The small size is suitable for a wide range of applications, including: data processing, telecommunications, instrumentation, and industrial controls.

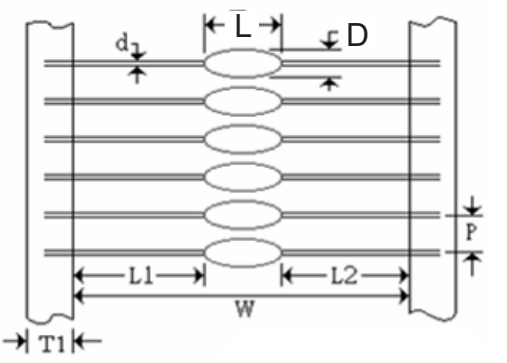
FEATURES

- Epoxy Coating
- Minature Size
- Auto Insertable
- Operating Temperature Range -55 to 125°C
- Temperature Characterisistics 0 ± 30 PPM/°C

PART NUMBER EXAMPLE

AD10 CG 104 K 500 A

- AD10 — Series
- CG — Temperature Coefficient
- 104 — Capacitance
- K — Tolerance Code
- 500 — Voltage Code
- A — Packing Code



SIZE CODE & CAPACITANCE RANGE

Size Code	Dimensions (mm)		Voltage Vdc	Voltage Code	C0G / NPO (pF)
	D (max)	L (max)			
AD10	2.6	4.0	50V	500	1 ~ 10,000
			100V	101	1 ~ 4,700
			250V	251	100 ~ 2,700
AD15	3.1	5.1	50V	500	3,900 ~ 33,000
			100V	101	3,900 ~ 10,000
			250V	251	3,300 ~ 8,200
			500V	501	100 ~ 3,300

CAPACITANCE CODE

Code	1R0	3R3	100	470	101	102	222	103	333
Capacitance	1.0pF	3.3pF	10pF	47pF	100pF	1000pF	2200pF	10000pF	33000 pF

TOLERANCE CODE

Symbol	Cap. Tolerance
C	±0.25pF
D	±0.5pF
F	±1%
G	±2%
J	±5%
K	±10%
M	±20%
Z	+80%, -20%

TEMPERATURE COEFFICIENT

Code	Temp. Charact.	Temperature Range	Capacitance Change
CG	C0G/NPO	-55 ~ 125°C	0±30ppm/°C
X5R	X5R	-55 ~ 85°C	±15°C
XR	X7R	-55 ~ 125°C	±15°C
YV	Y5V	-30 ~ 85°C	±22°C, -82%
ZU	Z5U	+10 ~ 85°C	±22°C, -56%

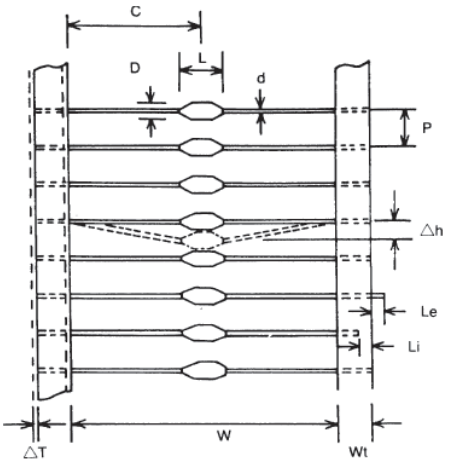
* See other AD Series for X5R, X7R, Y5V, Z5U

RFE International • Tel:(949) 833-1988 • Fax:(949) 833-1788 • E-Mail Sales@rfeinc.com

C1BD03
2022.05.31

DIMENSIONS

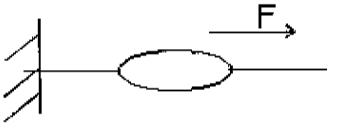
Tape Specification	Symbol	Dimension (mm)
Pitch of component	P	5.08±0.51
Culmulative Tolerance of P Over 6 Consecutive Units		±0.15
Tape Width	Wt	6.0±1.0
Lead Wire Protrusion	Le	1.0 max
Lead Extension into Tape	Li	1.5 max
Offset Between Tapes	ΔT	0.8 max
Width Between Tapes	Wt	52.4±1.5
Lead Diameter	d	0.483
Centered	C	±0.76
Deflection from Nominal Position	Δh	1.2 max



ELECTRICAL CHARACTERISTICS

Parameter	Specification	Measuring Condition
Capacitance	With the specified tolerance	Shall be measured at 25°C ± 2°C at the frequency and voltage C≦1000pF@1MHz ± 20%, 1±0.2Vrms C>1000pF@1MHz ± 10%, 1±0.2Vrms
Q	C≧30pF : Q≧1000 C<30pF : Q≧400+20xC (C is nominal capacitance)	
Withstanding Voltage	No defects	Applied voltage: Rated voltage x 2.5 100V~500V Rated voltage (over) x 1.5 Duration: 1 to 5 sec. The charge/discharge current is less than 50mA
Insulation Resistance	More than 10GΩ or 500MΩ • μF Whichever is less 16Vdc product: More than 10GΩ or 100MΩ • μF whichever is less	Apply rated voltage for 1 minute at 25°C ± 2°C and 70% R.H. max 16Vdc product: Measurement voltage is 25Vdc

ENVIRONMENTAL AND TEST CHARACTERISTICS

Parameter	Specification	Measuring Condition
Strength of termination	Termination not to be broken or loosened Force : 4 LB min. Keep time : 10±1 sec.	
Solderability of leads	Lead wire to be soldered vertically up to the coating end point. At least 75% of lead surface is covered	Solder temperature: 260 ± 5°C Dipping: 2 ± 0.5 sec. (containing Ag 2~5%) (Flux shall be used)

RFE International • Tel:(949) 833-1988 • Fax:(949) 833-1788 • E-Mail Sales@rfeinc.com

C1BD03
2022.05.31

■ ELECTRICAL CHARACTERISTICS

Item	Specification	Measuring Condition	Measuring Condition
		Resistance to Soldering heat	**Thermal shock**
△C	±2.5% or ± 0.25pF (Whichever is greater)	The lead wire is immersed in the melted solder 1.5mm to 2mm from the main body at 260 ± 5°C for 10 ± 0.5sec	
Q	C ≧ 30pF: Q ≧ 1000 C < 30pF: Q ≧ 400 + 20 X C (C is nominal capacitance)	Let sit at room temperature for 24 ± 2hrs. then measure.	Perform the five cycles according to the four heat treatments listed in the following table. Remove and let sit at room temperature for 24 ± 2hrs., then measure.
I.R.	More than 10GΩ or 500MΩ • μF Whichever is less 16Vdc product: More than 10GΩ or 100MΩ • μF whichever is less	Perform the initial measurement.	Perform the initial measurement.

Step	1	2	3	4
Temp. (°C)	Min. Operating Temp.	Room Temp.	Max. Operating Temp.	Room Temp.
Time	30±3	15	30±3	15

Item	Specification	Measuring Condition	Measuring Condition
		Moisture resistance (Steady state)	**High temperature loading**
△C	(Whichever is greater) ± 5% or ± 0.5pF(Moisture resistance) ± 3% or ± 0.5pF(High temperature loading)	Apply the rated DC voltage at 40 ± 2°C and 90 to 95% R.H. for 500^{+24}_{0} hrs. Remove and let sit at room temperature for24 ± 2hrs., then measure. Perform the initial measurement.	Apply 200%of the rated DC voltage for 1000^{+48}_{0} hrs at the maximum operating temperature ± 2°C. Remove and let sit at room temperature for 24 ± 2hrs, then measure. The charge/discharge current is less than 50mA. Perform the initial measurement. * 100% for 100V 500V over.
Q	C ≧ 30pF: Q ≧ 350 10pF>C<30pF: Q ≧ 275 + $\frac{5}{2}$ X C C ≦ 10pF: Q ≧ 200+10XC (C is nominal capacitance)		
I.R.	More than 1000MΩ or 50MΩ • μF Whichever is less 16Vdc product: More than 1000MΩ or 10MΩ • μF whichever is less		

- Withstanding voltage: No defects
- Exterior: No abnormalities

■ STORAGE

1. The storage conditions <40°C, <70% R.H.
2. After opening the package, please store in desiccators.

RFE International • Tel:(949) 833-1988 • Fax:(949) 833-1788 • E-Mail Sales@rfeinc.com

C1BD03
2022.05.31