

# CERAMIC CAPACITORS MULTILAYER CERAMIC CAPACITORS



## Series 積層陶瓷型電容器

### ELECTRICAL SPECIFICATIONS

#### Capacitance Range

1 pF to uF

#### Capacitance Tolerance (Standard)

NPO: F=±1%

G=±2%

C=±0.25pF(10pF and below)

D=±0.5pF(10pF and below)

J=±5%(10pF and above)

K=±10%(5.6pF and above)

M=±20%(2.7pF and above)

X7R: K=±10%

M=±20%

Z=±80-20%

#### Working Voltage

25,50,100,200,1k VDC

#### Temperature Characteristic

NPO: 0±30ppm/°C, -55V to+125°C

X7R: ±15%ΔC, -55°C to+125°C

Z5U: +22% to-56%ΔC, +10°C to +85°C

#### Insulation Resistance

NPO, X7R: 100,000megohms min. or 1000ohm-Farads min., whichever is less at 25°C

Z5U: 10,000megohms or 1000 ohmFarads min., Whichever is less at 25°C

### MECHANICAL SPECIFICATIONS

Cast: Conformal coated (epoxy)

Lead Material: Solder coated, copper

Package Method: Bulk, Tape & Ammo Pack

Solderability: (MIL-STD-202, Method 208)

Leach Resistance: Temp 230°C, 20 seconds immersion in Sn62

#### \*STANDARD TOLERANCE

NPO: J.K.

X7R: K.M.

Z5U: M.Z.

#### Capacitance Test (@25°C Or referred to +25°C)

NPO, X7R: 1.0VRMS±.25VRMS and 1KHz;

1 MHz for values below 100pF,

Z5U: 0.5V RMS maximum and 1KHz.

#### Dissipation Factor

NPO: 0.1% maximum @25°C, 1.0VRMS

±.25VRM and 1KHz, 1MHz for values below 100pf.

X7R: 2.5% maximum @25°C, 1.0VRMS ±.25VRM and 1KHz.

Z5U: 4% maximum @25°C, 0.5VRMS maximum and 1KHz.

#### Dielectric Strength

NPO, X7R: 250% rated voltage, with 50 mA

maximum charging current.

Z5U: 200% rated voltage with 50 mA

Maximum charging current.

#### Life Test (1000 hrs)

NPO, X7R: 200% rated voltage at +125°C

Z5U: 150% rated voltage at +85°C

#### Humidity Resistance

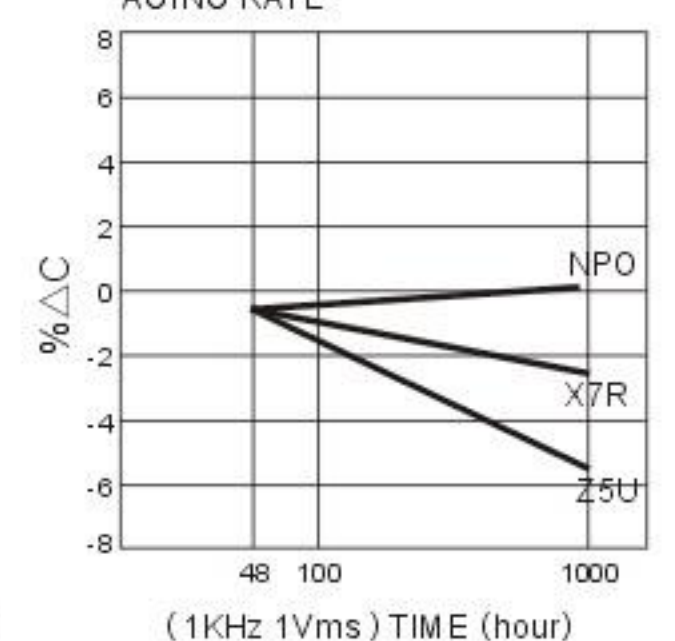
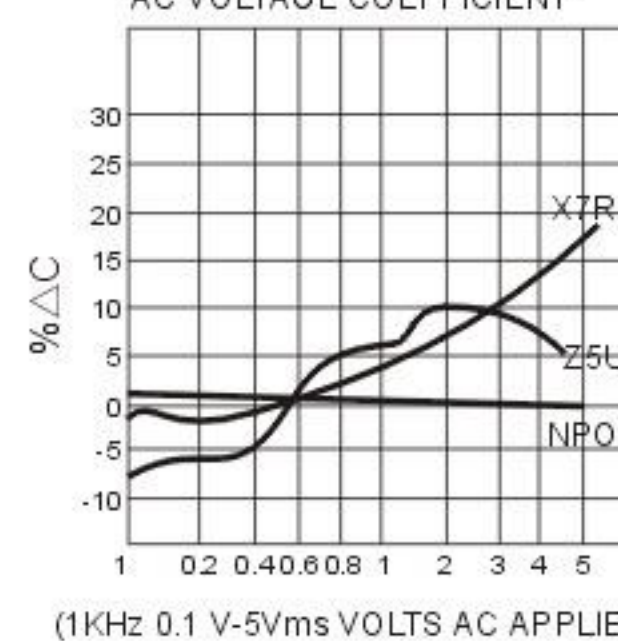
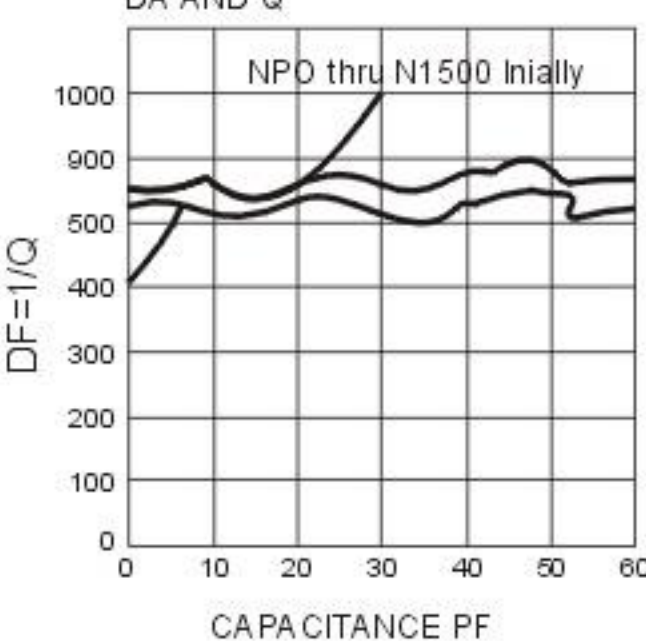
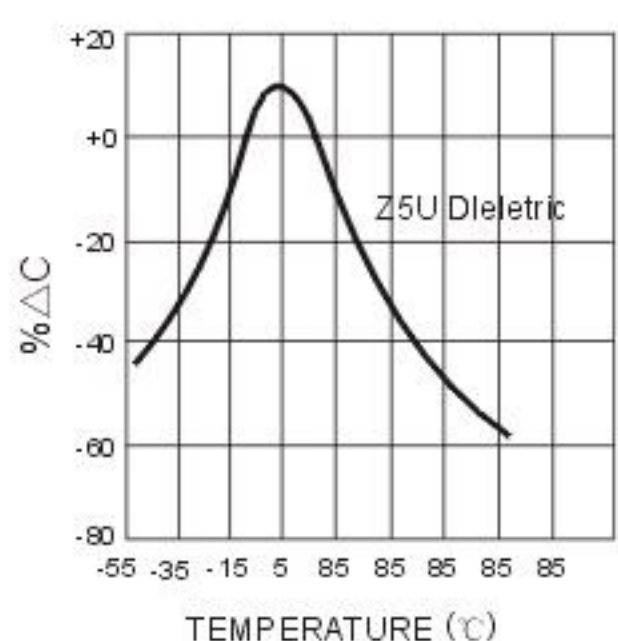
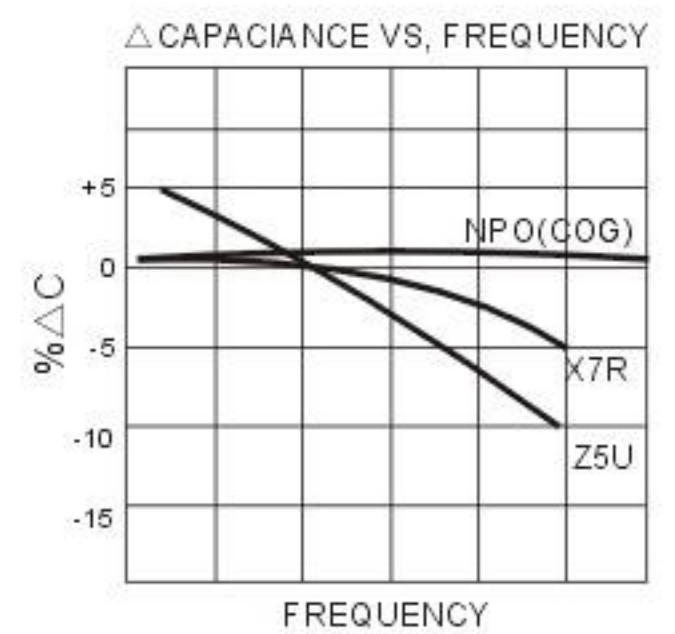
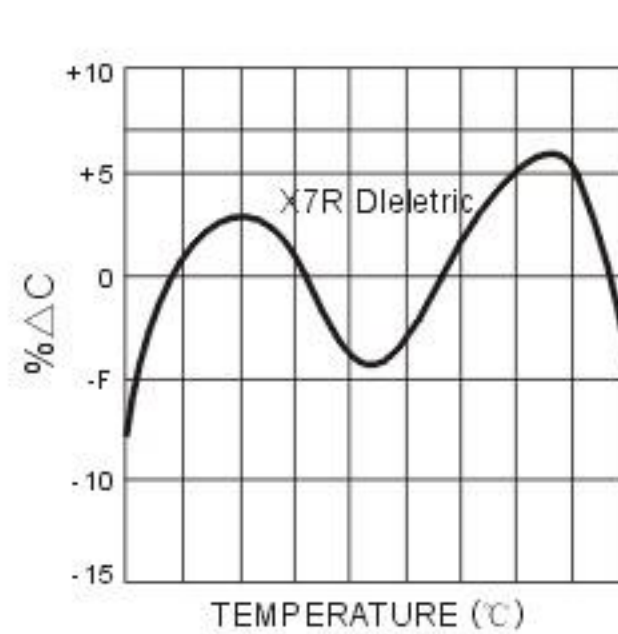
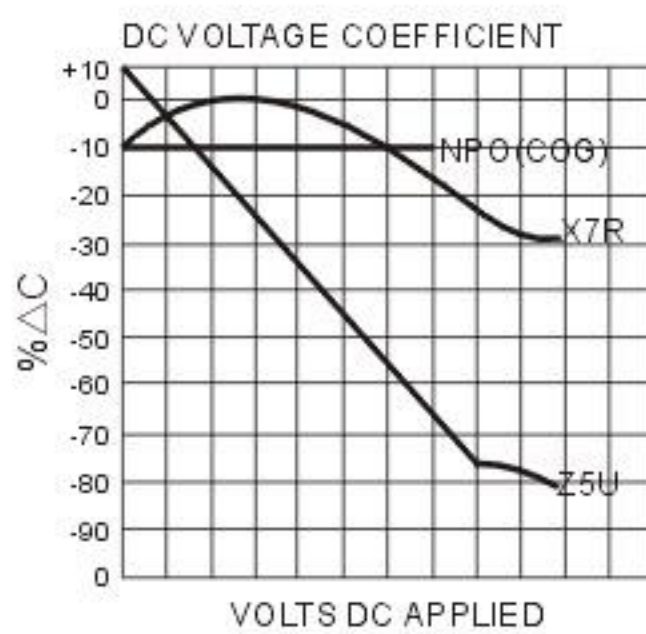
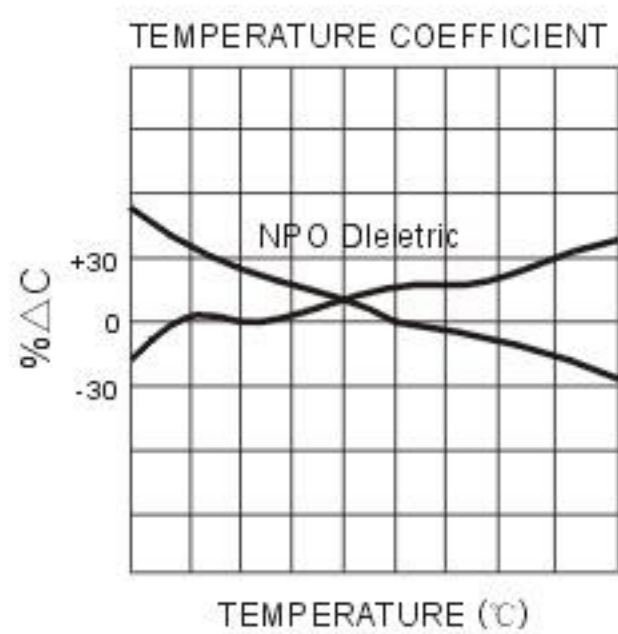
(MIL-STD-202 Method 106)

NPO, X7R Z5U: 96hrs at 40°C relative humidity 90-95%

#### Thermal Shock

(MIL-STD-202 Method 107, condition A)

### TYPICAL CHARACTERISTICS



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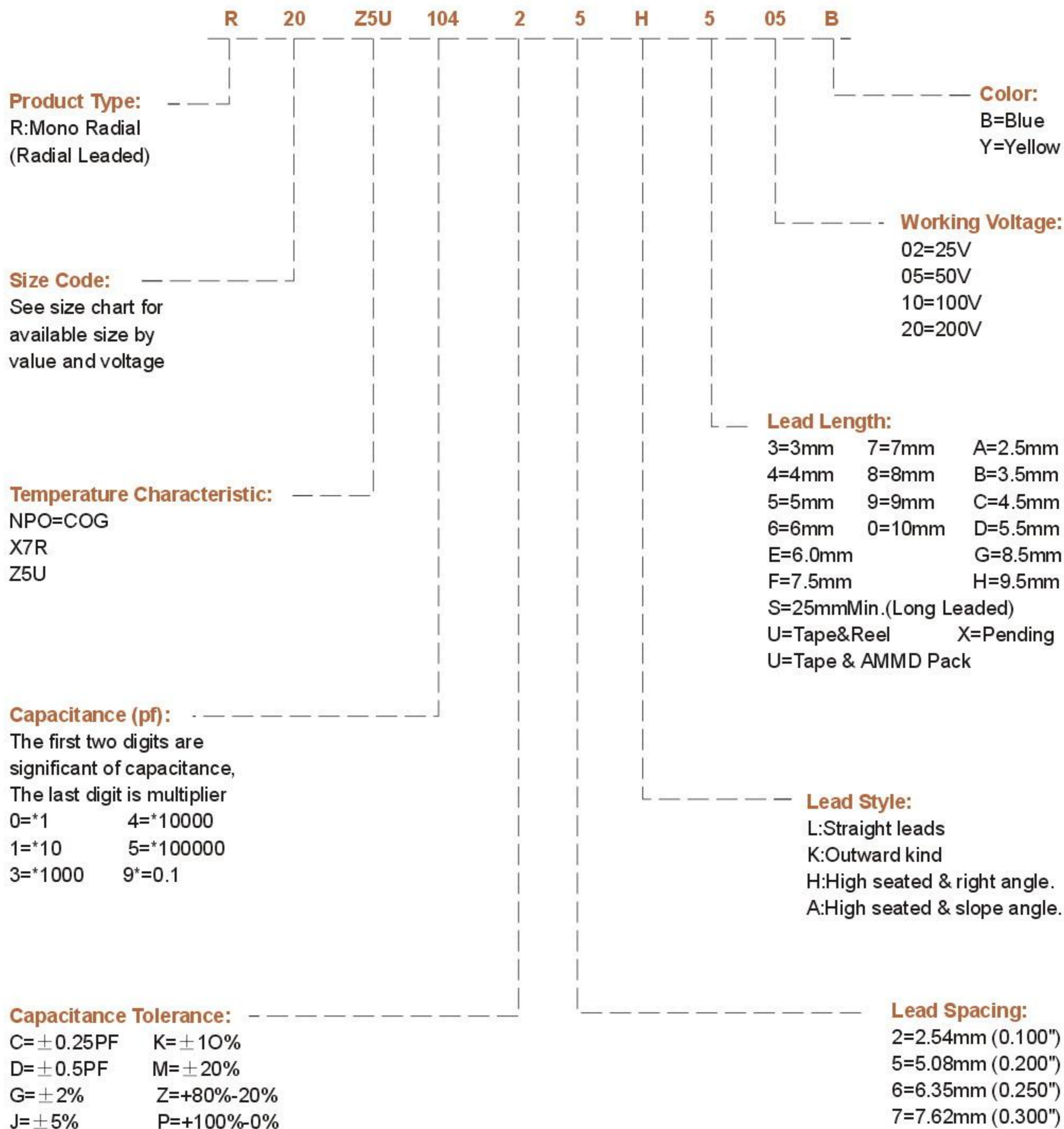
Series 積層陶瓷型電容器

## DESCRIPTION

EASE radial leaded, Epoxy dipped multilayer Ceramic Capacitors are built by Superior moisture and shock resistant epoxy coating can be supplied in bulk or taped & reel package for automatic insertion in PCB. Our RD series capacitors have wide applications in computer, data processing, telecommunication, industrial control and instrumentation equipment, etc.

## HOW TO ORDER

DURAN Part Number are designed as:

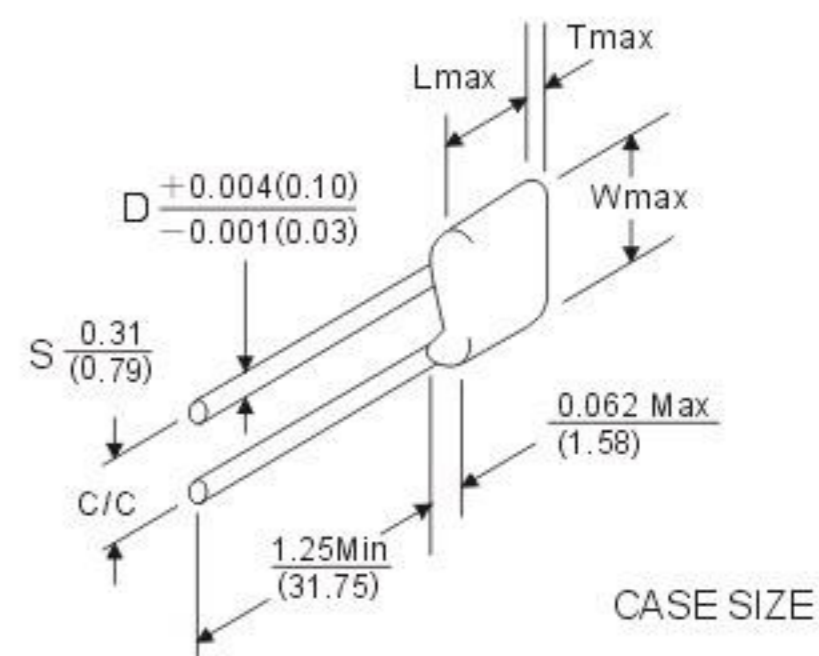
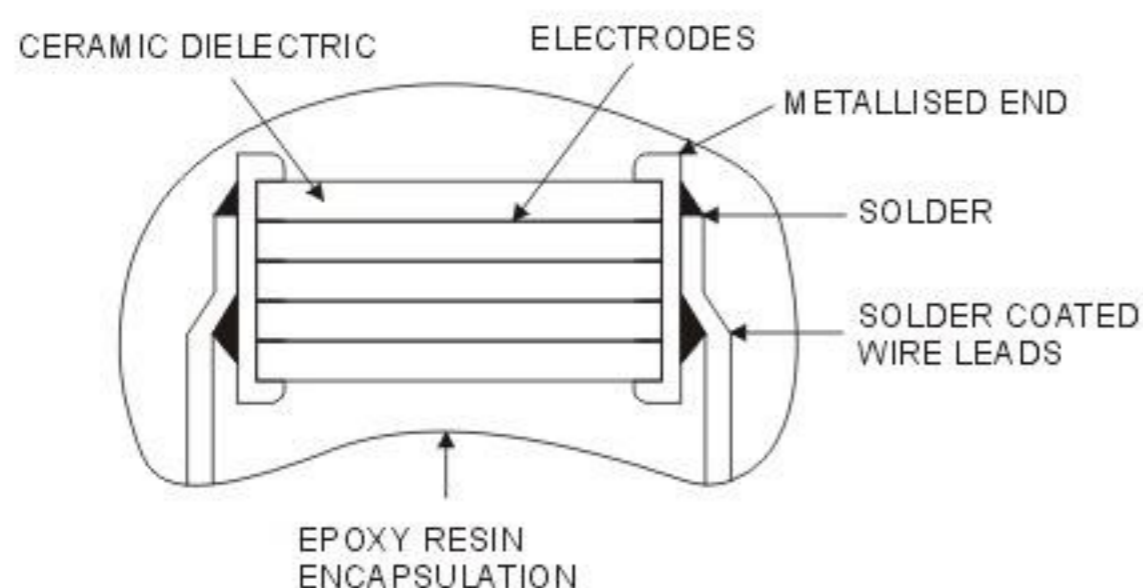


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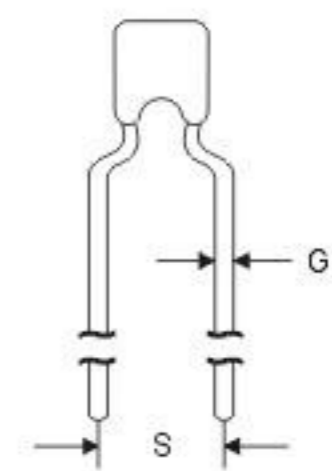
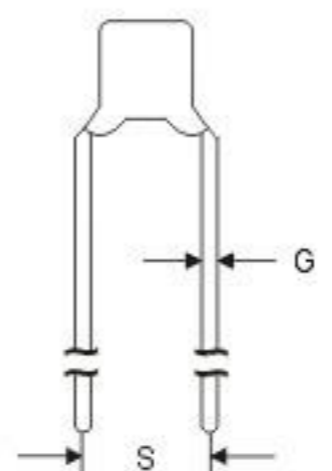
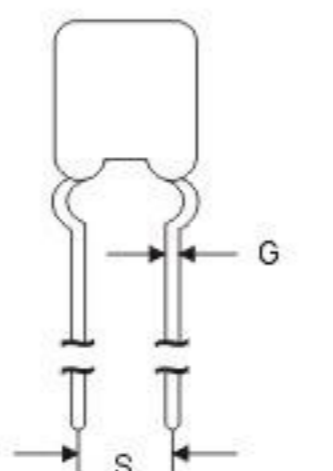
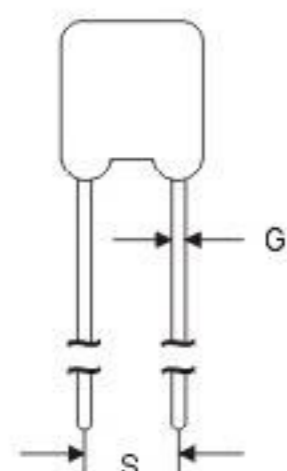
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Series 積層陶瓷型電容器

## MONOLITHIC CONSTRUCTION



## LEAD STYLES



## SIZE CODE and DIMENSIONS

Units in inches (millimeter)

SIZE CODE	L	W	T	LEAD DIAMETER(G)	LEAD LENGTH(L)	LEAD SPACING(S)	LEAD STYLES
R15	0.150 (3.81)	0.150 (3.81)	0.100 (2.54)	0.200 (0.50)	0.10(2.50) ~ 1.0(25.0)	0.100(2.54)	L
						0.200(5.08)	H, K, A
						0.300(7.62)	H
R20	0.200 (5.08)	0.200 (5.08)	0.125 (3.18)	0.20 (0.50)	0.10(2.50) ~ 1.0(25.0)	0.100(2.54)	L, K
						0.200(5.08)	H, K
						0.250(6.35)	H
						0.300(7.62)	H
R30	0.300 (7.62)	0.300 (7.62)	0.150 (3.81)	0.20 (0.50)	0.10(2.50) ~ 1.0(25.0)	0.200(5.08)	H
						0.300(7.62)	H

## MARKING

- First line marked the Capacitance value.
- Second line marked the Tol. WVDC, & T.C.
- TDL: J=±50%, 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

101  
J5N

COLOR	SIZE CODE	Capacitance	Tolerance	Rated Voltage	Temp Char
BLUE	R15, R20, R30	✓	—	—	
YELLOW	R15	✓	—	—	
YELLOW	R20, R30	✓	✓	✓	✓



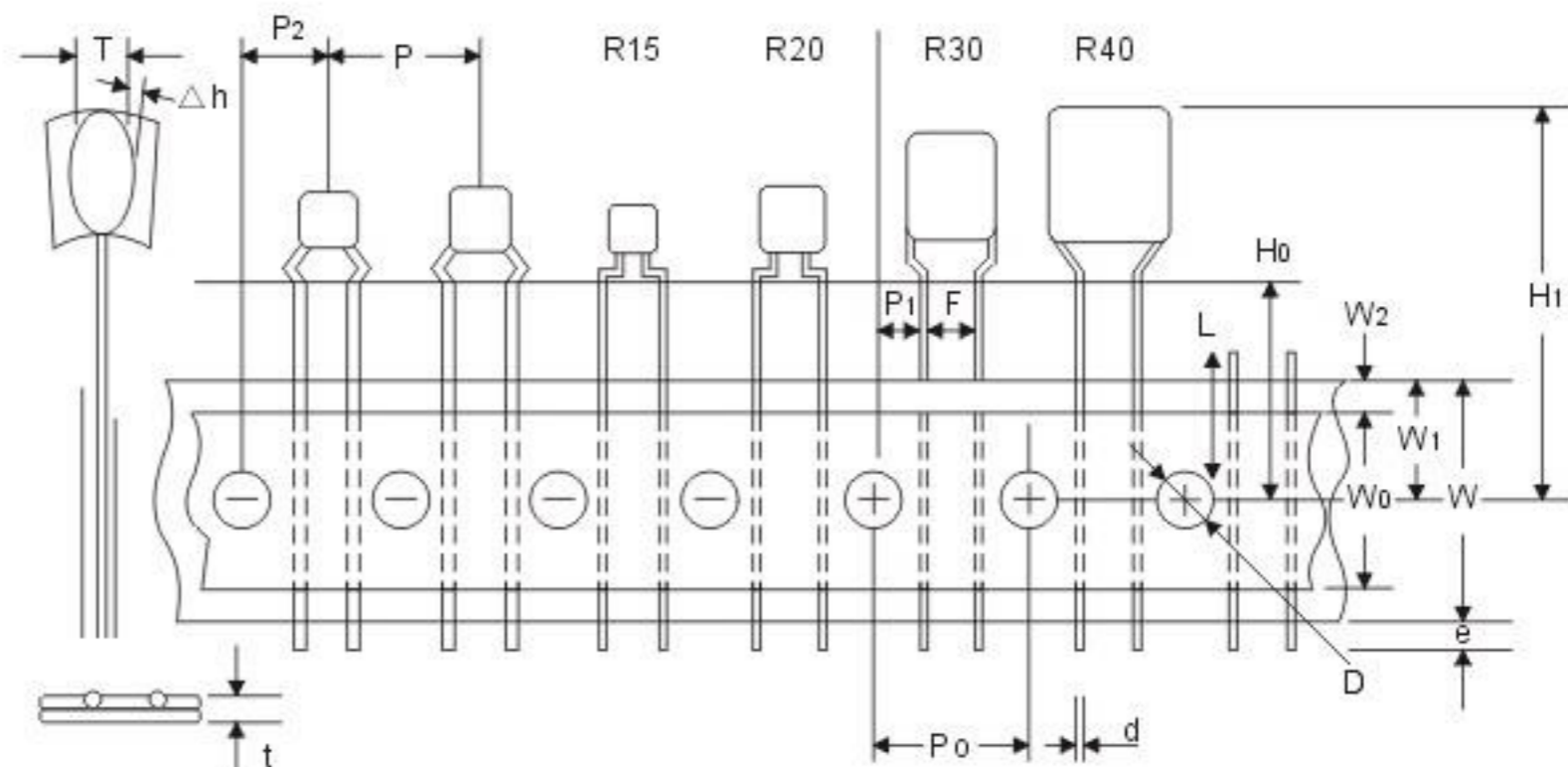
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## RADIAL TAPE & REEL

EASE has developed a tape and reel system of radially leaded components which is suitable for the auto insertion machine.



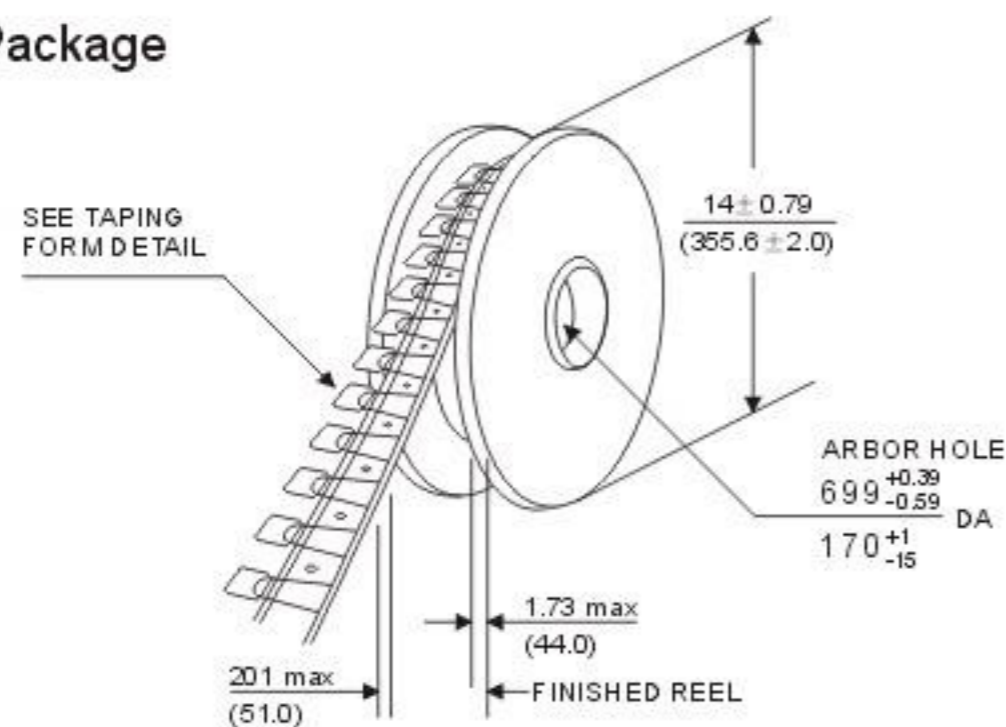
## DIMENSION

Units in inches (millimeter)

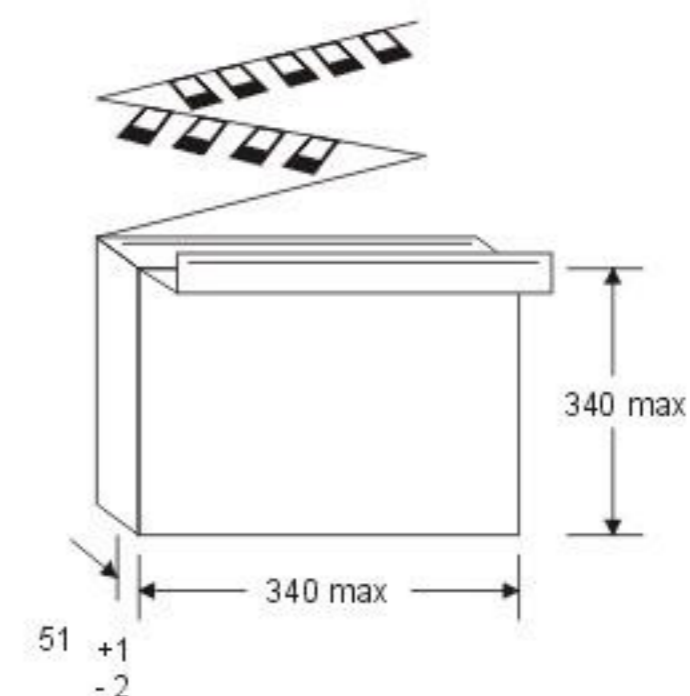
Description	Symbol	Dimensions	Description	Symbol	Dimensions
Body	A	.400x.400(10.16x10.16) Maximum	Feed hole pitch	P <sub>0</sub>	±.040(±1.02)Accumu. lative pitch over Two units
Wire lead diameter (Mono-Kap)	d	.020 <sup>+0.0024</sup> <sub>-.0020</sub> (0.51 <sup>+0.06</sup> <sub>-.05</sub> )	Feed hole off alignment	P <sub>1</sub> P <sub>2</sub>	.150±.020(3.81±0.51) .250±.040(6.35±1.02)
Feed Hole Diameter	D	.157±0.012(4±0.30)	Overall tape thickness	t	.035(0.89)Maximum
Lead and protrusion		+0 0- 120(-3.05)	Body thickness	T	.157(3.99)Maximum
Lead spacing	F	.20±0.30(5.08±0.76) .10±0.30(2.54±0.76)	Lead crimp height	H <sub>0</sub>	.630±.020 to .710±.020 (16.0±0.051 to 18.0±.051)
Body inclination	Δh	0±.040(0±1.02)	Carrier tape width	W	.710±.020(18.03±0.51)
Top height	H1	1.27(32.25)Maximum	Adhesive tape width	W <sub>0</sub>	.510(12.95)Reference
Rejected component out height	L	.433(11.00)Maximum	Feed hole height off alignment	W <sub>1</sub>	.350 <sup>+0</sup> <sub>-.020</sub> (8.89 <sup>+0</sup> <sub>-.051</sub> )
Taping pitch	P	.500±0.39(12.70±0.99)	Adhesive tape margin	W <sub>2</sub>	.120(3.05)Reference

## REEL AND BOX DIMENSIONS

### Reel Package



### Box Package



## PACKAGING QUANTITY

Size Code	Taping Type		Taping Type
	Quantity per reel	Quantity per box	Quantity per bag
R15	2,500	2,000	1,000
R20	2,500	2,000	1,000
R30	2,500	2,000	1,000