# muRata

**Reference Specification** 

Leaded MLCC for General Purpose RDE Series

Product specifications in this catalog are as of Dec. 2017, and are subject to change or obsolescence without notice.

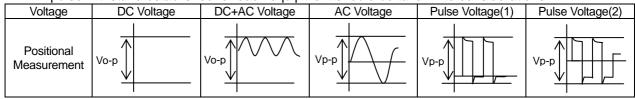
Please consult the approval sheet before ordering. Please read rating and Cautions first.

# ▲ 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.



# 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 selfgenerated 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 <u>the condition of</u> <u>atmosphere temperature 25 °C</u>. 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  $\phi$ 0.1mm 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.

- 1. Aircraft equipment
- Undersea equipment
   Medical equipment
- 2. Aerospace equipment
- 4. Power plant control equipment
- 6. Transportation equipment (vehicles, trains, ships, etc.)8. Disaster prevention / crime prevention equipment
- 7. Traffic signal 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.

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- 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.) <u>RDI</u> Serie	E es Temp Chara	R7 perature acteristic	2E Rated voltage	103 Capacitanc	Capacitance tolerance	1 Dimension code	K1 Lead code	H03 Individual specification code	B Packing style code
• Tempe		aracteristi Temp.		Danaa	Cap. Change	Ctorodo	rd To 200 0	Operat	ng
	Code	Char.	Temp.	Range	(Within%)	Standa	rd Temp.	Temp.Ra	inge
	R7	X7R	-55~	125°C	+/-15	25	5°C	-55~12	5°C

#### • Rated voltage

Code	Rated voltage
2E	DC250V
2H	DC500V
2J	DC630V
3A	DC1000V

#### • Capacitance

The first two digits denote significant figures ; the last digit denotes the multiplier of 10 in pF. ex.) In case of 103

 $10 \times 10^3 = 10000 \text{pF}$ 

#### • Capacitance tolerance

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

#### • Dimension code

Code	Dimensions (LxW) mm max.
1	4.5 x 3.5
2	5.5 x 4.0
3	5.5 x 5.0
4	7.5x 5.5
5	7.5 x 7.5 *
U	7.7 x12.5 *
	*D0000\//D04000\/\\/.0 Emm

\*DC630V/DC1000V : W+0.5mm

# Lead code

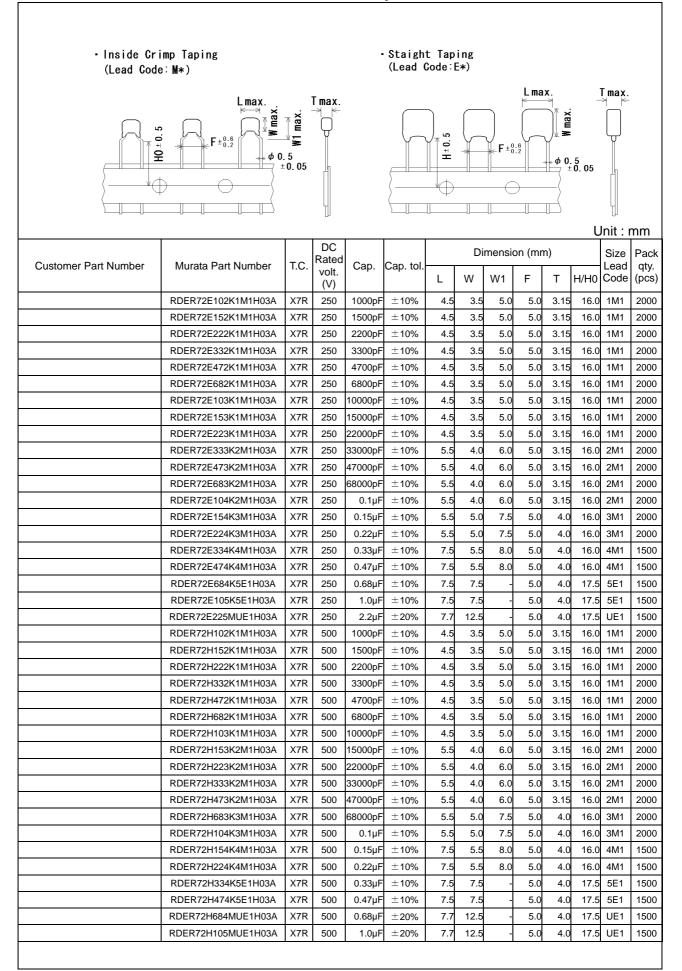
ſ	Code	Lead style	Lead spacing (mm)
F	B1	Straight type	5.0+/-0.8
F	E1	Straight taping type	5.0+0.6/-0.2
F	K1	Inside crimp type	5.0+/-0.8
	M1	Inside crimp taping type	5.0+0.6/-0.2

Lead wire is "solder coated CP wire".

	<ul> <li>Individual specificatio Murata's Cor Please refer</li> </ul>		ist ].		
	Packing style code     Code     A     B	Packing style Taping type of An Bulk type			
3.	Marking				
	Temp. Char. Capacitance Capacitance Tolera Rated voltage Company name coo (Ex.)	: 3 digit numb nce : Code : Letter code Letter code Letter code Letter code	ers : 4 (DC250V. Exc	ept dimension cod ept dimension cod	le : 1)
	(Ex.) Rated voltage	DC250V	DCE00V	DCc20V	DC1000\/
	Dimensions	DC250V	DC500V	DC630V	DC1000V
	1	103K	103K		
	2	<b>G</b> <sup>473</sup> K4C	<b>G</b> <sup>153</sup> K9C	<b>G</b> <sup>153</sup> K7C	(Cm <sup>152</sup> KAC
	3, 4	<b>(</b> 154 K4C	<b>G</b> 104 K9C	(Cm104 K7C	(Cm473) KAC
	5, U	684 K4C	474 K9C	474 M7C	224 MAC

Customer Part Number         Murata Part Number         T.C.         Wolt, (V)         Cap.         Uab         Uab         Uab         W         W1         F         T.         Code         Cap           RDER72E102X1K1H038         X7R         250         15000F         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E132X1K1H038         X7R         250         3200F         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E32X1K1H038         X7R         250         4000F         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E63X1K1H038         X7R         250         10000F         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E23X1K1H038         X7R         250         10000F         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E23X1K1H038         X7R         250         51000F         ±10%         5.5         4.0         6.0         5.0         3.15													
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	4. Part number list												
$ \begin{array}{c} 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$										UB1)			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			Lma	ax.	Tmax	ι.			Lm	ax.		Tmax.	
Customer Part Number         Murata Part Number         T.C.         Rated NUM         Cap. (N         DIM         DIM         I         W         W1         F         T         Size Code         Part Part           RDER72E102K1K1H038         X7R         250         1000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E132X1K1H038         X7R         250         12000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E32X1K1H038         X7R         250         3000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E472X1K1H038         X7R         250         10000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E13X1K1H038         X7R         250         10000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E13X1K1H038         X7R         250         10000pF         ±10%         5.5         5.0         7.5         5.0	Up to the of crimp	→		0 min.		← ¢0.5		F±	2.0	Omin.	_		
Customer Part Number         Murata Part Number         T.C.         Rate ( (V)         Cap ( V)         Cap ( V)         Cap ( V)         Cap ( V)         VI         F         T         Cap ( Cap ( V)         Cap ( V)         Cap ( V)         VI         F         T         Cap ( Cap ( V)         Cap ( V)<											ι	Jnit :	mm
RDER7ZE102K1K1H03B         X7R         250         10000F         ±10%         4.5         3.5         5.0         5.0         3.15         111         5.0           RDER7ZE152K1K1H03B         X7R         250         15000F         ±10%         4.5         3.5         5.0         5.0         3.15         11K1         5.0           RDER7ZE32X1K1H03B         X7R         250         25000F         ±10%         4.5         3.5         5.0         5.0         3.15         11K1         5.0           RDER7ZE32X1K1H03B         X7R         250         68000F         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER7ZE103X1K1H03B         X7R         250         16000F         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER7ZE13X1K1H03B         X7R         250         16000F         ±10%         4.5         3.5         5.0         3.15         1K1         5.0           RDER7ZE13X1K1H03B         X7R         250         16000F         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER7ZE16	Customer Part Number	Murata Part Number	T.C.	Rated Volt.	Cap.			1		, <i>,</i>	т	Lead	Pack qty.
RDER72E152K1K1H038         X7R         250         1500pf         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         50           RDER72E32XK1K1H038         X7R         250         2300pf         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         50           RDER72E32XK1K1H038         X7R         250         3300pf         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         50           RDER72E13XK1K1H038         X7R         250         16000pf         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         50           RDER72E13XK1K1H038         X7R         250         16000pf         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         50           RDER72E13XK1K1H038         X7R         250         16000pf         ±10%         4.5         3.5         5.0         5.0         3.15         2K1         50           RDER72E14XXK1H038         X7R         250         63000pf         ±10%         5.5         5.0         7.5         5.0         4.0         3.15         2K1         50		RDER72E102K1K1H03B	X7R	. ,	1000pF	±10%				-	-		500
RDER72E222K1K1H03B       X7R       250       2200P       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E32X1K1H03B       X7R       250       3300PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E682K1K1H03B       X7R       250       10000P       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E682K1K1H03B       X7R       250       10000P       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E33X1K1H03B       X7R       250       10000P       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E33X2K1H03B       X7R       250       2000PF       ±10%       4.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E33X2K1H03B       X7R       250       0.15µF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E34X2K1H03B       X7R       250       0.15µF       ±10%       5.5       5.0			-	-			-						500
RDER72E332K1K1H03B       X7R       250       3300,F       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E472K1K1H03B       X7R       250       4700,F       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E103X1K1H03B       X7R       250       10000,F       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E13X1K1H03B       X7R       250       10000,F       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E13X1K1H03B       X7R       250       2000,F       ±10%       4.5       3.5       5.0       5.0       3.15       2K1       5.0         RDER72E473X2K1H03B       X7R       250       400,00,F       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E43X2K1H03B       X7R       250       0.14µF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E43X2K1H03B       X7R       250       0.24µF       ±10%       7.5       5.0			-										500
RDER72E472K1K1H03B         X7R         250         4700pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E632X1K1H03B         X7R         250         16000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E13X1K1H03B         X7R         250         15000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E13X1K1H03B         X7R         250         22000pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         5.0           RDER72E33K2K1H03B         X7R         250         47000pF         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E34X2K1H03B         X7R         250         610pF         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E34K3K1H03B         X7R         250         0.3pF         ±10%         7.5         5.0         4.0         4.1         5.0         7.5         5.0         4.04			-	-	· ·		-						500
RDER72E682K1K1H03B       X7R       250       6800pF       ±10%       4.5       3.5       5.0       3.15       1K1       5.0         RDER72E103K1K1H03B       X7R       250       15000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       5.0         RDER72E233X2X1H03B       X7R       250       32000pF       ±10%       5.5       4.0       6.0       5.0       3.15       1K1       5.0         RDER72E333K2K1H03B       X7R       250       32000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E473K2K1H03B       X7R       250       68000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E194K3K1H03B       X7R       250       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       50         RDER72E474KK1H03B       X7R       250       0.3µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       50         RDER72E474KK1H03B       X7R       250       0.3µF       ±10%       7.5       5.5       8.0 <td< td=""><td></td><td></td><td>-</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>500</td></td<>			-				-						500
RDER72E103K1K1H03B       X7R       250       10000 pF       ±10%       4.5       3.5       5.0       3.15       111       5.0         RDER72E153K1K1H03B       X7R       250       15000 pF       ±10%       4.5       3.5       5.0       5.0       3.15       111       5.0         RDER72E233K2K1H03B       X7R       250       30000 pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E473K2K1H03B       X7R       250       68000 pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E473K2K1H03B       X7R       250       0.15µF       ±10%       5.5       5.0       7.5       5.0       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E104K2K1H03B       X7R       250       0.15µF       ±10%       5.5       5.0       7.5       5.0       4.0       4K1       5.0         RDER72E104K2K1H03B       X7R       250       0.53µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       5.0         RDER72E104KK1H03B       X7R       250       0.40µF       ±10%			-										
RDER72E153K1K1H03B         X7R         250         15000PF         ±10%         4.5         3.5         5.0         3.18         1K1         5.0           RDER72E233K1K1H03B         X7R         250         22000PF         ±10%         5.5         4.0         6.0         5.0         3.15         1K1         5.5           RDER72E333K2K1H03B         X7R         250         3000PF         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.5           RDER72E634X2K1H03B         X7R         250         0.15µF         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E104K2K1H03B         X7R         250         0.15µF         ±10%         5.5         5.0         7.5         5.0         4.0         3K1         5.0           RDER72E134K3K1H03B         X7R         250         0.33µF         ±10%         7.5         5.5         8.0         5.0         4.0         4K1         50           RDER72E34K4K1H03B         X7R         250         0.47µF         ±10%         7.5         5.5         8.0         5.0         4.0         4K1         50           RDER72E34K4			-	-	· ·		-						500
RDER72E233K1K1H03B         X7R         250         22000PF         ±10%         4.5         3.5         5.0         5.0         3.11         1K1         5.0           RDER72E333K2K1H03B         X7R         250         33000P         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E473K2K1H03B         X7R         250         6000P         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E154K3K1H03B         X7R         250         0.15µF         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E154K3K1H03B         X7R         250         0.15µF         ±10%         5.5         5.0         7.5         5.0         4.0         3K1         5.0           RDER72E334K4K1H03B         X7R         250         0.32µF         ±10%         7.5         5.5         8.0         5.0         4.0         4K1         5.0           RDER72E634K5B1H03B         X7R         250         1.0µF         ±10%         7.5         5.0         4.0         581         50         5.0         5.0         5.0			-	-	· ·		-						500
RDER72E333K2K1H03B         X7R         250         33000P         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E473K2K1H03B         X7R         250         68000P         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E104K2K1H03B         X7R         250         68000P         ±10%         5.5         4.0         6.0         5.0         3.15         2K1         5.0           RDER72E154K3K1H03B         X7R         250         0.15µF         ±10%         5.5         5.0         7.5         5.0         4.0         3.11         5.0           RDER72E154K3K1H03B         X7R         250         0.22µF         ±10%         7.5         5.5         8.0         5.0         4.0         4.11         5.0           RDER72E34K4K1H03B         X7R         250         0.4µF         ±10%         7.5         5.5         8.0         5.0         4.0         4.11         5.0           RDER72E104K4K1H03B         X7R         250         1.0µF         ±10%         7.5         7.5         5.0         4.0         4.0         141         5.0         5.0							-						500
RDER72E473K2K1H03B       X7R       250       47000pf       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       50         RDER72E608X2K1H03B       X7R       250       68000pf       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       50         RDER72E104K2K1H03B       X7R       250       0.1µf       ±10%       5.5       6.0       5.0       7.5       5.0       4.0       3K1       50         RDER72E134K4X1H03B       X7R       250       0.15µf       ±10%       5.5       5.0       7.5       5.0       4.0       4K1       50         RDER72E34K4K1H03B       X7R       250       0.3µf       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       50         RDER72E634K5B1H03B       X7R       250       0.47µf       ±10%       7.5       7.5       6.0       4.0       BEI       50         RDER72E104K5B1H03B       X7R       250       0.47µf       ±10%       7.5       7.5       6.0       4.0       BEI       50         RDER72H102K1K1H03B       X7R       250       1.0µf       ±10%       4.5       3.5       5.0       5.0			-	-	· ·								500
RDER72E683K2K1H03B       X7R       250       68000pf       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       50         RDER72E104K2K1H03B       X7R       250       0.1µF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       50         RDER72E134K3K1H03B       X7R       250       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       50         RDER72E234K4K1H03B       X7R       250       0.3µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       50         RDER72E34K4K1H03B       X7R       250       0.3µF       ±10%       7.5       5.5       8.0       6.0       4.0       5B1       50         RDER72E105K5B1H03B       X7R       250       0.6µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72H12K1K1H03B       X7R       250       1.0µF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H12K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0			-		· ·								500
RDER72E104K2K1H03B       X7R       250       0.1µF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       5.0         RDER72E154K3K1H03B       X7R       250       0.15µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       5.0         RDER72E234K3K1H03B       X7R       250       0.33µF       ±10%       7.5       5.5       8.0       5.0       4.0       3K1       5.0         RDER72E34K4K1H03B       X7R       250       0.33µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       50         RDER72E64K5B1H03B       X7R       250       0.40µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72E105K5B1H03B       X7R       250       1.08µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72H152K1K1H03B       X7R       250       1.00pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H152K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15 </td <td></td> <td></td> <td>-</td> <td></td> <td>· ·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>500</td>			-		· ·								500
RDER72E154K3K1H03B       X7R       250       0.15µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       50         RDER72E224K3K1H03B       X7R       250       0.22µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       50         RDER72E334K4K1H03B       X7R       250       0.33µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       50         RDER72E474K4K1H03B       X7R       250       0.47µF       ±10%       7.5       5.5       8.0       5.0       4.0       5B1       50         RDER72E105K5B1H03B       X7R       250       1.0µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72E125KMUB1H03B       X7R       250       1.0µF       ±10%       7.5       5.0       5.0       4.0       B1       250         RDER72H122K1K1H03B       X7R       500       1500PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H32K1K1H03B       X7R       500       1500PF       ±10%       4.5       3.5       5.0       5.0       3.15			-										500
RDER72E224K3K1H03B         X7R         250         0.22µF         ±10%         5.5         5.0         7.5         5.0         4.0         3K1         50           RDER72E334K4K1H03B         X7R         250         0.33µF         ±10%         7.5         5.5         8.0         5.0         4.0         4K1         50           RDER72E474K4K1H03B         X7R         250         0.47µF         ±10%         7.5         5.5         8.0         5.0         4.0         4K1         50           RDER72E474K4K1H03B         X7R         250         0.68µF         ±10%         7.5         7.5         5.0         4.0         581         50           RDER72E1255KB1H03B         X7R         250         1.0µF         ±10%         7.5         7.5         5.0         4.0         UB1         20           RDER72H122K1K1H03B         X7R         500         1500pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         50           RDER72H32K1K1H03B         X7R         500         1500pF         ±10%         4.5         3.5         5.0         5.0         3.15         1K1         50           RDER72H32K1K1H03B         X7R <td></td> <td>RDER72E104K2K1H03B</td> <td>X7R</td> <td>250</td> <td>0.1µF</td> <td>±10%</td> <td>5.5</td> <td>4.0</td> <td>6.0</td> <td>5.0</td> <td>3.15</td> <td>2K1</td> <td>500</td>		RDER72E104K2K1H03B	X7R	250	0.1µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500
RDER72E334K4K1103B       X7R       250       0.33µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       5.0         RDER72E474K4K1103B       X7R       250       0.47µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       50         RDER72E684K5B1H03B       X7R       250       0.68µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72E105K5B1H03B       X7R       250       1.0µF       ±10%       7.5       7.5       5.0       4.0       0B1       20         RDER72H102K1K1H03B       X7R       250       1.0µF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H102K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H32K1K1H03B       X7R       500       1500pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H32K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15 <td></td> <td>RDER72E154K3K1H03B</td> <td>X7R</td> <td>250</td> <td>0.15µF</td> <td>±10%</td> <td>5.5</td> <td>5.0</td> <td>7.5</td> <td>5.0</td> <td>4.0</td> <td>3K1</td> <td>500</td>		RDER72E154K3K1H03B	X7R	250	0.15µF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	500
RDER72E474K4K1H03B       X7R       250       0.47µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       50         RDER72E684K5B1H03B       X7R       250       0.68µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72E105K5B1H03B       X7R       250       1.0µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72E225MUB1H03B       X7R       250       2.2µF       ±20%       7.7       12.5       5.0       4.0       UB1       20         RDER72H102K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H32X1K1H03B       X7R       500       1500pF       ±10%       4.5       3.5       5.0       3.15       1K1       50         RDER72H32X1K1H03B       X7R       500       3200pF       ±10%       4.5       3.5       5.0       3.15       1K1       50         RDER72H32K1K1H03B       X7R       500       4700pF       ±10%       4.5       3.5       5.0       3.15       1K1       50         RDER72H03		RDER72E224K3K1H03B	X7R	250	0.22µF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	500
RDER72E684K5B1H03B       X7R       250       0.68µF       ±10%       7.5       7.5       5.0       4.0       5B1       5C         RDER72E105K5B1H03B       X7R       250       1.0µF       ±10%       7.5       7.5       5.0       4.0       5B1       5C         RDER72E225MUB1H03B       X7R       250       2.2µF       ±20%       7.7       12.5       5.0       4.0       UB1       2C         RDER72H102K1K1H03B       X7R       500       1000PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50C         RDER72H152K1K1H03B       X7R       500       1500PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50C         RDER72H32K1K1H03B       X7R       500       2200F       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50C         RDER72H32K1K1H03B       X7R       500       4700PF       ±10%       4.5       3.5       5.0       3.15       1K1       50C         RDER72H682K1K1H03B       X7R       500       16000PF       ±10%       4.5       3.5       5.0       3.15       1K1       50C		RDER72E334K4K1H03B	X7R	250	0.33µF	$\pm 10\%$	7.5	5.5	8.0	5.0	4.0	4K1	500
RDER72E105K5B1H03B       X7R       250       1.0µF       ±10%       7.5       7.5       5.0       4.0       5B1       5C         RDER72E225MUB1H03B       X7R       250       2.2µF       ±20%       7.7       12.5       5.0       4.0       UB1       22         RDER72H102K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H152K1K1H03B       X7R       500       1500pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H322K1K1H03B       X7R       500       2200pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H472K1K1H03B       X7R       500       3300pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H62K1K1H03B       X7R       500       4000pF       ±10%       4.5       3.5       5.0       3.15       1K1       50         RDER72H62K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       3.15       2K1       50 </td <td></td> <td>RDER72E474K4K1H03B</td> <td>X7R</td> <td>250</td> <td>0.47µF</td> <td>±10%</td> <td>7.5</td> <td>5.5</td> <td>8.0</td> <td>5.0</td> <td>4.0</td> <td>4K1</td> <td>500</td>		RDER72E474K4K1H03B	X7R	250	0.47µF	±10%	7.5	5.5	8.0	5.0	4.0	4K1	500
RDER72E225MUB1H03B       X7R       250       2.2µF       ±20%       7.7       12.5       5.0       4.0       UB1       22         RDER72H102K1K1H03B       X7R       500       1000PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H152K1K1H03B       X7R       500       1500PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H222K1K1H03B       X7R       500       2200PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H32K1K1H03B       X7R       500       3300PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H472K1K1H03B       X7R       500       400PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H133K1K1H03B       X7R       500       1000PF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       50         RDER72H133K2K1H03B       X7R       500       1000PF       ±10%       5.5       4.0       6.0       5.0<		RDER72E684K5B1H03B	X7R	250	0.68µF	±10%	7.5	7.5	-	5.0	4.0	5B1	500
RDER72H102K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H152K1K1H03B       X7R       500       1500pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H222K1K1H03B       X7R       500       2200pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H322K1K1H03B       X7R       500       3300pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H472K1K1H03B       X7R       500       4700pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H135K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H135K2K1H03B       X7R       500       15000pF       ±10%       5.5       4.0		RDER72E105K5B1H03B	X7R	250	1.0µF	±10%	7.5	7.5	-	5.0	4.0	5B1	500
RDER72H102K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H152K1K1H03B       X7R       500       1500pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H222K1K1H03B       X7R       500       2200pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H322K1K1H03B       X7R       500       3300pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H472K1K1H03B       X7R       500       4700pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H135K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H135K2K1H03B       X7R       500       15000pF       ±10%       5.5       4.0		RDER72E225MUB1H03B	X7R	250	2.2µF	±20%	7.7	12.5	-	5.0	4.0	UB1	200
RDER72H152K1K1H03B       X7R       500       1500pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H222K1K1H03B       X7R       500       2200pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H332K1K1H03B       X7R       500       3300pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H32K1K1H03B       X7R       500       4700pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H682K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H153K1K1H03B       X7R       500       16000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H153K2K1H03B       X7R       500       16000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H33K2K1H03B       X7R       500       2200pF       ±10%       5.5       4.0			-		-				5.0				500
RDER72H222K1K1H03B       X7R       500       2200pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H332K1K1H03B       X7R       500       3300pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H32K1K1H03B       X7R       500       4700pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H682K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H223K2K1H03B       X7R       500       15000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H33K2K1H03B       X7R       500       3000pF       ±10%       5.5       5.0			-				-						500
RDER72H332K1K1H03B       X7R       500       3300pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H472K1K1H03B       X7R       500       4700pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H682K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H682K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H153K2K1H03B       X7R       500       10000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H33K2K1H03B       X7R       500       2200pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       3000pF       ±10%       5.5       5.0			-										500
RDER72H472K1K1H03B       X7R       500       4700pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H682K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H682K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       1000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H153K2K1H03B       X7R       500       15000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H333K2K1H03B       X7R       500       3300pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       3300pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H633K2K1H03B       X7R       500       68000pF       ±10%       5.5       5.0			-		· ·		-						500
RDER72H682K1K1H03B       X7R       500       6800pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H103K1K1H03B       X7R       500       15000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H153K2K1H03B       X7R       500       15000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H233K2K1H03B       X7R       500       22000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       3000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H683K3K1H03B       X7R       500       68000pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H683K3K1H03B       X7R       500       0.1µF       ±10%       5.5       5.0			-		· ·								500
RDER72H103K1K1H03B       X7R       500       10000pF       ±10%       4.5       3.5       5.0       5.0       3.15       1K1       500         RDER72H153K2K1H03B       X7R       500       15000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H223K2K1H03B       X7R       500       22000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H233K2K1H03B       X7R       500       22000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       33000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       47000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H683K3K1H03B       X7R       500       68000pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       7.5       5.5			-	-	· ·								500
RDER72H153K2K1H03B       X7R       500       15000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H223K2K1H03B       X7R       500       22000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H333K2K1H03B       X7R       500       32000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H333K2K1H03B       X7R       500       33000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H333K2K1H03B       X7R       500       33000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       4700pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H104K3K1H03B       X7R       500       6800pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.15µF       ±10%       7.5       5.5			-										
RDER72H223K2K1H03B       X7R       500       22000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H333K2K1H03B       X7R       500       33000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H333K2K1H03B       X7R       500       33000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       47000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H633K3K1H03B       X7R       500       47000pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H34K4K1H03B       X7R       500       0.3µF       ±10%       7.5       5.5			-	-	· ·								500
RDER72H333K2K1H03B       X7R       500       33000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       47000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H473K2K1H03B       X7R       500       47000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H683K3K1H03B       X7R       500       68000pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H154K4K1H03B       X7R       500       0.1µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H224K4K1H03B       X7R       500       0.3µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H334K5B1H03B       X7R       500       0.3µF       ±10%       7.5       7.5 <t< td=""><td></td><td></td><td>-</td><td>-</td><td>· ·</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>500</td></t<>			-	-	· ·		-						500
RDER72H473K2K1H03B       X7R       500       47000pF       ±10%       5.5       4.0       6.0       5.0       3.15       2K1       500         RDER72H683K3K1H03B       X7R       500       68000pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H1683K3K1H03B       X7R       500       68000pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H154K4K1H03B       X7R       500       0.1µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H224K4K1H03B       X7R       500       0.22µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H334K5B1H03B       X7R       500       0.33µF       ±10%       7.5       7.5       4.0       581       500         RDER72H474K5B1H03B       X7R       500       0.47µF       ±10%       7.5       7.5       5.0       4.0 <t< td=""><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>500</td></t<>			-										500
RDER72H683K3K1H03B       X7R       500       68000pF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H154K4K1H03B       X7R       500       0.15µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H224K4K1H03B       X7R       500       0.22µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H334K5B1H03B       X7R       500       0.33µF       ±10%       7.5       7.5       5.0       4.0       581       500         RDER72H474K5B1H03B       X7R       500       0.47µF       ±10%       7.5       7.5       5.0       4.0       581       500         RDER72H684MUB1H03B       X7R       500       0.48µF       ±10%       7.5       7.5       5.0       4.0       58			-		· ·		-						500
RDER72H104K3K1H03B       X7R       500       0.1µF       ±10%       5.5       5.0       7.5       5.0       4.0       3K1       500         RDER72H154K4K1H03B       X7R       500       0.15µF       ±10%       7.5       5.5       8.0       5.0       4.0       3K1       500         RDER72H154K4K1H03B       X7R       500       0.15µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H224K4K1H03B       X7R       500       0.22µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H334K5B1H03B       X7R       500       0.33µF       ±10%       7.5       7.5       5.0       4.0       5B1       500         RDER72H474K5B1H03B       X7R       500       0.47µF       ±10%       7.5       7.5       5.0       4.0       5B1       500         RDER72H684MUB1H03B       X7R       500       0.48µF       ±10%       7.5       7.5       5.0       4.0       5B1       500         RDER72H684MUB1H03B       X7R       500       0.68µF       ±20%       7.7       12.5       5.0       4.0       UB1       2			-	-	· ·								500
RDER72H154K4K1H03B       X7R       500       0.15µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H224K4K1H03B       X7R       500       0.22µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H224K4K1H03B       X7R       500       0.22µF       ±10%       7.5       5.5       8.0       5.0       4.0       4K1       500         RDER72H334K5B1H03B       X7R       500       0.33µF       ±10%       7.5       7.5       -       5.0       4.0       5B1       500         RDER72H474K5B1H03B       X7R       500       0.47µF       ±10%       7.5       7.5       -       5.0       4.0       5B1       500         RDER72H684MUB1H03B       X7R       500       0.46µF       ±10%       7.5       7.5       -       5.0       4.0       5B1       500         RDER72H684MUB1H03B       X7R       500       0.68µF       ±20%       7.7       12.5       -       5.0       4.0       UB1       200			-				-						500
RDER72H224K4K1H03B         X7R         500         0.22µF         ±10%         7.5         5.5         8.0         5.0         4.0         4K1         500           RDER72H324K4K1H03B         X7R         500         0.33µF         ±10%         7.5         5.5         8.0         5.0         4.0         4K1         500           RDER72H334K5B1H03B         X7R         500         0.33µF         ±10%         7.5         7.5         5.0         4.0         5B1         500           RDER72H474K5B1H03B         X7R         500         0.47µF         ±10%         7.5         7.5         5.0         4.0         5B1         500           RDER72H684MUB1H03B         X7R         500         0.68µF         ±20%         7.7         12.5         5.0         4.0         UB1         200			-	500							4.0		500
RDER72H334K5B1H03B       X7R       500       0.33µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72H474K5B1H03B       X7R       500       0.47µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72H474K5B1H03B       X7R       500       0.47µF       ±10%       7.5       7.5       5.0       4.0       5B1       50         RDER72H684MUB1H03B       X7R       500       0.68µF       ±20%       7.7       12.5       5.0       4.0       UB1       20		RDER72H154K4K1H03B	X7R	500	0.15µF	±10%	7.5		8.0	5.0	4.0	4K1	500
RDER72H474K5B1H03B         X7R         500         0.47µF         ±10%         7.5         7.5         5.0         4.0         5B1         50           RDER72H684MUB1H03B         X7R         500         0.68µF         ±20%         7.7         12.5         5.0         4.0         UB1         200		RDER72H224K4K1H03B	X7R	500	0.22µF	±10%	7.5		8.0	5.0	4.0	4K1	500
RDER72H684MUB1H03B X7R 500 0.68µF ±20% 7.7 12.5 - 5.0 4.0 UB1 20		RDER72H334K5B1H03B	X7R	500	0.33µF	±10%	7.5	7.5	-	5.0	4.0	5B1	500
		RDER72H474K5B1H03B	X7R	500	0.47µF	±10%	7.5	7.5	-	5.0	4.0	5B1	500
RDER72H105MUB1H03B X7R 500 1.0uF ±20% 77 125 50 40 UB1 20		RDER72H684MUB1H03B	X7R	500	0.68µF	±20%	7.7	12.5	-	5.0	4.0	UB1	200
		RDER72H105MUB1H03B	X7R	500	1.0µF	±20%	7.7	12.5	-	5.0	4.0	UB1	200

・Inside Crimp (Lead Code∶K1)	• Straight Long (Lead Code:B1)					Straig (Size L			)			
L max. F ± 0.8 L max. L max.	T max. → ↓ 0.5 ± 0.05 F ± 0.8		25.0min. Wmax.	T max. → ★ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	5 . 05		хеш 0.7 F ± 0.8	L max.	25.0 min. W max.	T ma	x. ⊭ ∲0.5 ±0.0	5
Customer Part Number	Murata Part Number	T.C.	DC Rated Volt.	Cap.	Cap. tol.	L	Dime W	nsion ( W1	(mm) F	ц т	Jnit : Size Lead Code	Pa q
	RDER72J102K2K1H03B	X7R	(V) 630	1000pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J152K2K1H03B	X7R	630	1500pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J222K2K1H03B	X7R	630	2200pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J332K2K1H03B	X7R	630	3300pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J472K2K1H03B	X7R	630	4700pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J682K2K1H03B	X7R	630	6800pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J103K2K1H03B	X7R	630	10000pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J153K2K1H03B	X7R	630	15000pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J223K2K1H03B	X7R	630	22000pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER72J333K3K1H03B	X7R	630	33000pF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	5
	RDER72J473K3K1H03B	X7R	630	47000pF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	5
	RDER72J683K4K1H03B	X7R	630	68000pF	±10%	7.5	5.5	8.0	5.0	4.0	4K1	5
	RDER72J104K4K1H03B	X7R	630	0.1µF	±10%	7.5	5.5	8.0	5.0	4.0	4K1	5
	RDER72J154K5B1H03B	X7R	630	0.15µF	$\pm 10\%$	7.5	8.0	-	5.0	4.0	5B1	5
	RDER72J224K5B1H03B	X7R	630	0.22µF	$\pm 10\%$	7.5	8.0	-	5.0	4.0	5B1	5
	RDER72J474MUB1H03B	X7R	630	0.47µF	±20%	7.7	13.0	-	5.0	4.0	UB1	2
	RDER73A471K2K1H03B	X7R	1000	470pF	$\pm 10\%$	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER73A681K2K1H03B	X7R	1000	680pF	$\pm 10\%$	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER73A102K2K1H03B	X7R	1000	1000pF	$\pm 10\%$	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER73A152K2K1H03B	X7R	1000	1500pF	$\pm 10\%$	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER73A222K2K1H03B	X7R	1000	2200pF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	5
	RDER73A332K2K1H03B	X7R	1000	3300pF	±10%	5.5	4.0	6.0	5.0	3.15		5
	RDER73A472K2K1H03B	X7R	1000	4700pF	±10%	5.5	4.0	6.0	5.0	3.15		5
	RDER73A682K2K1H03B	X7R	1000	6800pF	±10%	5.5	4.0	6.0	5.0	3.15		5
	RDER73A103K2K1H03B	X7R	1000	10000pF		5.5	4.0	6.0	5.0	3.15		5
	RDER73A153K3K1H03B	X7R	1000	15000pF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	5
	RDER73A223K3K1H03B	X7R	1000	22000pF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	5
	RDER73A333K4K1H03B	X7R	1000	33000pF	±10%	7.5	5.5	8.0	5.0	4.0	4K1	5
	RDER73A473K4K1H03B	X7R	1000	47000pF	±10%	7.5	5.5	8.0	5.0	4.0	4K1	5
	RDER73A683K5B1H03B	X7R	1000	68000pF	±10%	7.5	8.0	-	5.0	4.0	5B1	50
	RDER73A104K5B1H03B	X7R	1000	0.1µF	$\pm 10\%$	7.5	8.0	-	5.0	4.0	5B1	50



・Inside Crimp (Lead Code∶N					aight T ead Cod								
HO + 0. 5	Lmax.		ax.     			H = 0.5				XBM X 0.5		]	
			DC				Di	monsi	on (mn	n)	L	Jnit : I Size	mm Pa
Customer Part Number	Murata Part Number	T.C.	Rated volt. (V)	Cap.	Cap. tol.	L	w	W1	F	T	H/H0	Lead Code	qt
	RDER72J102K2M1H03A	X7R	630	1000pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J152K2M1H03A	X7R	630	1500pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J222K2M1H03A	X7R	630	2200pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J332K2M1H03A	X7R	630	3300pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J472K2M1H03A	X7R	630	4700pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J682K2M1H03A	X7R	630	6800pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J103K2M1H03A	X7R	630	10000pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J153K2M1H03A	X7R	630	15000pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J223K2M1H03A	X7R	630	22000pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER72J333K3M1H03A	X7R	630	33000pF	±10%	5.5	5.0	7.5	5.0	4.0	16.0	3M1	20
	RDER72J473K3M1H03A	X7R	630	47000pF	±10%	5.5	5.0	7.5	5.0	4.0	16.0	3M1	20
	RDER72J683K4M1H03A	X7R	630	68000pF	±10%	7.5	5.5	8.0	5.0	4.0	16.0	4M1	15
	RDER72J104K4M1H03A	X7R	630	0.1µF	±10%	7.5	5.5	8.0	5.0	4.0	16.0	4M1	15
	RDER72J154K5E1H03A	X7R	630	0.15µF	±10%	7.5	8.0	-	5.0	4.0	17.5	5E1	15
	RDER72J224K5E1H03A	X7R	630	0.22µF	±10%	7.5	8.0	-	5.0	4.0	17.5	5E1	15
	RDER72J474MUE1H03A	X7R	630	0.47µF	±20%	7.7	13.0	-	5.0	4.0	17.5	UE1	15
	RDER73A471K2M1H03A	X7R	1000	470pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER73A681K2M1H03A	X7R	1000	680pF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RDER73A102K2M1H03A	X7R	1000	1000pF		5.5	4.0	6.0	5.0	3.15		2M1	20
	RDER73A152K2M1H03A	X7R	1000	1500pF		5.5	4.0	6.0	5.0	3.15			20
	RDER73A222K2M1H03A	X7R	1000	2200pF		5.5	4.0	6.0	5.0	3.15			20
	RDER73A332K2M1H03A	X7R	1000	3300pF		5.5	4.0	6.0	5.0	3.15			20
	RDER73A472K2M1H03A	X7R	1000	4700pF		5.5	4.0	6.0	5.0	3.15			20
	RDER73A682K2M1H03A	X7R	1000	6800pF		5.5	4.0	6.0	5.0	3.15			20
	RDER73A103K2M1H03A	X7R	1000	10000pF		5.5	4.0	6.0	5.0	3.15			20
	RDER73A153K3M1H03A	X7R	1000	15000pF		5.5	5.0	7.5	5.0	4.0	16.0		20
	RDER73A223K3M1H03A	X7R		22000pF		5.5	5.0	7.5	5.0	4.0	16.0		20
	RDER73A333K4M1H03A	X7R		33000pF		7.5	5.5	8.0	5.0	4.0	16.0		15
	RDER73A473K4M1H03A	X7R		47000pF		7.5	5.5	8.0	5.0	4.0	16.0		15
	RDER73A683K5E1H03A	X7R		68000pF		7.5	8.0	-	5.0	4.0	17.5		15
	RDER73A104K5E1H03A	X7R	1000	0.1µF	±10%	7.5	8.0	-	5.0	4.0	17.5	5E1	15

**Reference only** 

No.	lte	em	Specification	Test Method
1	Appearance		No defects or abnormalities	Visual inspection.
2	Dimension	and Marking	Within the specified dimensions and Marking	Visual inspection, Using Caliper.
3	Dielectric Strength	Between Terminals	No defects or abnormalities	The capacitor should not be damaged when voltage         in Table is applied between the terminations for         1 to 5 seconds. (Charge/Discharge current ≤ 50mA.         Rated voltage         DC250V       200% of the rated voltage         DC500V,DC630V       150% of the rated voltage         DC1kV       120% of the rated voltage
		Body Insulation	No defects or abnormalities	The capacitor is placed in a container with metal ba         of 1mm diameter so that each terminal, short-circuit         is kept approximately 2mm from the balls as shown         the figure, for 1 to 5 seconds between capacitor         terminals and metal balls.         (Charge/Discharge current ≤ 50mA.)         Rated voltage         DC250V, DC500V       200% of the rated voltage         DC630V, DC1kV       DC1300V
4	Insulation Resistance (I.R.)	Between Terminals	10000MΩ or 100MΩ·μF min. (Whichever is smaller)	The insulation resistance should be measured with DC500V (DC250V in case of rated voltage : DC250V) at normal temperature and humidity and within 2 minutes of charging. (Charge/Discharge current is ≤ 50mA)
5	Capacitanc	e	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 (D.F.)	Factor	0.025 max.	Char.         R7           Item         1±0.1kHz           Voltage         AC1±0.2Vrms
	Temperatur Characteris			$\label{eq:specified temperature stage.} $$ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $
8	Terminal Strength	Tensile Strength	Termination not to be broken or loosened	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 the force applied for 10±1 seconds.
		Bending Strength	Termination not to be broken or loosened	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
9	Vibration	Appearance	No defects or abnormalities	The capacitor should be subjected to a simple
	17621219106	Capacitance D.F.	Within the specified tolerance 0.025max.	<ul> <li>harmonic motion having a total amplitude of 1.5mm the frequency being varied uniformly between the approximate limits of 10Hz and 55Hz.</li> <li>The frequency range, from 10Hz to 55Hz and return to 10Hz, shall be traversed in approximately 1 minur This motion shall be applied for a period of 2 hours each 3 mutually perpendicular directions (total of 6 hours).</li> </ul>
10	Solderabilit		Solder is deposited on unintermittently immersed portion in axial direction covering 3/4 or more in circumferential direction of lead wires. 35°C, Relative humidity:45 to 75%, Atmospher	The terminal of capacitor is dipped into a solution o ethanol (JIS K 8101) and rosin (JIS K 5902) (25% rosin in weight propotion). Immerse in solder solutio for 2±0.5 seconds. In both cases the depth of dippin is up to about 1.5 to 2mm from the terminal body. Temp. of solder : 245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu 235±5°C H60A or H63A Eutectic Solder

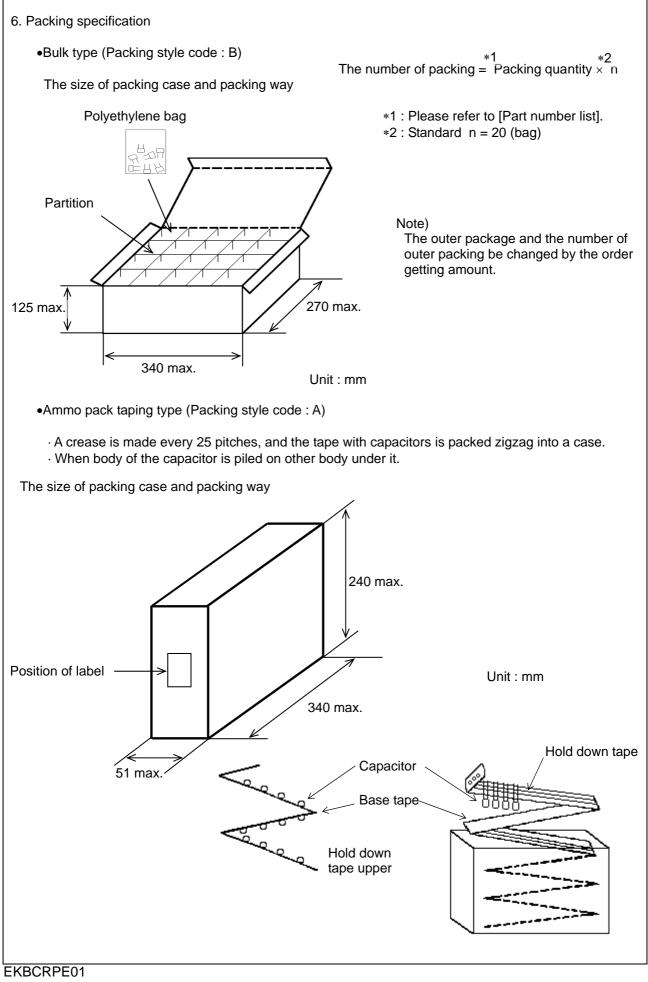
# **Reference only**

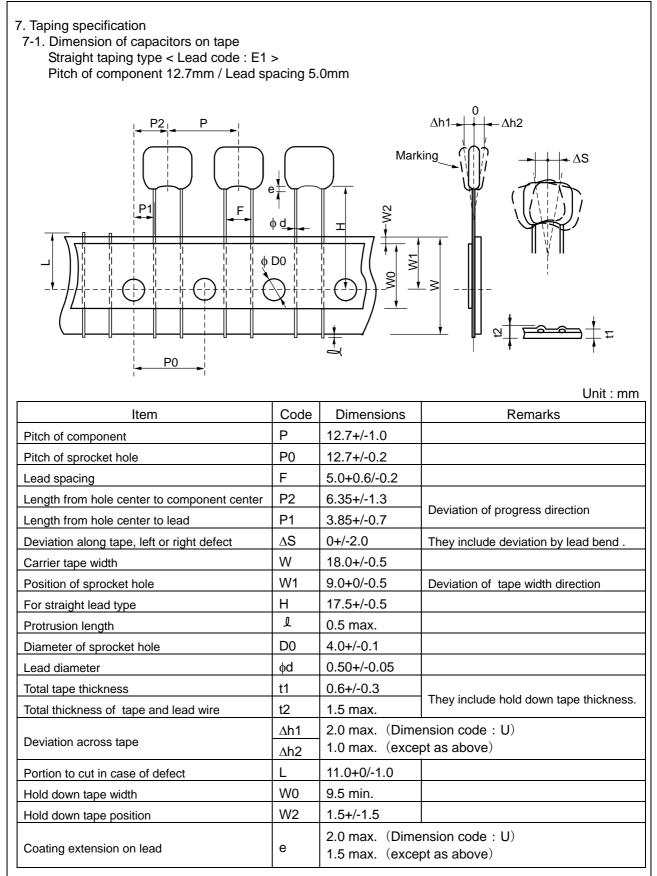
bioldering Heat Non- Preheard         Within 17.5% Change         solder 1.5 to 2.0mm from the root of terminal a 2005-FC for 10:19:socods.           12         Resistance (On- Preheard)         No defects or abnormalities Capacitor should be stored at 150-0/-10°C for heat measurement.         Pre-treatment Capacitor should be stored at 150-0/-10°C for hour, then place at "room condition for 24:2 brore initial measurement.           12.2         Resistance (On- Preheard)         No defects or abnormalities         First the capacitor should be stored at 150-0/-10°C for hour, then place at "room condition for 24:2 brore initial measurement.           12.2         Resistance (On- Preheard)         No defects or abnormalities         Then, the lead wires should be informed at 150-0/-10°C for hour, then place at "room condition for 24:2 before initial measurement.         Pre-treatment Capacitor should be stored at 150-0/-10°C for hour, then place at "room condition for 24:2 before initial measurement.           13         Resistance inform method)         No defects or abnormalities         Test condition Temperature of ion-tip: 350:10°C Soldering position Strength Between terminals)         No defects or abnormalities         Test condition for 24:2 before initial measurement.         Pre-treatment Capacitor should be stored for 24:12 hours a condition.           12         Temperature (cycle         Appearance No defects or abnormalities         Resider "com condition for 24:2 before initial measurement.         Pre-treatment Capacitor should be stored of 12:2 hours a condition for 24:2 hours a condition for 24:2 hours a condition for 24:2 hours a condition for 24:2 h	No.	lte	em	Specification	Test Method
Non- Preheat)         Delection Energy in (Between terminals)         No defects         - Pre-treatment Capacitor should be stored at 150+0/-10°C 1 Capacitor should be stored for 24:2 hours a condition.           11-2         Resistance to Soldening HOP- Preheat)         Appearance         No defects or abnormalities         - Pre-treatment Capacitor should be stored for 24:2 hours a condition.           11-2         Resistance to Soldening HOP- Preheat)         Appearance         No defects or abnormalities         - First the capacitor should be stored at 120-0/-10°C 1 First the capacitor should be stored at 120-0/-10°C 1 Strength (Between terminals)         No defects           11-3         Resistance to Soldening Hoating (soldening indicating condition.         Appearance         No defects or abnormalities         - First the capacitor should be stored at 150-0/-10°C 1 - Soldening time - 3.5:0.5 seconds.           11-3         Resistance to Soldening indicating stores should be stored for 24:2 hours a condition.         - First condition for 24:2 before initial measurement.         - Post-treatment Capacitor should be stored for 24:2 hours a condition.           11-3         Resistance to Soldening indicating stores and the stored for 24:2 hours a condition.         Test condition for 24:2 before initial measurement.         - Post-treatment Capacitor should be stored for 24:2 hours a condition.           12         Temperature (soldening internals)         Appearance No defects or abnormalities         Test condition for 24:2 hours, then the store capacitor should be stored for 24:2 hours, a condition.	11-1	to Soldering	Capacitance		The lead wires should be immersed in the melted solder 1.5 to 2.0mm from the root of terminal at 260±5°C for 10±1 seconds
11-2         Resistance to Soldering (On- Preheat)         No defects or abnormalities         First the capacitor should be stored at 120+0- 60+0/-5 seconds.           (On- Preheat)         Deletric Strength (Between terminals)         Within ±7.5%         Then, the lead wires should be immersed in the reside solder 1, 5 to 2.0mm from the root of ter 280-5°C for 7.5+0/-1 seconds.           11-3         Resistance terminals)         Appearance No defects or abnormalities         • Pre-treatment Capacitor should be stored at 150+0/-10°C f hour, then place at 'room condition for 24+2 bours a condition.           11-3         Resistance terminals)         Appearance No defects or abnormalities         • Test condition Test condition           11-3         Resistance terminals)         Appearance No defects or abnormalities         • Test condition Test condition           11-3         Resistance (soldering iron method)         Appearance Mithin ±7.5%         No defects           11-3         Resistance (soldering iron method)         Appearance Mithin ±7.5%         No defects           11-4         Appearance (change         No defects or abnormalities         • Test condition           12         Temperature Cycle         Appearance (change         No defects or abnormalities         • Pre-treatment Capacitor should be stored at 150+0/-10°C f hour, then place at 'room condition for 24+2 hours, then me condition.           12         Temperature Cycle         Appearance Diff.         No		(Non-	Dielectric Strength (Between	No defects	<ul> <li>Pre-treatment Capacitor should be stored at 150+0/-10°C for c hour, then place at *room condition for 24±2 hou before initial measurement.</li> <li>Post-treatment Capacitor should be stored for 24±2 hours at *rc</li> </ul>
Heat (Or- Preheat)         Charge Delectric Strength (Between terminals)         No defects         Then, the lead wires should be immersed in th melted sole?           11:3         Resistance (soldering not         No defects or abnormalities         - Pre-ireatment Capacitor should be stored for 24±2 hours a condition.           11:3         Resistance (soldering not         Appearance Capacitorse         No defects or abnormalities         - Test condition           11:3         Resistance (soldering not         Appearance Charge         No defects         - Test condition           11:3         Resistance (soldering not         No defects         - No defects         - Soldering Charge         - Soldering (Between terminals)           12         Temperature Cycle         Appearance Capacitors should be stored for 24±2 hours a condition.         - Soldering position           12         Temperature Cycle         Appearance Capacitors should be stored for 24±2 hours, a condition.         No defects or abnormalities         Repeat 5 cycles according to the 4 heat treatment capacitor should be stored for 24±2 hours, a condition.           12         Temperature Cycle         Appearance D.F.         No defects or abnormalities         Repeat 5 cycles according to the 4 heat treatment capacitors should be stored for 24±2 hours, a condition.           12         Temperature Cycle         Appearance D.F.         No defects or abnormalities           13	11-2		Appearance	No defects or abnormalities	First the capacitor should be stored at 120+0/-5°C
1     No defects or abnormalities     Pre-irratment Capacitor should be stored at 150+0/-10°C 1 hour, then place at room condition for 24±2 before initial measurement.     Pre-irratment Capacitor should be stored for 24±2 hours a condition.       11-3     Resistance (soldering theat (soldering method)     Appearance Change (between terminals)     No defects or abnormalities     Test condition       11-3     Resistance (soldering tron method)     Appearance Change (between terminals)     No defects or abnormalities     Test condition       12     Temperature Cycle     Appearance Change (between terminals)     No defects or abnormalities     Repeat 5 cycles according to the 4 heat treatment Capacitor should be stored for 24±2 hours a condition.       12     Temperature Cycle     Appearance Capacitor should be stored for 24±2 hours a condition for 24±2 hours.     Repeat 5 cycles according to the 4 heat treatment capacitor should be stored for 24±2 hours a condition for 24±2 hours.       12     Temperature Cycle     D.F.     0.05 max.     Tempe. Change     Min: ±12.5% Change       13     Humidity State)     Appearance D.F.     No defects or abnormalities     Set the capacitor at 40:2*C and relative hours.       13     Humidity Load     Appearance Change     No defects or abnormalities D.F.     Set the capacitor at 40:2*C and relative hours.       14     Humidity Load     Appearance Change     No defects or abnormalities Change     Apply the rated voltage at 40±2*C and relative humidity 90 to 95% for 500+24/-0 hours		Heat	Change		Then, the lead wires should be immersed in the melted solder 1.5 to 2.0mm from the root of termina
11-3     Resistance booldering (capacitance method)     No defects or abnormalities Change (change method)     Test condition (capacitance Change (change)     Test condition (capacitance)     Test condition (condition)     Test condition (capacitance)     Test condition (condition)     Test condition (condi		Preheat)	Strength (Between	No defects	<ul> <li>Pre-treatment Capacitor should be stored at 150+0/-10°C for or hour, then place at *room condition for 24±2 hou before initial measurement.</li> <li>Post-treatment Capacitor should be stored for 24±2 hours at *room</li> </ul>
Image: Soldering Heat (soldering inor) in : 30:10°C     Soldering time : 3.50±10°C       (soldering time : 3.50±10°C     Soldering time : 3.50±10°C       Strength (soldering position)     Strength (soldering position)       (soldering removal the strength (soldering position)     Straight Lead: 1.5 to 2.0mm from the root of te Capacitor should be stored at 150+0/-10°C for hour, then place at 150+0/-10°C for hour, then place at 150+0/-10°C for hour, then set at "room condition for 24±2 hours, then meter Cycle       12     Temperature Cycle     Appearance (thin ±12.5%)       Capacitance (Within ±12.5%)     D.F.     0.05 max.       1.R.     1,000MΩ or 50MΩ-μF min. (Whichever is smaller)     Time, 100 at 3 max.       13     Humidity (State)     No defects or abnormalities (state)     Set the capacitor at 40±2°C and relative hours. condition for 24±2 hours. then measure.       14     Humidity Load     Appearance No defects or abnormalities (then set at "room condition for 24±2 hours.     Set the capacitor at 40±2°C and relative hours.       14     Humidity Load     Appearance No defects or abnormalities (then set at "room condition for 24±2 hours.     Apply the rated voltage at 40±2°C and relative hours.       14     Humidity Load     Appearance No defects or abnormalities (then set at "room condition for 24±2 hours.     Apply the rated voltage at 40±2°C and relative hours.       14     Humidity Load     Appearance No defects or abnormalities (then set at "room condition for 24±2 hours.     Perform a heat treatment at 150+0/-10°C for hour	1 2	Posistance	Anno 210 000	No defecto er obnormalitica	
(soldering iron method)     Dielectric Strength (Between terminals)     No defects     Soldering position     Soldering position       12     Temperature Cycle     Appearance Change     No defects or abnormalities     Pre-treatment Capacitor shuld be stored for 24±2 hours a condition.     Peost-treatment Capacitor shuld be stored for 24±2 hours a condition.       12     Temperature Cycle     Appearance Change     No defects or abnormalities     Repeat 5 cycles according to the 4 heat treatment capacitor shuld be stored for 24±2 hours, then met capacitors hould be stored for 24±2 hours, then met capacitors.       12     Temperature Cycle     0.05 max.     Step 1     2     3       14     Humidity Load     No defects or abnormalities D.F.     O.05 max.     Step 1     2     3       13     Humidity Load     Appearance D.F.     No defects or abnormalities Step 0     Pretreatment Perform a heat treatment at 150+0/-10°C for hour and then set at "room condition for 24±2 hours. (Whichever is smaller)       14     Humidity Load     Appearance D.F.     No defects or abnormalities D.F.     Set the capacitor at 40±2°C and relative humidity 90 to 95% for 500+24/-0 hours. Remove and set at "room condition for 24±2 hours.       14     Humidity Load     Appearance D.F.     No defects or abnormalities D.F.     Apply the rated voltage at 40±2°C and relative humidity 90 to 95% for 500+24/-0 hours. Remove and set at "room condition for 24±2 hours. Remove and set at "room condition for 24±2 hours. Remove and set at "room condition for 24±2 hours.	1-3	to Soldering Heat	Capacitance		Termperature of iron-tip : 350±10°C Soldering time : 3.5±0.5 seconds
12       Temperature Cycle       Appearance Capacitor should be stored at 150+0/-10° C f hour, then place at "room condition for 24±2 before initial measurement. Post-treatment Capacitor should be stored for 24±2 hours a condition.         12       Temperature Cycle       Appearance Capacitar should be stored for 24±2 hours a condition.         12       Temperature Cycle       Appearance Change       No defects or abnormalities       Repeat 5 cycles according to the 4 heat treatment isted in the following table.         12       Temperature Capacitar Structure Strength (Between Terminals)       No defects or abnormalities       Repeat 5 cycles according to the 4 heat treatment isted in the following table.         13       Humidity (Steady State)       No defects or abnormalities D.F.       0.05 max.         14       Humidity Load       Appearance Capacitor store is smaller)       No defects or abnormalities D.F.       Set the capacitor at 40±2°C and relative humidity of 0 to 95% for 500+24/-0 hours.         14       Humidity Load       Appearance Capacitor condition for 24±2 h (then measure.       Appearance D.F.       No defects or abnormalities D.F.       Appearance D.F.       No defects or abnormalities D.F.       Pertreatment Perform a heat treatment at 150+0/-10°C for hour and then set at "room condition for 24±2 h then measure.         14       Humidity Load       Appearance D.F.       No defects or abnormalities D.F.       Apply the rated voltage at 40±2°C and relative humindity of 0 to 95% for 500+24/-0 hours. Remove and set at "room c		iron	Dielectric Strength (Between	No defects	Soldering position Straight Lead:1.5 to 2.0mm from the root of termi Crimp Lead:1.5 to 2.0mm from the end of lead be
CycleWithin $\pm 12.5\%$ Isted in the following table. Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, then me Set at "room condition for $24\pm 2$ hours, Temp. $\pm 3$ Temp. $\pm 42$ hours.13Humidity (Steady State)Appearance I.R.No defects or abnormalities Temp. $\pm 3$ Temp. $\pm$					<ul> <li>Post-treatment Capacitor should be stored for 24±2 hours at *rc condition.</li> </ul>
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	12				listed in the following table.
D.F.0.05 max.Image: Marking temp.Max. Operating temp.Max.13Humidity (Steady State)AppearanceNo defects or abnormalitiesSet the capacitor at 40±2°C and relative humidity 90 to 95% for 500+24/-0 hours. Remove and set at "room condition for 24±2 h then measure.Max. Hen measure.Max. Hen measure.Max. Operating temp.Max. Operating temp.Max. Operating temp.Max. Operating temp.Max. Operating temp.Max. Operating temp.Max. Operating temp.Max. Operating temp.Max. Max.Max. Oper				Within ±12.5%	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				0.05 max.	Temp. Min. Room Max. Roo (c) Operating Tomp Operating Tom
Dielectric Strength (Between Terminals)       No defects or abnormalities       • Pretreatment Perform a heat treatment at 150+0/-10°C for hour and then set at *room condition for 24±2 hours.         13       Humidity (Steady State)       Appearance       No defects or abnormalities       Set the capacitor at 40±2°C and relative humidty 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for 24±2 h then measure.         13       Humidity (Steady State)       Capacitance Change       Within ±12.5%       Remove and set at *room condition for 24±2 h then measure.         D.F.       0.05 max.       • Pretreatment         I.R.       1,000MΩ or 50MΩ·μF min. (Whichever is smaller)       • Pretreatment Perform a heat treatment at 150+0/-10°C for hour and then set at *room condition for 24±2 hours.         14       Humidity Load       Appearance Capacitance Change       No defects or abnormalities       Apply the rated voltage at 40±2°C and relative humidity of 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for 24±2 h then measure.         14       Humidity Load       Appearance       No defects or abnormalities       Apply the rated voltage at 40±2°C and relative humidity of 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for 24±2 h then measure.         1.R.       500MΩ or 25MΩ·μF min. (Whichever is smaller)       • Pretreatment Perform a heat treatment at 150+0/-10°C for			I.R.		Time $2012$ $2 \text{ max}$ $2012$ $2 \text{ max}$
13Humidity (Steady State)AppearanceNo defects or abnormalitiesSet the capacitor at 40±2°C and relative humidty 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for 24±2 h then measure.13Humidity Capacitance ChangeWithin ±12.5% 0.05 max.Remove and set at *room condition for 24±2 h then measure.1.R.1,000MΩ or 50MΩ·μF min. (Whichever is smaller)• Pretreatment Perform a heat treatment at 150+0/-10°C for hour and then set at *room condition for 24±2 hours.14Humidity LoadAppearanceNo defects or abnormalities (Within ±12.5%)Apply the rated voltage at 40±2°C and relative hours.14Humidity LoadAppearanceNo defects or abnormalities 0.05 max.Apply the rated voltage at 40±2°C and relative hours.14Humidity LoadAppearanceNo defects or abnormalities 0.05 max.Apply the rated voltage at 40±2°C and relative hours.14Humidity LoadAppearanceNo defects or abnormalities 0.05 max.Apply the rated voltage at 40±2°C and relative hours.14Humidity LoadAppearanceNo defects or abnormalities 0.05 max.Apply the rated voltage at 40±2°C and relative hours.14Humidity LoadAppearanceNo defects or abnormalities 0.05 max.Apply the rated voltage at 40±2°C and relative hours.14Humidity LoadApply the rated voltage at 40±2°C and relative hours.Pretreatment at 150+0/-10°C for14Humidity LoadI.R.500MΩ or 25MΩ·μF min. (Whichever is smaller)Pretreatment P			Strength (Between	No defects or abnormalities	<ul> <li>Pretreatment Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2</li> </ul>
State)Capacitance ChangeWithin $\pm 12.5\%$ ChangeRemove and set at *room condition for 24 $\pm 2$ h then measure.D.F.0.05 max.• Pretreatment Perform a heat treatment at 150+0/-10°C for hour and then set at *room condition for 24 $\pm 2$ hours.14Humidity LoadAppearance ChangeNo defects or abnormalities Capacitance ChangeApply the rated voltage at 40 $\pm 2^{\circ}$ C and relative humidity of 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for 24 $\pm 2$ h then measure.14Humidity LoadAppearance ChangeNo defects or abnormalities Capacitance ChangeApply the rated voltage at 40 $\pm 2^{\circ}$ C and relative humidity of 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for 24 $\pm 2$ h then measure. (Charge/Discharge current $\leq 50$ mA)1.R.500M\Omega or 25M\Omega · \muF min. (Whichever is smaller)• Pretreatment Perform a heat treatment at 150+0/-10°C for	13		,	No defects or abnormalities	
$ \begin{array}{ c c c c c c } & & & & & & & & & & & & & & & & & & &$		· ·		Within ±12.5%	Remove and set at *room condition for 24±2 hours
Interm(Whichever is smaller) (Whichever is smaller)hour and then set at *room condition for $24\pm 2$ hours.14Humidity LoadAppearanceNo defects or abnormalitiesApply the rated voltage at $40\pm 2^{\circ}$ C and relative humidity of 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for $24\pm 2$ hours.14Humidity LoadAppearanceWithin $\pm 12.5\%$ ChangeApply the rated voltage at $40\pm 2^{\circ}$ C and relative humidity of 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for $24\pm 2$ h then measure. (Charge/Discharge current $\leq 50$ mA)I.R. $500M\Omega \text{ or } 25M\Omega \cdot \mu \text{F min.}$ (Whichever is smaller)• Pretreatment Perform a heat treatment at $150+0/-10^{\circ}$ C for			D.F.	0.05 max.	Pretreatment
MarkingLegible14Humidity LoadAppearanceNo defects or abnormalitiesApply the rated voltage at 40±2°C and relative humidity of 90 to 95% for 500+24/-0 hours. Remove and set at *room condition for 24±2 h then measure. (Charge/Discharge current $\leq$ 50mA)1.R.500M\Omega or 25MΩ·µF min. (Whichever is smaller)• Pretreatment Perform a heat treatment at 150+0/-10°C for			I.R.		Perform a heat treatment at 150+0/-10°C for one hour and then set at *room condition for 24±2
LoadImage			Marking	Legible	hours.
Changethen measure.D.F. $0.05 \text{ max.}$ (Charge/Discharge current $\leq 50$ mA)I.R. $500M\Omega \text{ or } 25M\Omega \cdot \mu F \text{ min.}$ (Whichever is smaller)• Pretreatment Perform a heat treatment at $150+0/-10^{\circ}$ C for	14			No defects or abnormalities	
I.R.500M $\Omega$ or 25M $\Omega$ ·µF min. (Whichever is smaller)• Pretreatment Perform a heat treatment at 150+0/-10°C for					
(Whichever is smaller) Perform a heat treatment at 150+0/-10°C for			D.F.	0.05 max.	(Charge/Discharge current $\leq$ 50mA)
			I.R.		Perform a heat treatment at $150+0/-10^{\circ}C$ for one hour and then set at *room condition for $24\pm2$
"room condition" Temperature:15 to 35°C, Relative humidity:45 to 75%, Atmosphere pressure:86 to 106kPa	'room	condition" Tem	perature:15 to 3	I 35°C, Relative humidity:45 to 75%, Atmosp	

# Reference only

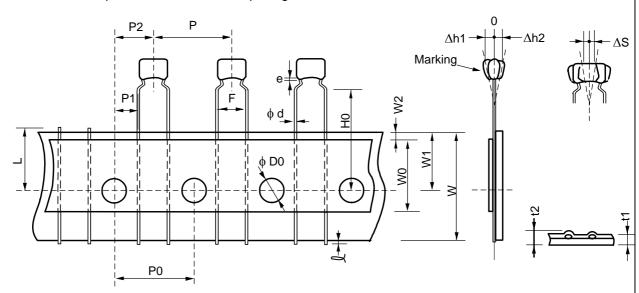
No.		m	Specification	Test	
15	High Tomporatura	Appearance	No defects or abnormalities	Apply voltage in Table for	1000+48/-0 hours at the
	Temperature Load	Conceiter	Within ±12.5%	maximum operating temp	erature ±3°C. condition for 24±2 hours,
	2000	Capacitance Change	vvi(iiii) ±12.3%	then measure.	-5000000000000000000000000000000000000
		D.F.	0.04 max.	(Charge/Discharge currei	nt ≤ 50mA)
		I.R.	1,000MΩ or 50MΩ·μF min.	Rated voltage DC250V	Test voltage 150% of the rated voltag
			(Whichever is smaller)	DC500V,DC630V	120% of the rated voltag
				DC1kV	110% of the rated voltage
				Pretreatment	
				Apply test voltage for or	ne hour at test temperature
				Remove and set at *roo	m condition for 24±2 hours
16	Solvent	Appearance	No defects or abnormalities		ully immersed, unagitated
	Resistance			in reagent at 20 to 25°C f	or 30±5 sec. and then
		Marking	Legible	remove gently. Marking o	ely be visually examined.
					cry be visually examined.
				Regent : Isopropyl alcoho	bl
oom	condition" Tem	perature:15 to 3	35°C, Relative humidity:45 to 75%, Atmosp	here pressure:86 to 106kPa	

Γ



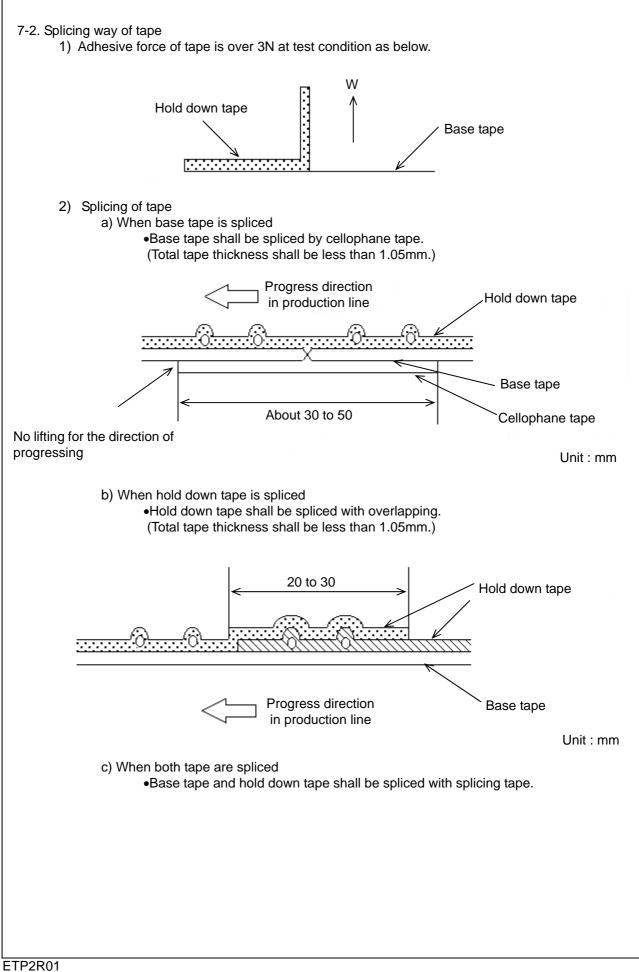


Inside crimp taping type < Lead code : M1 > Pitch of component 12.7mm / Lead spacing 5.0mm



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	HO	16.0+/-0.5	
Protrusion length	l	0.5 max.	
Diameter of sprocket hole	D0	4.0+/-0.1	
Lead diameter	φd	0.50+/-0.05	
Total tape thickness	t1	0.6+/-0.3	They include hold down tape thickness.
Total thickness of tape and lead wire	t2	1.5 max.	
Deviation across tape	∆h1	2.0 max. (Dimension code : W)	
	∆h2	1.0 max. (except 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	



#### EU RoHS and Halogen Free

This products of the following crresponds to EU RoHS and Halogen Free

(1) RoHS

EU RoHs 2011/65/EC compliance

maximum concentration values tolerated by weight in homogeneous materials •1000 ppm maximum Lead

- •1000 ppm maximum Mercury
- •100 ppm maximum Cadmium
- 1000 ppm maximum Hexavalent chromium
- •1000 ppm maximum Polybrominated biphenyls (PBB)
- •1000 ppm maximum Polybrominated diphenyl ethers (PBDE)

# (2) Halogen-Free

The International Electrochemical Commission's (IEC) Definition of Halogen-Free (IEC 61249-2-21) compliance

- •900 ppm maximum chlorine
- •900 ppm maximum bromine
- •1500 ppm maximum total chlorine and bromine

单击下面可查看定价,库存,交付和生命周期等信息

>>Murata(村田)