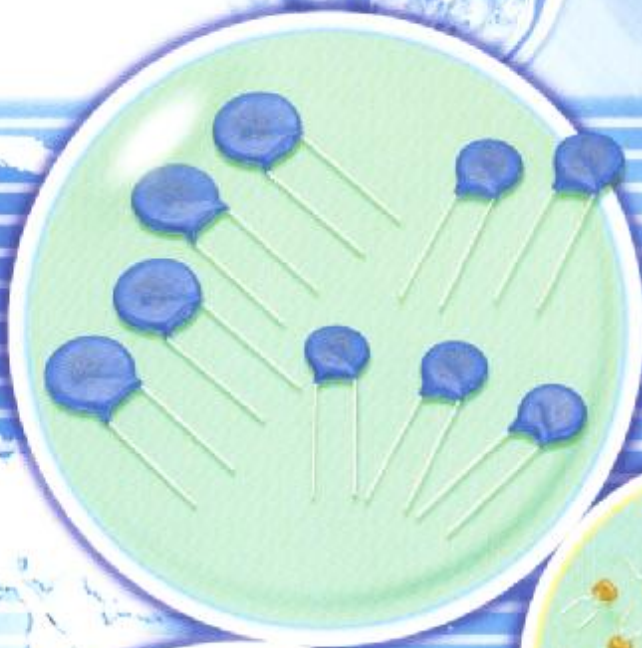




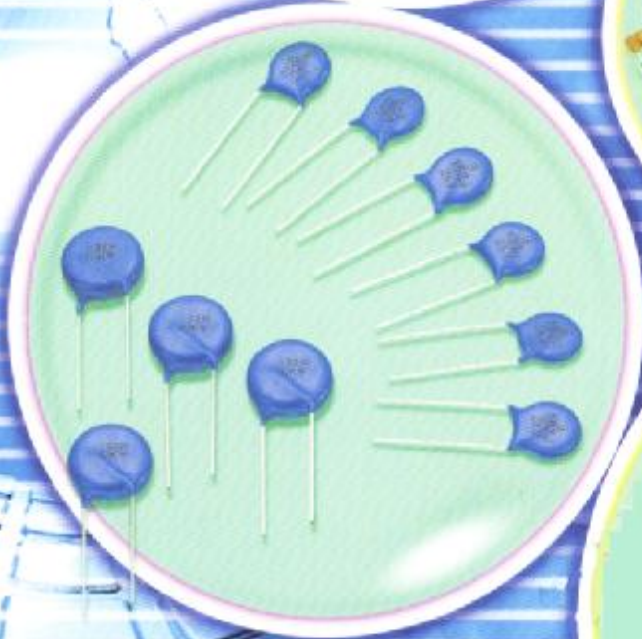
永銳電子股份有限公司
EASE ELECTRONICS CO., LTD.



陶瓷安規電容器
Y2/X1 SAFETY CER. CAP.



積層電容器
MULTILAYER CER. CAP.



陶瓷高壓電容器
HIGH-VOLTAGE CER. CAP.



Quality System Registered to
ISO 9002:1994



INTRODUCTION

The following information about EASE ELECTRONICS CO., LTD. Safety Standard Recognized Ceramic Capacitors-AC, High-Voltage Ceramic Capacitors and Multilayer Ceramic Capacitors provides all information necessary to select a particular part to fit your application. EASE offers a versatile product line designed to meet the high standard of industrial applications. They are regulated by the safety standards of eight countries.

In our modern facility, all aspects of production are controlled through each step of manufacturing process from the incoming inspection of original material to the final testing of the capacitors. The most up-to date quality control and test equipment is used to insure the finest components for your application.

For easy reference, this catalogue is divided into separate section as shown in the table of contents. Each section has product specification, dimensional drawing and ordering information. Once you have determined the proper part number for your application. You may use it for ordering as a reference for further question, or obtaining price information.

For any application not covered by the following, please contact our office immediately and in prompt reaction, we will obtain the correct capacitor as well as the most reasonable offer.

EASE welcomes you to join us right now.



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ELECTRICAL SPECIFICATION

Safety Standard Recognized Ceramic Capacitor

Capacitance Range: 100PF to 10000PF

Test at $1.0 \pm 0.2V$ RMS +25°C and 1KHZ

Capacitance Tolerance:

K: $\pm 10\%$

M: $\pm 20\%$

Working Voltage:

UL, CUL, CSA: 250VAC

VDE, FIMKO, NEMKO, SEMKO, DEMKO, SEV: 400VAC, 250VAC

Dielectric Strength:

2600VAC For 60 Seconds

Dissipation Factor:

B (Y5P), E (Y5U): 2.5% max., test at $1.0 \pm 0.2V$ RMS, 25°C at 1KHZ.

F (Y5V): 5.0% Max., test at $1.0 \pm 0.2V$ RMS, 25°C at 1KHZ.

Insulation Resistance:

10,000 Megohms min at 500VDC

Temperature Characteristics:

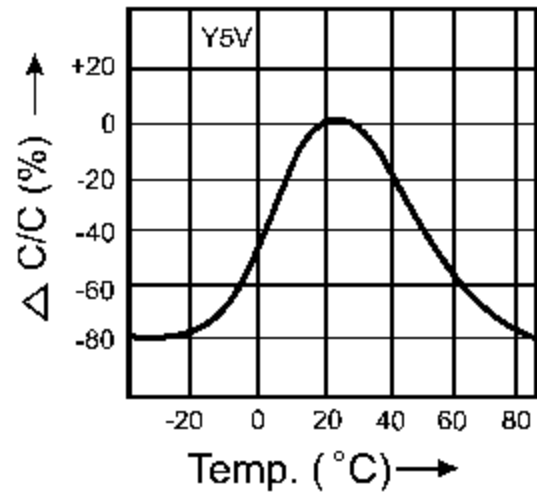
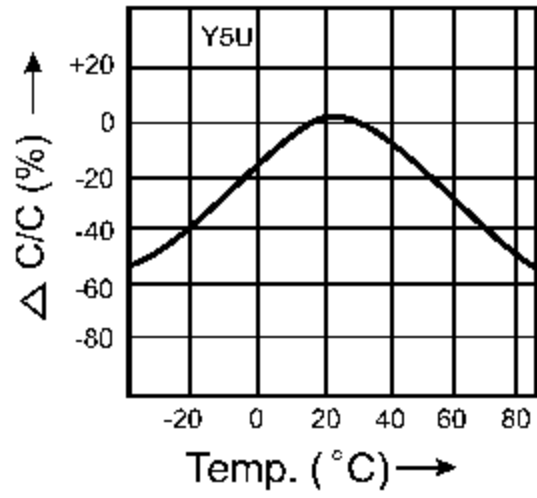
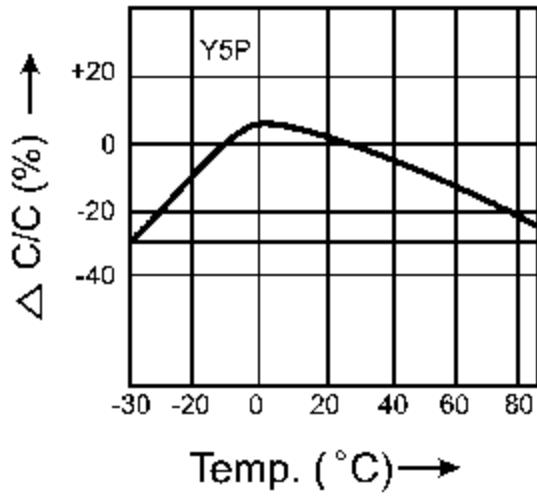
T.C.	Cap. Change	Temp. Range
B (Y5P)	$\pm 10\%$	-25°C to +85°C
E (Y5U)	+22-56%	-25°C to +85°C
F (Y5V)	+22-82%	-25°C to +85°C

Humidity Test:

Capacitance Change	T.C.	Capacitance Change	Capacitors shall be subjected to a temperature of $40 \pm 2^\circ C$ and relative humidity between 90-95% for 500 ± 12 hours. And maintained at normal temperature and humidity for a period of 4-24 hours.
	Y5P	10% max	
	Y5U	20% max	
	Y5V	30% max	
D.F.	T.C.	Dissipation Factor:	
	Y5P	5.0% max	
	Y5U	5.0% max	
	Y5V	7.5% max	



TEMPERATURE DEPENDENCY OF CAPACITANCE





APPROVAL STANDARD AND FILE NO.

APPROVAL STANDARD AND FILE NO.:

Agencies	Standard No.	Recognized File No.	Class & W.V.	Capacitance Values
UL	UL1414	E189495	AC250V	101-103
CUL	UL1414	E189495	AC250V	101-103
CSA	C22.2 NO.1	LR111381-1	AC250V	101-103
VDE	IEC384-14 2 nd Ed.1993 EN132 400:1994	104855	X1:400V Y2:250V	101-103
FIMKO	IEC384-14 2 nd Ed.1993 EN132 400:1994	F1196796	X1:400V Y2:250V	101-103
SEMKO	IEC384-14 2 nd Ed.1993 EN132 400:1994	9741064/01-02	X1:400V Y2:250V	101-103
NEMKO	IEC384-14 2 nd Ed.1993 EN132 400:1994	P97102472	X1:400V Y2:250V	101-103
DEMKO	IEC384-14 2 nd Ed.1993 EN132 400:1994	307053	X1:400V Y2:250V	101-103
SEV	IEC384-14 2 nd Ed.1993 EN132 400:1994	97,7 70742,01	X1:400V Y2:250V	101-103



HOW TO ORDER

Parts Number System

<u>E</u>	<u>B</u>	<u>101</u>	<u>K</u>	<u>2V</u>	<u>7</u>	<u>L</u>	<u>1</u>	<u>K</u>
1)	2)	3)	4)	5)	6)	7)	8)	9)

1) Coating: E: Epoxy Coating

6) Lead Space: 5= 5.0mm

6= 6.35mm

7= 7.5mm

9= 9.5mm

2) Temp. Char.: B= Y5P

E= Y5U

F= Y5V

7) Lead length: L= 25mm

M= 10mm

S= 5mm

T= Taping Reel

A= AMMO BOX

3) Capacitance: 101=10x10=100PF

102=10x100=1,000PF

103=10x1000

= 10,000PF

8) Lead Style: 1= Straight type

4= Outside kink type

7= Inside kink type

4) Tolerance: K= $\pm 10\%$

M= $\pm 20\%$

9) Mark

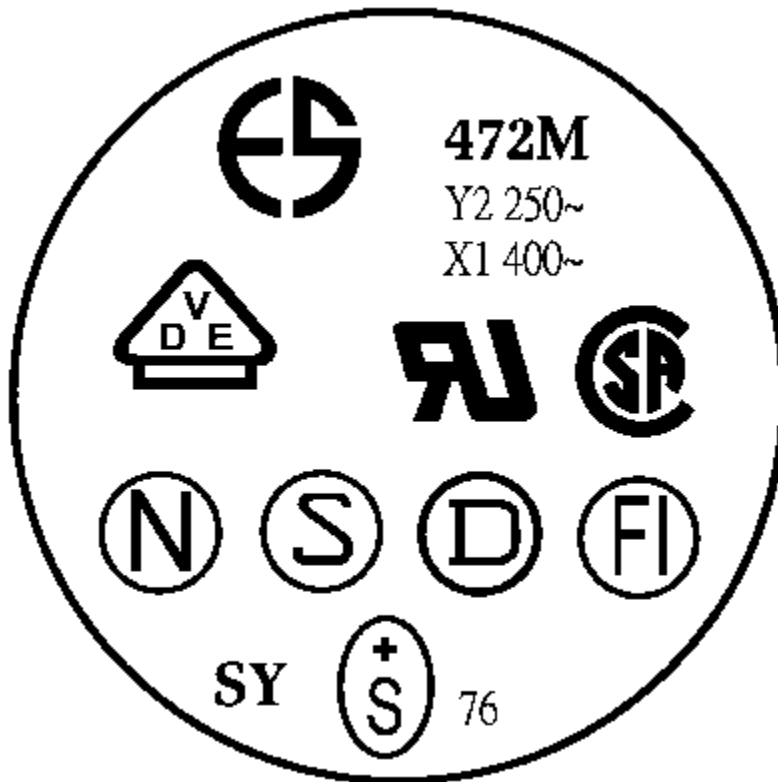
K= Standard Marking

5) Rated 2T= 250VAC

Voltage: 2V= 400VAC



MARKING



: The mark of EASE ELECTRONICS CO.,LTD.

472 : Capacitance ,EX. 472=47x100=4700(PF)

M : Capacitance Tolerance , EX. M=±20%

76 : Date Code

7: Last digit of ERA

6: Month Jan, Feb, Mar..... Sep=1,2,3.....9

Oct= O

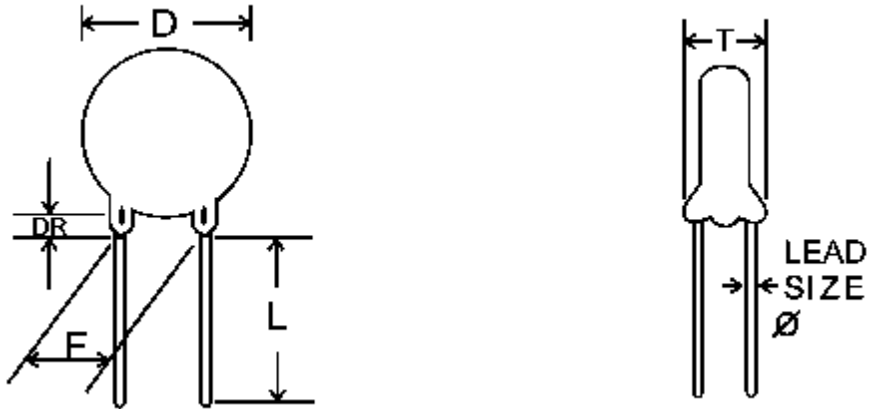
Nov= N

Dec= D

SY : Type Designation



PRODUCT SPECIFICATIONS X1: 400VAC



R.V.	CAP.	TOL. %	T.C.	D. mm (Max.)	F. ± 1.0 mm	L. mm	DR mm.	L.S. ± 0.05 mm	T. mm
250V	101K	± 10	Y5P	7	5 / 7.5	< 32	< 3.5	0.6	< 7
	151K	± 10	Y5P	7	5 / 7.5				
	221K	± 10	Y5P	8	5 / 7.5				
	331K	± 10	Y5P	8	5 / 7.5				
	471K	± 10	Y5P	9	5 / 7.5				
	681K	± 10	Y5P	9	5 / 7.5				
400V	102K	± 10	Y5P	10	5 / 7.5				
	681M	± 20	Y5U	8	5 / 7.5				
	102M	± 20	Y5U / Y5V	8 / 7	5 / 7.5				
	152M	± 20	Y5U / Y5V	9 / 8	5 / 7.5				
	222M	± 20	Y5U / Y5V	10 / 9	7.5 / 9.5				
	332M	± 20	Y5U / Y5V	12 / 10	7.5 / 9.5				
	472M	± 20	Y5U / Y5V	14 / 12	7.5 / 9.5				
	103M	± 20	Y5V	18	7.5 / 9.5				



ELECTRICAL SPECIFICATION

Capacitance Range: 10PF to 100,000PF

CLASS I: Test at 1.0±0.2V **RMS**, +25°C and **1MHZ**

CLASS II: Test at 1.0±0.2V **RMS**, +25°C and **1KHZ**

CLASSIII: Test at 0.5±0.2V**RMS**, +25°C and **1KHZ**.

Capacitance Tolerance:

J: ±5% (NP0, SL, and ST)

K: ±10% (NP0, SL, ST, X7R, Y5E, Y5P and Y5R)

M: ±20% (Z5U and Y5U)

Z: + 80%-20% (Z5V and Y5V)

Working Voltage:

500V, 1000V, 2000V, 3000V,.....15KV

Dielectric Strength:

500V and below: 250% rated voltage with 50mA max charging current

1KV to 3KV: 200% rated voltage with 50mA max charging current.

4KV and above: 150% rated voltage with 50mA max charging current.

Dissipation Factor:

CLASS I (30PF blow): Test at 1.0±0.2V **RMS**, +25°C and **1MHZ**, Q>400+20*Cap

CLASS I (30PF above): Test at 1.0±0.2V **RMS**, +25°C and **1MHZ**, Q≥1000

CLASS II: Test at 1.0±0.2V **RMS**, +25°C and **1KHZ**,

5% max for Y5V, 3% max for Z5V, 2.5% max for other

CLASSIII: Test at 0.5±0.2V **RMS**, +25°C and **1KHZ**.

Insulation Resistance:

Working voltage 500V and blow: 10,000 Megohms min at rate working voltage and 25°C

Working voltage 500V and above: 10,000 Megohms min at 500Vdc and 25°C

Humidity Test:

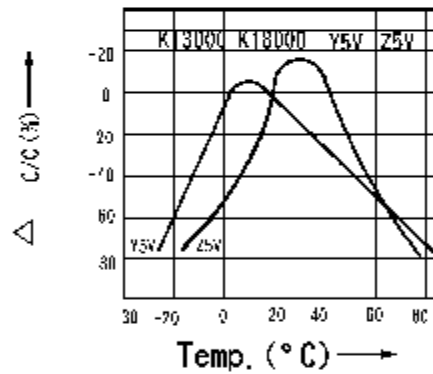
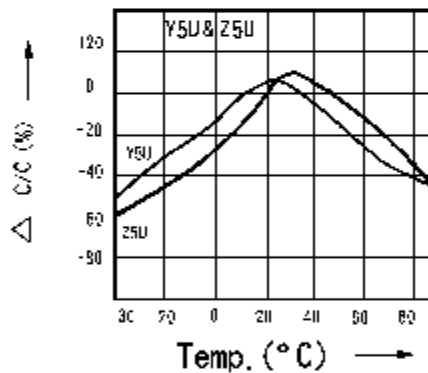
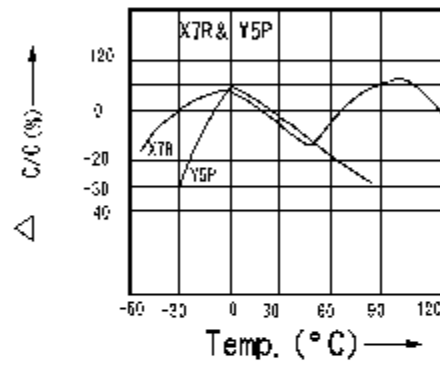
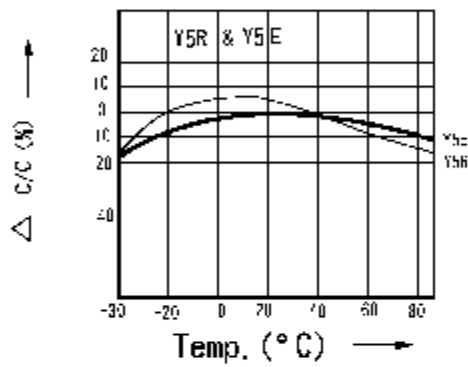
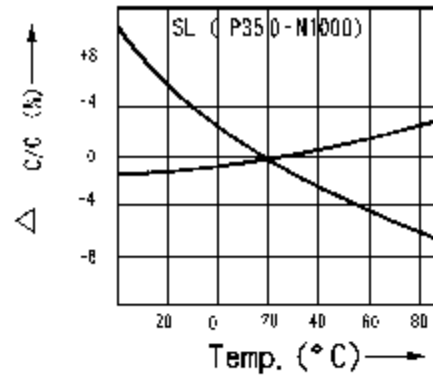
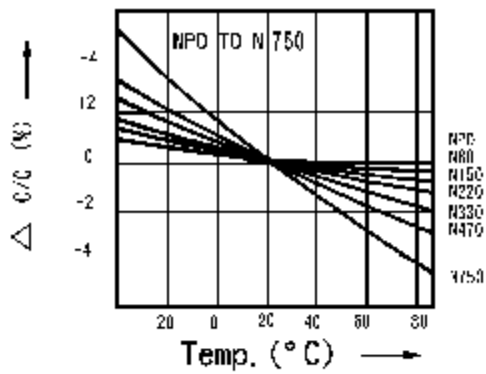
Capacitance Change	T.C.	Capacitance Change	Per EIA RS-198-C, method B3, Condition B.
	F	30% Max	
	other	20% Max	
D.F.	T.C.	Dissipation Factor:	
	F	5.0% Max	
	other	3.0% Max	

Life Test:

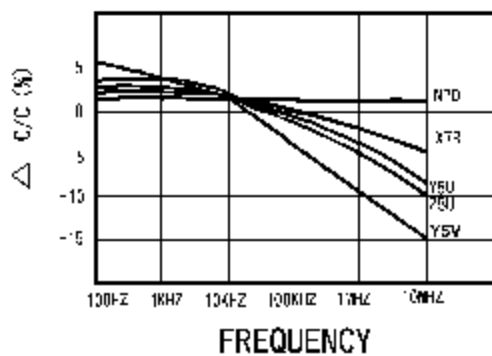
Capacitance Change	T.C.	Capacitance Change	Per EIA RS-198-C, method C2, Condition C, at 85±2°C, and 200% rated working voltage. (150% for parts rated over 500Vdc)
	F	30% Max	
	other	20% Max	
D.F.	T.C.	Dissipation Factor:	
	F	5.0% Max	
	other	3.0% Max	
I. R.	T.C.	Insulation Resistance	
	all	10,000 Megohms min	



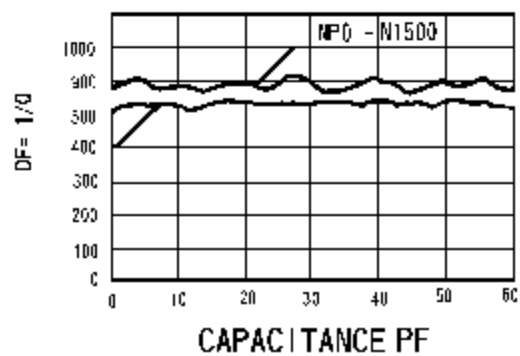
TEMPERATURE DEPENDENCY OF CAPACITANCE



△ CAPACITANCE VS FREQUENCY



DF AND Q





Parts Number System

E	B	102	K	3D	5	L	1	C
1)	2)	3)	4)	5)	6)	7)	8)	9)

1) Coating:

E: Epoxy Coating

D: Durez Coating

2)Temp. Char.:

C= NPO

U= N750

S= SL=P350-N1000

R= Y5R

T= ST

X= X7R

B= Y5E/Y5P

E= Y5U/Z5U

F= Y5V/Z5V

3)Capacitance:

101=10x10=100PF

222=22x100=2,200PF

103=10x1000

=10,000PF

4)Tolerance:

C= ±0.25PF

D= ±0.5PF

J= ±5%

K= ±10%

M= ±20%

Z= +80%-20%

5)Rated Voltage:

1H= 50V DC

1J= 63V DC

2A= 100V DC

2H= 500V DC

3A= 1KV DC

3B= 1.2KV DC

3C= 1.5KV DC

3D= 2KV DC

3E= 2.5KV DC

3F= 3KV DC

3G= 4KV DC

3H= 5KV DC

3I= 6KV DC

3J= 8KV DC

4A= 10KV DC

4B= 12KV DC

4C= 15KV DC

4D= 20KV DC

6)Lead Space:

5= 5.00±1.0mm

6= 6.35±1.0mm

7= 7.50±1.0mm

9= 9.50±1.0mm

7)Lead length:

S= 5±1.0mm

M= 10±1.0mm

L= <32mm

T= TAPING REEL

A= AMMO BOX

8) Lead Style:

1= Straight type
φ =0.60±0.05mm

2= Straight type
φ =0.65±0.05mm

3= Straight type
φ =0.80±0.05mm

4= Outside kink type
φ =0.60±0.05mm

5= Outside kink type
φ =0.65±0.05mm

6= Outside kink type
φ =0.80±0.05mm

7= Inside kink type
φ =0.60±0.05mm

8= Inside kink type
φ =0.65±0.05mm

9= Inside kink type
φ =0.80±0.05mm

9)Mark

B= B (T.C.)
102K (Capacitance)

2KV (Voltage)

C= 102K (Capacitance)
2KV (Voltage)

F= (Logo)

102K (Capacitance)

2KV (Voltage)



DIMENSION OF DC 50 & 100 VOLTAGE DISC CAP

CLASS I

T.C. W.V.DC	C (NPO)	U (N750)	S (SL)	DIAMENSION MAX
50V 100V	1-50PF	22-50PF	47-150PF	6Φ
	51-82PF	3,900PF	180-220PF	7Φ
	83-120PF	83-120PF	250-330PF	8Φ
	121-180PF	121-180PF	340-470PF	9Φ
	181-220PF	181-220PF	500-680PF	10Φ
	221-270PF	221-270PF	820PF	11Φ
	271-330PF	271-330PF	---	12Φ
	340-390PF	340-390PF	---	13Φ
	470PF	470PF	---	14Φ

CLASS II

T.C. W.V.DC	B (Y5E, Y5P)	E (Z5U)	F (Z5V)	DIAMENSION MAX
50V 100V	180-2,200PF	3,000-5,000PF	5,000-10,000PF	6Φ
	2,700-3,300PF	5,600-8,200PF	10,000-20,000PF	7Φ
	3,900-4,700PF	10,000-12,000PF	22,000PF	8Φ
	5,600-6,800PF	15,000PF	---	9Φ
	8,200PF	18,000-20,000PF	---	10Φ
	10,000PF	22,000PF	47,000PF	11Φ

CLASS III

T.C. W.V.DC	E (Y5U)	F (Y5V)	DIAMENSION MAX
50V 100V	20,000-56,000PF	20,000-56,000PF	6Φ
	68,000PF	68,000PF	7Φ
	---	100,000PF	8Φ
	100,000PF	150,000PF	9Φ
	---	200,000-220,000PF	10Φ



DIMENSION OF DC HIGH VOLTAGE DISC CAPACITORS

T.C. W.V.DC	B (Y5E,Y5P)	R (X7R)	E (Z5U,Y5U)	F (Z5V,Y5V)	DIAMENSION MAX
500V	100-680PF	---	1,000-2,200PF	2,200PF	6Φ
	1,000PF	---	3,900PF	4,700PF	7Φ
	1,500PF	---	4,700PF	6,800PF	8Φ
	2,200PF	---	6,800PF	10,000PF	9Φ
	3,300PF	---	10,000PF	---	10Φ
	4,700PF	---	---	20,000PF	11Φ
	10,000PF	---	20,000PF	33,000PF	14Φ
	---	---	33,000PF	47,000PF	18Φ
				100000PF	22Φ
1KV	100-170PF	100-170PF	1-100PF	1-100PF	6Φ
	560-1,000PF	560-1,000PF	1,500-2,200PF	1,500-2,200PF	7Φ
	---	---	3,300PF	4,700PF	8Φ
	1,500PF	1,500PF	3,900PF	6,800PF	9Φ
	2,200PF	2,200PF	4,700PF	10,000PF	10Φ
	3,300PF	3,300PF	10,000PF	15,000PF	11Φ
	4,700PF	4,700PF	15,000PF	22,000PF	14Φ
	6,800PF	6,800PF	22,000PF	33,000PF	16Φ
	8,200PF	8,200PF	33,000PF	47,000PF	18Φ
	10,000PF	10,000PF	---	100,000PF	20Φ
2KV	100-170PF	100-170PF	1-100PF	1-100PF	7Φ
	560PF	560PF	1,500PF	2,200PF	8Φ
	820PF	820PF	2,200PF	3,300PF	9Φ
	1,000PF	1,000PF	3,300PF	4,700PF	10Φ
	2,200PF	2,200PF	4,700PF	6,800PF	12Φ
	3,300PF	3,300PF	6,800-8,200PF	8,200PF	13Φ
	4,700PF	4,700PF	10,000PF	10,000PF	15Φ
	5,600-6,800PF	5,600-6,800PF		22,000PF	18Φ
	82,000PF	82,000PF	22,000PF	--	20Φ
	10,000PF	10,000PF			22Φ
3KV	100-220PF	100-220PF		1-100PF	7Φ
	390-470PF	390-470PF	1,000PF	1,500PF	8Φ
	680PF	680PF	1,500PF	2,200PF	9Φ
	820-1,000PF	820-1,000PF	2,200PF	3,300PF	10Φ
	1,500PF	1,500PF	3,300PF	4,700PF	12Φ
	1,800PF	1,800PF	4,700PF	5,600PF	14Φ
	2,000-2,700PF	2,000-2,700PF	5,600PF	10,000PF	16Φ
	3,300-3,900PF	3,300-3,900PF	6,800PF	--	18Φ
	4,700PF	4,700PF	8,200-10,000PF		20Φ



DIMENSION OF DC HIGH VOLTAGE DISC CAPACITORS

T.C. W.V.DC	B (Y5E,Y5P)	E (Z5U,Y5U)	F (Z5V,Y5V)	DIAMENSION MAX
4KV	100-270PF	---	1,000PF	8Φ
	330-560PF	1,000PF	1,500PF	9Φ
	680-820PF	1,500PF	2,200PF	10Φ
	1,000PF	---	---	11Φ
	1,200PF	2,200PF	3,300PF	12Φ
	1,500PF	3,300PF	4,700PF	14Φ
	2,200PF	4,700PF	5,600PF	16Φ
	---	6,800PF	---	18Φ
	3,300PF	8,200PF	10,000PF	20Φ
	----	10,000PF	---	22Φ
5KV	220PF	---	---	8Φ
	270-330PF	---	1,000PF	9Φ
	470PF	1,000PF	---	10Φ
	680PF	1,500PF	1,500PF	12Φ
	1,000PF	---	1,800PF	13Φ
	1,500PF	1,800PF	2,200PF	15Φ
	2,200PF	2,200PF	3,300PF	18Φ
6KV	100PF	----	1000PF	8Φ
	330PF	470PF	----	9Φ
	470PF	----	1500PF	10Φ
	560PF	1000PF	2200PF	12Φ
	1000PF	1500PF	----	14Φ
	----	2200PF	4700PF	16Φ

Note: For working Voltages above 6 KV, please contact sales office.



DIMENSION AND CAPACITANCE RANGE

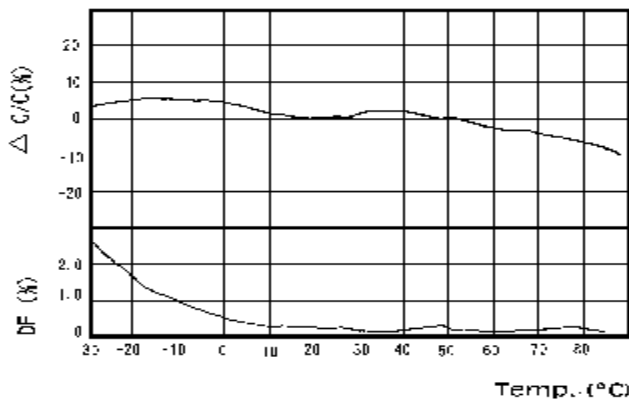
T.C. W.V.DC	T ST(Y5P)	R (Y5R)	DIAMENSION MAX
1KV	---	120-270PF	6Φ
	---	330-470PF	7Φ
	---	560PF	8Φ
	---	---	9Φ
	---	680-1,000PF	10Φ
	---	1,200PF	11Φ
	---	1,500-1,800PF	14Φ
	---	2,000-2,200PF	16Φ
	---	2,700PF	18Φ
	---	---	20Φ
2KV	---	---	---
	390PF	180-330PF	8Φ
	470-560PF	390-470PF	9Φ
	820PF	500-560PF	10Φ
	1,000PF	680-820PF	11Φ
	1,200PF	1,000PF	12Φ
	1,500-1,800PF	1,200PF	13Φ
	2,200-2,700PF	1,500PF	15Φ
	---	1,800PF	18Φ
	---	2,000-2,200PF	20Φ
	---	2,700PF	24Φ
3KV	---	---	---
	---	150PF	8Φ
	---	180-270PF	9Φ
	---	330-390PF	10Φ
	---	470-560PF	12Φ
	---	680PF	14Φ
	---	820-1,000PF	16Φ
	---	---	18Φ
	---	---	20Φ

These mediums High-Voltage ceramic capacitors ST type have a primary of SrTiO₃ and provide low voltage distortion and piezoelectric as well as excellent.

Dissipation Factor: ST ≤ 0.5%, Y5R ≤ 0.2%

Insulation Resistance: ≥ 10 GΩ ST Temperature Characteristics = Y5P

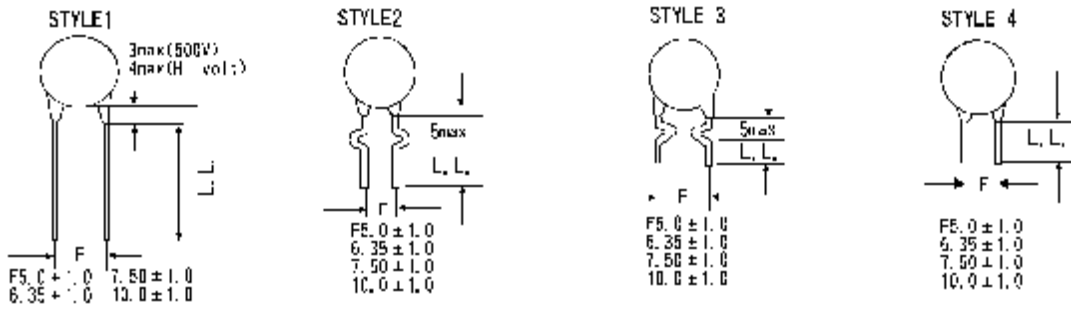
TEMPERATURE DEPENDENCY OF CAPACITANCE



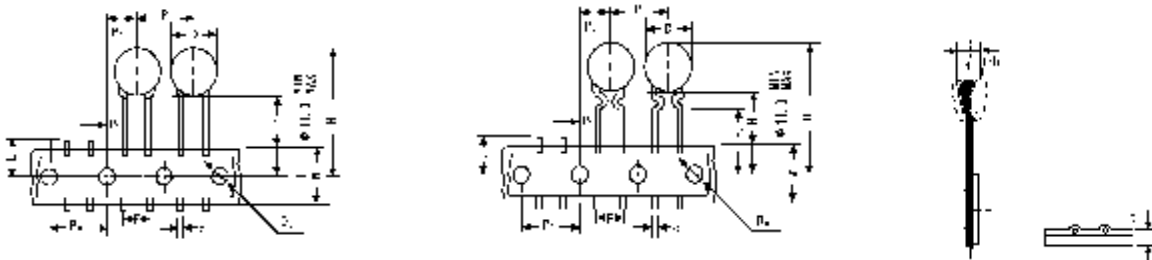


SPECIAL LEAD TYPE OF DISC CAPACITORS

DIMENSIONS (UNIT MILLIMETER)



TAPING LEAD CAPACITORS FOR AUTOMATIC INSERTION

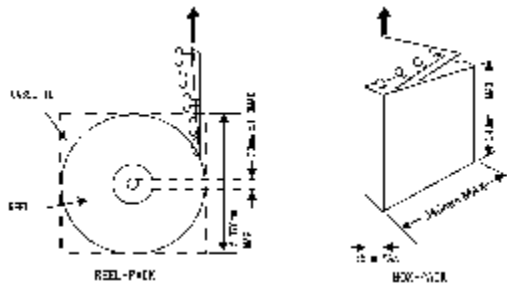


Symbol	D	d	P	P ₀	P ₁	P ₂	F	H ₀	H	H ₁	D ₀	W	L	T
Value	Max 11.0	0.6	12.7	12.7	3.85	6.35	5.0	16.0 18.0	20 23	Max 32 25	4.0	18.0	Max 11.0	0.7
Tolerance	----	+0.06 -0.05	± 1	± 0.2	± 0.7	± 1.0	+0.8 -0.2	± 1.0	± 1.0	----	± 0.2	± 0.5	----	± 0.2

PACKING QUANTITY

Package	One Box	Carton Box
Reel Pack	2,500 PCS	25,000 PCS
Box Pack	2,000 PCS	20,000 PCS

REEL AND BOX DIMENSIONS(mm)





Radial Leaded, Epoxy Dipped Multilayer Ceramic Capacitors

Capacitance Range: 10PF to 100,000PF

Capacitance Test: @25°C

NP0, X7R: 1.0±0.25VRMS and 1KHz, 1MHz

for values below 100PF.

Capacitance Tolerance:

NP0: C=±0.25PF (10PF and below)

D=±0.5PF (10PF and below)

J=±5% (10PF and below)

K=±10% (5.6PF and below)

X7R: K=±10%

M=±20%

Y5V: M=±20%

Z=+80% -20%

Y5V: 0.5VRMS maximum and 1KHz

Dissipation Factor:

NP0: 0.1% max @25°C, 1.0±0.25VRMS and

1KHz. 1MHz for values below 100PF.

X7R: 2.5% max @25°C, 1.0±0.25VRMS and

1KHz.

Y5V: 5.0% max @25°C, 0.5VRMS max and

1KHz.

Working Voltage: 25V, 50V and 100Vdc

Temperature Characteristics:

NP0: 0±30ppm°C, -55°C to +125°C

X7R: ±15%ΔC, -55°C to +125°C

Y5V: +22-82% ΔC, -25°C to +85°C

Dielectric Strength:

NP0, X7R: 250% rated voltage with 50mA

maximum charging current

Y5V: 200% rated voltage with 50mA maximum

charging current

Insulation Resistance:

NP0, X7R: 100,000 Megohms min. or

1000 ohm-farads min.,

whichever is less at 25°C.

Y5V: 10,000 Megohms min. or

1000 ohm-farads min.,

Whichever is less at 25°C.

Life Test: [1,000 hrs]

NP0, X7R: 200% rated voltage at +125°C.

Y5V: 150% rated voltage at +85°C.

Humidity Resistance: [MIL-STD-202 Method

106]

NP0, X7R, Y5V: 96hrs at 40°C related

humidity 90~95%.

Mechanical Specification:

Cast: Conformal coating (epoxy)

Lead Material: Solder coated, copper

Package Method: Bulk, Tape & Ammo

Solderability: [MIL-STD-202, Method 208]

Leach Resistance: Temp 230°C, 20 seconds

immersion in SN62

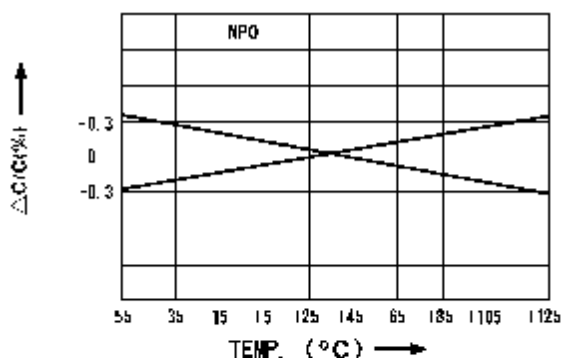
Thermal Shock: [MIL-STD-202 Method 107,

condition A]

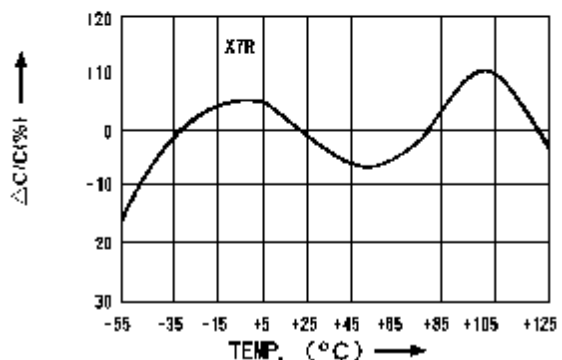
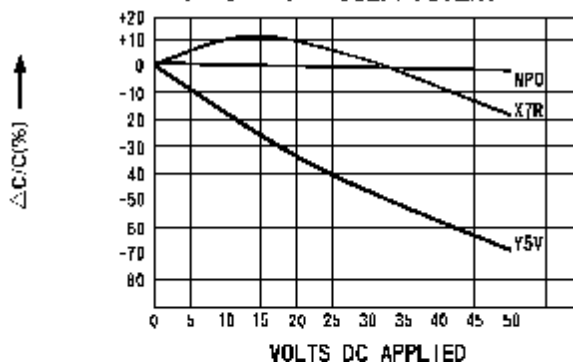


TYPICAL CHARACTERISTICS

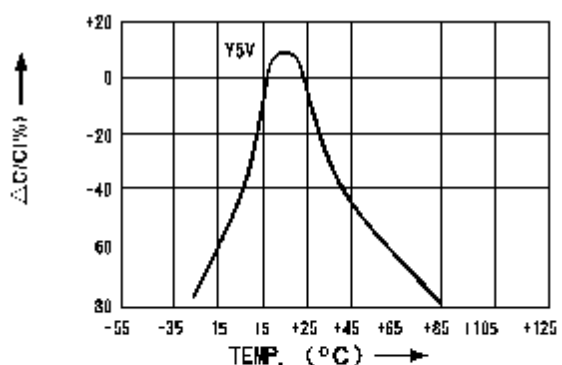
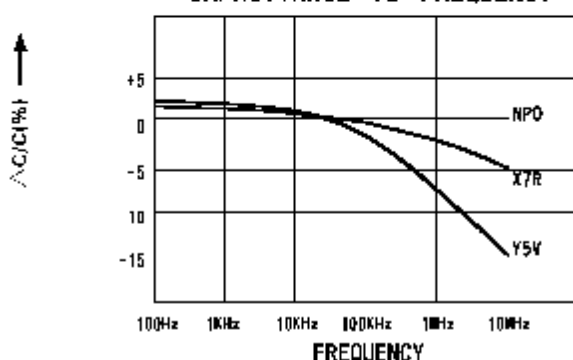
TEMPERATURE COEFFICIENT



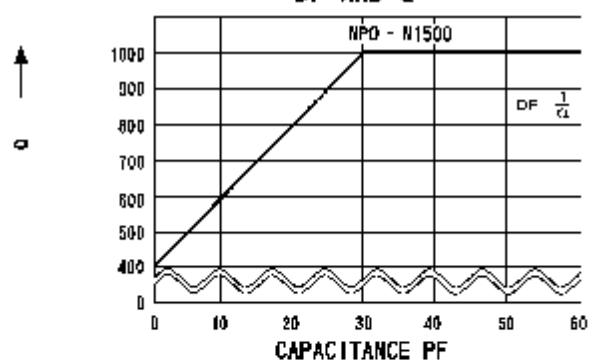
DC VOLTAGE COEFFICIENT



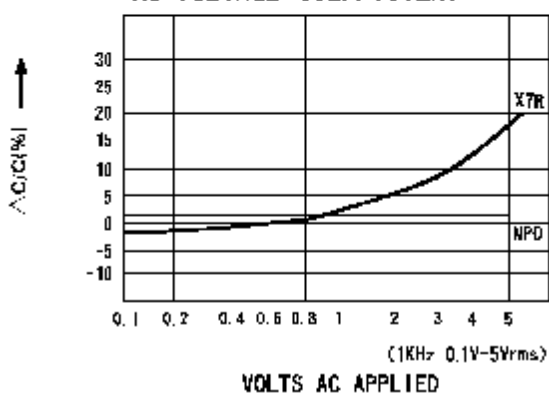
Δ CAPACITANCE VS FREQUENCY



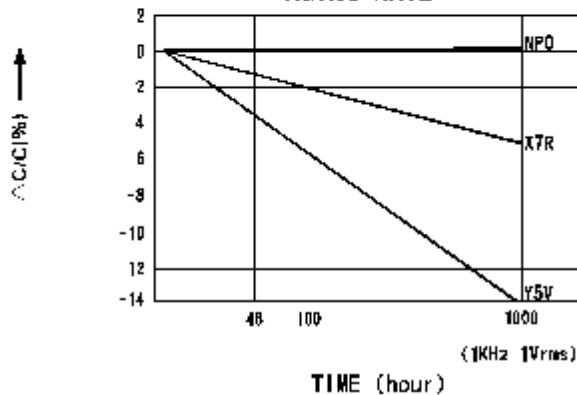
DF AND Q



AC VOLTAGE COEFFICIENT



AGING RATE





Radial Leaded, Epoxy Dipped Multilayer Ceramic Capacitors

Parts Number System									
R	20	X7R	104	K	5	H	5	05	Y
1)	2)	3)	4)	5)	6)	7)	8)	9)	10)

1) Product Type:

R: Mono Radial
(Radial Lead)

7) Lead Style:

L= Straight leads
H= High seated & right angle

2) Size Code:

See sizechart for available size by capacitance and voltage

8)Lead length:

3= 3mm
4= 4mm
S= 5mm
6= 6mm
7= 7mm
8= 8mm
9= 9mm
M= 10mm
L= 25mm
T= Tape & Reel
A= Ammo Box

3)Temp. Char.:

NPO (COG)
X7R
Y5V

4)Capacitance:

101=10x10=100PF
222=22x100=2,200PF
103=10x1000
=10,000PF

5)Tolerance:

C= ± 0.25 PF
D= ± 0.5 PF
J= $\pm 5\%$
K= $\pm 10\%$
M= $\pm 20\%$
Z= +80%-20%

9)Rated Voltage:

02= 25V dc
05= 50V dc
10= 100V dc
20= 200V dc

6) Lead Space:

2= 2.54mm (0.10")
5= 5.08mm (0.20")

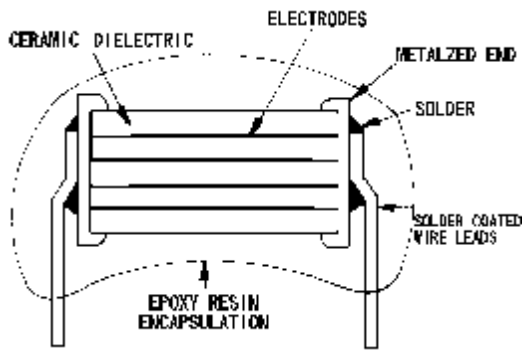
10)Color:

Y= Yellow

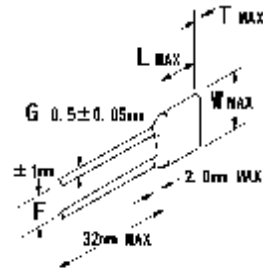


STYLE OF RADIAL LEADED

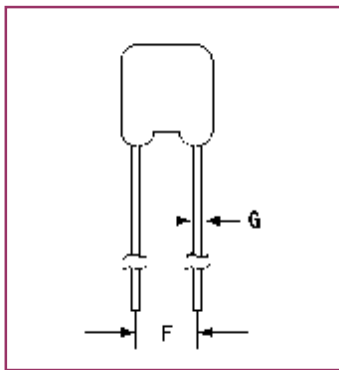
MONOLITHIC CONSTRUCTION



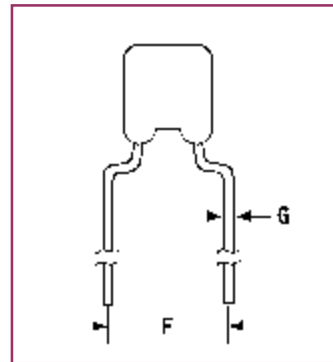
CASE SIZE



LEAD STYLES:



STYLE L
STRAIGHT LEAD



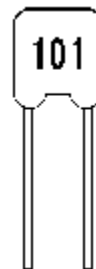
STYLE H
HIGH SEATED ASSEMBLY

SIZE CODE and DIMENSIONS: Units in millimeter

SIZE CODE	L	W	T	LEAD DIAMETER(G)	LEAD LENGTH(L)	LEAD SPACE (F)	LEAD STYLES
R15	3.8mm	3.8mm	2.8mm	0.5±0.05mm	3.0 ~ 32mm	2.54mm	L
R15	3.8mm	3.8mm	2.8mm	0.5±0.05mm	3.0 ~ 32mm	5.08mm	H
R20	5.1mm	5.1mm	3.2mm	0.5±0.05mm	3.0 ~ 32mm	2.54mm	L
R20	5.1mm	5.1mm	3.2mm	0.5±0.05mm	3.0 ~ 32mm	5.08mm	H

MARKING

The mark of capacitance value.





Radial Leaded, Epoxy Dipped Multilayer Ceramic Capacitors

T. C.		NP0		X7R		Y5V	
SIZE		R15	R20	R15	R20	R15	R20
WVDC CAP		50	50	50	50	50	50
1PF	1R0						
to	To						
100	101						
120	121						
150	151						
180	181						
220	221						
270	271						
330	331						
390	391						
470	471						
560	561						
680	681						
820	821						
1,000	102						
1,200	122						
1,500	152						
1,800	182						
2,200	222						
2,700	272						
3,300	332						
3,900	392						
4,700	472						
5,600	562						
6,800	682						
8,200	822						
.01uF	103						
.015	153						
.022	223						
.033	333						
.047	473						
.068	683						
.100	104						
.12	124						
.15	154						
.22	224						
.33	334						
.47	474						
.68	684						
1.0	105						

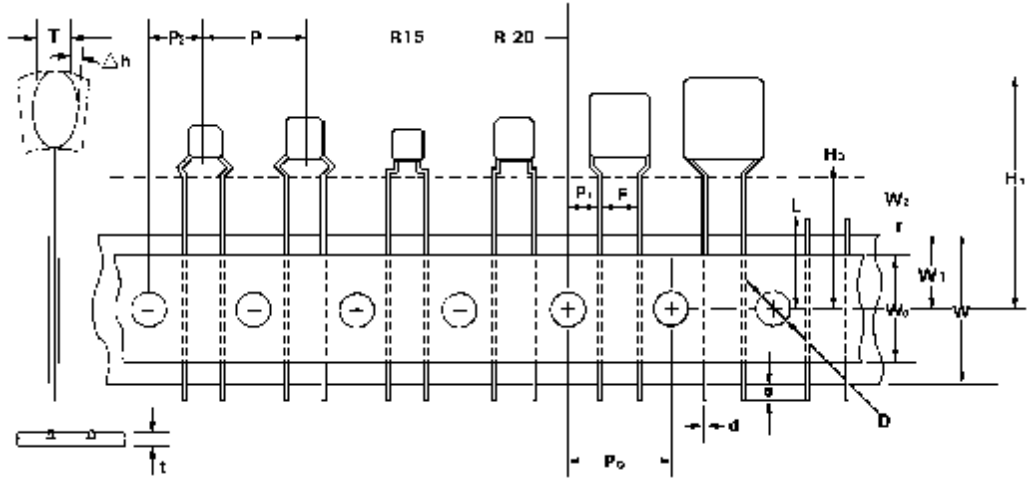


TAPING DIMENSIONS OF RADIAL LEADED

Radial TAPE AND REEL

Suitable for the auto insertion machine.

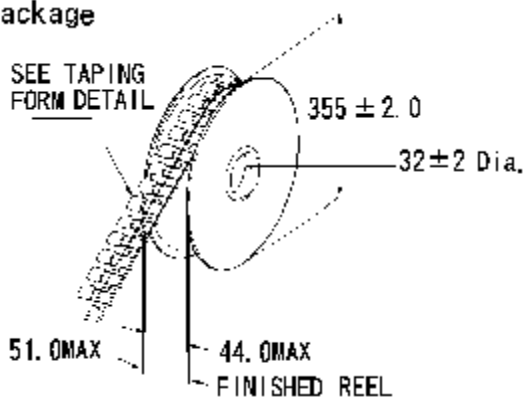
DIMENSION: Units in millimeter



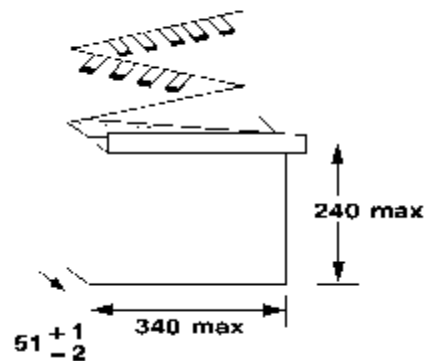
Description	Symbol	Dimensions	Description	Symbol	Dimension
Body		10.16X10.16mm	Feed hole pitch	P0	±1.05mm
Wire lead Diameter	d	0.5±0.05mm	Overall tape thickness	t	1.00mm Max
Feed Hole Diameter	D	4±0.5mm	Body thickness	T	4.5mm Max
Lead end Protrusion		+0.5-3.5mm	Lead crimp height	H0	16±0.5 to 18±0.5mm
Lead Spacing	F	5.08±1mm	Carrier tape width	W	18.05±0.55mm
Body inclination	△h	0±1.02mm	Adhesive tape width	W0	13.00 Ref.
Top height	H1	32.25mm Max	Feed hole height	W1	9.0±0.50mm
Rejected Component	L	11.0mm Max	Feed hole off alignment	P1	3.81±0.50mm
Out height				P2	6.35±1.05mm
Taping Pitch	P	12.7±1.0mm	Adhesive tape margin	W2	3.10 Ref.

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



MEMO