

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)

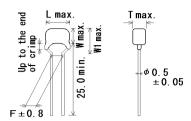
> Letter code: 5 (DC50V. Except dimension code: 0,1) Letter code: 1 (DC100V. Except dimension code: 0,1)

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	© 225 K1C		

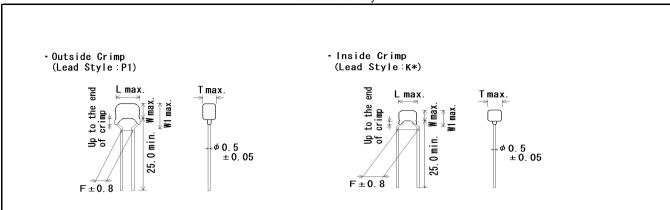
4. Part number list

• Outside Crimp (Lead Style:P1)



Unit : mm

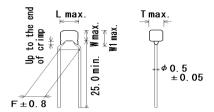
Customer	Murata Part Number	T.C.	DC Rated	Cap.	Cap.		Dime	ension (nsion (mm)		Dimension Pack (LxW) qty.	
Part Number			Volt. (V)		Tol.	L	W	W1	F	Т	Lead Style	(pcs)
	RDER71E104K0P1H03B	X7R	25	0.10µF	±10%	5.0	3.5	6.0	2.5	2.5	0P1	500
	RDEC71E224K0P1H03B	X7S	25	0.22µF	±10%	5.0	3.5	6.0	2.5	2.5	0P1	500
	RDEC71E474K0P1H03B	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

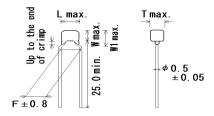




Unit : mm

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

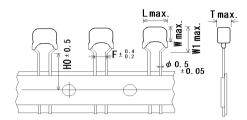
·Inside Crimp (Lead Style:K*)



Unit: mm

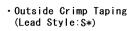
Customer	Murata Part Number	T.C.	DC Rated Volt. (V)	Сар.	Cap. Tol.		Dime	Dimension (LxW)	Pack qty.			
Part Number						L	W	W1	F	Т	Lead Style	
	RDER72A334K1K1H03B	X7R	100	0.33µF	±10%	4.5	3.5	5.0	5.0	3.15	1K1	500
	RDER72A474K1K1H03B	X7R	100	0.47µF	±10%	4.5	3.5	5.0	5.0	3.15	1K1	500
	RDER72A684K2K1H03B	X7R	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

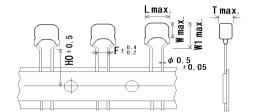
Outside Crimp Taping (Lead Style:S*)



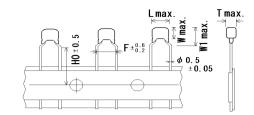
Unit : mm

						_			Onit : mm				
Customer	Murata Part Number	T.C.	DC Rated	Cap.	Cap.	Dimension (mm)		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





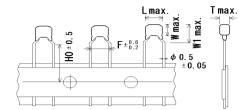
Inside Crimp Taping (Lead Style: M*)



Unit : mm

Customer Part Number	Murata Part Number	T.C.	DC Rated Volt.	Сар.	Cap. Tol.	Dimension (mm)		Dimension (LxW)	qt				
			(V)			L	W	W1	F	Т	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

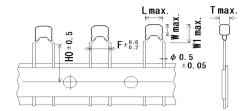
Inside Crimp Taping (Lead Style: M*)



Unit : mm

						_			Onit : mm				
Customer	Murata Part Number	T.C.	DC Rated	Cap.	Cap.	Dimension (mm)			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

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	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						
	Onaraciensiic			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 the capacit the lead wire says	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%	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 eat 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 eat 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 left of the left o	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 lead with the lead with	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 eat 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 eat 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 eat 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 foo tor should be s wires 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 eat 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 leftom t Pretical Capacitation Post Capacitation First ti Then, 1.5 to	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 immodernial at 26 d be stored at for 24±2 hours t d be stored for 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 eat 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 attent better should condition the capacitithe lead with the lead w	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 in the	±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 eat 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 the 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)					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. Pertor hour a saidity Appearance Change No defects or abnormalities. Set the humid Change D.F. X7R: 0.05 max. - Pretress or abnormalities. Set the humid Change D.F. X7R: 0.05 max. - Pretress or abnormalities. Set the humid Remo D.F. X7R: 0.05 max. - Pretress or 2000 P	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

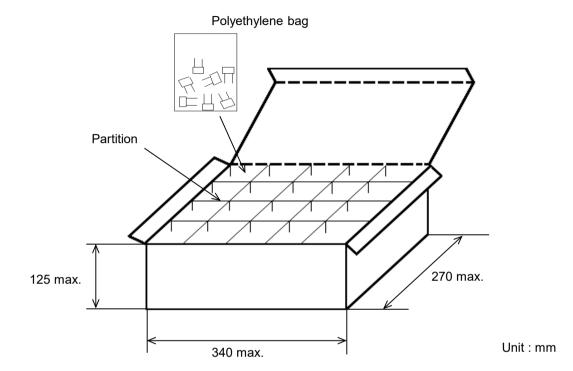
0.	It	em	Specification	Test Method					
14	Humidity	Appearance	No defects or abnormalities.	Apply the rated voltage at 40±2°C and relative					
	Load	Capacitance	X7R, X7S : Within±15%	humidity of 90 to 95% for 500+24/-0 hours.					
		Change		Remove and set for 24±2 hours at *room condition, then measure.					
		D.F.	X7R : 0.05 max.	(Charge/Discharge current ≦ 50mA.)					
			X7S : 0.2 max.						
		I.R.	500 M Ω or 25 M Ω · μF min.	Pretreatment					
			(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)

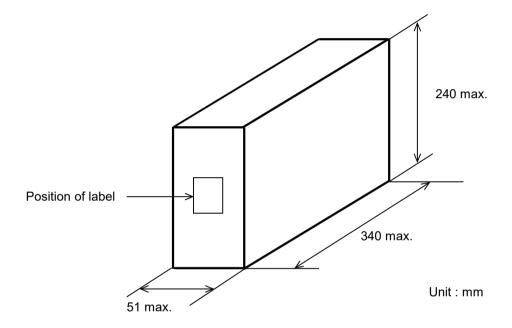
The outer package and the number of outer packing be changed by the order getting amount.

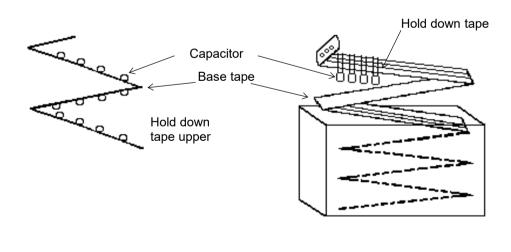
JKBCRPE02

·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



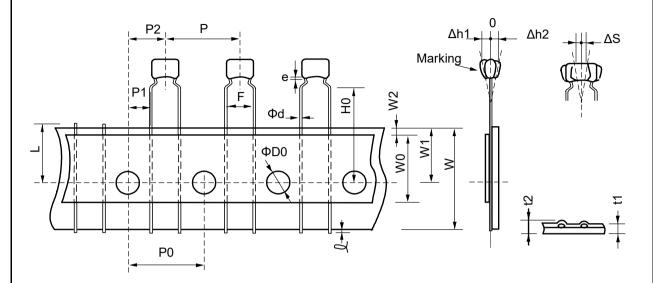


7. Taping specification

7-1. Dimension of capacitors on tape

Inside crimp taping type < Lead code : M1 >

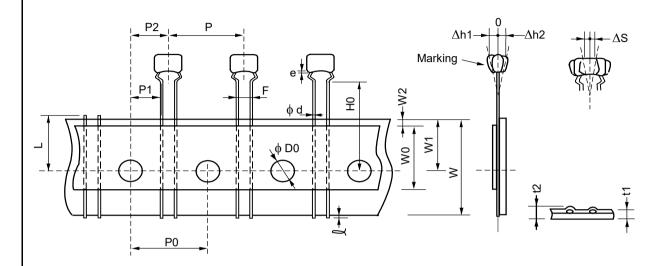
Pitch of component 12.7mm / Lead spacing 5.0mm



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

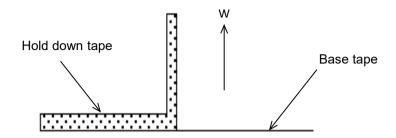


Unit : mm

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

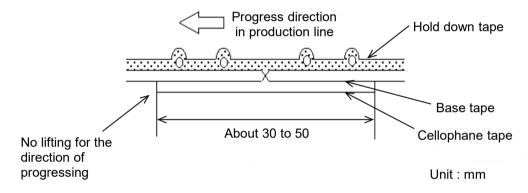
7-2. Splicing way of tape

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

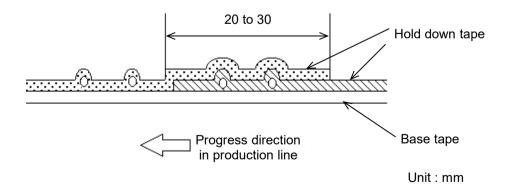


2) Splicing of tape

- 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

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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
RDEC71E224K0S1H03A	RDEC71E225K1M1H03A	RDEC71E476MWM1H03A	RDEC72A155K3S1H03A
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
RDER71H152K0S1H03A	RDER71H154K1M1H03A	RDER71H155K2M1H03A	RDER71H223K0S1H03A
RDER71H332K0S1H03A	RDER71H683K0M1H03A	RDER72A103K0S1H03A	RDER72A105K2S1H03A
RDER72A153K0M1H03A	RDER72A221K0S1H03A	RDER72A224K1M1H03A	RDER72A331K0M1H03A
RDER72A331K0S1H03A	RDER72A332K0M1H03A	RDER72A333K1M1H03A	RDER72A471K0M1H03A
RDER72A472K0S1H03A	RDER72A473K1S1H03A	RDER72A474K1M1H03A	RDEC71E106K2M1H03A
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RDER71H472K0M1H03A	RDER71H473K0S1H03A	RDER71H683K0S1H03A	RDER72A102K0S1H03A
RDER72A103K0M1H03A	RDER72A222K0S1H03A	RDER72A334K1M1H03A	RDER72A334K1S1H03A