



# 東莞市智旭電子有限公司

## JYH HSU (JEC) ELECTRONICS LTD.,

文件编号: P005  
 版本: 7  
 制定日期: 2020.04.01

### 承 认 书

### SPECIFICATION FOR APPROVAL

Description: CERAMIC DISC CAPACITOR SAFETY RECOGNIZED

JY SERIES X1:400VAC Y2: 300VAC

客户名称

CUSTOMER \_\_\_\_\_

品 名

PART NAME \_\_\_\_\_

安规 Y2 电容器

客户料号

Customer Part No: \_\_\_\_\_

210943  
 210945  
 210947  
 210949  
 210951

承認規格

APPROVE ITEM \_\_\_\_\_

Y5P - 102K/300VAC P=7.5  
 Y5V - 222M/300VAC P=7.5  
 Y5V - 332M/300VAC P=7.5  
 Y5V - 472M/300VAC P=7.5  
 Y5V - 103M/300VAC P=7.5

供应商料号

Part Number \_\_\_\_\_

JY102K2FY5PS7.5L  
 JY222M2FY5VS7.5L  
 JY332M2FY5VS7.5L  
 JY472M2FY5VS7.5L  
 JY103M2FY5VS7.5L

日 期

DATE \_\_\_\_\_

2020-08-18

客户承认

Customer approval

供应商承认

Supplier admit that



**JYH HSU (JEC) ELECTRONICS LTD.,**

**Approved/Recognized Type**

Related Standard		Certificate NO	APProved Monogram
CQC (China)	IEC 60384-14	CQC13001103539	
KC (Korea)	K60384	SU03044-9002	
UL(usa) CSA(Canada)	IEC UL 60384	E356696	
ENEC (EU)	EN 60384-14	ENEC-00984-A1	
VDE (Germany)	EN 60384-14	40038643	
IEC CB	IEC 60384-14	US-33636-UL	

**Specifications**

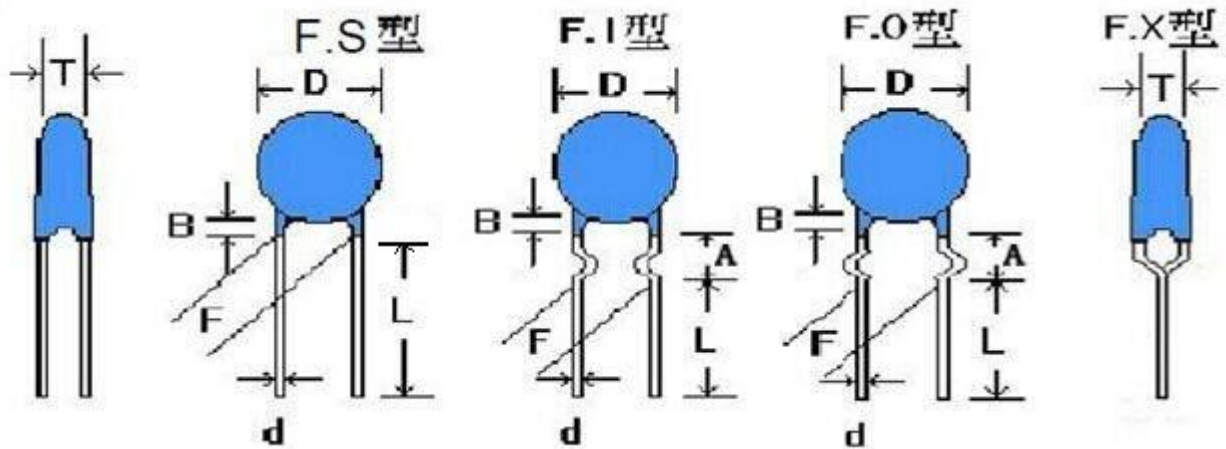
Operating Temp.Range	-40°C to +85°C		
Use temperature range	-40°C to +125°C		
Applicable Standards	UL, CSA, CQC, ENEC, VDE,KC		X1
			Y2
	400VAC		300VAC
Dielectric Withstanding Voltage	Rted Voltage		Test Voltage
	300VAC		1800V-2600 VAC for 1 min.
Dissipation Factor (D.F)	Y5P, Y5U	TANδ(DF) ≤ 2.5%, measured at 1KHz±10%, 1.0 – 5.0 Vrms, 25°C	
	Y5V	TANδ(DF) ≤ 5.0%, measured at 1KHz±10%, 1.0 – 5.0 Vrms, 25°C	
Capacitance(C)	Range	10 pF to 10000 pF. measured at 1KHz±10%, 1.0 – 5.0 Vrms, 25°C	
	Tolerance	±10%	Y5P
		±10%	Y5U
		±20%	
±20%		Y5V	
InsulationResiatance(IR)	10000 MΩ , 1 min , 500 VDC		
Temperature Characteristics	Type Code	Temp. Coeff.	Temp. Range
	Y5P	±10%	-40°C to +85°C, -40°C to +125°C
	Y5V	+30%~-89%	-40°C to +85°C, -40°C to +125°C
	Y5U	+22%~-65%	-40°C to +85°C, -40°C to +125°C

Part Number Configuration:

JY 102 K 2F Y5P S T 7.5 L

(1) (2) (3) (4) (5) (6) (编带) (7) (8)

- (1) AC capacitors, safety
- (2) Rated capacitance
- (3) Tolerance on rated capacitance
- (4) Rated Voltage
- (5) Type code : (B)Y5P, (F)Y5V, (E)Y5U
- (6) Lead shape: S(直角), I(内弯), O(外弯), X(前后弯)
- (7) Pin pitch : 7.5or9.5or10.0
- (8) Lead length: 3-30mm



Dimensions and Tolerance

B=3.0mm max for AA


L=3-30mm

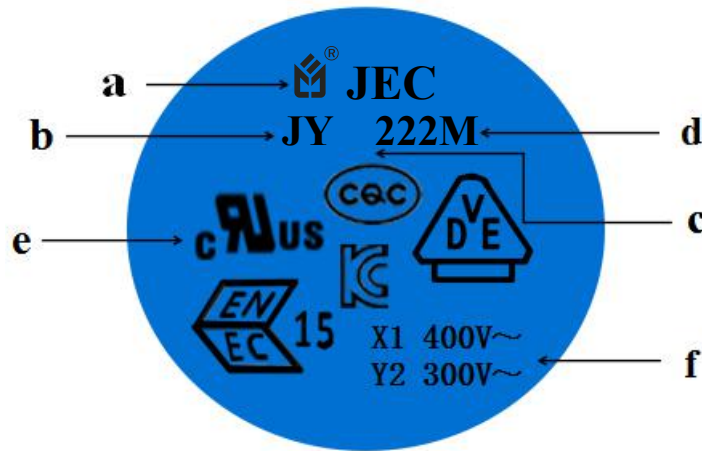
编带详细参数看 P12.

承认规格详细参数 (Approved Spec. Data)

品名规格	D(MAX)	F±0.8	LMINmm	T±0.5mm	d±0.05mm	DF 值	Amm	Bmm	备注
Y5P 102K/300VAC	8.8	7.5	25.0	3.5	0.55	≅2.5%	/	≅2.0	
Y5V 222M/300VAC	6.8	7.5	25.0	3.5	0.55	≅5.0%	/	≅2.0	
Y5V 332M/300VAC	8.5	7.5	25.0	3.5	0.55	≅5.0%	/	≅2.0	
Y5V 472M/300VAC	9.3	7.5	25.0	3.5	0.55	≅5.0%	/	≅2.0	
Y5V 103M/300VAC	13.7	7.5	25.0	3.8	0.55	≅5.0%	/	≅2.0	

Marking:

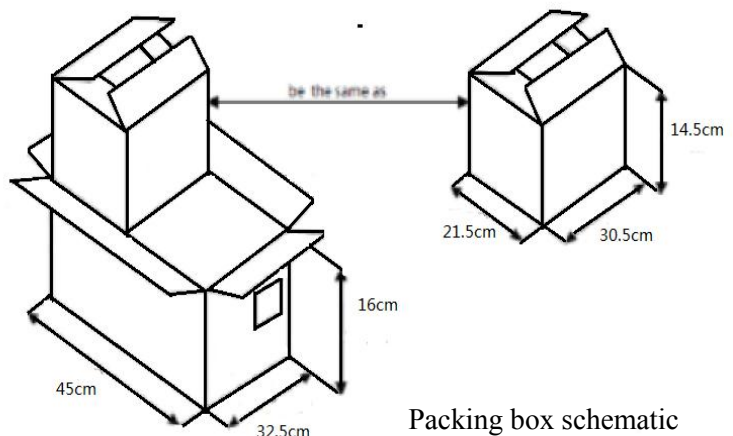
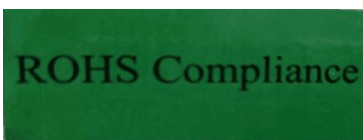
- a. Trademark or Company name  JEC
- b. Product Type JY Series
- c. Nominal Capacitance 222=2200pF,
- d. Tolerance K= ±10%, M= ±20%
- e. Recognized Type cUL, CQC, VDE, ENEC, KC
- f. Rated Voltage X1=400Vac , Y2=300Vac



1. Packing Quantity:

Pack	Safety Y1	Safety Y2	High Voltage	Ceramic DC
10 -332PF	1000PCS	1000pcs	1000pcs	1000PCS
472-103pF	500PCS	1000PCS	1000PCS	1000PCS
223-104pF	/	/	500PCS	1000PCS

ROHS Compliance , SVHC



Packing box schematic

2. Packing information

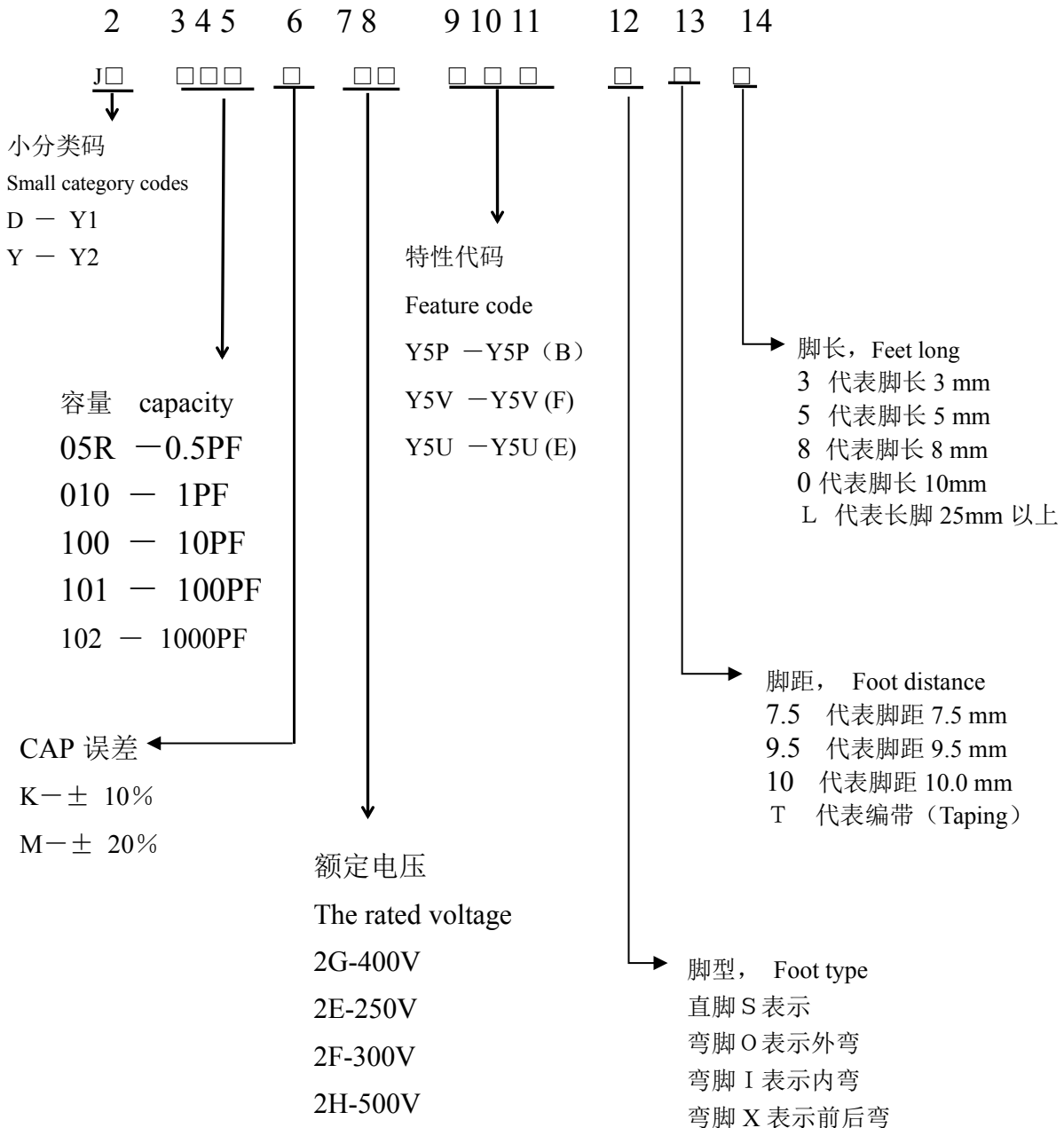
2.1 the number of plastic bags in each bag is 1000 PCS. Internal label and ROHS qualification label.

2.2 the quantity of each small box is 10k-30k. 1K is a bag. It depends on the product volume.  
<http://www.jec365.com>

料號編碼規定如下:

成品之編碼原則上以十五碼完成, 亦以阿拉伯數字與英文字母混合編成, 第二碼至第十一碼與瓷片相同。第一碼以 J 代表自製 (取 JEC 商標第一字)

The coding of the finished product is in principle 15 codes, which are mixed with Arabic numerals and English letters Sizes 2 to 11 are the same as the tiles The first code is represented by J (take the first word of JEC trademark).



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Capacitance and Dimensions:

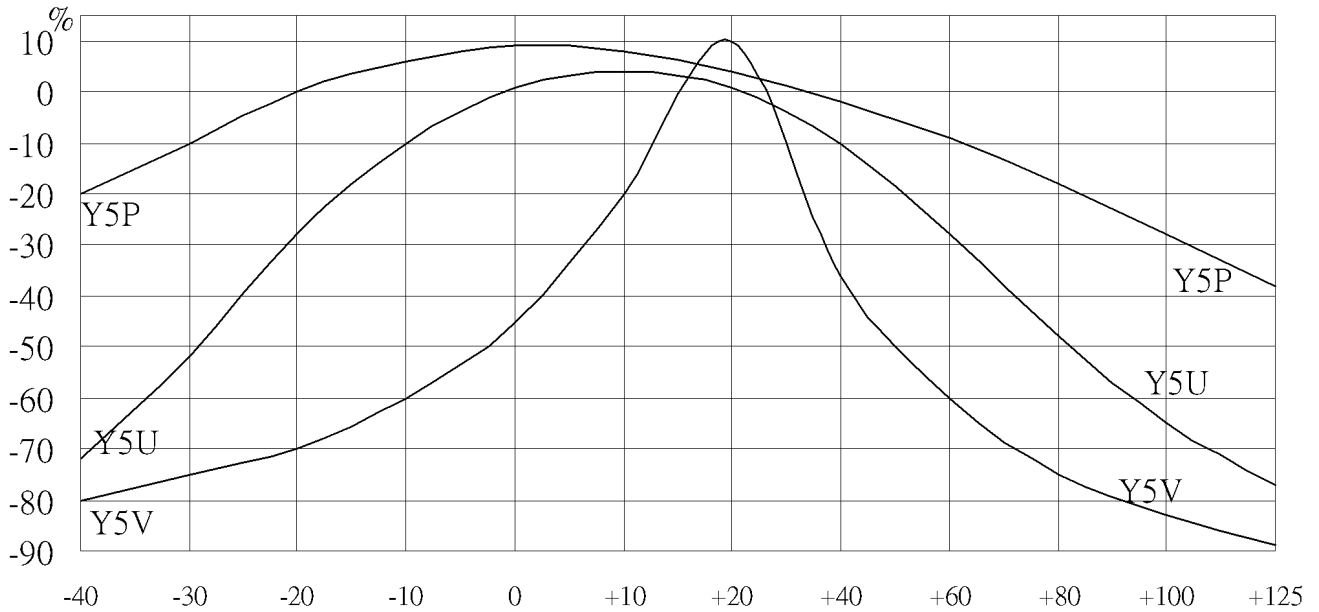
Part Number	T.C.	CAP.	TOL.	Dimension(mm)					
				D max	F±0.8mm			T max	Φ d(±0.05)
JY10K2FY5P To JY82K2FY5P	±10% (Y5P)	10pF To 82PF	K ±10%	6.3	7.5	9.5	10	5.0	0.55
JY101K2FY5P		100PF		6.3					
JY151K2FY5P		150PF		6.3					
JY221K2FY5P		220PF		6.3					
JY331K2FY5P		330PF		6.3					
JY471K2FY5P		470PF		6.8					
JY561K2FY5P		560PF		7.7					
JY681K2FY5P		680PF		7.7					
JY102K2FY5P		1000PF		8.8					
JY102M2FY5U		+22 ~-65% (Y5U)		1000PF					
JY152M2FY5U	1500PF		7.7						
JY222M2FY5U	2200PF		9.3						
JY332M2FY5U	3300PF		10.3						
JY472M2FY5U	4700PF		11.5						
JY102M2FY5V	+30 ~-89% (Y5V)	1000PF	M ±20%	6.3	7.5	9.5	10	5.0	0.55
JY152M2FY5V		1500PF		6.3					
JY222M2FY5V		2200PF		6.8					
JY332M2FY5V		3300PF		8.5					
JY392M2FY5V		3900PF		9.3					
JY472M2FY5V		4700PF		9.3					
JY562M2FY5V		5600PF		10.2					
JY682M2FY5V		6800PF		11.5					
JY103M2FY5V		10000PF		13.7					

注：本规格仅作参考，在没有告知的情况下，有可能变更或改进，如有需求请咨询我司。

**JYH HSU (JEC) ELECTRONICS LTD.,**

EIA TEMPERATURE CHARACTERISTIC CHART			
First Digit is low Temperature	Second Digit is High Temperature	Last Digit is Capacitance Change Over Temperature Range From +25 °C Reading	
X: -55°C	4: +65°C	A	± 1.0 %
Y: -25°C	5: +85°C	B	± 1.5 %
Z: +10°C	6: +105°C	C	± 2.2 %
	7: +125°C	D	± 3.3 %
	8: +150°C	E	± 4.7 %
		F	± 7.5 %
		P	± 10 %
		R	± 15 %
		S	± 22 %
		T	+ 22 % - 33 %
		U	+ 22 % - 56 %
		V	+ 22 % - 82 %

**Capacitance Temperature Characteristics**



**JYH HSU (JEC) ELECTRONICS LTD.,**

**Performance & Tests, draw up by IEC 60384-14:2005 and GB/T 6346**

"Note: (1) Is was defined according with IEC 60384-14:2005, when for qualification approval and periodic tests, the withstanding test must last to 1 minute, and it belong to destroyed test domain, therefore, after the test, capacitors should be scrap. Withstand voltage test should rise slowly at 150V/s, and test time is counted from when the voltage reaches to experiment requirement." (2)

The test time is more than 1 second at production period, and the rated test voltage is applied.

Capacitors may cause to damage when withstand voltage test repeated."

NO.	Item		Characteristic	Test Method	
1	Appearance and Dimensions		Please refer to figures and tables on page 2, 3 and 4.	1~1 1~2	"Production line visual inspection must be done in full and remove the defective products." "Dimensions measurement by micrometer and Caliper
2	Marks		Must be clean and clear.	2~1	Label need to be able endure wiping with Isopropanol
3	Withstand voltage test ( I )	Between terminal	Can not have exceptions.	3~1	Rated voltage: 300VAC for Y2, test voltage 2000 VAC or 2600 VAC, time 60s, frequency: 50Hz/60Hz Rated voltage: 400VAC for Y1, test voltage 4000 VAC, Approval and period test: 60s, Lot inspection 100% and time 2s, discharge current must $\leq 50$ mA."
		Between terminal and coating.	Can not have exceptions.	3~2	Use metal foil test method: use metal foil wrap around the capacitor body, each end extending at least 5mm, and keep 1mm/1kV distance minimum, between metal foil and terminals. for Y2, test voltage 2300VAC; for Y1, test voltage 4000VAC, test time 60s.
4	Withstand voltage test(III) (For safety symbol A2)		(1)Gauze shall not ignite. (2)Capacitors shall not in burned.	4~1	According to IEC 60384-14 and GB/T6346 requirements.
5	Withstand voltage test (IV)(For safety symbol B2)		(3)Elements and coating must not scattered. (4)Terminals can not be moved away from the mounting position than 3mm.	5~1	According to IEC 60384-14 and GB/T6346 requirements.
6	I R	Between terminals	More than 10000M $\Omega$ .	6~1	Measured voltage is $100 \pm 15$ V within 1 minute, and IR keeps within the specified value.
		Between terminals and coating.	More than 10000M $\Omega$ .		
7	Capacitance		Within specified tolerance	7~1	The Capacitance shall be measured at 25 $^{\circ}$ C, with $1 \pm 0.1$ kHz and 5Vrms max
8	Dissipation Factor(D.F)		B(Y5P) $\tan \delta \leq 2.5\%$ E(Y5U) $\tan \delta \leq 2.5\%$ F(Y5V) $\tan \delta \leq 5.0\%$	8~1	"The Dissipation Factor shall be measured at 25 $^{\circ}$ C with $1 \pm 0.1$ kHz and 5Vrms max



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NO	Item	Characteristic		Test Method			
9	Temperature    Characteristic	Temperature Coefficient (T.C. category applicable):		9~1	Temperature Coefficient (T.C. category applicable):		
		TYPE Temp.Range	SL	YN	9~2	$\text{PPM}/^{\circ}\text{C} = (\text{Ct2} - \text{Ct1}) / \text{Ct1} * (\text{t2} - \text{t1})$ Ct2: the capacitance of t2 Ct1: the capacitance of t1 t2: 85°C±3°C t1: 20°C±2°C	
		20~85°C	+ 350~ -1000pp m°C	- 800~ -5800 ppm°C			
		Temperature characteristics: (High Dielectric applicable) Capacitance change rate within the range:  Type B Within ±10% Type E Within +22% -56% Type F Within +30% -85%			9~3	Temperature phase 1) 20±2°C → 2) -25±2°C → 3) 20±2°C → 4) 85±2°C → 5) 20±2°C Capacitance change: (High Dielectric Category applicable) $C.C(\%) = (\text{Ctx} - \text{Ct20}) / \text{Ct20} * 100$ Ctx : Except Temp. phase 1、3、5, The capacitance of any temperature between phase 2 to phase 4. Ct20: The capacitance of phase 3 temp.	
10	Robustness of terminations	Tensile	Lead wires not be snapped	10~1	Diameter(mm)	Load(kgs)	Time(sec)
			Capacitors not be damaged	0.5Φ	0.5	10	
				0.6Φ~0.8Φ	1	10	
		10~2		Fix the capacitor's body and apply a tensile weight gradually to each lead wire in the radial direction			
		Bending	Lead wires not be fractured Capacitors not be damaged	10~3	Diameter(mm)	Load(kgs)	Bending angle is 90 more than twice.
				0.5Φ	0.25		
0.6Φ~0.8Φ	0.5						
11	Vibrationresistance	Appearance	No significant abnormal	11~1	Vibration frequency from 10Hz to 55Hz and back to 10Hz, amplitude 1.5mm, period time within 1 minute.		
		Cap. Change	Within specification				
		Q or DF	within initial specification				
12	Soldering Heat Resistance	Appearance	No significant abnormal	12~1	Solder temperature 350±10°C		
		Dielectric Strength I	compliance with the characteristic as No.3	12~2	Immersion time 3.0± 0.5sec		
		Capacitance change rate	B: within ±10% E: within ±15% F: within ±20%	12~3	Placed at room condition for 4~24 hours, and then to measure.		

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No	Item	Characteristic		Test Method		
13	Solder ability	The round surface of lead wires, there must be 3/4 area welding with the solder.		13~1 13~2	Solder temperature 275±10°C Immersion time 2.0± 0.5sec	
14	Humidity (Under Steady State)	Appearance	No significant abnormal	14~1	Temperature: 40±2°C	
		Dielectric Strength I	Must meet the requirements of No.3	14~2	Humidity: 90~95%RH	
		I R	Between terminals	More than the 1/2 value of No.6 requirements.	14~3	Time: 500±12 Hrs
			Between terminal & coating		14~4	Remove & placed at room condition for 1~2 hours, and then to measure.
		Capacitance change rate	Type B within ±15% Type E within ±20% Type F within ±30%			
		Dissipation Factor (D.F)	Type B & E, under 5%. Type F, under 7.5%			
15	Damp heat loading	Appearance	No significant abnormal	15~1	Temperature: 40±2°C	
		Dielectric Strength I	Must meet the requirements of No.3	15~2	Humidity: 90~95%RH	
		I R	Between terminals	More than the 1/2 value of No.6 requirements.	15~3	Time: 500±12 Hrs
			Between terminal & coating		15~4	Voltage: AC 180Vrms
		Capacitance change rate	Type B within ±15% Type E within ±20% Type F within ±30%	15~5 15~6	Current: Less than 50mA Remove & placed at room condition for 1~2 hours, and then to measure.	
		Dissipation Factor (D.F)	Type B & E, under 5% Type F, under 7.5%.			

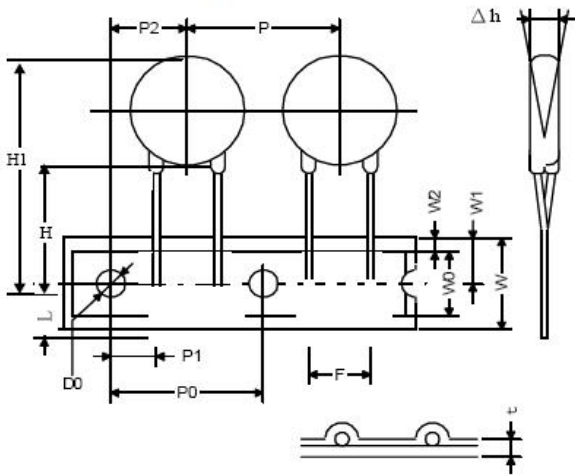
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No	Item	Characteristic		Test Method		
16	Endurance	Appearance		No significant abnormal	16~1	Temperature: 85±3℃; 125±5℃  Time: 1000±12 Hrs  Voltage: rated voltage of 1.7UR  Current: less than 50mA  Remove & placed at room condition for 1~2 hours, and then to measure.
		Dielectric Strength I		"Must meet the requirements of No.3	16~2	
		I R	Between terminals	More than the 1/2 value of No.6 requirements.	16~3	
			Between terminal&coating		16~4	
		Capacitance change rate		Type B within ±15% Type E within ±20% Type F within ±30%	16~5	
		Dissipation Factor (D.F)		Type B & E, under 5% Type F, under 7.5%		
17	Flame Test		Applicable safety symbols A2, B2.		The capacitor should be subjected to applied flame for 15 sec, and then removed for 15 sec, until 3 cycles are completed. And then continued to flame a minute and never to explode.	
18	Solvent Resistance (Body)		After the test must meet the standards of its electrical properties		The capacitor should be immersed into a isopropyl alcohol for 5±0.5 minutes, then removed and placed for 48 hrs. at room condition before post measurements.	
19	Solvent Resistance (Mark)		Marks should be legible		Use cotton yarn dips isopropyl alcohol, by force 5±0.5 N/1 cm <sup>2</sup> , 1 second round trip twice to wipe mark on the body, and run 5 cycles.	

# TAPING SPECIFICATIONS

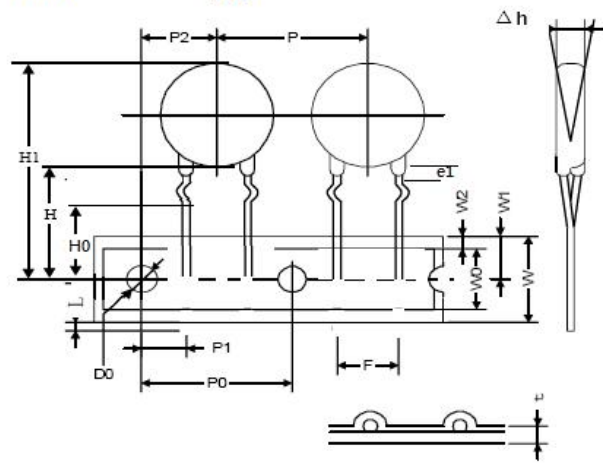
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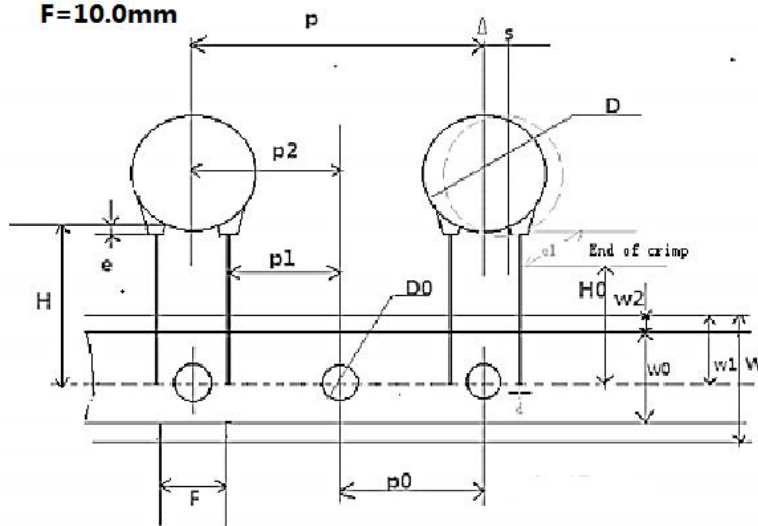
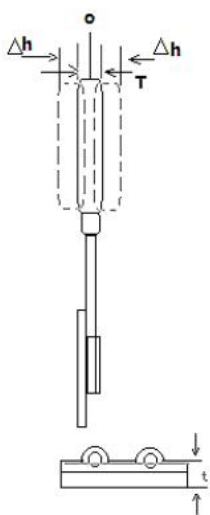


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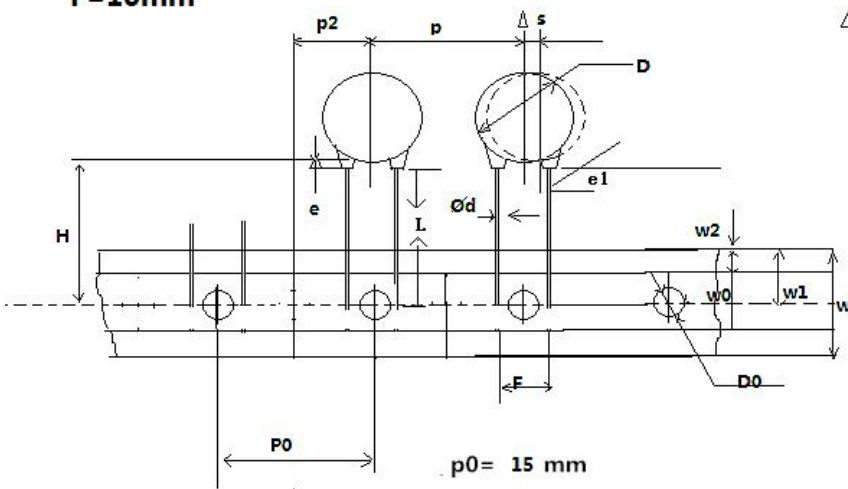
FO



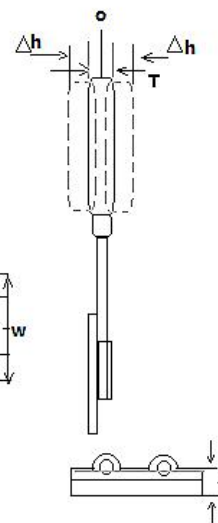
F=10.0mm



F=10mm



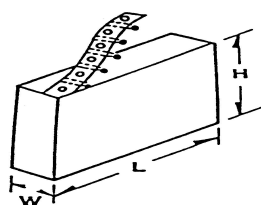
p0= 15 mm



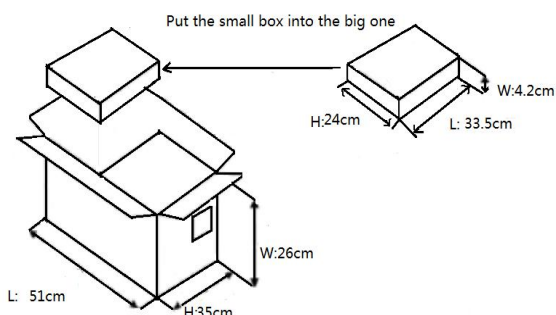
Taping (Radial)--Lead Spacing F=7.5±0.8 or 10.0±0.8

Item		Code	Dimensions (mm)	Item	Code	Dimensions (mm)
Taping Pitch		P	12.7±1.0	Lead Protrusion	l	+0.5~1.0
Guide Pitch		Po	12.7±1.0 15.0±1.0	Diameter of Feed Hole	Do	4.0±0.3
Lead Spacing		F	7.5±0.8 10.0±0.8	Diameter of Lead	d	0.55+0.06 -0.05
Feed Hole Position Capacitor Body		P2	6.35±1.3	Total Thickness of Tape	t	0.7±0.2
Feed Hole Position Capacitor Lead		P1	3.85±0.7	Thickness of Capacitor Body	T	Differ in each product
Diameter Of ISO		D	See table of each series	Alignment to FR. Direction	Δ h	0±2.0
				Length of snapped Lead	L	11.0 +0 -1.0
Width Of Base Tape		W	18.0±0.5	Width of Hold-down Tape	Wo	12.5
Feed Hole Vertical Position		W1	9.0 +0.75 -0.05	Hold-down Tape Position	W2	1.5±1.5
Taping Height	For Straight	Ho	16.0±1.0	Coating Extention	e	3.0 以下
	For Crimp	H	17.0 +2.0 -1.0		e1	up to center of crimp

AMMO PACK Acceptable to standard radial type cartridge.



H = 241±5 mm  
L = 332±5 mm  
W = 42±3 mm



1. Tape box:

Part F	10. 0mm	7. 5mm (Y1)	7. 5mm (Y2)
10-222PF	1000pcs	1200pcs	1500PCS
332-472PF	1000PCS	1200PCS	1500PCS
103PF	1000PCS	1000PCS	1000pcs
p0=15	1000pcs	1000PCS	1200pcs

2. each large box can hold **ten** small boxes.