MULTILAYER CERAMIC CAPACITORS
EPOXY COATED RADIAL TYPE

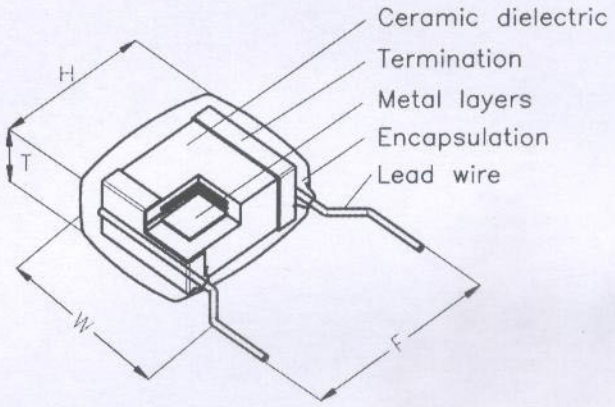
APPLICATION

NPO : Temperature compensation type, have little or no change in capacitance with variation in temperature. Hence, they are used in radio-frequency oscillators, precision timing circuits, ultra stable amplifiers, etc.

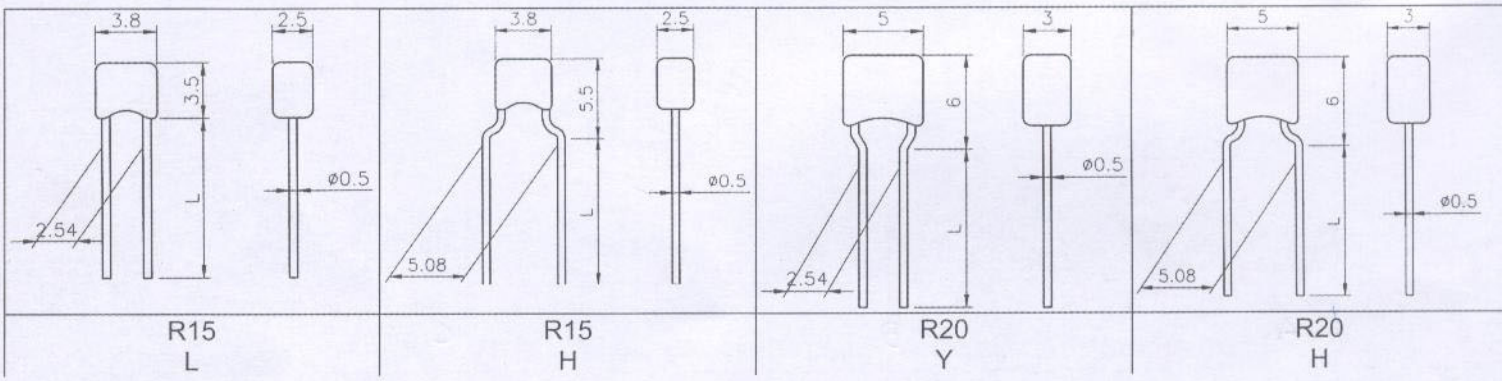
X7R : Temperature stable type for by-pass and decoupling in radio and television receivers, computers servo systems. Audio tone, and coupling, etc., where moderate capacitance variations are permissible and dissipation factor is not critical.

Z5U/Y5V : General type for by-pass and filtering applications.

Construction



1. LEAD SHAPE :



2. LEAD SPACE (F)

CODE	LEAD SPACE (mm/inch)	
2	2.54±0.8	0.1±0.032
5	5.08±0.8	0.2±0.032

3. LAED LENGTH (L)

CODE	LEAD LENGTH	REMARK
6	6mm±1mm	SPECIFIED LEAD LENGTH UPON
9	9mm±1mm	
L	25.4mm min	

4. BODY SIZE & DIMENSION

Size code	Lead style available	Capacitance Range (PF)			Dimensions (mm)				
		NPO	X7R	Y5V	H max	W max	T max.	d±0.05	F±0.08
15	L	1~1,000	330~ 100,000	10,000~ 330,000	3.8	3.8	2.5	0.5	2.54
	H				3.8	3.8	2.5	0.5	5.08
20	Y	1,000~6,800	100,000~ 1,000,000	330,000~ 4,700,000	5.0	6.0	3.0	0.5	2.54
	H				5.0	6.0	3.0	0.5	5.08

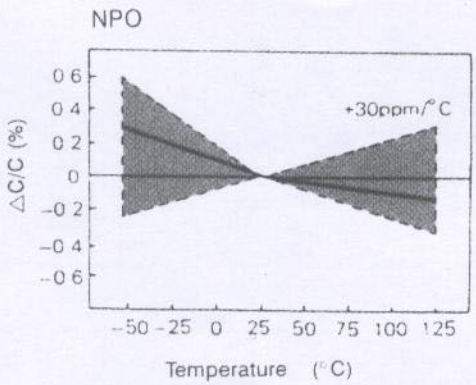
MULTILAYER CERAMIC CAPACITORS
EPOXY COATED RADIAL TYPE

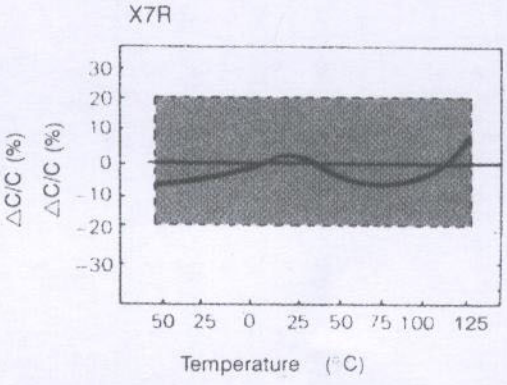
Part Number Code Designation

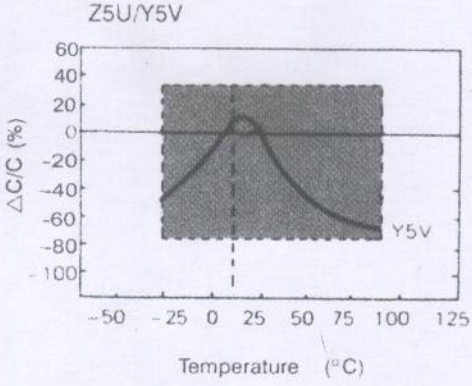
RD15	YV	104	M	1H	A	5	L
SIZE	T.C	Capacitance-Code	Tolerance	Voltage	Lead shape	Lead space	Package-Lead-lenght
15 20	CG=NPO BX=X7R YV=Y5V	Two significant digits + NO. of zeros. Example 100=10pf 101=100pf 102=1000pf 223=22000pf 104=100000pf	G=±2% J=±5% K=±10% M=±20% Z=+80/-20%	1C=16V 1E=25V 1H=50V 2A=100V	L=Straight Y=Inside Crimp H=High seated	2=2.54±0.8 5=5.08±0.8 (mm)	R=Tape/Reel B=Tape/Box 6=6±1mm 9=9±1mm L=25.4mm(min)

TYPICAL PERFORMANCE CHARACTERISTICS

1. TEMPERATURE CHARACTERSITCS SPECIFICATIONS







2. SPECIFICATIONS

Temperature coefficient

NPO: ± 30PPM/℃, -55℃ to +125℃
X7R: ± 15%, -55℃ to +125℃
Y5V: +22%, -82%, -30℃ to +85℃

Capacitance test 25℃

NPO: 1 VRMS max at 1 KHz
(1 MHz for 100pF or less)
X7R: 1 VRMS max at 1 KHz
Y5V: 1 VRMS max at 1 KHz

Dissipation Factor 25℃

NPO: 0.15% max at 1KHz, 1VRMS max
(1 MHz for 100pF or less)
X7R: 2.5% max at 1KHz, 1VRMS max
Y5V: 5% max at 1KHz, 1VRMS max

Dielectric strength 25℃ (Flash Test)

- NPO and X7R: 300% rated voltage for 5 seconds with 50 mA. max charging current.
- Y5V: 250% rated voltage for 5 seconds with 50 mA. max charging current

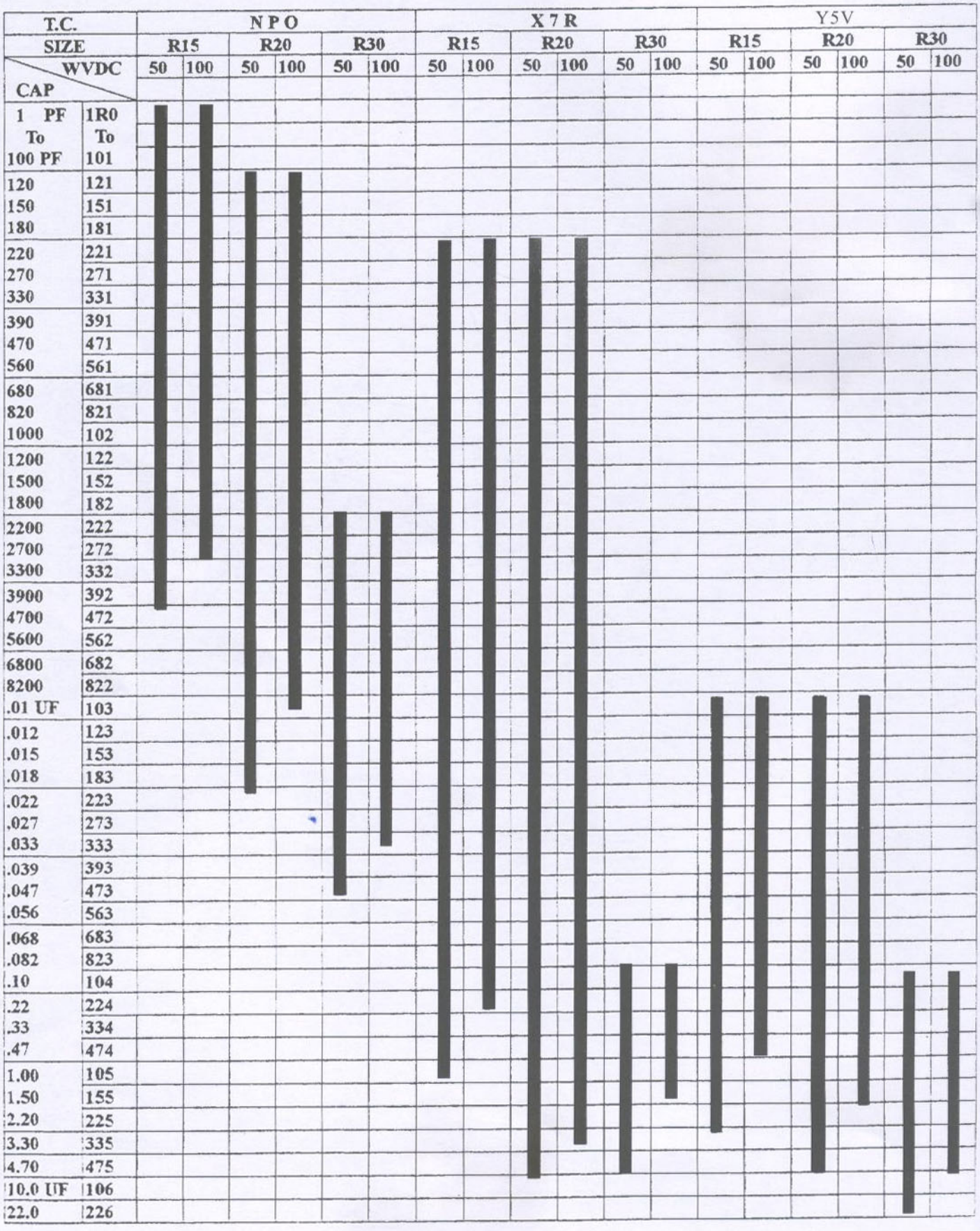
Life Test (1000 hrs)

NPO: ≤ ± 3% at 200% rated voltage, 125℃
X7R: ≤ ± 3% at 200% rated voltage, 125℃
Y5V: ≤ ± 3% at 200% rated voltage, 85℃

Insulation Resistance 25℃

- NPO and X7R: 100GΩ or 1000MΩ-MFD whichever is less
- Y5V: 10GΩ or 100MΩ-MFD whichever is less

CAPACITANCE RANGE OF MONO RADIAL

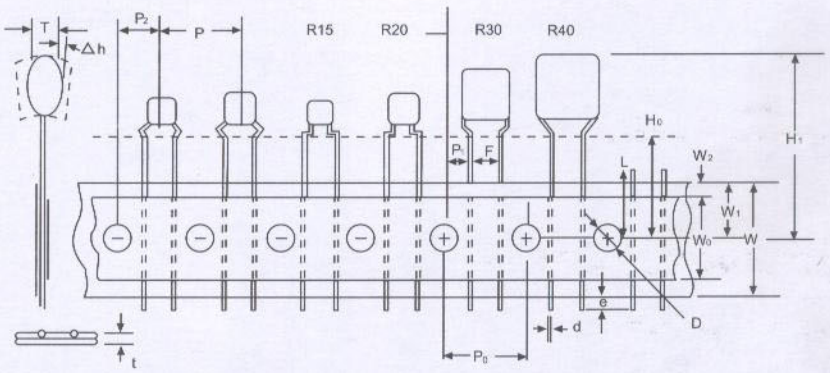


TAPING DIMENSIONS OF RADIAL LEADED

RADIAL TAPE & REEL

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

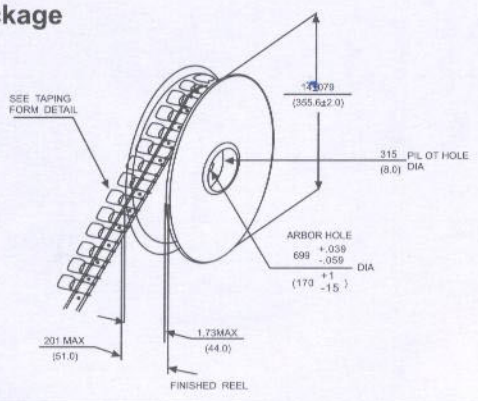
DIMENSION: Units in inches [millimeter]



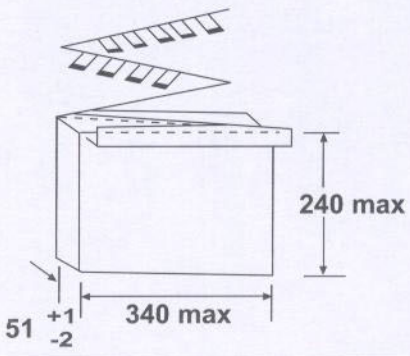
Description	Symbol	Dimensions	Description	Symbol	Dimensions
Body	A	.400X.400[10.16X10.16]Maximum	Feed hole pitch	P_0	±.040[±1.02]Accumu. lative pitch over Two units
Wire lead diameter (Mono-Kap)	d	$.020^{+.0024}_{-.0020}[0.51^{+0.06}_{-0.05}]$	Feed hole off alignment	P_1 P_2	.150 ±.020[3.81±0.51] .250 ±.040[6.35±1.02]
Feed Hole Diameter	D	.157±0.012 [4±0.30]	Overall tape thickness	t	.035 [0.89] Maximum
Lead end protrustione		$0^{+0}_{-.}120[^{+0}_{-3.05}]$	Body thickness	T	.157 [3.99] Maximum
Lead spacing	F	.20±.030[5.08±0.76] .10±.030[2.54±0.76]	Lead crimp height	H_0	.630±.020to.710±.020 [16.0±.051to18.0±.051]
Body inclination	Δh	0±.040 .[0. ± 1.02]	Carrier tape width	W	.710±.020[18.03±0.51]
Top height	H_1	1.27 [32.25] Maximum	Adhesive tape width	W_0	.510 [12.95] Reference
Rejected component out height	L	.433 [11.00] Maximum	Feed hole height off alignment	W_1	$.350^{+0}_{-.020}[8.89^{+0}_{-0.51}]$
Taping pitch	P	.500±0.39[12.70±0.99]	Adhesive tape margin	W_2	.120 [3.05] Reference

REEL and BOX DIMENSIONS (mm)

Reel Package



Box Package



PACKAGING QUANTITY

Size Code	Taping Type		Bulk 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