

Reference Specification

Leaded MLCC for General Purpose RDE Series

Product specifications in this catalog are as of Mar. 2022, and are subject to change or obsolescence without notice.

Please consult the approval sheet before ordering. Please read rating and Cautions first.

⚠ CAUTION

1. OPERATING VOLTAGE

When DC-rated capacitors are to be used in AC or ripple current circuits, be sure to maintain the Vp-p value of the applied voltage or the Vo-p which contains DC bias within the rated voltage range. When the voltage is started to apply to the circuit or it is stopped applying, the irregular voltage may be generated for a transit period because of resonance or switching. Be sure to use a capacitor within rated voltage containing these irregular voltage.

When DC-rated capacitors are to be used in input circuits from commercial power source (AC filter), be sure to use Safety Recognized Capacitors because various regulations on withstand voltage or impulse withstand established for each equipment should be taken into considerations.

| Voltage | DC Voltage | DC+AC Voltage | AC Voltage | Pulse Voltage(1) | Pulse Voltage(2) |
|---------------------------|------------|---------------|------------|------------------|------------------|
| Positional Measurement | Vo-p | Vo-p | Vp-p | Vp-p | Vp-p |

2. OPERATING TEMPERATURE AND SELF-GENERATED HEAT

Keep the surface temperature of a capacitor below the upper limit of its rated operating temperature range. Be sure to take into account the heat generated by the capacitor itself.

When the capacitor is used in a high-frequency current, pulse current or the like, it may have the self-generated heat due to dielectric-loss. In case of Class 2 capacitors (Temp.Char.: X7R,X7S,X8L, etc.), applied voltage should be the load such as self-generated heat is within 20 °C on the condition of atmosphere temperature 25 °C. Please contact us if self-generated heat is occurred with Class 1 capacitors (Temp.Char.: C0G,U2J,X8G, etc.). When measuring, use a thermocouple of small thermal capacity-K of Φ0.1mm and be in the condition where capacitor is not affected by radiant heat of other components and wind of surroundings. Excessive heat may lead to deterioration of the capacitor's characteristics and reliability.

3. FAIL-SAFE

Be sure to provide an appropriate fail-safe function on your product to prevent a second damage that may be caused by the abnormal function or the failure of our product.

4. OPERATING AND STORAGE ENVIRONMENT

The insulating coating of capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. And avoid exposure to moisture. Before cleaning, bonding, or molding this product, verify that these processes do not affect product quality by testing the performance of a cleaned, bonded or molded product in the intended equipment. Store the capacitors where the temperature and relative humidity do not exceed 5 to 40 °C and 20 to 70%. Use capacitors within 6 months.

5. VIBRATION AND IMPACT

Do not expose a capacitor or its leads to excessive shock or vibration during use.

6. SOLDERING

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specification of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

7. BONDING AND RESIN MOLDING, RESIN COAT

In case of bonding, molding or coating this product, verify that these processes do not affect the quality of capacitor by testing the performance of a bonded or molded product in the intended equipment. In case of the amount of applications, dryness / hardening conditions of adhesives and molding resins containing organic solvents (ethyl acetate, methyl ethyl ketone, toluene, etc.) are unsuitable, the outer coating resin of a capacitor is damaged by the organic solvents and it may result, worst case, in a short circuit.

The variation in thickness of adhesive or molding resin may cause a outer coating resin cracking and/or ceramic element cracking of a capacitor in a temperature cycling.

8. TREATMENT AFTER BONDING AND RESIN MOLDING, RESIN COAT

When the outer coating is hot (over 100 °C) after soldering, it becomes soft and fragile. So please be careful not to give it mechanical stress.

Failure to follow the above cautions may result, worst case, in a short circuit and cause fuming or partial dispersion when the product is used.

9. LIMITATION OF APPLICATIONS

Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property.

Aircraft equipment

2. Aerospace equipment

3. Undersea equipment

4. Power plant control equipment

5. Medical equipment

 $\hbox{6. Transportation equipment (vehicles, trains, ships, etc.)}\\$

7. Traffic signal equipment

8. Disaster prevention / crime prevention equipment

9. Data-processing equipment exerting influence on public

10. Application of similar complexity and/or reliability requirements to the applications listed in the above.

NOTICE

1. CLEANING (ULTRASONIC CLEANING)

To perform ultrasonic cleaning, observe the following conditions.

Rinse bath capacity: Output of 20 watts per liter or less.

Rinsing time: 5 min maximum.

Do not vibrate the PCB/PWB directly.

Excessive ultrasonic cleaning may lead to fatigue destruction of the lead wires.

2. SOLDERING AND MOUNTING

Insertion of the Lead Wire

- When soldering, insert the lead wire into the PCB without mechanically stressing the lead wire.
- Insert the lead wire into the PCB with a distance appropriate to the lead space.

3. CAPACITANCE CHANGE OF CAPACITORS

• Class 2 capacitors (Temp.Char. : X7R,X7S,X8L etc.)

Class 2 capacitors an aging characteristic, whereby the capacitor continually decreases its capacitance slightly if the capacitor leaves for a long time. Moreover, capacitance might change greatly depending on a surrounding temperature or an applied voltage. So, it is not likely to be able to use for the time constant circuit

Please contact us if you need a detail information.

⚠ NOTE

- 1. Please make sure that your product has been evaluated in view of your specifications with our product being mounted to your product.
- 2. You are requested not to use our product deviating from this specification.

1. Application

This product specification is applied to Leaded MLCC RDE series used for General Electronic equipment.

Do not use these products in any automotive power train or safety equipment including battery chargers for electric vehicles and plug-in hybrids.

2. Rating

• Part Number Configuration

| ex.) | RDE | R7 | 1E 104 | | K | 0 | P1 | H03 | B |
|------|--------|-----------------------------|---------|-------------|-------------|-----------|-----------------|---------------|---------|
| | Series | Temperature Rated Capacitan | | Capacitance | Capacitance | Dimension | Lead Individual | | Package |
| | | Characteristics | Voltage | | Tolerance | (LxW) | Style | Specification | |

• Temperature Characteristics

| Code | Temp. Char. | Temp. Range | Cap. Change | Standard Temp. | Operating Temp. Range |
|------|-------------------|-------------|-------------|-------------------|--------------------------|
| R7 | X7R (EIA code) | -55∼125°C | +/-15% | 25°C | -55∼125°C |
| C7 | X7S (EIA code) | -55∼125°C | +/-22% | 25°C | -55∼125°C |

Rated Voltage

| Code | Rated voltage |
|------|---------------|
| 1E | DC25V |
| 1H | DC50V |
| 2A | DC100V |

Capacitance

The first two digits denote significant figures; the last digit denotes the multiplier of 10 in pF. ex.) In case of 104

$$10 \times 10^4 = 100000 pF$$

• Capacitance Tolerance

| Code | Capacitance Tolerance |
|------|-----------------------|
| K | +/-10% |
| М | +/-20% |

• Dimension (LxW)

Please refer to [Part number list].

· Lead Style

*Lead wire is "solder coated CP wire".

| Code | Lead Style | Lead spacing (mm) |
|------|---------------------------|-------------------|
| K1 | Inside crimp type | 5.0+/-0.8 |
| M1 | Inside crimp taping type | 5.0+0.6/-0.2 |
| P1 | Outside crimp type | 2.5+/-0.8 |
| S1 | Outside crimp taping type | 2.5+0.4/-0.2 |

• Individual Specification

Murata's control code.

Please refer to [Part number list].

• Package

| Code | Package |
|------|---------------------|
| Α | Taping type of Ammo |
| В | Bulk type |

3. Marking

Temp. char. : Letter code : C (X7R/X7S Char. Except dimension code : 0,1)

Capacitance : 3 digit numbers

Capacitance tolerance : Code

Rated voltage : Letter code : 2 (DC25V. Except dimension code : 0,1)

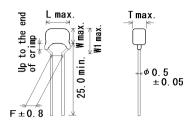
> Letter code: 5 (DC50V. Except dimension code: 0,1) Letter code: 1 (DC100V. Except dimension code: 0,1)

Company name code : Abbreviation : (Except dimension code : 0,1)

| (Ex.) | | | | | |
|-------------------------------|---------------------|-------------------|-------------------|--|--|
| Rated voltage Dimension code | DC25V | DC50V | DC100V | | |
| 0,1 | 104K | 103K | 224K | | |
| 2 | 2 CM 475 K2C | | € 105 K1C | | |
| 3,W | © 226 K2C | (M 335 K5C | (4 225 K1C | | |

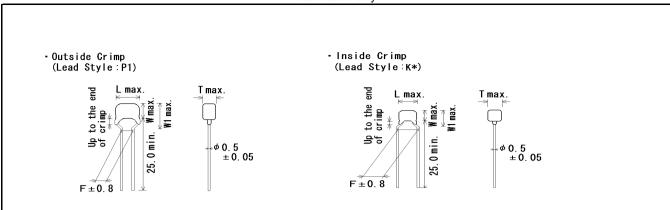
4. Part number list

• Outside Crimp (Lead Style:P1)



Unit : mm

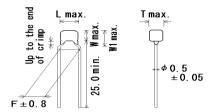
| Customer | Murata Part Number | T.C. | DC Rated | Cap. | Cap. | | Dime | ension (| nsion (mm) | | Dimension Pack (LxW) qty. | |
|-------------|--------------------|------|--------------|---------|------|-----|------|----------|------------|------|---------------------------|-------|
| Part Number | | | Volt. (V) | | Tol. | L | W | W1 | F | Т | Lead Style | (pcs) |
| | RDER71E104K0P1H03B | X7R | 25 | 0.10µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDEC71E224K0P1H03B | X7S | 25 | 0.22µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDEC71E474K0P1H03B | X7S | 25 | 0.47µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDEC71E105K0P1H03B | X7S | 25 | 1.0µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDEC71E225K1P1H03B | X7S | 25 | 2.2µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | 500 |
| | RDEC71E475K2P1H03B | X7S | 25 | 4.7µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | 500 |
| | RDEC71E106K2P1H03B | X7S | 25 | 10µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | 500 |
| | RDEC71E226K3P1H03B | X7S | 25 | 22µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 3P1 | 500 |
| | RDER71H221K0P1H03B | X7R | 50 | 220pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H331K0P1H03B | X7R | 50 | 330pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H471K0P1H03B | X7R | 50 | 470pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H681K0P1H03B | X7R | 50 | 680pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H102K0P1H03B | X7R | 50 | 1000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H152K0P1H03B | X7R | 50 | 1500pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H222K0P1H03B | X7R | 50 | 2200pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H332K0P1H03B | X7R | 50 | 3300pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H472K0P1H03B | X7R | 50 | 4700pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H682K0P1H03B | X7R | 50 | 6800pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H103K0P1H03B | X7R | 50 | 10000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H153K0P1H03B | X7R | 50 | 15000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H223K0P1H03B | X7R | 50 | 22000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H333K0P1H03B | X7R | 50 | 33000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H473K0P1H03B | X7R | 50 | 47000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H683K0P1H03B | X7R | 50 | 68000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H104K0P1H03B | X7R | 50 | 0.10µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER71H154K1P1H03B | X7R | 50 | 0.15µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | 500 |
| | RDER71H224K1P1H03B | X7R | 50 | 0.22µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | 500 |
| | RDER71H334K1P1H03B | X7R | 50 | 0.33µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | 500 |
| | RDER71H474K1P1H03B | X7R | 50 | 0.47µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | 500 |
| | RDER71H684K2P1H03B | X7R | 50 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | 500 |
| | RDEC71H105K1P1H03B | X7S | 50 | 1.0µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | 500 |
| | RDER71H105K2P1H03B | X7R | 50 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | 500 |
| | RDER71H155K2P1H03B | X7R | 50 | 1.5µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | 500 |
| | RDER71H225K2P1H03B | X7R | 50 | 2.2µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | 500 |
| | RDER71H335K3P1H03B | X7R | 50 | 3.3µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 3P1 | 500 |
| | RDEC71H475K2P1H03B | X7S | 50 | 4.7µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | 500 |
| | RDEC71H106K3P1H03B | X7S | 50 | 10µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 3P1 | 500 |
| | RDER72A221K0P1H03B | X7R | 100 | 220pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 500 |
| | RDER72A331K0P1H03B | X7R | 100 | 330pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | | 500 |
| | RDER72A471K0P1H03B | X7R | 100 | 470pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | | 500 |



Unit : mm

| Customer Part Number | Murata Part Number | T.C. | DC Rated Volt. | Сар. | Cap. Cap. | | Dime | | Dimension (LxW) | q | | |
|-------------------------|--------------------|------|----------------------|---------|-----------|-----|------|------|--------------------|------|------------|----|
| rait Number | | | (V) | | 101. | L | W | W1 | F | Т | Lead Style | (p |
| | RDER72A681K0P1H03B | X7R | 100 | 680pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 50 |
| | RDER72A102K0P1H03B | X7R | 100 | 1000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A152K0P1H03B | X7R | 100 | 1500pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A222K0P1H03B | X7R | 100 | 2200pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A332K0P1H03B | X7R | 100 | 3300pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A472K0P1H03B | X7R | 100 | 4700pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A682K0P1H03B | X7R | 100 | 6800pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A103K0P1H03B | X7R | 100 | 10000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A153K0P1H03B | X7R | 100 | 15000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A223K0P1H03B | X7R | 100 | 22000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 0P1 | 5 |
| | RDER72A333K1P1H03B | X7R | 100 | 33000pF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | 5 |
| | RDER72A473K1P1H03B | X7R | 100 | 47000pF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | Ę |
| | RDER72A683K1P1H03B | X7R | 100 | 68000pF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | Ę |
| | RDER72A104K1P1H03B | X7R | 100 | 0.10µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | Ę |
| | RDER72A154K2P1H03B | X7R | 100 | 0.15µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | |
| | RDER72A224K1P1H03B | X7R | 100 | 0.22µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | |
| | RDER72A334K1P1H03B | X7R | 100 | 0.33µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | ţ |
| | RDER72A474K1P1H03B | X7R | 100 | 0.47µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 1P1 | ţ |
| | RDER72A684K2P1H03B | X7R | 100 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | ţ |
| | RDER72A105K2P1H03B | X7R | 100 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 2P1 | ţ |
| | RDEC72A155K3P1H03B | X7S | 100 | 1.5µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 3P1 | Ę |
| | RDEC72A225K3P1H03B | X7S | 100 | 2.2µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 3P1 | Ę |
| | RDER71E104K0K1H03B | X7R | 25 | 0.10µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDEC71E224K0K1H03B | X7S | 25 | 0.22µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDEC71E474K0K1H03B | X7S | 25 | 0.47µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDEC71E105K0K1H03B | X7S | 25 | 1.0µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDEC71E225K1K1H03B | X7S | 25 | 2.2µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | ţ |
| | RDEC71E475K2K1H03B | X7S | 25 | 4.7µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | |
| | RDEC71E106K2K1H03B | X7S | 25 | 10µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | |
| | RDEC71E226K3K1H03B | X7S | 25 | 22µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 3K1 | |
| | RDEC71E476MWK1H03B | X7S | 25 | 47µF | ±20% | 5.5 | 7.5 | 10.0 | 5.0 | 4.0 | WK1 | Ę |
| | RDER71H221K0K1H03B | X7R | 50 | 220pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDER71H331K0K1H03B | X7R | 50 | 330pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | |
| | RDER71H471K0K1H03B | X7R | 50 | 470pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDER71H681K0K1H03B | X7R | 50 | 680pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H102K0K1H03B | X7R | 50 | 1000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H152K0K1H03B | X7R | 50 | 1500pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDER71H222K0K1H03B | X7R | 50 | 2200pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | Ę |
| | RDER71H332K0K1H03B | X7R | 50 | 3300pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| • | RDER71H472K0K1H03B | X7R | 50 | 4700pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |

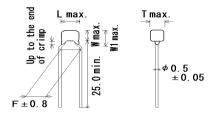




Unit : mm

| Customer Part Number | Murata Part Number | T.C. | DC Rated Volt. | Сар. | Cap. Tol. | | Dime | ension (| mm) | | Dimension (LxW) | qt |
|-------------------------|--------------------|------|----------------------|---------|--------------|-----|------|----------|-----|------|--------------------|-----|
| | | | (V) | | | L | W | W1 | F | Т | Lead Style | (pc |
| | RDER71H682K0K1H03B | X7R | 50 | 6800pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 50 |
| | RDER71H103K0K1H03B | X7R | 50 | 10000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 50 |
| | RDER71H153K0K1H03B | X7R | 50 | 15000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H223K0K1H03B | X7R | 50 | 22000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H333K0K1H03B | X7R | 50 | 33000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H473K0K1H03B | X7R | 50 | 47000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H683K0K1H03B | X7R | 50 | 68000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H104K0K1H03B | X7R | 50 | 0.10µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | 5 |
| | RDER71H154K1K1H03B | X7R | 50 | 0.15µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | 5 |
| | RDER71H224K1K1H03B | X7R | 50 | 0.22µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | 5 |
| | RDER71H334K1K1H03B | X7R | 50 | 0.33µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | Ę |
| | RDER71H474K1K1H03B | X7R | 50 | 0.47µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | Ę |
| | RDER71H684K2K1H03B | X7R | 50 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | Ę |
| | RDEC71H105K1K1H03B | X7S | 50 | 1.0µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | 1 |
| | RDER71H105K2K1H03B | X7R | 50 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | ; |
| | RDER71H155K2K1H03B | X7R | 50 | 1.5µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | ; |
| | RDER71H225K2K1H03B | X7R | 50 | 2.2µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | ; |
| | RDER71H335K3K1H03B | X7R | 50 | 3.3µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 3K1 | ; |
| | RDEC71H475K2K1H03B | X7S | 50 | 4.7µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | |
| | RDEC71H106K3K1H03B | X7S | 50 | 10µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 3K1 | |
| | RDEC71H226MWK1H03B | X7S | 50 | 22µF | ±20% | 5.5 | 7.5 | 10.0 | 5.0 | 4.0 | WK1 | |
| | RDER72A221K0K1H03B | X7R | 100 | 220pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | |
| | RDER72A331K0K1H03B | X7R | 100 | 330pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | ; |
| | RDER72A471K0K1H03B | X7R | 100 | 470pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | ; |
| | RDER72A681K0K1H03B | X7R | 100 | 680pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | |
| | RDER72A102K0K1H03B | X7R | 100 | 1000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | |
| | RDER72A152K0K1H03B | X7R | 100 | 1500pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | ; |
| | RDER72A222K0K1H03B | X7R | 100 | 2200pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | ; |
| | RDER72A332K0K1H03B | X7R | 100 | 3300pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | ; |
| | RDER72A472K0K1H03B | X7R | 100 | 4700pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | ; |
| | RDER72A682K0K1H03B | X7R | 100 | 6800pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | ; |
| | RDER72A103K0K1H03B | X7R | 100 | 10000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | |
| | RDER72A153K0K1H03B | X7R | 100 | 15000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | |
| | RDER72A223K0K1H03B | X7R | 100 | 22000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 0K1 | |
| | RDER72A333K1K1H03B | X7R | 100 | 33000pF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | ; |
| | RDER72A473K1K1H03B | X7R | 100 | 47000pF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | , |
| | RDER72A683K1K1H03B | X7R | 100 | 68000pF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | | , |
| | RDER72A104K1K1H03B | X7R | 100 | 0.10µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | ţ |
| | RDER72A154K2K1H03B | X7R | 100 | 0.15µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | ţ |
| | RDER72A224K1K1H03B | X7R | 100 | 0.22µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | 5 |

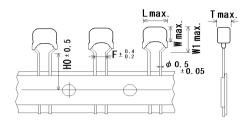
·Inside Crimp (Lead Style:K*)



Unit: mm

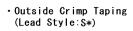
| Customer | Murata Part Number | T.C. | DC Rated Volt. (V) | Сар. | Cap. Tol. | | Dime | Dimension (LxW) | Pack qty. | | | |
|-------------|--------------------|------|-----------------------------|--------|--------------|-----|------|--------------------|--------------|------|------------|-----|
| Part Number | | | | | | L | W | W1 | F | Т | Lead Style | |
| | RDER72A334K1K1H03B | X7R | 100 | 0.33µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | 500 |
| | RDER72A474K1K1H03B | X7R | 100 | 0.47µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 1K1 | 500 |
| | RDER72A684K2K1H03B | X7R | 100 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | 500 |
| | RDER72A105K2K1H03B | X7R | 100 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 2K1 | 500 |
| | RDEC72A155K3K1H03B | X7S | 100 | 1.5µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 3K1 | 500 |
| | RDEC72A225K3K1H03B | X7S | 100 | 2.2µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 3K1 | 500 |
| | RDEC72A475MWK1H03B | X7S | 100 | 4.7µF | ±20% | 5.5 | 7.5 | 10.0 | 5.0 | 4.0 | WK1 | 500 |

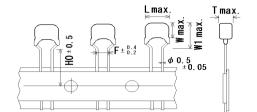
Outside Crimp Taping (Lead Style:S*)



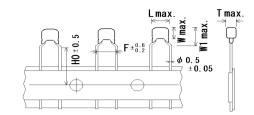
Unit : mm

| | | | | | | | | | Onit : mm | | | | |
|-------------|--|------|--------------|----------------|--------------|-----|-----|--------|-----------|------|------|--------------------|------------|
| Customer | Murata Part Number | T.C. | DC Rated | Cap. | Cap. | | D | imensi | on (mr | n) | ī | Dimension (LxW) | Pac qty |
| Part Number | | | Volt. (V) | , | Tol. | L | W | W1 | F | Т | H/H0 | Lead Style | |
| | RDER71E104K0S1H03A | X7R | 25 | 0.10µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDEC71E224K0S1H03A | X7S | 25 | 0.22µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDEC71E474K0S1H03A | X7S | 25 | 0.47µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDEC71E105K0S1H03A | X7S | 25 | 1.0µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDEC71E225K1S1H03A | X7S | 25 | 2.2µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 20 |
| | RDEC71E475K2S1H03A | X7S | 25 | 4.7µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 16.0 | 2S1 | 20 |
| | RDEC71E106K2S1H03A | X7S | 25 | 10µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 16.0 | 2S1 | 20 |
| | RDEC71E226K3S1H03A | X7S | 25 | 22µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 16.0 | 3S1 | 15 |
| | RDER71H221K0S1H03A | X7R | 50 | 220pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER71H331K0S1H03A | X7R | 50 | 330pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER71H471K0S1H03A | X7R | 50 | 470pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER71H681K0S1H03A | X7R | 50 | 680pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER71H102K0S1H03A | X7R | 50 | 1000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER71H152K0S1H03A | X7R | 50 | 1500pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER71H222K0S1H03A | X7R | 50 | 2200pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER71H332K0S1H03A | X7R | 50 | 3300pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H472K0S1H03A | X7R | 50 | 4700pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H682K0S1H03A | X7R | 50 | 6800pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H103K0S1H03A | X7R | 50 | 10000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H153K0S1H03A | X7R | 50 | 15000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H223K0S1H03A | X7R | 50 | 22000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H333K0S1H03A | X7R | 50 | 33000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H473K0S1H03A | X7R | 50 | 47000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H683K0S1H03A | X7R | 50 | 68000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H104K0S1H03A | X7R | 50 | 0.10µF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 2 |
| | RDER71H154K1S1H03A | X7R | 50 | 0.15µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER71H224K1S1H03A | X7R | 50 | 0.22µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER71H334K1S1H03A | X7R | 50 | 0.33µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER71H474K1S1H03A | X7R | 50 | 0.47µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER71H684K2S1H03A | X7R | 50 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 16.0 | 2S1 | 20 |
| | RDEC71H105K1S1H03A | X7S | 50 | 1.0µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER71H105K2S1H03A | X7R | 50 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 16.0 | 2S1 | 2 |
| | RDER71H155K2S1H03A | X7R | 50 | 1.5µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | | | 2 |
| | RDER71H225K2S1H03A | X7R | 50 | 2.2µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | | | | 2 |
| | RDER71H335K3S1H03A | X7R | 50 | 3.3µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | | | 1: |
| | RDEC71H475K2S1H03A | X7S | 50 | 3.3μF 4.7μF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | | | 2 |
| | RDEC71H106K3S1H03A | X7S | 50 | 4.7μF 10μF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | | | 1: |
| | RDER72A221K0S1H03A | X7R | 100 | 220pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | | 2 |
| | RDER72A221K0S1H03A RDER72A331K0S1H03A | X7R | 100 | 330pF | ±10% ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | | 20 |
| | RDER72A331K0S1H03A RDER72A471K0S1H03A | X7R | 100 | 470pF | ±10% ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | | 20 |





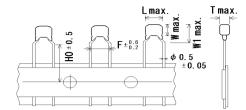
Inside Crimp Taping (Lead Style: M*)



Unit : mm

| Customer Part Number | Murata Part Number | T.C. | DC Rated Volt. | Сар. | Cap. Tol. | Dimension (mm) | | | 1 | Dimension (LxW) | qt | | |
|-------------------------|--------------------|------|----------------------|---------|--------------|----------------|-----|------|-----|--------------------|------|-----------------|-----|
| | | | (V) | | | L | W | W1 | F | Т | H/H0 | H/H0 Lead Style | (pc |
| | RDER72A681K0S1H03A | X7R | 100 | 680pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 200 |
| | RDER72A102K0S1H03A | X7R | 100 | 1000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A152K0S1H03A | X7R | 100 | 1500pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A222K0S1H03A | X7R | 100 | 2200pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A332K0S1H03A | X7R | 100 | 3300pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A472K0S1H03A | X7R | 100 | 4700pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A682K0S1H03A | X7R | 100 | 6800pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A103K0S1H03A | X7R | 100 | 10000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A153K0S1H03A | X7R | 100 | 15000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A223K0S1H03A | X7R | 100 | 22000pF | ±10% | 5.0 | 3.5 | 6.0 | 2.5 | 2.5 | 16.0 | 0S1 | 20 |
| | RDER72A333K1S1H03A | X7R | 100 | 33000pF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 20 |
| | RDER72A473K1S1H03A | X7R | 100 | 47000pF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER72A683K1S1H03A | X7R | 100 | 68000pF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER72A104K1S1H03A | X7R | 100 | 0.10µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER72A154K2S1H03A | X7R | 100 | 0.15µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 16.0 | 2S1 | 2 |
| | RDER72A224K1S1H03A | X7R | 100 | 0.22µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER72A334K1S1H03A | X7R | 100 | 0.33µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER72A474K1S1H03A | X7R | 100 | 0.47µF | ±10% | 5.0 | 3.5 | 5.0 | 2.5 | 3.15 | 16.0 | 1S1 | 2 |
| | RDER72A684K2S1H03A | X7R | 100 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 16.0 | 2S1 | 2 |
| | RDER72A105K2S1H03A | X7R | 100 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 2.5 | 3.15 | 16.0 | 2S1 | 2 |
| | RDEC72A155K3S1H03A | X7S | 100 | 1.5µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 16.0 | 3S1 | 1 |
| | RDEC72A225K3S1H03A | X7S | 100 | 2.2µF | ±10% | 5.5 | 5.0 | 7.5 | 2.5 | 4.0 | 16.0 | 3S1 | 1 |
| | RDER71E104K0M1H03A | X7R | 25 | 0.10µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDEC71E224K0M1H03A | X7S | 25 | 0.22µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDEC71E474K0M1H03A | X7S | 25 | 0.47µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDEC71E105K0M1H03A | X7S | 25 | 1.0µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDEC71E225K1M1H03A | X7S | 25 | 2.2µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 2 |
| | RDEC71E475K2M1H03A | X7S | 25 | 4.7µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 2 |
| | RDEC71E106K2M1H03A | X7S | 25 | 10µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 2 |
| | RDEC71E226K3M1H03A | X7S | 25 | 22µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 16.0 | 3M1 | 1 |
| | RDEC71E476MWM1H03A | X7S | 25 | 47µF | ±20% | 5.5 | 7.5 | 10.0 | 5.0 | 4.0 | 16.0 | WM1 | 1 |
| | RDER71H221K0M1H03A | X7R | 50 | 220pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDER71H331K0M1H03A | X7R | 50 | 330pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDER71H471K0M1H03A | X7R | 50 | 470pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDER71H681K0M1H03A | X7R | 50 | 680pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDER71H102K0M1H03A | X7R | 50 | 1000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDER71H152K0M1H03A | X7R | 50 | 1500pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 2 |
| | RDER71H222K0M1H03A | X7R | 50 | 2200pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H332K0M1H03A | X7R | 50 | 3300pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H472K0M1H03A | X7R | 50 | 4700pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |

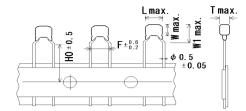
Inside Crimp Taping (Lead Style: M*)



Unit: mm

| | | | | | | | | | Unit : mm | | | | |
|-------------|--------------------|------|--------------|------------------|------|-----|-----|--------|-----------|------|------|--------------------|------------|
| Customer | Murata Part Number | T.C. | DC Rated | Cap. | Cap. | | D | imensi | on (mr | n) | 1 | Dimension (LxW) | Pac qty |
| Part Number | | | Volt. (V) | , | Tol. | L | W | W1 | F | Т | H/H0 | Lead Style | |
| | RDER71H682K0M1H03A | X7R | 50 | 6800pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 200 |
| | RDER71H103K0M1H03A | X7R | 50 | 10000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 200 |
| | RDER71H153K0M1H03A | X7R | 50 | 15000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H223K0M1H03A | X7R | 50 | 22000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H333K0M1H03A | X7R | 50 | 33000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H473K0M1H03A | X7R | 50 | 47000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H683K0M1H03A | X7R | 50 | 68000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H104K0M1H03A | X7R | 50 | 0.10µF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER71H154K1M1H03A | X7R | 50 | 0.15µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 20 |
| | RDER71H224K1M1H03A | X7R | 50 | 0.22µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 20 |
| | RDER71H334K1M1H03A | X7R | 50 | 0.33µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 20 |
| | RDER71H474K1M1H03A | X7R | 50 | 0.47µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 20 |
| | RDER71H684K2M1H03A | X7R | 50 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 20 |
| | RDEC71H105K1M1H03A | X7S | 50 | 1.0µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 20 |
| | RDER71H105K2M1H03A | X7R | 50 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 20 |
| | RDER71H155K2M1H03A | X7R | 50 | 1.5µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 20 |
| | RDER71H225K2M1H03A | X7R | 50 | 2.2µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 20 |
| | RDER71H335K3M1H03A | X7R | 50 | 3.3µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 16.0 | 3M1 | 15 |
| | RDEC71H475K2M1H03A | X7S | 50 | 4.7µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 20 |
| | RDEC71H106K3M1H03A | X7S | 50 | 10µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 16.0 | 3M1 | 15 |
| | RDEC71H226MWM1H03A | X7S | 50 | 22µF | ±20% | 5.5 | 7.5 | 10.0 | 5.0 | 4.0 | 16.0 | WM1 | 15 |
| | RDER72A221K0M1H03A | X7R | 100 | 220pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A331K0M1H03A | X7R | 100 | 330pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A471K0M1H03A | X7R | 100 | 470pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A681K0M1H03A | X7R | 100 | 680pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A102K0M1H03A | X7R | 100 | 1000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A152K0M1H03A | X7R | 100 | 1500pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A222K0M1H03A | X7R | 100 | 2200pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A332K0M1H03A | X7R | 100 | 3300pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A472K0M1H03A | X7R | 100 | 4700pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A682K0M1H03A | X7R | 100 | 6800pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A103K0M1H03A | X7R | 100 | 10000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | 16.0 | 0M1 | 20 |
| | RDER72A153K0M1H03A | X7R | 100 | 15000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | | | 20 |
| | RDER72A223K0M1H03A | X7R | 100 | 22000pF | ±10% | 4.0 | 3.5 | 6.0 | 5.0 | 2.5 | | | 20 |
| | RDER72A333K1M1H03A | X7R | 100 | 33000pF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | | | 20 |
| | RDER72A473K1M1H03A | X7R | 100 | 47000pF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | | | | 20 |
| | RDER72A683K1M1H03A | X7R | 100 | 68000pF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | | | 20 |
| | RDER72A104K1M1H03A | X7R | 100 | 0.10µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | | | 20 |
| | RDER72A154K2M1H03A | X7R | 100 | 0.16μF 0.15μF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | | | 20 |
| | RDER72A224K1M1H03A | X7R | 100 | 0.13μF 0.22μF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | | | 20 |

Inside Crimp Taping (Lead Style: M*)



Unit: mm

| Customer | Murata Part Number | T.C. | DC Rated | Сар. | Сар. | | D | imensi | on (mn | n) | | Dimension (LxW) | Pack qty. |
|-------------|--------------------------|------|--------------|--------|------|-----|-----|--------|--------|------|------|--------------------|--------------|
| Part Number | ividiata i art ivdilibei | 1.0. | Volt. (V) | Сар. | Tol. | Г | W | W1 | F | Т | H/H0 | Lead Style | |
| | RDER72A334K1M1H03A | X7R | 100 | 0.33µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 2000 |
| | RDER72A474K1M1H03A | X7R | 100 | 0.47µF | ±10% | 4.5 | 3.5 | 5.0 | 5.0 | 3.15 | 16.0 | 1M1 | 2000 |
| | RDER72A684K2M1H03A | X7R | 100 | 0.68µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 2000 |
| | RDER72A105K2M1H03A | X7R | 100 | 1.0µF | ±10% | 5.5 | 4.0 | 6.0 | 5.0 | 3.15 | 16.0 | 2M1 | 2000 |
| | RDEC72A155K3M1H03A | X7S | 100 | 1.5µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 16.0 | 3M1 | 1500 |
| | RDEC72A225K3M1H03A | X7S | 100 | 2.2µF | ±10% | 5.5 | 5.0 | 7.5 | 5.0 | 4.0 | 16.0 | 3M1 | 1500 |
| | RDEC72A475MWM1H03A | X7S | 100 | 4.7µF | ±20% | 5.5 | 7.5 | 10.0 | 5.0 | 4.0 | 16.0 | WM1 | 1500 |

Reference only

| _ | | | | • | | | | | | |
|-----|--------------------------------|--|--|--|--|--|--|--|--|--|
| | CIFICATIONS | | | Total Madical | | | | | | |
| No. | | em | Specification | Test Method | | | | | | |
| 2 | Appearance | d Markina | No defects or abnormalities. | Visual inspection. | | | | | | |
| 2 | Dimension and | ı Marking | Within the specified dimensions and Marking | Visual inspection, Using Caliper. | | | | | | |
| 3 | Dielectric | Between | No defects or abnormalities. | The capacitor should not be damaged when voltage | | | | | | |
| | Strength | Terminals | | in Table is applied between the terminations for | | | | | | |
| | | | | 1 to 5 seconds. (Charge/Discharge current ≦ 50mA.) | | | | | | |
| | | | | Rated voltage Test voltage | | | | | | |
| | | | | DC25V·DC50V 250% of the rated voltage | | | | | | |
| | | | | DC100V | | | | | | |
| | | Body | No defects or abnormalities. | The capacitor is placed in a container with metal balls | | | | | | |
| | | Insulation | | of 1mm diameter so that each terminal, short-circuit, | | | | | | |
| | | | | is kept approximately 2mm from the balls, and | | | | | | |
| | | | | voltage in Table is impressed for 1 to 5 seconds | | | | | | |
| | | | | between capacitor terminals and metal balls. | | | | | | |
| | | | | (Charge/Discharge current ≤ 50mA.) | | | | | | |
| | | | | Rated voltage Test voltage | | | | | | |
| | | | | DC25V•DC50V 250% of the rated voltage | | | | | | |
| | | | | DC100V | | | | | | |
| 4 | Insulation | Between | 10,000MΩ or 500MΩ•μF min. | The insulation resistance should be measured with a | | | | | | |
| | Resistance | Terminals | (Whichever is smaller) | DC voltage not exceeding the rated voltage at normal | | | | | | |
| | (I.R.) | | | temperature and humidity and within 2 minutes of | | | | | | |
| E | Conceite | I | Within the one-ified teles- | charging. (Charge/Discharge current ≤ 50mA.) | | | | | | |
| 5 | Capacitance | | Within the specified tolerance. | The capacitance, D.F. should be measured at 25°C at the frequency and voltage shown in the table. | | | | | | |
| 6 | Dissipation Fa | ctor (D.F.) | X7R : 0.025 max. | | | | | | | |
| | , | ` ' | X7S: 0.125 max. | Nominal Cap. Frequency Voltage | | | | | | |
| | | | | C≤1000pF 1±0.1MHz AC0.5~5V (r.m.s.) 10μ F≥C>1000pF 1±0.1kHz AC1±0.2V(r.m.s.) | | | | | | |
| | | | | C>10μF 120±24Hz AC150.2V (I.III.S.) | | | | | | |
| Щ | | | | | | | | | | |
| 7 | Capacitance | | X7R : within ±15% | The capacitance change should be measured after 5 | | | | | | |
| | Temperature Characteristics | 2 | X7S : within ±22% | min. at each specified temperature stage. The ranges of capacitance change compared with the | | | | | | |
| | Onaracie (ISIIC) | | | 25°C value over the temperature ranges shown in the | | | | | | |
| | | | | table should be within the specified ranges. | | | | | | |
| | | | | Step Temperature(°C) | | | | | | |
| | | | | 1 25±2 | | | | | | |
| , 1 | Í | | | 1 2012 | | | | | | |
| 1 I | 1 | | | 2 -55±3 | | | | | | |
| | | | | | | | | | | |
| | | | | 2 -55±3 3 25±2 4 125±3 | | | | | | |
| | | | | 2 -55±3 3 25±2 | | | | | | |
| | | | | 2 -55±3 3 25±2 4 125±3 | | | | | | |
| | | | | 2 -55±3 3 25±2 4 125±3 5 25±2 | | | | | | |
| | | | | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment | | | | | | |
| | Terminal | Tensile | Termination not to be broken or | 2 | | | | | | |
| | Terminal Strength | Tensile Strength | Termination not to be broken or loosened | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of | | | | | | |
| | | | | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep | | | | | | |
| | | Strength | loosened | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. | | | | | | |
| | | Strength Bending | | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of | | | | | | |
| | | Strength | loosened Termination not to be broken or | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. | | | | | | |
| | | Strength Bending | loosened Termination not to be broken or | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in | | | | | | |
| | | Strength Bending | loosened Termination not to be broken or | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the | | | | | | |
| | Strength | Strength Bending Strength | Termination not to be broken or loosened No defects or abnormalities. | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds. The capacitor should be subjected to a simple | | | | | | |
| | Strength | Strength Bending Strength Appearance Capacitance | Termination not to be broken or loosened No defects or abnormalities. Within the specified tolerance. | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds. The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, | | | | | | |
| | Strength | Strength Bending Strength | Termination not to be broken or loosened No defects or abnormalities. Within the specified tolerance. X7R: 0.025 max. | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds. The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the | | | | | | |
| | Strength | Strength Bending Strength Appearance Capacitance | Termination not to be broken or loosened No defects or abnormalities. Within the specified tolerance. | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds. The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10Hz and 55Hz. | | | | | | |
| | Strength | Strength Bending Strength Appearance Capacitance | Termination not to be broken or loosened No defects or abnormalities. Within the specified tolerance. X7R: 0.025 max. | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds. The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10Hz and 55Hz. The frequency range, from 10Hz to 55Hz and return | | | | | | |
| | Strength | Strength Bending Strength Appearance Capacitance | Termination not to be broken or loosened No defects or abnormalities. Within the specified tolerance. X7R: 0.025 max. | 2 | | | | | | |
| | Strength | Strength Bending Strength Appearance Capacitance | Termination not to be broken or loosened No defects or abnormalities. Within the specified tolerance. X7R: 0.025 max. | 2 -55±3 3 25±2 4 125±3 5 25±2 • Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2 hours. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep applied the force for 10±1 seconds. Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3 seconds. The capacitor should be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10Hz and 55Hz. The frequency range, from 10Hz to 55Hz and return | | | | | | |

ESRDE103D

Reference only

| esistance Soldering at n- eheat) | | Specification Solder is deposited on unintermittently immersed portion in axial direction covering 3/4 or more in circumferential direction of lead wires. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±7.5% X7S: Within ±7.5% X7R: Within ±7.5% X7R: Within ±7.5% | ethanirosin i solutio of dipp Temp 245: 235: The left from t Prett Capace *room Post Capace First tl Then, 1.5 to | ol (JIS K & n weight pon for 2±0 ping is up of solder ±5°C Lead ±5°C H60, and wires the root of reatment citor should condition treatment iter should ne capacit the lead wires and the solder treatment the solder should be capacit the lead wires the solder treatment the solder treatment the solder treatment the solder treatment the lead wires the solder treatment the solder treatment the solder treatment the solder treatment treatmen | t t d be stored for should be stored at d be stored for should be swires should be swires should be swires should be | n (JIS K 5902 merse in sold both cases to 2mm from to | colution of 2) (25% ler he depth the terminal bo 5Cu) melted solder ±1 seconds. C for one hour al measureme s at *room con +0/-5°C for 60 | 1.5 to 2.0mm then place at nt. dition. +0/-5 seconds. | | | |
|--|---|---|--|--|--|--|---|--|--|--|--|
| sistance Soldering at on- eheat) sistance Soldering at n- eheat) | Appearance Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | immersed portion in axial direction covering 3/4 or more in circumferential direction of lead wires. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±7.5% X7R: Within ±7.5% X7R: Within ±7.5% | ethanirosin i solutio of dipp Temp 245: 235: The left from t Prett Capace *room Post Capace First tl Then, 1.5 to | ol (JIS K & n weight point of 2±0 on for 1±0 | and 101) and rosi propotion). Imit of seconds. In to about 1.5 to the seconds of the seconds of the seconds of the seconds of the second of th | n (JIS K 5902 merse in sold both cases to 2mm from to | 2) (25% ler he depth the terminal bo 5Cu) melted solder ±1 seconds. C for one hour al measureme s at *room con +0/-5°C for 60 | 1.5 to 2.0mm then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | No defects or abnormalities. X7R: Within ±10% No defects or abnormalities. X7R: Within ±10% | rosin i solutio of dipp 245: 235: The left from t Pretrict Capace First till Then, 1.5 to | n weight properties of solder to sol | oropotion). Imito seconds. In to about 1.5 to to about | merse in sold both cases to 2mm from to 2m | he depth the depth the terminal bo 5Cu) melted solder ±1 seconds. C for one hour al measureme at *room con +0/-5°C for 60 | 1.5 to 2.0mm then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±7.5% | solutic of dipp Temp 245: 235: The lefter of the control of the c | on for 2±0 bing is up of solder ±5°C H60. ad wires she root of ceatment citor should condition treatmen bitor should the lead with the lead wi | 5 seconds. In to about 1.5 to a | both cases to 2mm from to 2mm | he depth the terminal bo 5Cu) melted solder ±1 seconds. C for one hour al measureme s at *room cone +0/-5°C for 60 | 1.5 to 2.0mm then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±7.5% | of dipp Temp 245: 235: The lefter from t Prett Capace *room Post Capace First tl Then, 1.5 to | oing is up of solder t5°C Lead t5°C H60. ad wires she root of reatment citor shoul condition treatmen citor shoul ne capacit the lead to | to about 1.5 to the stored at the stored for the stored for the stored for the stored for should be stored for sh | (Sn-3.0Ag-0.) tectic Solder nersed in the i0±5°C for 10 t 150+0/-10°t rs before initia r 24±2 hours stored at 120 e immersed i | melted solder ±1 seconds. C for one hour all measureme s at *room cone+0/-5°C for 60 | 1.5 to 2.0mm then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | X7R: Within ±7.5% X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% | Temp 245: 235: The lefter from t Prett Capace *room Post Capace First tl Then, 1.5 to | of solder ±5°C Lead ±5°C H60. ad wires and reatment condition treatment condition treatment condition treatment condition the capacit the lead v 2.0mm from | t t d be stored for should be stored at d be stored for should be swires should be swires should be swires should be | (Sn-3.0Ag-0. tectic Solder nersed in the 10±5°C for 10 t 150+0/-10°C rs before initial r 24±2 hours stored at 120 e immersed | melted solder ±1 seconds. C for one hour al measureme s at *room cone +0/-5°C for 60 | 1.5 to 2.0mm then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | X7R: Within ±7.5% X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% | 245: 235: The leform t Pretical Capacitation Post Capacitation First tile Then, 1.5 to Pretical Capacitation | ±5°C Lead ±5°C H60, and wires a the root of reatment citor shoul condition -treatmen citor shoul the capacit the lead v 2.0mm fro | d Free Solder A or H63A Euro should be immoterminal at 26 d be stored a for 24±2 hour t d be stored for tor should be swires should be | tectic Solder hersed in the fo±5°C for 10 t 150+0/-10°C rs before initia r 24±2 hours stored at 120 e immersed | melted solder ±1 seconds. C for one hour al measureme s at *room con+0/-5°C for 60 | then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | X7R: Within ±7.5% X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% | 235: The left from t Pretical Parameter of the left o | et5°C H60, and wires a he root of reatment citor should condition treatment citor should ne capacit the lead with | A or H63A Euroshould be immodern terminal at 26 and be stored at 1 for 24±2 hours to the stored for the should be swires should be should be swires should be should b | tectic Solder hersed in the fo±5°C for 10 t 150+0/-10°C rs before initia r 24±2 hours stored at 120 e immersed | melted solder ±1 seconds. C for one hour al measureme s at *room con+0/-5°C for 60 | then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | X7R: Within ±7.5% X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% | The left from t Pretrict Capace *room Post Capace First ti Then, 1.5 to | ad wires and wires and wires are atment citor should condition treatment citor should be capacit the lead with the | should be imm terminal at 26 d be stored a for 24±2 hour t d be stored fo tor should be s wires should b | nersed in the 10±5°C for 10 1150+0/-10°0 125 before initia 124±2 hours 124±2 hours 1200 e immersed | ±1 seconds. C for one hour al measureme s at *room con- +0/-5°C for 60 | then place at nt. dition. +0/-5 seconds. | | | |
| Soldering at on- eheat) sistance Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | X7R: Within ±7.5% X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% | room t Pretr Capace *room Post Capace First tl Then, 1.5 to Pretr | ne root of reatment citor shoul condition treatmen citor shoul ne capacit the lead value from the from the capacit conditions from the capacit conditions from the capacit conditions are capacit conditions. | d be stored at for 24±2 hourd to stored for tor should be stored for the stored for should be swires should be | t 150+0/-10°0 t 150+0/-10°0 ts before initia r 24±2 hours stored at 120 e immersed | ±1 seconds. C for one hour al measureme s at *room con- +0/-5°C for 60 | then place at nt. dition. +0/-5 seconds. | | | |
| at on- eheat) sistance Soldering at n- eheat) | Change Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | X7S: Within ±10% No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% | • Pretr Capace *room • Post Capace First ti Then, 1.5 to | reatment condition -treatmen citor shoul ne capacit the lead v | d be stored a for 24±2 hour t d be stored fo tor should be s wires should b | t 150+0/-10°(rs before initial r 24±2 hours stored at 120 e immersed | C for one hour al measureme s at *room con +0/-5°C for 60 | dition. +0/-5 seconds. | | | |
| sistance Soldering at n-eheat) | Dielectric Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | No defects. No defects or abnormalities. X7R: Within ±7.5% X7S: Within ±10% | Capace *room • Post Capace First tl Then, 1.5 to | citor shoul condition -treatmen citor shoul ne capacit the lead v 2.0mm fro | for 24±2 hour t d be stored fo tor should be s wires should b | r 24±2 hours stored at 120 e immersed | al measureme s at *room con +0/-5°C for 60 | dition. +0/-5 seconds. | | | |
| sistance Soldering at n- eheat) | Strength (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | No defects or abnormalities. X7R : Within ±7.5% X7S : Within ±10% | Capace *room • Post Capace First tl Then, 1.5 to | citor shoul condition -treatmen citor shoul ne capacit the lead v 2.0mm fro | for 24±2 hour t d be stored fo tor should be s wires should b | r 24±2 hours stored at 120 e immersed | al measureme s at *room con +0/-5°C for 60 | dition. +0/-5 seconds. | | | |
| sistance Soldering at n- eheat) | (Between terminals) Appearance Capacitance Change Dielectric Strength (Between | X7R : Within ±7.5% X7S : Within ±10% | *room • Post Capac First tl Then, 1.5 to | condition -treatmen citor shoul ne capacit the lead v 2.0mm fro | for 24±2 hour t d be stored fo tor should be s wires should b | r 24±2 hours stored at 120 e immersed | al measureme s at *room con +0/-5°C for 60 | dition. +0/-5 seconds. | | | |
| Soldering at n- eheat) | Appearance Capacitance Change Dielectric Strength (Between | X7R : Within ±7.5% X7S : Within ±10% | • Post Capac First tl Then, 1.5 to | treatmen citor shoul ne capacit the lead v 2.0mm fro | t d be stored fo tor should be s wires should b | r 24±2 hours stored at 120 e immersed | s at *room con +0/-5°C for 60 | dition. +0/-5 seconds. | | | |
| Soldering at n- eheat) | Appearance Capacitance Change Dielectric Strength (Between | X7R : Within ±7.5% X7S : Within ±10% | Capace First to Then, 1.5 to | citor shoul ne capacit the lead v 2.0mm fro | d be stored fo tor should be s wires should b | stored at 120 e immersed | +0/-5°C for 60 | +0/-5 seconds. | | | |
| Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between | X7R : Within ±7.5% X7S : Within ±10% | First then, 1.5 to | ne capacit the lead v 2.0mm fro | tor should be s wires should b | stored at 120 e immersed | +0/-5°C for 60 | +0/-5 seconds. | | | |
| Soldering at n- eheat) | Capacitance Change Dielectric Strength (Between | X7R : Within ±7.5% X7S : Within ±10% | Then, 1.5 to | the lead v | wires should b | e immersed i | | | | | |
| at n- eheat) | Change Dielectric Strength (Between | X7S : Within ±10% | 1.5 to | 2.0mm fro | | | in the melted s | | | | |
| n- eheat) | Dielectric Strength (Between | | • Pretr | | om the root of | tarmainal at 0 | | older | | | |
| eheat) | Strength (Between | No defects. | | eatment | | terminai at 2 | 60±5°C for 7.5 | 5+0/-1 seconds. | | | |
| , | (Between | | | eatment | | | | | | | |
| | • | | Capac | | | | | | | | |
| | terminals) | | | itor shoul | d be stored a | t 150+0/-10° | C for one hour | , then place at | | | |
| | | | *room | condition | for 24±2 hou | rs before initia | al measureme | nt. | | | |
| | | | • Post | -treatmen | t | | | | | | |
| | | | Capac | itor shoul | d be stored fo | r 24±2 hours | at *room con | dition. | | | |
| sistance | Appearance | No defects or abnormalities. | Test o | ondition | | | | | | | |
| Soldering | Capacitance | X7R : Within ±7.5% | Tem | perature c | of iron-tip: 350 |)±10°C | | | | | |
| at | Change | X7S : Within ±10% | Sold | ering time | : 3.5±0.5 sec | onds | | | | | |
| oldering | Dielectric | No defects. | Solde | ring positi | on | | | | | | |
| n method) | Strength | | Strai | ght Lead : | : 1.5 to 2.0mm | from the roo | ot of terminal. | | | | |
| | (Between | | Crim | p Lead : 1 | 1.5 to 2.0mm f | rom the end | of bend. | | | | |
| | terminals) | | | | | | | | | | |
| | | | • Preti | eatment | | | | | | | |
| | | | | | | | | , then place at | | | |
| | | | | | | rs before initia | al measureme | nt. | | | |
| | | | | | | | | | | | |
| | | | _ | | | | at *room con | dition. | | | |
| | | No defects or abnormalities. | | | | | | | | | |
| cle | • | X7R, X7S : Within±12.5% | | | | • | | | | | |
| | | | Set at | *room co | ndition for 24± | 2 hours, ther | n measure. | | | | |
| | D.F. | | | Step | 1 | 2 | 3 | 4 | | | |
| | | | _ | - | | | | | | | |
| | I.K. | ' | | Temp. | Operating | Room | Operating | Room | | | |
| | D. 1 () | , | _ | (0) | Temp. ±3 | remp. | Temp. ±3 | Temp. | | | |
| | | No detects or abnormalities. | | Time | 00:0 | 0 | 20.0 | 0 | | | |
| | = | | | (min.) | 30±3 | 3 max. | 30±3 | 3 max. | | | |
| | ` | | | | | | | | | | |
| | ı ermınals) | | | | <u> </u> | E0.0/ 1000 | | | | | |
| | | | | | | | | | | | |
| midit: | Annos | No defeate or almount slitic - | | | | | +±∠ ⊓OUrs. | | | | |
| | | | _ | - | | | | | | | |
| eady | • | Λ/ΓΛ, Λ/Ο : WIIΠΠ ±15% | | - | | | anditia: 41- | | | | |
| 41C) | | VZD : 0.05 | Kemo | ve and se | t for 24±2 hou | ııs at ^room o | onaition, then | measure. | | | |
| - | U.F. | | | | | | | | | | |
| - | | | _ | | | E0 . 0/ 400C 3 | | | | | |
| - | I.R. 1,000MΩ or 50MΩ•μF min. | | | | | | | | | | |
| - | I.R. | (Whichever is smaller) | | | hour and then set at *room condition for 24±2 hours. | | | | | | |
| ım cea | nidity ady | Capacitance Change D.F. I.R. Dielectric Strength (Between Terminals) didity Appearance ady Capacitance Change D.F. | Capacitance Change D.F. X7R : 0.05 max. X7S : 0.2 max. I.R. 1,000MΩ or 50MΩ • μF min. (Whichever is smaller) Dielectric Strength (Between Terminals) Appearance Polyman Appearance Change D.F. X7R : 0.05 max. X7S : 0.2 max. I.R. 1,000MΩ or 50MΩ • μF min. Whichever is smaller) No defects or abnormalities. X7R, X7S : Within ±15% Change D.F. X7R : 0.05 max. X7S : 0.2 max. I.R. 1,000MΩ or 50MΩ • μF min. | Perature e Appearance Capacitance Change D.F. X7R: 0.05 max. X7S: 0.2 max. I.R. 1,000MΩ or 50MΩ·μF min. (Whichever is smaller) Dielectric Strength (Between Terminals) Appearance No defects or abnormalities. **Pretr Perfor hour a defects or abnormalities.** **Capacitance Appearance No defects or abnormalities.** **Capacitance Appearance A | Capacitor shoul perature Appearance No defects or abnormalities. Repeat 5 cycles treatments liste Change D.F. X7R : 0.05 max. X7S : 0.2 max. Step Temp. (°C) | Appearance Appearance Repeat 5 cycles according to treatments listed in the follow | Capacitor should be stored for 24±2 hours | Capacitor should be stored for 24±2 hours at *room content of the perature | | | |

Reference only

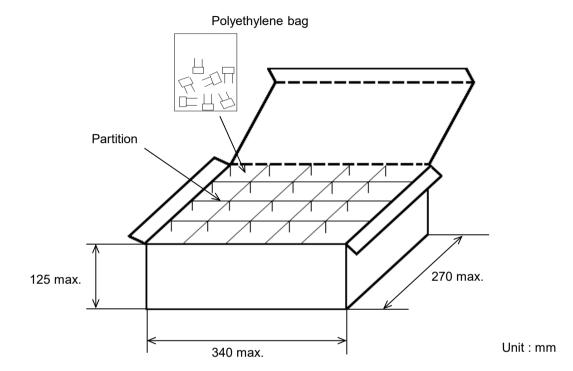
| 0. | It | em | Specification | Test Method | | | | | |
|----|-------------|-------------|--|---|--|--|--|--|--|
| 14 | Humidity | Appearance | No defects or abnormalities. | Apply the rated voltage at 40±2°C and relative | | | | | |
| | Load | Capacitance | X7R, X7S : Within±15% | humidity of 90 to 95% for 500+24/-0 hours. | | | | | |
| | | Change | | Remove and set for 24±2 hours at *room condition, then measure. (Charge/Discharge current ≤ 50mA.) • Pretreatment | | | | | |
| | | D.F. | X7R : 0.05 max. | | | | | | |
| | | | X7S : 0.2 max. | | | | | | |
| | | I.R. | 500M Ω or 25M Ω •μF min. | | | | | | |
| | | | (Whichever is smaller) | Perform a heat treatment at 150+0/-10°C for one | | | | | |
| | | | | hour and then set at *room condition for 24±2 hours. | | | | | |
| 15 | High | Appearance | No defects or abnormalities. | Apply 150% of the rated voltage at the maximum | | | | | |
| | Temperature | Capacitance | X7R, X7S : Within±15% | operating temperature ±3°C for 1000+48/-0 hours. | | | | | |
| | Load | Change | | Remove and set for 24±2 hours at *room condition, then measure. | | | | | |
| | | D.F. | X7R : 0.05 max. | (Charge/Discharge current ≦ 50mA.) | | | | | |
| | | | X7S: 0.2 max. | | | | | | |
| | | I.R. | 1,000MΩ or 50 MΩ•μF min. | Pretreatment | | | | | |
| | | | (Whichever is smaller) | Apply test voltage for one hour at test temperature. | | | | | |
| | | | | Remove and set at *room condition for 24±2 hours. | | | | | |
| 16 | Solvent | Appearance | No defects or abnormalities. | The capacitor should be fully immersed, unagitated, | | | | | |
| | Resistance | Marking | Legible | in reagent at 20 to 25°C for 30±5 seconds and then | | | | | |
| | | | | remove gently. Marking on the surface of the | | | | | |
| | | | | capacitor shall immediately be visually examined. | | | | | |
| | | | | Reagent : Isopropyl alcohol | | | | | |

ESRDE103D

6. Packing specification

•Bulk type (Packing style code : B)

The size of packing case and packing way



The number of packing = *1 Packing quantity × *2 n

*1 : Please refer to [Part number list].

*2 : Standard n = 20 (bag)

Note)

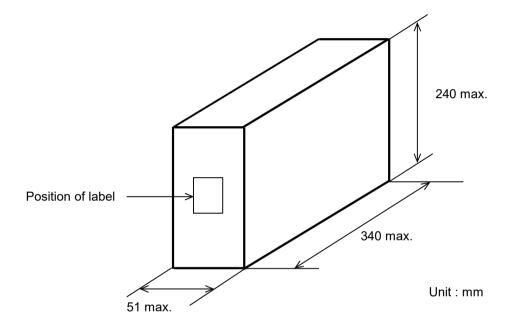
The outer package and the number of outer packing be changed by the order getting amount.

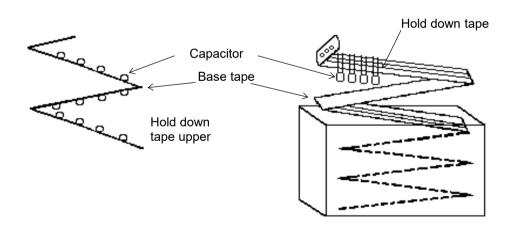
JKBCRPE02

·Ammo pack taping type (Packing style code : A)

A crease is made every 25 pitches, and the tape with capacitors is packed zigzag into a case. When body of the capacitor is piled on other body under it.

The size of packing case and packing way



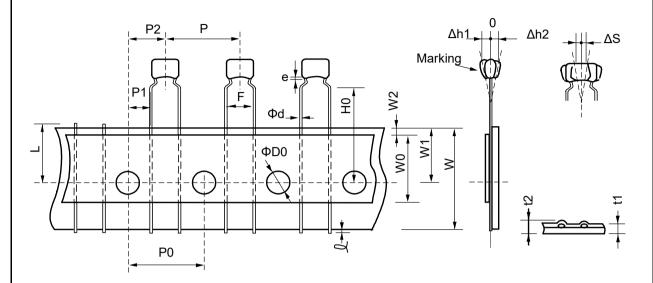


7. Taping specification

7-1. Dimension of capacitors on tape

Inside crimp taping type < Lead code : M1 >

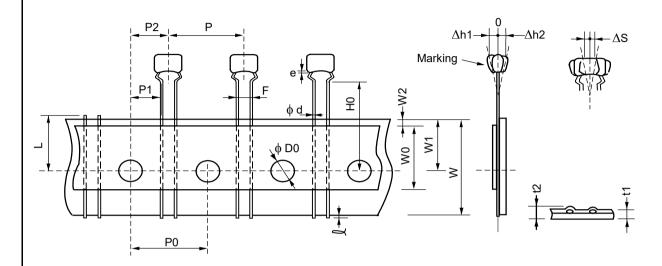
Pitch of component 12.7mm / Lead spacing 5.0mm



Unit: mm

| Item | Code | Dimensions | Remarks |
|--|------|------------------|-------------------------------------|
| Pitch of component | Р | 12.7+/-1.0 | |
| Pitch of sprocket hole | P0 | 12.7+/-0.2 | |
| Lead spacing | F | 5.0+0.6/-0.2 | |
| Length from hole center to component center | P2 | 6.35+/-1.3 | Deviation of progress direction |
| Length from hole center to lead | P1 | 3.85+/-0.7 | |
| Deviation along tape, left or right defect | ΔS | 0+/-2.0 | They include deviation by lead bend |
| Carrier tape width | W | 18.0+/-0.5 | |
| Position of sprocket hole | W1 | 9.0+0/-0.5 | Deviation of tape width direction |
| Lead distance between reference and bottom plane | H0 | 16.0+/-0.5 | |
| Protrusion length | Q | 0.5 max. | |
| Diameter of sprocket hole | ФD0 | 4.0+/-0.1 | |
| Lead diameter | Фd | 0.5+/-0.05 | |
| Total tape thickness | t1 | 0.6+/-0.3 | They include hold down tape |
| Total thickness of tape and lead wire | t2 | 1.5 max. | thickness |
| Deviation across tape | Δh1 | 2.0 max. (Di | mension code : W) |
| Deviation across tape | Δ h2 | 1.0 max. (ex | ccept as above) |
| Portion to cut in case of defect | L | 11.0+0/-1.0 | |
| Hold down tape width | W0 | 9.5 min. | |
| Hold down tape position | W2 | 1.5+/-1.5 | |
| Coating extension on lead | е | Up to the end of | crimp |

Outside crimp taping type < Lead code : S1 > Pitch of component 12.7mm / Lead spacing 2.5mm

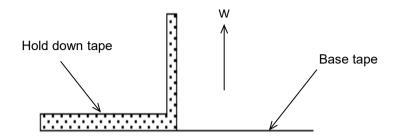


Unit : mm

| Item | Code | Dimensions | Remarks |
|--|------|------------------|-------------------------------------|
| Pitch of component | Р | 12.7+/-1.0 | |
| Pitch of sprocket hole | P0 | 12.7+/-0.2 | |
| Lead spacing | F | 2.5+0.4/-0.2 | |
| Length from hole center to component center | P2 | 6.35+/-1.3 | Deviation of progress direction |
| Length from hole center to lead | P1 | 3.85+/-0.7 | |
| Deviation along tape, left or right defect | ΔS | 0+/-2.0 | They include deviation by lead bend |
| Carrier tape width | W | 18.0+/-0.5 | |
| Position of sprocket hole | W1 | 9.0+0/-0.5 | Deviation of tape width direction |
| Lead distance between reference and bottom plane | H0 | 16.0+/-0.5 | |
| Protrusion length | Q | 0.5 max. | |
| Diameter of sprocket hole | ФD0 | 4.0+/-0.1 | |
| Lead diameter | Фd | 0.5+/-0.05 | |
| Total tape thickness | t1 | 0.6+/-0.3 | They include hold down tape |
| Total thickness of tape and lead wire | t2 | 1.5 max. | thickness |
| Deviation across tape | Δh1 | 1.0 max. | |
| Deviation across tape | Δ h2 | 1.0 IIIax. | |
| Portion to cut in case of defect | L | 11.0+0/-1.0 | |
| Hold down tape width | W0 | 9.5 min. | |
| Hold down tape position | W2 | 1.5+/-1.5 | |
| Coating extension on lead | е | Up to the end of | crimp |

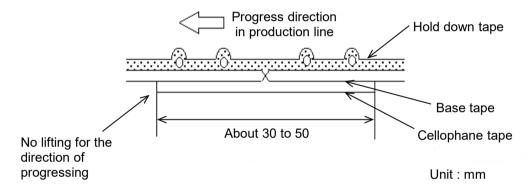
7-2. Splicing way of tape

1) Adhesive force of tape is over 3N at test condition as below.

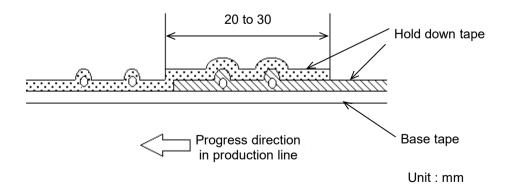


2) Splicing of tape

- a) When base tape is spliced
 - •Base tape shall be spliced by cellophane tape. (Total tape thickness shall be less than 1.05mm.)



- b) When hold down tape is spliced
 - •Hold down tape shall be spliced with overlapping. (Total tape thickness shall be less than 1.05mm.)



- c) When both tape are spliced
 - •Base tape and hold down tape shall be spliced with splicing tape.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Murata:

| RDER71E223K0K1C03E | RDEC71E226K3M1H03A | RDEC71E226K3S1H03A | RDEC71E475K2S1H03A |
|--------------------|--------------------|--------------------|--------------------|
| RDEC71H475K2M1H03A | RDEC72A225K3S1H03A | RDER71H102K0S1H03A | RDER71H103K0M1H03A |
| RDER71H104K0S1H03A | RDER71H153K0S1H03A | RDER71H221K0S1H03A | RDER71H222K0M1H03A |
| RDER71H224K1M1H03A | RDER71H225K2M1H03A | RDER71H331K0M1H03A | RDER71H332K0M1H03A |
| RDER71H333K0S1H03A | RDER71H471K0M1H03A | RDER71H473K0M1H03A | RDER71H681K0M1H03A |
| RDER71H682K0M1H03A | RDER71H684K2S1H03A | RDER72A102K0M1H03A | RDER72A105K2M1H03A |
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| RDER71H103K0S1H03A | RDER71H154K1S1H03A | RDER71H221K0M1H03A | RDER71H224K1S1H03A |
| RDER71H334K1S1H03A | RDER71H335K3M1H03A | RDER71H681K0S1H03A | RDER71H682K0S1H03A |
| RDER71H684K2M1H03A | RDER72A152K0S1H03A | RDER72A154K2M1H03A | RDER72A154K2S1H03A |
| RDER72A223K0M1H03A | RDER72A223K0S1H03A | RDER72A224K1S1H03A | RDER72A333K1S1H03A |
| RDER72A472K0M1H03A | RDER72A473K1M1H03A | RDER72A681K0M1H03A | RDER72A153K0S1H03A |
| RDER72A221K0M1H03A | RDER72A222K0M1H03A | RDER72A332K0S1H03A | RDER72A474K1S1H03A |
| RDER72A681K0S1H03A | RDER72A683K1S1H03A | RDEC71E105K0S1H03A | RDEC71E106K2S1H03A |
| RDEC71E474K0M1H03A | RDEC71H106K3M1H03A | RDEC72A155K3M1H03A | RDEC72A225K3M1H03A |
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| RDER71H332K0S1H03A | RDER71H683K0M1H03A | RDER72A103K0S1H03A | RDER72A105K2S1H03A |
| RDER72A153K0M1H03A | RDER72A221K0S1H03A | RDER72A224K1M1H03A | RDER72A331K0M1H03A |
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| RDEC71E225K1S1H03A | RDEC71E475K2M1H03A | RDEC72A475MWM1H03A | RDER71E104K0M1H03A |
| RDER71H105K2M1H03A | RDER71H152K0M1H03A | RDER71H222K0S1H03A | RDER71H223K0M1H03A |
| RDER71H225K2S1H03A | RDER71H333K0M1H03A | RDER71H334K1M1H03A | RDER71H471K0S1H03A |
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