# SPECIFICATION FOR APPROVAL

## CERAMIC DISC CAPACITOR SAFETY RECOGNIZED

**JY SERIES X1:400VAC Y2: 250VAC**

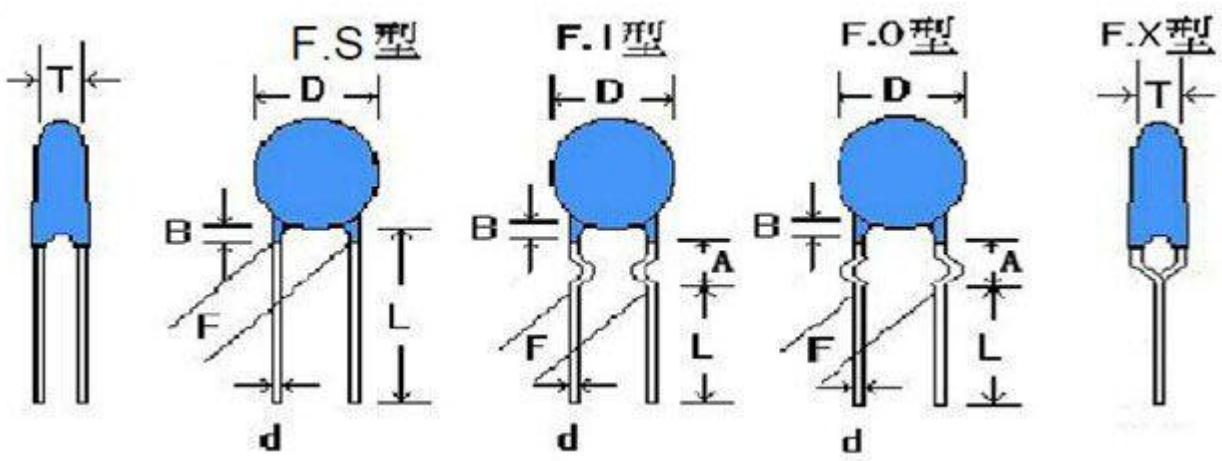
**Specifications:**

<table>
<tr><td>Operating Temp.Range</td><td colspan="4">－40℃ to ＋85℃, －40℃ to ＋125℃</td></tr>
<tr><td rowspan="2">Applicable Standards</td><td colspan="2" rowspan="2">UL, CSA, CQC, ENEC, VDE</td><td>X1</td><td>Y2</td></tr>
<tr><td>400VAC</td><td>250VAC</td></tr>
<tr><td rowspan="2">Dielectric Withstanding Voltage</td><td colspan="2">Rted Voltage</td><td colspan="2">Test Voltage</td></tr>
<tr><td colspan="2">250VAC</td><td colspan="2">1800 VAC for 1 min.</td></tr>
<tr><td rowspan="2">Dissipation Factor (D.F)</td><td>Y5P,Y5U</td><td colspan="3">TANδ(DF) ≦2.5%,measured at 1KHz±10%,1.0 － 5.0 Vrms,25℃</td></tr>
<tr><td>Y5V</td><td colspan="3">TANδ(DF) ≦5.0%,measured at 1KHz±10%,1.0 － 5.0 Vrms,25℃</td></tr>
<tr><td rowspan="3">Capacitance(C)</td><td>Range</td><td colspan="3">10 pF to 4700 pF. measured at 1KHz±10%, 1.0 － 5.0 Vrms, 25℃</td></tr>
<tr><td rowspan="2">Tolerance</td><td>±10%</td><td colspan="2">Y5P</td></tr>
<tr><td>±20%</td><td colspan="2">Y5U,Y5V</td></tr>
<tr><td>InsulationResiatance(IR)</td><td colspan="4">10000 MΩ , 1 min , 500 VDC</td></tr>
<tr><td rowspan="3">Temperature Characteristics</td><td>Type Code</td><td>Temp. Coeff.</td><td colspan="2">Temp. Range</td></tr>
<tr><td>Y5P,Y5U</td><td>±10%, +22~－65%</td><td colspan="2">－40℃ to ＋85℃, －40℃ to ＋125℃</td></tr>
<tr><td>Y5V</td><td>+30%~－89%</td><td colspan="2">－40℃ to ＋85℃, －40℃ to ＋125℃</td></tr>
</table>

## Part Number Configuration:

| JY | 102 | K | 2F | Y5P | S | T | 7.5 | L |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (Tape) | (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=3-25mm

## Marking:

a. Company name code CJYH

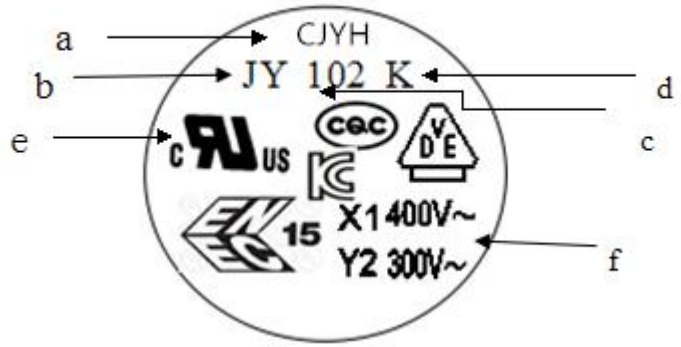
b. Product Type JY Series

c. Nominal Capacitance 102 = 1000pF,

d. Tolerance K= ±10%, M= ±20%

e. Recognized Type cUL, CQC, VDE, ENEC, KC

f. Rated Voltage X1=400Vac , Y2=300Vac




## Packing Quantity:

| | | | |
|---|---|---|---|
| Packing | Safety | High Voltage | *Ceramic* |
| | Capacitor | Capacitor(Y1, Y2) | *Capacitor DC* |
| Bulk | 1000pcs | 1000pcs | *1000pcs* |
| Tape Ammo | 2000pcs | 1500pcs | *2000pcs* |

ROHS Compliance , SVHC

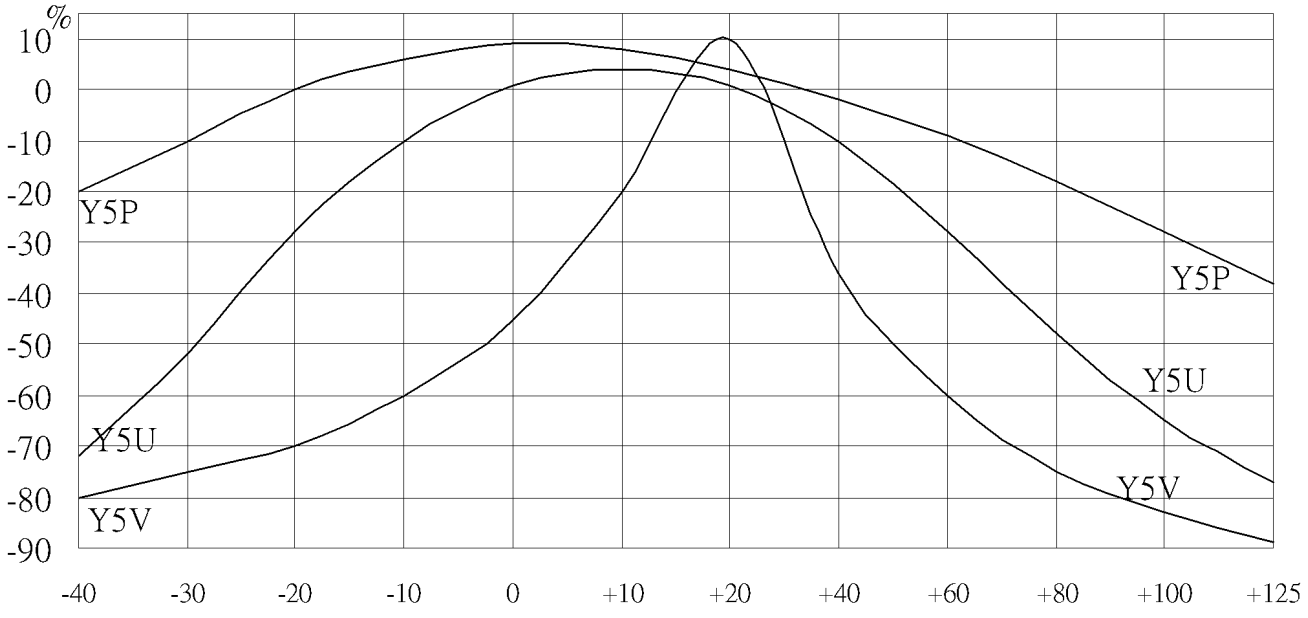
## Capacitance and Dimensions:

| Part Number | T.C. | CAP. | TOL. | Dimension(mm) | | | |
|---|---|---|---|---|---|---|---|
| | | | | D max | F | T max | Φ d(±0.05) |
| JY10K2FY5P----<br>To<br>JY82K2FY5P---- | ±10%<br>(Y5P) | 10pF<br>To<br>82PF | K<br>±10% | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| | | | | | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| | | | | | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY101K2FY5P---- | | 100PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY151K2FY5P---- | | 150PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY221K2FY5P---- | | 220PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY331K2FY5P---- | | 330PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY471K2FY5P---- | | 470PF | | 6.8 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY561K2FY5P---- | | 560PF | | 7.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY681K2FY5P---- | | 680PF | | 7.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY102K2FY5P---- | | 1000PF | | 8.8 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY471K2FY5U ---- | +22 ~-65%<br>(Y5U) | 470PF | M±<br>20% | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY561K2FY5U ---- | | 560PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY681K2FY5U ---- | | 680PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY102M2FY5U ---- | | 1000PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY152M2FY5U ---- | | 1500PF | | 9.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY222M2FY5U | | 2200PF | | 9.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY332M2FY5U | | 3300PF | | 10.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY472M2FY5U ---- | | 4700PF | | 12.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY102M2FY5V ---- | +30 ~-89%<br>(Y5V) | 1000PF | M±<br>20% | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY152M2FY5V ---- | | 1500PF | | 6.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY222M2FY5V ---- | | 2200PF | | 6.8or7.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY332M2FY5V ---- | | 3300PF | | 8.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY392M2FY5V ---- | | 3900PF | | 9.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY472M2FY5V ---- | | 4700PF | | 9.3 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY562M2FY5V ---- | | 5600PF | | 10.2 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY682M2FY5V ---- | | 6800PF | | 11.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| JY822M2FY5V | | 8200PF | | 13.0 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |
| JY103M2FY5V ---- | | 10000PF | | 14.5 | 7.5,9.5 or 10 ±0.8 | 5 | 0.55 |

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

Capacitance Temperature Characteristics



**Performance & Tests, draw up by IEC 60384-14:2005 and GB/T 14472**

"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<br>1~2 | "Production line visual inspection must be done in full and remove the defective products."<br>"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<br>Rated voltage: 400VAC for Y1, test voltage 4000 VAC, Approval and period test: 60s, Lot inspection 100% and time 2s, dicharge current must ≦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 / T 14472 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 / T 14472 requirements. |
| 6 | IR | Between terminals | More than 10000MΩ. | 6~1 | Measured voltage is 100 ± 15V within 1 minute, and IR keeps within the specified value. |
| | | Between terminals and coating. | More than 10000MΩ. | | |

| | | | | |
|---|---|---|---|---|
| 7 | Capacitance | Within specified tolerance | 7~1 | The Capacitance shall be measured at 25℃, with 1±0.1kHz and 5Vrms max |
| 8 | Dissipation Factor(D.F) | B(Y5P) tan ≦2.5%<br>E(Y5U) tan ≦2.5%<br>F(Y5V) tan ≦5.0% | 8~1 | "The Dissipation Factor shall be measured at 25℃ with 1±0.1kHz and 5Vrms max |

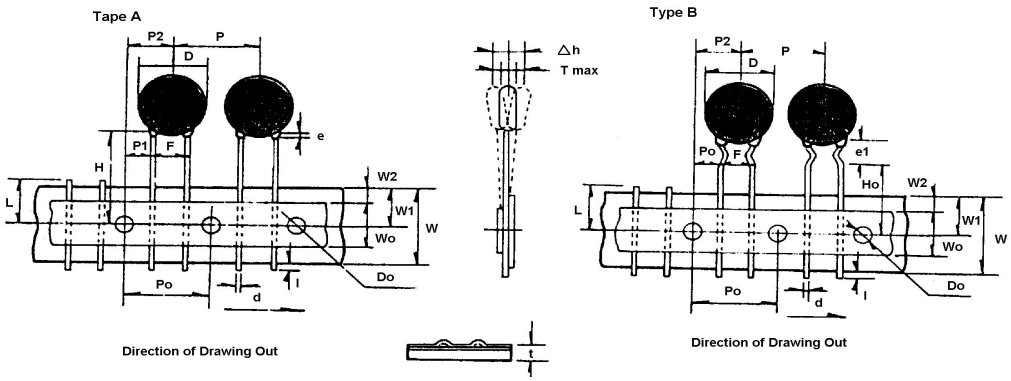
| NO | Item | Characteristic | | | Test Method | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | Temperature Characteristic | Temperature Coefficient (T.C. category applicable): | | | 9~1 | Temperature Coefficient (T.C. category applicable): | | |
| | | TYPE<br>Temp.Range | SL | YN | 9~2 | PPM/℃＝(Ct2－ Ct1)<br>/Ct1*(t2－t1)<br>Ct2：the capacitance of t2<br>Ct1：the capacitance of t1<br>t2：85℃±3℃<br>t1：20℃±2℃ | | |
| | | 20~85℃ | ＋350~<br>-1000ppm/℃ | －800~<br>-5800<br>ppm/℃ | | | | |
| | | Temperature characteristics: (High Dielectric applicable)<br>Capacitance change rate within the range:<br>Type B Within ±10%<br>Type E Within ＋22% －56%<br>Type F Within ＋30% －85% | | | 9~3 | Temperature phase<br>1) 20±2℃ → 2) -25±2℃ → 3) 20±2℃ →4) 85±2℃ →5) 20±2℃<br>Capacitance change: (High Dielectric Category applicable)<br>C .C(%)＝(Ctx－Ct20)/Ct20*100<br>Ctx：Except Temp. phase 1、3、5, The capacitance of any temperature between phase 2 to phase 4.<br>Ct20： The capacitance of phase 3 temp. | | |
| 10 | Robustness of terminations | Tensile | Lead wires not be snapped<br>Capacitors not be damaged | | 10~1 | Diameter(mm) | Load(kgs) | Time(sec) |
| | | | | | | 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<br>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 | Vibration resistance | 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 | Appearance | No significant abnormal | | 12~1 | Solder temperature 350±10℃<br>Immersion time 3.0± 0.5sec | | |

| | | | | | |
|---|---|---|---|---|---|
| | | Dielectric Strength Ⅰ | compliance with the characteristic as No.3 | 12~2 | Placed at room condition for 4~24 hours, and then to measure. |
| | | Capacitance change rate | B: within ±10%<br>E: within ±15%<br>F: within ±20% | 12~3 | |
| No | Item | Characteristic | | Test Method | |
| 13 | Solderability | The round surface of lead wires, there must be 3/4 area welding with the solder.。 | | 13~1<br>13~2 | Solder temperature 275±10℃<br>Immersion time 2.0± 0.5sec |
| 14 | Humidity (Under Steady State) | Appearance | No significant abnormal | 14~1<br>14~2<br>14~3<br>14~4 | Temperature：40±2℃<br>Humidity：90~95%RH<br>Time：500±12 Hrs<br>Remove & placed at room condition for 1~2 hours, and then to measure. |
| | | Dielectric Strength Ⅰ | Must meet the requirements of No.3 | | |
| | | I R Between terminals | More than the 1/2 value of No.6 requirements. | | |
| | | I R Between terminal& coating | | | |
| | | Capacitance change rate | Type B within ±15%<br>Type E within ±20%<br>Type F within ±30% | | |
| | | Dissipation Factor (D.F) | Type B & E, under 5%.<br>Type F, under 7.5% | | |
| 15 | loading Damp heat | Appearance | No significant abnormal | 15~1<br>15~2 | Temperature：40±2℃<br>Humidity：90~95%RH |
| | | Dielectric Strength Ⅰ | Must meet the requirements of No.3 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | IR | Between terminals Between terminal& coating | More than the 1/2 value of No.6 requirements. | 15~3<br>15~4 | Time：500±12 Hrs<br>Voltage: AC 180Vrms |
| | | | Capacitance change rate | Type B within ±15%<br>Type E within ±20%<br>Type F within ±30% | 15~5 | Current：Less than 50mA |
| | | | Dissipation Factor (D.F) | Type B & E, under 5%<br>Type F, under 7.5%. | 15~6 | Remove & placed at room condition for 1~2 hours, and then to measure. |

| No | Item | Characteristic | | Test Method | |
|---|---|---|---|---|---|
| 16 | Endurance | Appearance | No significant abnormal | 16~1 | Temperature：85±3℃; 125±5℃ |
| | | Dielectric Strength Ⅰ | "Must meet the requirements of No.3 | 16~2 | Time：1000±12 Hrs |
| | | IR Between terminals | More than the 1/2 value of No.6 requirements. | 16~3 | Voltage: rated voltage of 1.7UR |
| | | Between terminal&coating | | 16~4 | Current：less than 50mA |
| | | Capacitance change rate | Type B within ±15%<br>Type E within ±20%<br>Type F within ±30% | 16~5 | Remove & placed at room condition for 1~2 hours, and then to measure. |
| | | Dissipation Factor (D.F) | Type B & E, under 5%<br>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^2, 1 second round trip twice to wipe mark on the body, and run 5 cycles. |



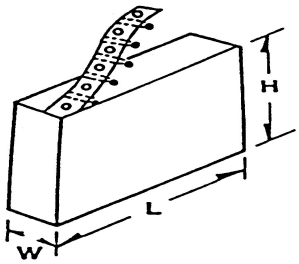

TAPING SPECIFICATIONS

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 | Diameter of Feed Hole | Do | 4.0±0.3 |
| Lead Spacing | F | 5.0±0.8<br>7.5±0.8 、9.5±0.8 | Diameter of Lead | d | 0.55+0.06<br>-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 snipped 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±0.5 | Coating Extention | e | 3.0 以下 |
| | For Crimp | H | 20 +1.5 -1.0 | | e1 | up to center of crimp |

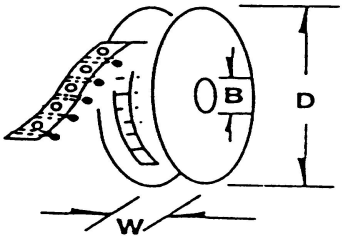
AMMO PACK




H =241±5 mm
L =332±5 mm
W = 42 ±3 mm

Acceptable to standard radial type cartridge.

REEL




D ≦ 354(13.93)
B ≧ 21(.83')but
≦ 30(1.18")
W ≦ 55(2.16)

Acceptable to standard radial type cartridge with a few extra accessories. Reeled axials are also acceptable to standard axial type cartridge with a few accessories.