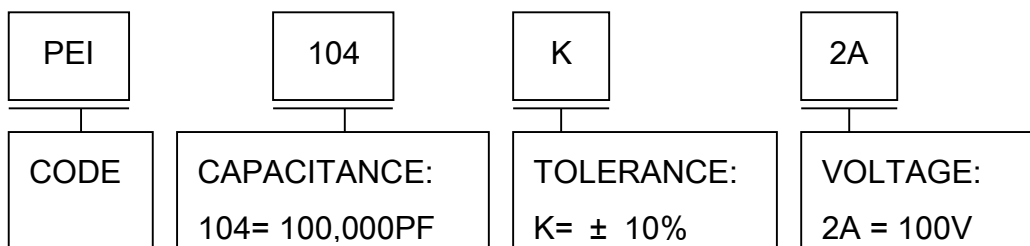


## HOW TO ORDER



## TOLERANCE

SYMBOLS	F	G	H	I	J	K	M
TOL.	$\pm 1\%$	$\pm 2\%$	$\pm 2.5\%$	$\pm 3\%$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$

## CAPACITANCE CODE:

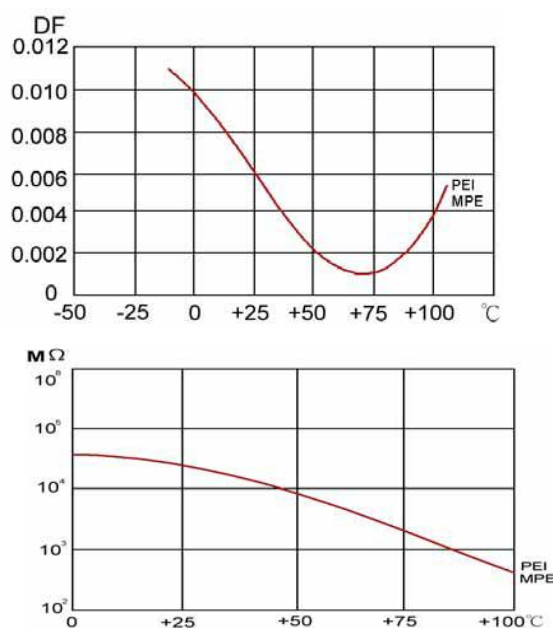
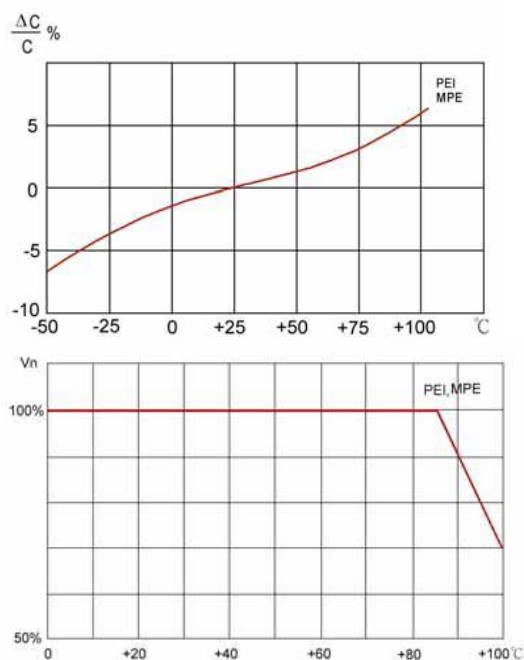
CODE	101	102	103	104	105	106
PF	100PF	1,000PF	10,000PF	100,000PF		
NF	-	1nF	10nF	100nF	1000nF	
uF	-	0.001uF	0.01uF	0.1uF	1uF	10uF

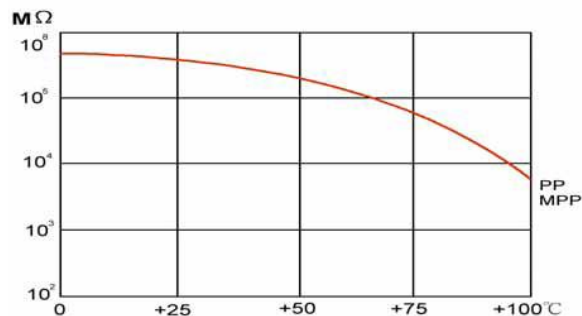
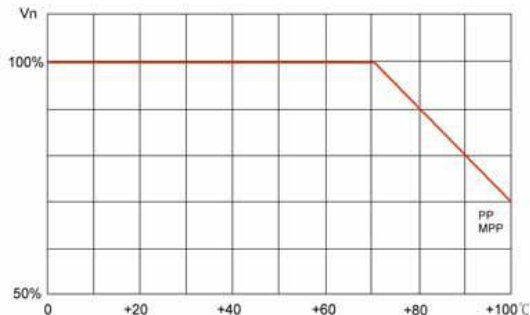
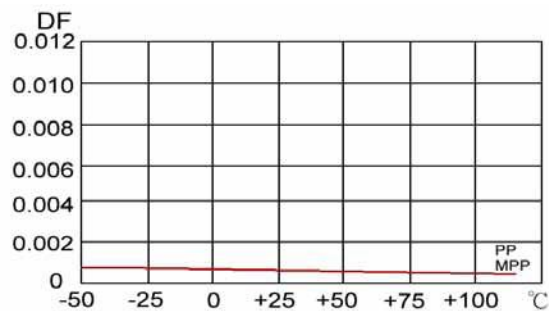
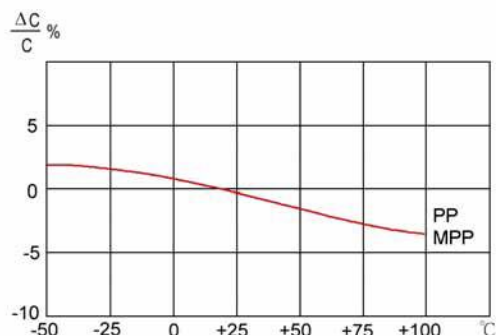
## VOLTAGE CODE:

CODE	1H	2A	2B	2D	2E	2G	2H	2J	3A	3B	3C	3D
WVDC	50V	100V	125V	200V	250V	400V	500V	630V	1000V	1250V	1600V	2000V

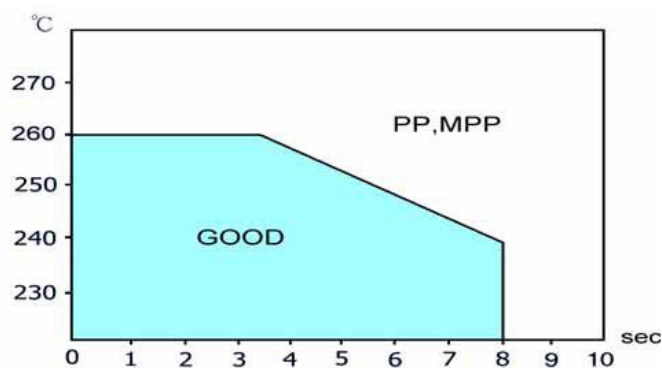
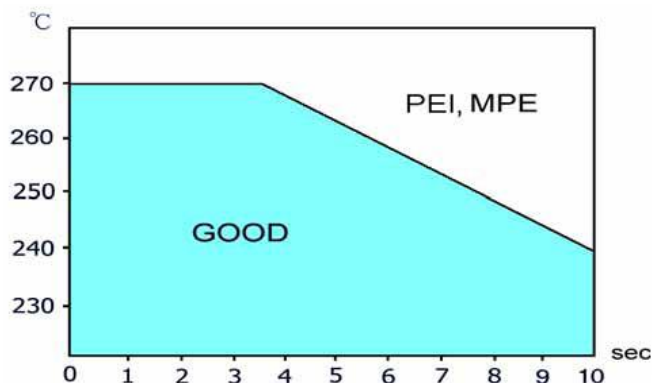
## CHARACTERISTICS REFERENCE

### TEMPERATURE CHARACTERISTICS

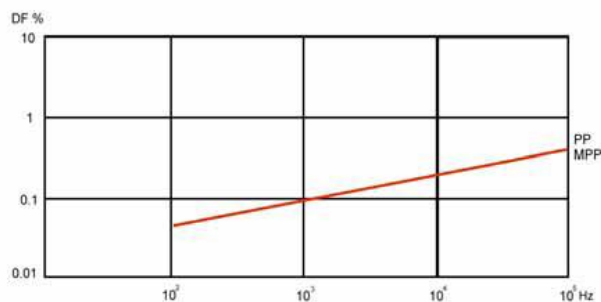
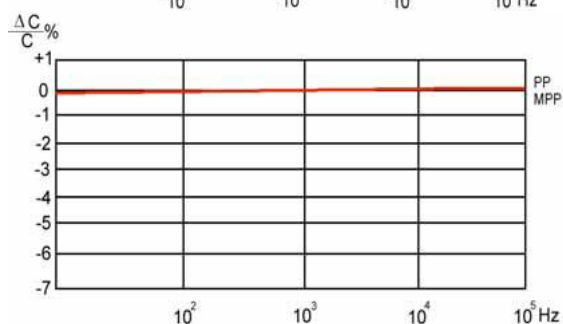
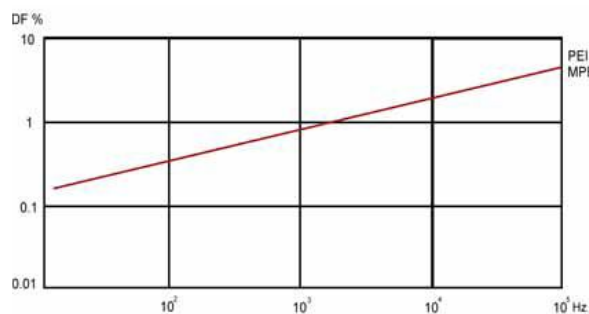
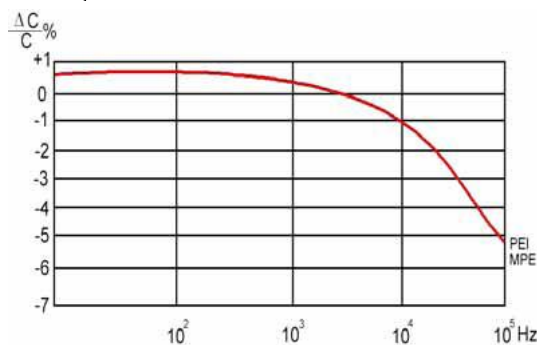




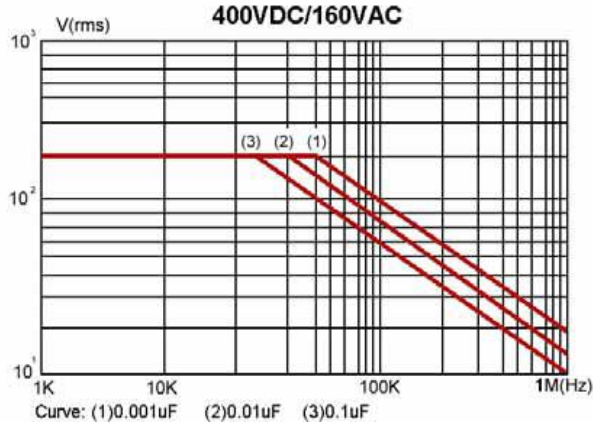
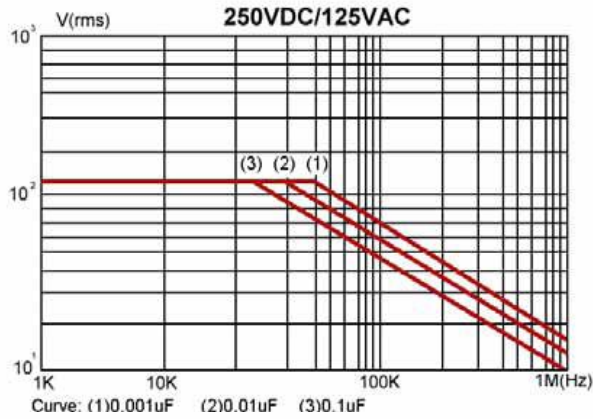
## SOLDERING TEMPERATURE VS TIME



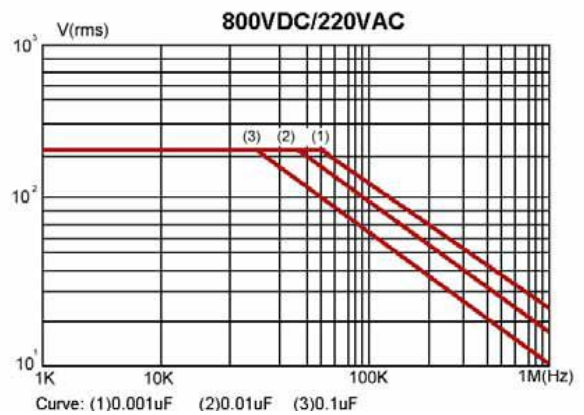
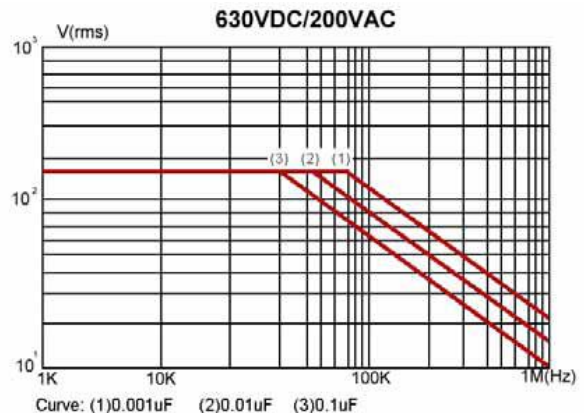
## FREQUENCY CHARACTERISTICS



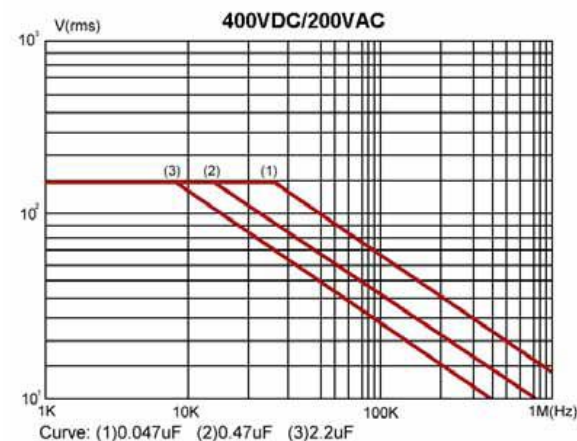
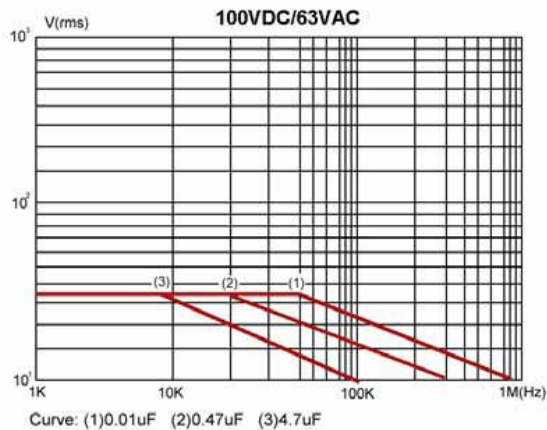
RATED VOLTAGE FREQUENCY



POLYPROPYLENE (PPN)

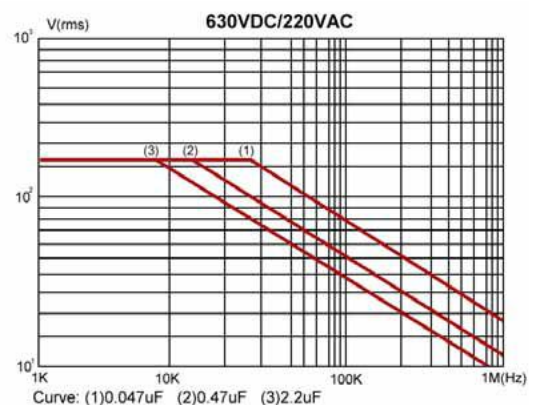
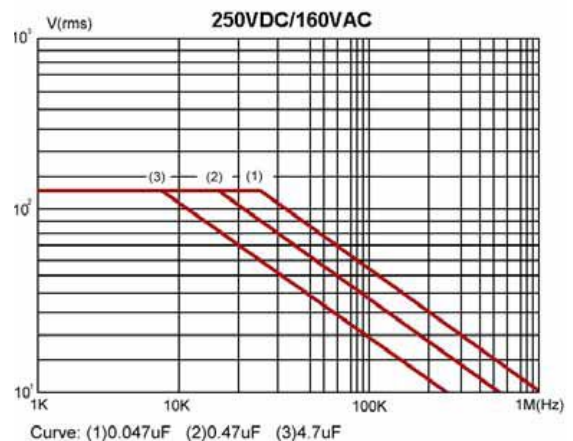


RATED VOLTAGE FREQUENCY

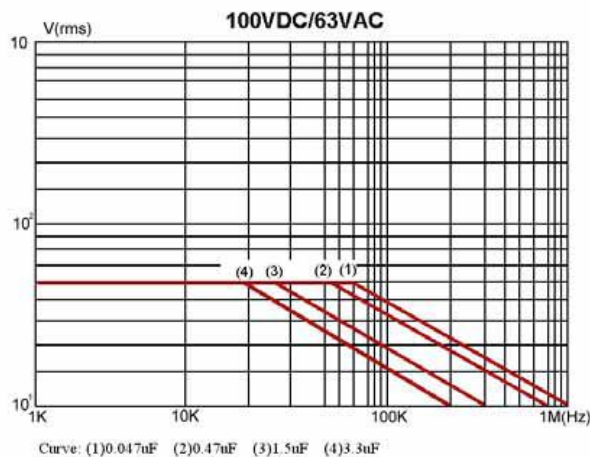


METALLIZED POLYESTER (MPE)

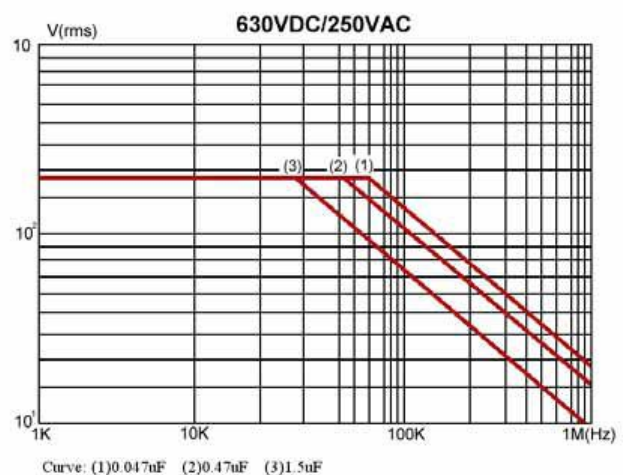
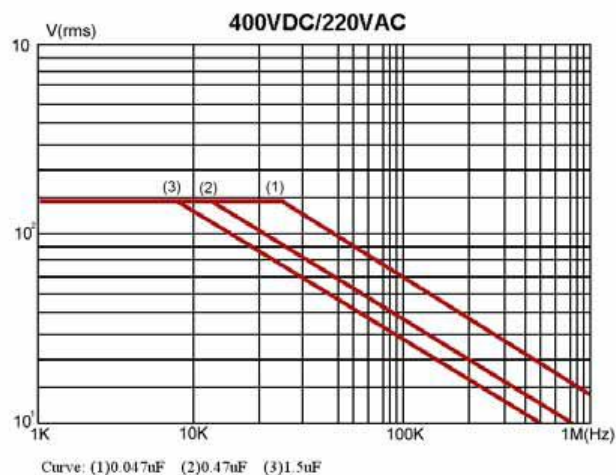
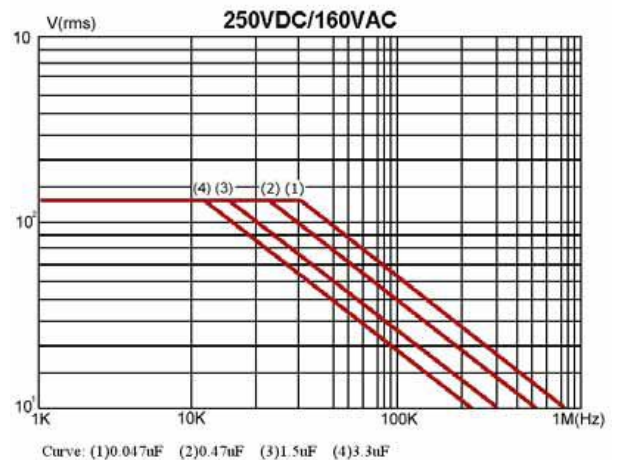
POLYESTER (PEI)



## RETED VOLTAGE FREQUENCY



## POLYPROPYLENE (MPP)



## CHARACTERISTICS REFERENCE

### GENERAL APPLICATION REFERENCE

Plastic film capacitors are now widely used by the electronic industry, any of their selection is based upon the following factors:

#### ● FREQUENCY:

Polyester (PE) capacitors have higher dielectric losses and as a result are generally suitable at frequencies of 10KHz or less. They have a wider temperature range than the other common use dielectric materials and due to a higher dielectric constant can produce high C values in smaller package dimensions.

Polypropylene (PP) capacitors have relatively low dissipation factors and dielectric losses; as such they are suitable for high voltages, high frequencies and high pulse

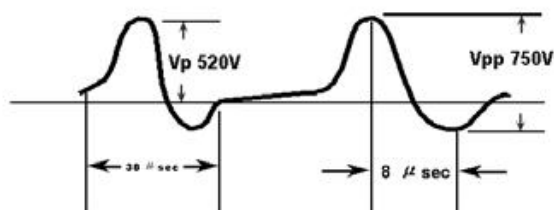
currents. They are larger in size, have a narrow temperature range and negative temperature coefficient.

Polycarbonate (PC) capacitors have moderate features of both PE&PP styles, but are more expensive. They do offer more stable capacitance versus temperature characteristics and good long-term stability.

Ploystyrene (PS) capacitors have excellent high frequency performance due to their low dissipation factor and very low dielectric absorption characteristics.

### ● PEAK VOLTAGE:

The peak voltage against a zero potential reference shall always be less than nominal DC voltage rating of the capacitor. The rates of voltage change (dv/dt) of individual specifications are valid for pulse voltages equal to or less than the rated DC voltage. If the pulse voltage is less, then a factor of “VDC/applied voltage” may be used.



$V_{rms} \leq V_{AC}$  rated for sinusoidal wave

$$V_{rms} = \frac{V_{PP}}{Z_x \sqrt{2}}$$

$V_p \leq V_{DC}$  rated

And the  $V_{rms}$  voltage derived from the peak voltage shall always be less than the nominal AC voltage rating of the capacitor.

### ● PERMISSIBLE CURRENT:

Under AC operation, the permissible current to capacitor must be less than  $A_{p-p}$ . As the following details and graphs indicate, operation at higher than permissible currents may deteriorate performance and damage the capacitor due to internal temperature rise.

### ● INHERENT TEMPERATURE RISE:

When capacitor is operated in AC circuit, especially at high frequency, temperature of capacitor rises inherently in case temperature rises too high; performance of capacitor may be deteriorated or damaged. The inherent temperature rise at no air circulation (Ambient temp. at 40°C) Shall be within a value specified below. (The allowable value depends on dielectric. For details, please contact us for more information.)



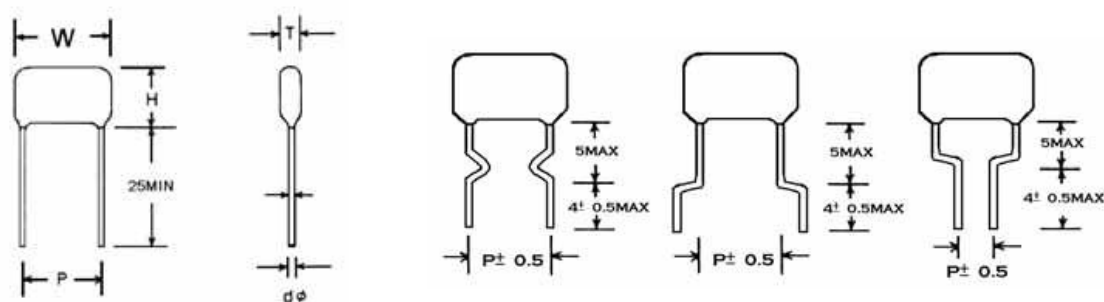
## RELIABILITY ASSURANCE

Item	Description					
	MPE	MPP	PPN	PEN	PEI	PS
Capacitance Drift	Cycles through the operation temperature range.					
	2% Max.	2% Max.	2% Max.	2% Max.	2% Max.	0.5% Max.
Humidity Test	It will withstand a test of R.H. 95% at 40°C for 240hrs.					
	C ≤ 5% DF < 1.2% IR > 5000MΩ	C ≤ 5% DF < 0.1% IR > 10000MΩ	C ≤ 3% DF < 0.1% IR > 10000MΩ	C ≤ 3% DF < 1.2% IR > 10000MΩ	C ≤ 3% DF < 1.2% IR > 10000MΩ	C ≤ 2% DF < 0.15% IR > 50000MΩ
Load Life Test	It will withstand a testing of 140% of R.V. for 1000hrs at 85°C. (70°C PS)					
	C ≤ 5% DF < 1.2% IR > 5000MΩ	C ≤ 5% DF < 0.1% IR > 10000MΩ	C ≤ 3% DF < 0.1% IR > 10000MΩ	C ≤ 3% DF < 1.2% IR > 10000MΩ	C ≤ 3% DF < 1.2% IR > 10000MΩ	C ≤ 2% DF < 0.15% IR > 50000MΩ
Lead Pull Test	It will withstand a pull of 1.5KG applied axially for seconds.					
Lead Bend Test	It will sustain 2 cycles without breaking when attaching a load of 0.5KG to the end of the lead and than rotating the capacitor 90 degree from the direction of lead egress than 180 degree in opposite direction, then back to the starting point.					
Solderability	The lead shall be immersed in molten solder (230 ± 5°C) for 2 ± 0.5 sec. At the completion of the test, the wound lead and the gap in the wound lead will be covered and filled by solder. And it is difficult for taking the wound leads apart by finger to turn it.					
Dielectric Strength	Shall withstand 200% or 160% of rated voltage at 25°C for 1 minute with current limiting resistance of 1Ω/V.					

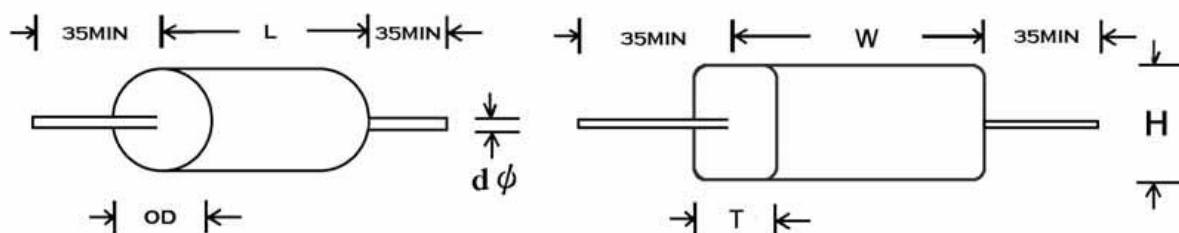
## DIAGRAM

### 1. RADIAL (NON-INDUCTIVE)

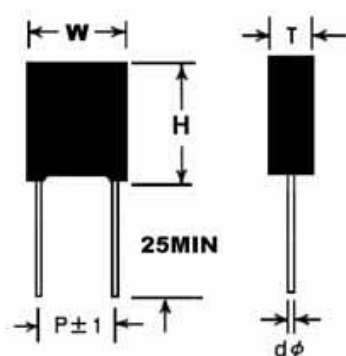
Unit – mm



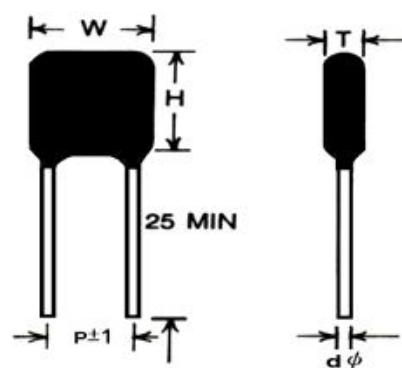
### 2. AXIAL (NON-INDUCTIVE)



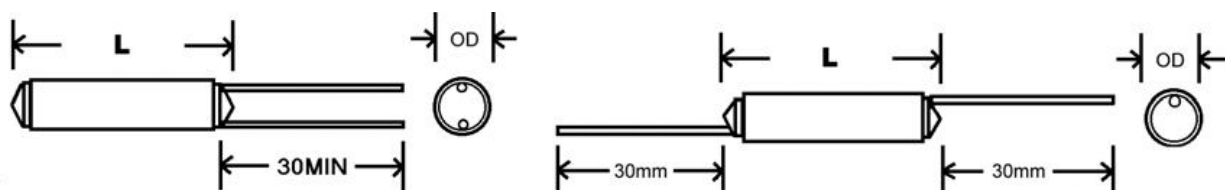
### 3. BOX



### 4. PEI

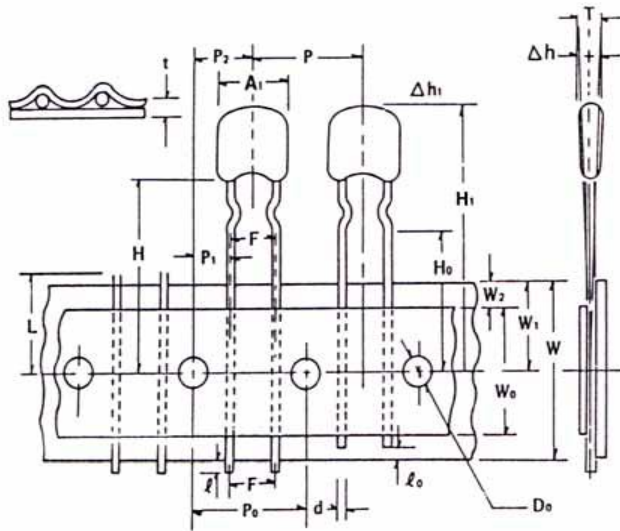


### 5. PS



## LEAD TAPING & PACKING OF RADIAL CAPACITOR

## TAPING ON REELS OR AMMO PACKING FOR AUTOMATIC INSERTION

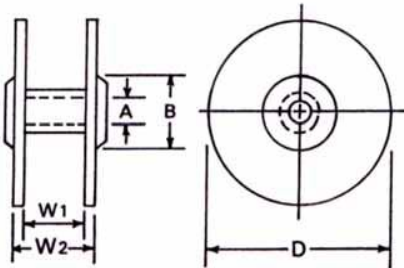
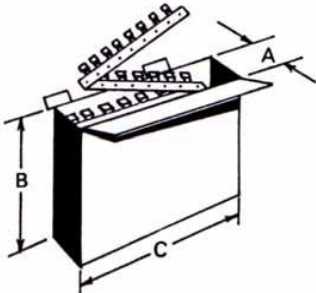


Unit: mm			
Symbol	Dimension	Symbol	Dimension
A	Under 10.0	$W_0$	Above 12.5
B	Ref. Bulk catalog	$W_1$	$9.0 = 0.75/-0.5$
C	Ref. Bulk catalog	$W_2$	Under 3
P	$12.7 \pm 1.0$	H	$20.5 \pm 0.75$
$P_0$	$12.7 \pm 0.3$	$H_0$	$16.0 \pm 0.5$
$P_1$	$3.85 \pm 0.7$	I	Under 2
$P_2$	$6.35 \pm 1.3$		
d	0.5/0.6	$D_0$	$4.0 \pm 0.3$
F	$5.0 + 0.8/-0.2$	t	$0.7 \pm 0.2$
$\Delta h$	$0 \pm 2.0$	L	Under 11
W	$18.0 + 1.0/-0.5$		

Remark:

- \* Allowance of accumulated pitch less than 1mm at the sum of 20 pitches.
- \* Continuous empty component less than 3 pcs.
- \* Total empty on one reel less than 1%

## PACKING SPECIFICATIONS

TYPE	REEL PACKING			AMMO BOX PACKING		
						
DIMENSIONS Unit: mm	A	14 - 30		A	50 +5/-2	
	B	80 min		B	260 ± 2	
	D	370 max		C	330 ± 2	
	W <sub>1</sub>	45 +5/-2				
	W <sub>2</sub>	55 max				
PEI Packing Q'ty	0.001~0.0082	0.01~0.047	0.056~0.1	0.001~0.0082	0.01~0.047	0.056~0.1
	2000pcs	1500pcs	1000pcs	2000pcs	1500pcs	1000pcs