

Reference Specification

150°C Operation Leaded MLCC for Automotive with AEC-Q200 RH Series

Product specifications in this catalog are as of Jul. 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 $^{\circ}$ 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

2. Aerospace equipment

3. Undersea equipment

4. Power plant control equipment

5. Medical equipment

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

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 specification is applied to 150°C Operation Leaded MLCC RHE series in accordance with AEC-Q200 requirements used for Automotive Electronic equipment.

2. Rating

• Applied maximum temperature up to 150°C

Note: Maximum accumulative time to 150°C is within 2000 hours.

• Part Number Configuration

ex.)	RHE	L8	_1E_	104	K	0	A2	H03	B
	Series	Temperature	Rated	Capacitance	Capacitance	Dimension	Lead	Individual	Package
		Characteristics	Voltage		Tolerance	(LxW)	Style	Specification	

Series

Code	Content
RHE	Epoxy coated, 150°C max.

• Temperature Characteristics

	Code	Temp. Char.	Temp. Range	Cap. Change	Standard Temp.	Operating Temp. Range
	10	X8L	-55∼125°C	+/-15%	25°C	-55∼150°C
L8	(Murata code)	125~150°C	+15/-40%	25 C	-55~ 150 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%
M	+/-20%

• Dimension (LxW)

Please refer to [Part number list].

Lead Style

*Lead wire is "solder coated CP wire".

Code	Lead Style	Lead spacing (mm)
A2	Straight type	2.5+/-0.8
DB	Straight taping type	2.5+0.4/-0.2
K1	Inside crimp type	5.0+/-0.8
M1	Inside crimp taping type	5.0+0.6/-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 : 8 (X8L char.)

Capacitance : 3 digit numbers

Capacitance tolerance : Code

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

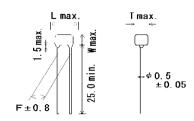
> Letter code: 5 (DC50V. Except dimension code: 0,1) Letter code: 1 (DC100V. Except dimension code: 0,1)

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

(Ex.)			
Rated voltage Dimension code	DC25V	DC50V	DC100V
0,1	8 105K	8 102K	8 103K
2	€ 475 K28	€ 225 K58	(M _{K18}
3,W	(106 K28	(335 K58	-

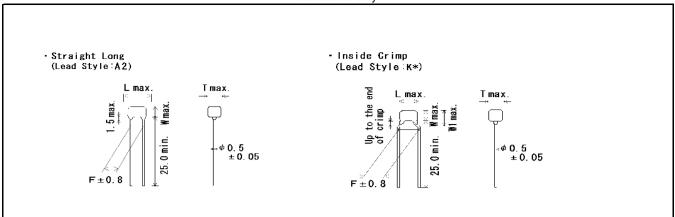
4. Part number list

·Straight Long (Lead Style:A2)



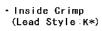
Unit : mm

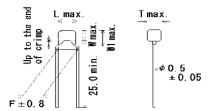
Customer	Murata Part Number	T.C.	DC Rated	ted Can	Cap.	Dimension (mm)					Dimension (LxW)	Pack qty.
Part Number			Volt. (V)		Tol.	L	W	W1	F	Т	Lead Style	(pcs)
	RHEL81E104K0A2H03B	X8L	25	0.1µF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81E154K0A2H03B	X8L	25	0.15µF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81E224K0A2H03B	X8L	25	0.22µF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81E334K1A2H03B	X8L	25	0.33µF	±10%	4.0	3.5	-	2.5	2.5	1A2	500
	RHEL81E474K1A2H03B	X8L	25	0.47µF	±10%	4.0	3.5	-	2.5	2.5	1A2	500
	RHEL81E684K1A2H03B	X8L	25	0.68µF	±10%	4.0	3.5	-	2.5	2.5	1A2	500
	RHEL81E105K1A2H03B	X8L	25	1.0µF	±10%	4.0	3.5	-	2.5	2.5	1A2	500
	RHEL81E155K2A2H03B	X8L	25	1.5µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81E225K2A2H03B	X8L	25	2.2µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81E335K2A2H03B	X8L	25	3.3µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81E475K2A2H03B	X8L	25	4.7µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81E106K3A2H03B	X8L	25	10µF	±10%	5.5	5.0	-	2.5	4.0	3A2	500
	RHEL81H221K0A2H03B	X8L	50	220pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H331K0A2H03B	X8L	50	330pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H471K0A2H03B	X8L	50	470pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H681K0A2H03B	X8L	50	680pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H102K0A2H03B	X8L	50	1000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H152K0A2H03B	X8L	50	1500pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H222K0A2H03B	X8L	50	2200pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H332K0A2H03B	X8L	50	3300pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H472K0A2H03B	X8L	50	4700pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H682K0A2H03B	X8L	50	6800pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H103K0A2H03B	X8L	50	10000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H153K0A2H03B	X8L	50	15000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H223K0A2H03B	X8L	50	22000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H333K0A2H03B	X8L	50	33000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H473K0A2H03B	X8L	50	47000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H683K0A2H03B	X8L	50	68000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H104K0A2H03B	X8L	50	0.1µF	±10%	3.6	3.5	-	2.5	2.5	0A2	500
	RHEL81H154K1A2H03B	X8L	50	0.15µF	±10%	4.0	3.5	-	2.5	2.5	1A2	500
	RHEL81H224K1A2H03B	X8L	50	0.22µF	±10%	4.0	3.5	-	2.5	2.5	1A2	500
	RHEL81H334K1A2H03B	X8L	50	0.33µF	±10%	4.0	3.5	-	2.5	2.5	1A2	500
	RHEL81H474K2A2H03B	X8L	50	0.47µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81H684K2A2H03B	X8L	50	0.68µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81H105K2A2H03B	X8L	50	1.0µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81H155K2A2H03B	X8L	50	1.5µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81H225K2A2H03B	X8L	50	2.2µF	±10%	5.5	4.0	-	2.5	3.15	2A2	500
	RHEL81H335K3A2H03B	X8L	50	3.3µF	±10%	5.5	5.0	-	2.5	4.0	3A2	500
	RHEL81H475K3A2H03B	X8L	50	4.7µF	±10%	5.5	5.0	-	2.5	4.0	3A2	500
	RHEL82A221K0A2H03B	X8L	100	220pF	±10%	3.6	3.5	-	2.5	2.5	0A2	500



Unit : mm

Customer Part Number	Murata Part Number	T.C.	DC Rated Volt.	Сар.	Cap. Tol.		Dimension (mm)					Pa qt
			(V)			L	W	W1	F	Т	Lead Style	(po
	RHEL82A331K0A2H03B	X8L	100	330pF	±10%	3.6	3.5	-	2.5	2.5	0A2	50
	RHEL82A471K0A2H03B	X8L	100	470pF	±10%	3.6	3.5	-	2.5	2.5	0A2	5
	RHEL82A681K0A2H03B	X8L	100	680pF	±10%	3.6	3.5	-	2.5	2.5	0A2	5
	RHEL82A102K0A2H03B	X8L	100	1000pF	±10%	3.6	3.5		2.5	2.5	0A2	5
	RHEL82A152K0A2H03B	X8L	100	1500pF	±10%	3.6	3.5		2.5	2.5	0A2	5
	RHEL82A222K0A2H03B	X8L	100	2200pF	±10%	3.6	3.5		2.5	2.5	0A2	5
	RHEL82A332K0A2H03B	X8L	100	3300pF	±10%	3.6	3.5		2.5	2.5	0A2	5
	RHEL82A472K0A2H03B	X8L	100	4700pF	±10%	3.6	3.5		2.5	2.5	0A2	5
	RHEL82A682K0A2H03B	X8L	100	6800pF	±10%	3.6	3.5	-	2.5	2.5	0A2	5
	RHEL82A103K0A2H03B	X8L	100	10000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	5
	RHEL82A153K0A2H03B	X8L	100	15000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	5
	RHEL82A223K0A2H03B	X8L	100	22000pF	±10%	3.6	3.5	-	2.5	2.5	0A2	Ę
	RHEL82A333K1A2H03B	X8L	100	33000pF	±10%	4.0	3.5	-	2.5	2.5	1A2	Ę
	RHEL82A473K1A2H03B	X8L	100	47000pF	±10%	4.0	3.5	-	2.5	2.5	1A2	Ę
	RHEL82A683K1A2H03B	X8L	100	68000pF	±10%	4.0	3.5	-	2.5	2.5	1A2	
	RHEL82A104K1A2H03B	X8L	100	0.1µF	±10%	4.0	3.5	-	2.5	2.5	1A2	
	RHEL82A154K2A2H03B	X8L	100	0.15µF	±10%	5.5	4.0	-	2.5	3.15	2A2	ţ
	RHEL82A224K2A2H03B	X8L	100	0.22µF	±10%	5.5	4.0		2.5	3.15	2A2	ţ
	RHEL81E104K0K1H03B	X8L	25	0.1µF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	ţ
	RHEL81E154K0K1H03B	X8L	25	0.15µF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	
	RHEL81E224K0K1H03B	X8L	25	0.22µF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	Ę
	RHEL81E334K1K1H03B	X8L	25	0.33µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	Ę
	RHEL81E474K1K1H03B	X8L	25	0.47µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	Ę
	RHEL81E684K1K1H03B	X8L	25	0.68µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	Ę
	RHEL81E105K1K1H03B	X8L	25	1.0µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	Ę
	RHEL81E155K2K1H03B	X8L	25	1.5µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	Ę
	RHEL81E225K2K1H03B	X8L	25	2.2µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	ţ
	RHEL81E335K2K1H03B	X8L	25	3.3µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	Ę
	RHEL81E475K2K1H03B	X8L	25	4.7µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	ţ
	RHEL81E106K3K1H03B	X8L	25	10µF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	Į,
	RHEL81E226MWK1H03B	X8L	25	22µF	±20%	5.5	7.5	10.0	5.0	4.0	WK1	ţ
	RHEL81H221K0K1H03B	X8L	50	220pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	į
	RHEL81H331K0K1H03B	X8L	50	330pF	±10%	3.6	3.5	6.0	5.0	2.5		Ę
	RHEL81H471K0K1H03B	X8L	50	470pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	Ę
	RHEL81H681K0K1H03B	X8L	50	680pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	Ę
	RHEL81H102K0K1H03B	X8L	50	1000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	Ę
	RHEL81H152K0K1H03B	X8L	50	1500pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	Ę
	RHEL81H222K0K1H03B	X8L	50	2200pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	Ę
	RHEL81H332K0K1H03B	X8L	50	3300pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	5
	RHEL81H472K0K1H03B	X8L	50	4700pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	5

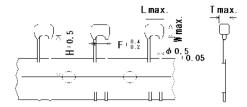




Unit: mm

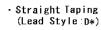
											Onit : mm	
Customer	Murata Part Number	T.C.	DC Rated	Сар.	Сар.		Dime	ension ((mm)		Dimension (LxW)	Pack qty.
Part Number			Volt. (V)	- '	Tol.	L	W	W1	F	Т	Lead Style	(pcs)
	RHEL81H682K0K1H03B	X8L	50	6800pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H103K0K1H03B	X8L	50	10000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H153K0K1H03B	X8L	50	15000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H223K0K1H03B	X8L	50	22000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H333K0K1H03B	X8L	50	33000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H473K0K1H03B	X8L	50	47000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H683K0K1H03B	X8L	50	68000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H104K0K1H03B	X8L	50	0.1µF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL81H154K1K1H03B	X8L	50	0.15µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	500
	RHEL81H224K1K1H03B	X8L	50	0.22µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	500
	RHEL81H334K1K1H03B	X8L	50	0.33µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	500
	RHEL81H474K2K1H03B	X8L	50	0.47µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500
	RHEL81H684K2K1H03B	X8L	50	0.68µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500
	RHEL81H105K2K1H03B	X8L	50	1.0µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500
	RHEL81H155K2K1H03B	X8L	50	1.5µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500
	RHEL81H225K2K1H03B	X8L	50	2.2µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500
	RHEL81H335K3K1H03B	X8L	50	3.3µF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	500
	RHEL81H475K3K1H03B	X8L	50	4.7µF	±10%	5.5	5.0	7.5	5.0	4.0	3K1	500
	RHEL81H106MWK1H03B	X8L	50	10µF	±20%	5.5	7.5	10.0	5.0	4.0	WK1	500
	RHEL82A221K0K1H03B	X8L	100	220pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A331K0K1H03B	X8L	100	330pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A471K0K1H03B	X8L	100	470pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A681K0K1H03B	X8L	100	680pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A102K0K1H03B	X8L	100	1000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A152K0K1H03B	X8L	100	1500pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A222K0K1H03B	X8L	100	2200pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A332K0K1H03B	X8L	100	3300pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A472K0K1H03B	X8L	100	4700pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A682K0K1H03B	X8L	100	6800pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A103K0K1H03B	X8L	100	10000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A153K0K1H03B	X8L	100	15000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A223K0K1H03B	X8L	100	22000pF	±10%	3.6	3.5	6.0	5.0	2.5	0K1	500
	RHEL82A333K1K1H03B	X8L	100	33000pF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	500
	RHEL82A473K1K1H03B	X8L	100	47000pF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	500
	RHEL82A683K1K1H03B	X8L	100	68000pF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	500
	RHEL82A104K1K1H03B	X8L	100	0.1µF	±10%	4.0	3.5	5.0	5.0	2.5	1K1	500
	RHEL82A154K2K1H03B	X8L	100	0.15µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500
	RHEL82A224K2K1H03B	X8L	100	0.22µF	±10%	5.5	4.0	6.0	5.0	3.15	2K1	500

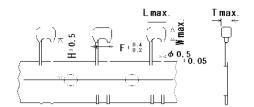
• Straight Taping (Lead Style:D*)



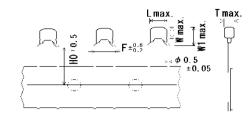
Unit : mm

Customer Part Number	Murata Part Number	T.C.	DC Rated Volt. (V)	Сар.	Cap. Tol.	L	Di W	imensio	on (mn	n) T	H/H0	Dimension (LxW) Lead Style	qty
	DUEL 04E404K0DDLI00A	V01	`	24	: 400/	2.0	2.5		2.5		10.0	^DD	200
	RHEL81E104K0DBH03A	X8L	25	0.1µF	±10%	3.6	3.5	-	2.5	2.5	16.0		200
	RHEL81E154K0DBH03A	X8L	25	0.15µF	±10%	3.6	3.5	-	2.5	2.5	16.0		200
	RHEL81E224K0DBH03A	X8L	25	0.22µF	±10%	3.6	3.5	-	2.5	2.5	16.0		200
	RHEL81E334K1DBH03A	X8L	25	0.33µF	±10%	4.0	3.5	-	2.5	2.5	16.0		20
	RHEL81E474K1DBH03A	X8L	25	0.47µF	±10%	4.0	3.5		2.5	2.5	16.0		20
	RHEL81E684K1DBH03A	X8L	25	0.68µF	±10%	4.0	3.5		2.5	2.5	16.0		20
	RHEL81E105K1DBH03A	X8L	25	1.0µF	±10%	4.0	3.5		2.5	2.5	16.0		20
	RHEL81E155K2DBH03A	X8L	25	1.5µF	±10%	5.5	4.0		2.5	3.15	16.0		20
	RHEL81E225K2DBH03A	X8L	25	2.2µF	±10%	5.5	4.0		2.5	3.15	16.0		20
	RHEL81E335K2DBH03A	X8L	25	3.3µF	±10%	5.5	4.0		2.5	3.15	16.0		20
	RHEL81E475K2DBH03A	X8L	25	4.7µF	±10%	5.5	4.0		2.5	3.15	16.0		20
	RHEL81E106K3DBH03A	X8L	25	10µF	±10%	5.5	5.0		2.5	4.0	16.0		15
	RHEL81H221K0DBH03A	X8L	50	220pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL81H331K0DBH03A	X8L	50	330pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H471K0DBH03A	X8L	50	470pF	±10%	3.6	3.5	_	2.5	2.5	16.0	0DB	20
	RHEL81H681K0DBH03A	X8L	50	680pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL81H102K0DBH03A	X8L	50	1000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H152K0DBH03A	X8L	50	1500pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H222K0DBH03A	X8L	50	2200pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H332K0DBH03A	X8L	50	3300pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H472K0DBH03A	X8L	50	4700pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H682K0DBH03A	X8L	50	6800pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H103K0DBH03A	X8L	50	10000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H153K0DBH03A	X8L	50	15000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H223K0DBH03A	X8L	50	22000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H333K0DBH03A	X8L	50	33000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H473K0DBH03A	X8L	50	47000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H683K0DBH03A	X8L	50	68000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H104K0DBH03A	X8L	50	0.1µF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	2
	RHEL81H154K1DBH03A	X8L	50	0.15µF	±10%	4.0	3.5	-	2.5	2.5	16.0	1DB	2
	RHEL81H224K1DBH03A	X8L	50	0.22µF	±10%	4.0	3.5	-	2.5	2.5	16.0	1DB	2
	RHEL81H334K1DBH03A	X8L	50	0.33µF	±10%	4.0	3.5	-	2.5	2.5	16.0		2
	RHEL81H474K2DBH03A	X8L	50	0.47µF	±10%	5.5	4.0	-	2.5	3.15			2
	RHEL81H684K2DBH03A	X8L	50	0.68µF	±10%	5.5	4.0	_		3.15			2
	RHEL81H105K2DBH03A	X8L	50	1.0µF	±10%	5.5	4.0	_	2.5		-		2
	RHEL81H155K2DBH03A	X8L	50	1.5µF	±10%	5.5	4.0		2.5				20
	RHEL81H225K2DBH03A	X8L	50	2.2µF	±10%	5.5	4.0	_	2.5				20
	RHEL81H335K3DBH03A	X8L	50	3.3µF	±10%	5.5	5.0		2.5				1:
	RHEL81H475K3DBH03A	X8L	50	3.5μr 4.7μF	±10%	5.5	5.0		2.5	4.0			15
	RHEL82A221K0DBH03A	X8L	100	4.7μF 220pF	±10%	3.6	3.5		2.5	2.5			20





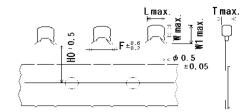
• Inside Crimp Taping (Lead Style: M*)



Unit : mm

Customer Part Number	Murata Part Number	T.C.	DC Rated Volt.	Сар.	Cap. Tol.	L	W	Dimension (mm)			H/H0	Dimension (LxW) Lead Style	qty
			(V)			L	VV	VVI	Г	ı	H/HU		(10.0
	RHEL82A331K0DBH03A	X8L	100	330pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	200
	RHEL82A471K0DBH03A	X8L	100	470pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	200
	RHEL82A681K0DBH03A	X8L	100	680pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	200
	RHEL82A102K0DBH03A	X8L	100	1000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	200
	RHEL82A152K0DBH03A	X8L	100	1500pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A222K0DBH03A	X8L	100	2200pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A332K0DBH03A	X8L	100	3300pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A472K0DBH03A	X8L	100	4700pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A682K0DBH03A	X8L	100	6800pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A103K0DBH03A	X8L	100	10000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A153K0DBH03A	X8L	100	15000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A223K0DBH03A	X8L	100	22000pF	±10%	3.6	3.5	-	2.5	2.5	16.0	0DB	20
	RHEL82A333K1DBH03A	X8L	100	33000pF	±10%	4.0	3.5	-	2.5	2.5	16.0	1DB	20
	RHEL82A473K1DBH03A	X8L	100	47000pF	±10%	4.0	3.5	-	2.5	2.5	16.0	1DB	20
	RHEL82A683K1DBH03A	X8L	100	68000pF	±10%	4.0	3.5	-	2.5	2.5	16.0	1DB	20
	RHEL82A104K1DBH03A	X8L	100	0.1µF	±10%	4.0	3.5	-	2.5	2.5	16.0	1DB	20
	RHEL82A154K2DBH03A	X8L	100	0.15µF	±10%	5.5	4.0	-	2.5	3.15	16.0	2DB	20
	RHEL82A224K2DBH03A	X8L	100	0.22µF	±10%	5.5	4.0	-	2.5	3.15	16.0	2DB	20
	RHEL81E104K0M1H03A	X8L	25	0.1µF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	20
	RHEL81E154K0M1H03A	X8L	25	0.15µF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	20
	RHEL81E224K0M1H03A	X8L	25	0.22µF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	20
	RHEL81E334K1M1H03A	X8L	25	0.33µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	20
	RHEL81E474K1M1H03A	X8L	25	0.47µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	20
	RHEL81E684K1M1H03A	X8L	25	0.68µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	20
	RHEL81E105K1M1H03A	X8L	25	1.0µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	20
	RHEL81E155K2M1H03A	X8L	25	1.5µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RHEL81E225K2M1H03A	X8L	25	2.2µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RHEL81E335K2M1H03A	X8L	25	3.3µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RHEL81E475K2M1H03A	X8L	25	4.7µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	20
	RHEL81E106K3M1H03A	X8L	25	10µF	±10%	5.5	5.0	7.5	5.0	4.0	16.0	3M1	15
	RHEL81E226MWM1H03A	X8L	25	22µF	±20%	5.5	7.5	10.0	5.0	4.0	16.0	WM1	15
	RHEL81H221K0M1H03A	X8L	50	220pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	20
	RHEL81H331K0M1H03A	X8L	50	330pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	20
	RHEL81H471K0M1H03A	X8L	50	470pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	20
	RHEL81H681K0M1H03A	X8L	50	680pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0		20
	RHEL81H102K0M1H03A	X8L	50	1000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	20
	RHEL81H152K0M1H03A	X8L	50	1500pF	±10%	3.6	3.5	6.0	5.0	2.5			20
	RHEL81H222K0M1H03A	X8L	50	2200pF	±10%	3.6	3.5	6.0	5.0	2.5			20
	RHEL81H332K0M1H03A	X8L	50	3300pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0		20
	RHEL81H472K0M1H03A	X8L	50	4700pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0		20

• Inside Crimp Taping (Lead Style: ₩*)



Unit: mm

						1					Onit : mm		
Customer	Murata Part Number	T.C.	DC Rated	Cap.	Cap.	Dimension (mm)						Dimension (LxW)	Pack qty.
Part Number			Volt. (V)		Tol.	L	W	W1	F	Т	H/H0	Lead Style	(pcs)
	RHEL81H682K0M1H03A	X8L	50	6800pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	2000
	RHEL81H103K0M1H03A	X8L	50	10000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	2000
	RHEL81H153K0M1H03A	X8L	50	15000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	2000
	RHEL81H223K0M1H03A	X8L	50	22000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	2000
	RHEL81H333K0M1H03A	X8L	50	33000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	2000
	RHEL81H473K0M1H03A	X8L	50	47000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL81H683K0M1H03A	X8L	50	68000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL81H104K0M1H03A	X8L	50	0.1µF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL81H154K1M1H03A	X8L	50	0.15µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	200
	RHEL81H224K1M1H03A	X8L	50	0.22µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	2000
	RHEL81H334K1M1H03A	X8L	50	0.33µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	2000
	RHEL81H474K2M1H03A	X8L	50	0.47µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	200
	RHEL81H684K2M1H03A	X8L	50	0.68µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	200
	RHEL81H105K2M1H03A	X8L	50	1.0µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	200
	RHEL81H155K2M1H03A	X8L	50	1.5µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	200
	RHEL81H225K2M1H03A	X8L	50	2.2µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	200
	RHEL81H335K3M1H03A	X8L	50	3.3µF	±10%	5.5	5.0	7.5	5.0	4.0	16.0	3M1	150
	RHEL81H475K3M1H03A	X8L	50	4.7µF	±10%	5.5	5.0	7.5	5.0	4.0	16.0	3M1	150
	RHEL81H106MWM1H03A	X8L	50	10µF	±20%	5.5	7.5	10.0	5.0	4.0	16.0	WM1	150
	RHEL82A221K0M1H03A	X8L	100	220pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A331K0M1H03A	X8L	100	330pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A471K0M1H03A	X8L	100	470pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A681K0M1H03A	X8L	100	680pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A102K0M1H03A	X8L	100	1000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A152K0M1H03A	X8L	100	1500pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A222K0M1H03A	X8L	100	2200pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A332K0M1H03A	X8L	100	3300pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A472K0M1H03A	X8L	100	4700pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A682K0M1H03A	X8L	100	6800pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A103K0M1H03A	X8L	100	10000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A153K0M1H03A	X8L	100	15000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A223K0M1H03A	X8L	100	22000pF	±10%	3.6	3.5	6.0	5.0	2.5	16.0	0M1	200
	RHEL82A333K1M1H03A	X8L	100	33000pF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	200
	RHEL82A473K1M1H03A	X8L	100	47000pF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	200
	RHEL82A683K1M1H03A	X8L	100	68000pF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	200
	RHEL82A104K1M1H03A	X8L	100	0.1µF	±10%	4.0	3.5	5.0	5.0	2.5	16.0	1M1	200
	RHEL82A154K2M1H03A	X8L	100	0.15µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	200
	RHEL82A224K2M1H03A	X8L	100	0.22µF	±10%	5.5	4.0	6.0	5.0	3.15	16.0	2M1	200

Reference only

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b. AE	•		cifications and Test Methods						
No.		-Q200 t Item	Specification AEC-Q200 Test Method						
1	Pre-and Post-S Electrical Test			•					
2	High	Appearance	No defects or abnormalities.	Sit the capacitor for 1000±12 hours at 150±3°C. Let sit for 24±2 hours					
	Temperature Capacitance Exposure Change		within ±12.5%	at *room condition, then measure.					
	(Storage)	D.F.	0.04 max.	•Pretreatment					
		I.R.	More than 1,000MΩ or 50MΩ•μF	Perform the heat treatment at 150+0/-10°C for 60±5 min and					
			(Whichever is smaller)	then let sit for 24±2 hours at *room condition.					
3	Temperature Cycling	Appearance	No defects or abnormalities except color change of outer coating.	Perform the 1000 cycles according to the four heat treatments listed in the following table. Let sit for 24±2 hours at *room condition, then measu					
	Cyoming .	Capacitance	within ±12.5%	Step 1 2 3 4					
		Change		Temp Room Room					
		D.F.	0.05 max.	(°C) -55+0/-3 Temp. 150+3/-0 Temp.					
		I.R.	1,000MΩ or 50MΩ•μF min.	Time (min.) 15±3 1 15±3 1					
			(Whichever is smaller)	•Pretreatment					
				Perform the heat treatment at 150+0/-10°C for 60±5 min and					
	Majation	A m m c = ===	No defeate an above were 1865	then let sit for 24±2 hours at *room condition.					
4	Moisture Resistance	Appearance Capacitance	No defects or abnormalities. within ±12.5%	Apply the 24 hours heat (25 to 65°C) and humidity (80 to 98%)					
	resistance	Capacitance Change	wiu iii I I I Z.J /0	treatment shown below, 10 consecutive times. Let sit for 24±2 hours at *room condition, then measure.					
		D.F.	0.05 max.	Temperature Humidity Humidity					
		I.R.	500MΩ or 25MΩ•μF min.	lemperature					
			(Whichever is smaller)	70					
				65 60					
				55					
				<u>\$50</u> 845					
				840					
				[\$35					
				25 55					
				20 +10					
				15 - 2°C					
				10 Initial measurement 5					
				0					
				-5					
				One cycle 24 hours					
				0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Hours					
				•Pretreatment					
				Perform the heat treatment at 150+0/-10°C for 60±5 min and then let sit for 24±2 hours at *room condition.					
5	Biased	Appearance	No defects or abnormalities.	Apply the rated voltage and DC1.3+0.2/-0V (add 100kΩ resistor)					
	Humidity	Capacitance	within ±12.5%	at 85±3°C and 80 to 85% humidity for 1,000±12 hours.					
		Change		Remove and let sit for 24±2 hours at *room condition, then measure.					
		D.F.	0.05 max.	The charge/discharge current is less than 50mA.					
		I.R.	500MΩ or 25MΩ•μF min.	• Pretreatment					
			(Whichever is smaller)	Perform a heat treatment at 150+0/-10°C for one hour.					
6	Operational	Annostra	No defecte or observed like a very training	and then set at room temperature for 24±2 hours.					
6	Operational Life	Appearance	No defects or abnormalities except color change of outer coating.	Apply 150% of the rated voltage for 1,000±12 hours at 150±3°C. Let sit for 24±2 hours at *room condition, then measure.					
		Capacitance	within ±12.5%	The charge/discharge current is less than 50mA.					
		Change	1.2.5.75	•Pretreatment					
		D.F.	0.04 max.	Apply test voltage for 60±5 min at test temperature.					
		I.R.	1,000MΩ or 50MΩ•μF min.	Remove and let sit for 24±2 hours at *room condition.					
			(Whichever is smaller)						
7	External Visua	l	No defects or abnormalities.	Visual inspection.					
8	Physical Dime	nsion	Within the specified dimensions.	Using calipers and micrometers.					
9	Marking		To be easily legible.	Visual inspection.					
	Resistance	Appearance	No defects or abnormalities.	Per MIL-STD-202 Method 215					
10		Capacitance	Within the specified tolerance.	Solvent 1 : 1 part (by volume) of isopropyl alcohol					
10	to Solvents		0.005	3 parts (by volume) of mineral spirits					
10	to Solvents	D.F.	0.025 max.	-					
10	to Solvents	D.F. I.R.	More than 10,000MΩ or 500 MΩ•μF	Solvent 2 : Terpene defluxer					
10	to Solvents			Solvent 2 : Terpene defluxer Solvent 3 : 42 parts (by volume) of water					
10	to Solvents		More than 10,000MΩ or 500 MΩ·μF	Solvent 2 : Terpene defluxer					

Reference only

Post-treatment Capacitors should be stored at 120-0/-5°C for 60+0/-5 seconds The time capacitor should be stored at 120-0/-5°C for 60+0/-5 seconds Then, the lead wires should be immersed in the melted solder Then, the lead wires should be immersed in the melted solder Then, the lead wires should be immersed in the melted solder Then, the lead wires should be immersed in the melted solder Then, the lead wires should be immersed in the melted solder Then, the lead wires should be immersed in the melted solder Then, the lead wires should be immersed in the melted solder Then, the lead wires should be immersed in the melted solder Then, the lead wires should be stored at 150+0/-10°C for one hour, then place at "room condition for 2422 hours at "room condition. The place at "room condition for 2422 hours at "room condition. Test condition				Referen	ce only
Shock Capacitance O.F. O.S. Appearance No defects or abnormalities. Capacitance O.F. O.S. O.S. Appearance O.F. O.S. O.S. Appearance O.F. O.S. O.S. Appearance O.S. No defects or abnormalities. Capacitance O.F. O.S. O.S. The equation of the subjected for signife harmonic model of the self-policy will be	No.			Specification	AEC-Q200 Test Method
D.F. do 0.55 max. The special set pulses should be half aims and should have a function 1.0 mg. and entire the special set pulses should be half aims and should have a function 1.0 mg. and entire the special set pulses and entire the special se	11	Mechanical	Appearance	No defects or abnormalities.	Three shocks in each direction should be applied along 3
Appearance No defects or abnormalities Appearance Appearance No defects or abnormalities Appearance Appearance No defects or abnormalities Appearance Appe		Shock	Capacitance	Within the specified tolerance.	mutually perpendicular axes of the test specimen (18 shocks).
Appearance No defects or abnormalities The capacition should be subjected to a simple harmonic motion Capacition			D.F.	0.025 max.	The specified test pulse should be Half-sine and should have a
Appearance No defects or abnormalities The capacition should be subjected to a simple harmonic motion Capacition					duration: 0.5ms, peak value: 1500G and velocity change: 4.7m/s.
Capacitance Willin the specified blerance. Inviving a folial amplitude of 1.5mm, the frequency learly varied O.F.	12	Vibration	Appearance	No defects or abnormalities.	
D.F. 0.255 max.		l		Within the specified tolerance.	
The frequency range, from 10 to 2000Hz and rotum to 10Hz, should be transced in apposimately 2 min. This motion should be applied for 12 items in each 3 mutually perpendicular described to 50 strongs.			D.F.	0.025 max.	
Soldering Appearance No. defects or abnormalities. The lead were should be appeared in 2 for 12 femal in an 3 mutually perpendicular directions (total of 36 times). The lead were should be immored in the melted solder 1,5 to 2 0mm from the root of terminal at 26045°C for 1021 seconds. The lead were should be immored in the melted solder 1,5 to 2 0mm from the root of terminal at 26045°C for 1021 seconds. Pre-treatment Capacitor should be stored at 150+01-01°C for one hour, there place at 700m condition for 2442 hours at 1700m condition. Pre-treatment Capacitor should be stored for 2442 hours at 1700m condition. Pre-treatment Capacitor should be stored for 2442 hours at 1700m condition. Pre-treatment Capacitor should be stored at 120+05°C for 09-05 second to Soldering. Pre-treatment Capacitor should be stored at 120+05°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from the root of terminal at 26055°C for 09-05 second 1,5 to 2,0 mm from t					The frequency range, from 10 to 2000Hz and return to 10Hz,
Secretarion					
Secretarion Appearance No defects or abnormalities. The lead wires about be immensed in the melted societ 1,5 to 2,0mm from the root of terminal at 260±5°C for 10±1 seconds.					
In the Soldering Capacitance Within 27.5% Change No defects Pre-treatment Capacitor should be stored at 150-00-10°C for one hour, then place at "room condition for 24.22 hours before initial measurement one standard of the place at the capacitor should be stored at 150-00-10°C for one hour, then place at "room condition for 24.22 hours before initial measurement one standard of 24.22 hours at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at "room condition for 24.22 hours before initial measurement has been at the place at "room condition for 24.22 hours before initial measurement has been at the place at "room condition for 24.22 hours before initial measurement has been at the place at "room condition for 24.22 hours at "room cond					
Los Soldering Capacitance Within 27.5% From the root of terminal at 200±5°C for 10±1 seconds.	13-1	Resistance	Appearance	No defects or abnormalities.	The lead wires should be immersed in the melted solder 1.5 to 2.0mm
Non-Perhatist		to Soldering	Capacitance	Within ±7.5%	from the root of terminal at 260±5°C for 10±1 seconds.
Preheat Strength (Between terminals)		Heat	Change		
Between Item place at "room condition for 24±2 hours before initial measurement - Post-treatment Post-		(Non-	Dielectric	No defects.	Pre-treatment
Erminals Post-treatment		Preheat)	Strength		Capacitor should be stored at 150+0/-10°C for one hour,
Capacitor should be stored for 24½ hours at "room condition."			(Between		then place at *room condition for 24±2 hours before initial measurement.
13-2 Resistance			terminals)		Post-treatment
to Soldering Heat Change (Change) (Cho- Delectric Not defects. Then, the lead wives should be immersed in the melted solder (1.5 to 2.0mm from the root of terminal at 280±5°C for 7.5±0/-1 seconds (1.5 to 2.0mm from the root of terminal at 280±5°C for 7.5±0/-1 seconds (1.5 to 2.0mm from the root of terminal at 280±5°C for 7.5±0/-1 seconds (1.5 to 2.0mm from the root of terminal at 280±5°C for 7.5±0/-1 seconds (1.5 to 2.0mm from the root of terminal at 280±5°C for 7.5±0/-1 seconds (1.5 to 2.0mm from the root of terminal at 280±5°C for 7.5±0/-1 or one hour, then place at "room condition for 24±2 hours at "room condition. 13-3 Resistance (Secondary Change) (Soldering Change) (Soldering Change) (Soldering Delectric (Capacitor should be stored for 24±2 hours at *room condition.
Heat (On- Delectric No defects.	13-2	Resistance	Appearance	No defects or abnormalities.	First the capacitor should be stored at 120+0/-5°C for 60+0/-5 seconds.
On- Preheat On- Strength (Between terminals) Pre-treatment Capacitor should be stored at 150+0/-10°C for one hour, then place at "room condition for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition." Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition. Pre-treatment Capacitor should be stored for 24±2 hours at "room condition.		to Soldering	Capacitance	Within ±7.5%	Then, the lead wires should be immersed in the melted solder
Pre-treatment Capacitor should be stored at 150+0/-10°C for one hour, then place at "room condition for 24±2 hours at "room condition."		Heat	Change		1.5 to 2.0mm from the root of terminal at 260±5°C for 7.5+0/-1 seconds.
Getween terminals Get		(On-	Dielectric	No defects.	
terminals) teminals then place at "room condition for 24±2 hours before initial measuremer - Post-treatment Capacitor should be stored for 24±2 hours at "room condition. Temperature of iron-tip : 35±0.5 seconds Capacitance (Soldering Dielectric Change (Soldering Dielectric Research) Free-treatment (Retween terminals) Temperature of iron-tip : 35±0.5 seconds Soldering position Straight Lead : 1.5 to 2.0mm from the root of terminal. Crimp Lead : 1.5 to 2.0mm from the end of lead bend Pre-treatment Capacitor should be stored at 150+0/-10°C for one hour, then place at "room condition for 24±2 hours at "room condition. Appearance No defects or abnormalities. Temperature of iron-tip : 35±0.5 seconds Soldering position Straight Lead : 1.5 to 2.0mm from the root of terminal. Crimp Lead : 1.5 to 2.0mm from the end of lead bend Pre-treatment Capacitor should be stored at 150+0/-10°C for one hour, then place at "room condition for 24±2 hours at "room condition. Appearance No defects or abnormalities. Term the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20 seconds.) Let sit for 24±2 hours at "room condition, then measure. Temperature of iron-tip : 35±0±10°C for one hour, then place at "room condition for 24±2 hours at "room condition. Temperature of iron-tip : 35±0±10°C for 35±0±10°C for 60±5 min and then let sit for 24±2 hours at "room condition. Temperature of iron-tip : 35±0±10°C for 60±5 min and then let sit for 24±2 hours at "room condition. Temperature of iron-tip : 35±0±10°C for 60±5 min and then let sit for 24±2 hours at "room condition. Temperature of iron-tip : 35±0±10°C for 60±5 min and then let sit for 24±2 hours at "room condition. Temperature of iron-tip : 35±0±10°C for 60±5 min and then let sit for 24±2 hours at "room condition. Temperature of iron-tip : 35±0±10°C for 60±5 min and then let sit for 24±2 hours at "room condition. Temperature of iron-tip : 35±0±10°C for 60±5 min and then let sit for 24±2 hours at iron-tip interes		Preheat)	Strength		Pre-treatment
Post-treatment Capacitor should be stored for 24±2 hours at *room condition.			(Between		Capacitor should be stored at 150+0/-10°C for one hour,
Capacitor should be stored for 24±2 hours at "room condition.			terminals)		then place at *room condition for 24±2 hours before initial measurement.
13-3 Resistance to Soldering Heat Capacitance Change Within ±7.5% Test condition Temperature of iron-tip : 350±10°C Change Soldering Soldering Soldering Soldering Soldering position Straight Lead : 1.5 to 2.0mm from the root of terminal. Crimp Lead : 1.5 to 2.0mm from the root of lead bend. Pre-treatment Capacitance Capacitan					Post-treatment
Lead					Capacitor should be stored for 24±2 hours at *room condition.
Heat (soldering promethod) Dielectric Streight	13-3				Test condition
Soldering Iron method Strength Str		_	'	Within ±7.5%	· ·
Straight Lead : 1.5 to 2.0mm from the root of terminal. Crimp Lead : 1.5 to 2.0mm from the root of terminal. Crimp Lead : 1.5 to 2.0mm from the root of terminal. Crimp Lead : 1.5 to 2.0mm from the end of lead bend. Pre-treatment Capacitor should be stored at 150+0/-10°C for one hour, then place at "room condition for 24±2 hours at "room condition. Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20 seconds.). Let sit for 24±2 hours at "room condition, then measure. D.F.					-
Crimp Lead : 1.5 to 2.0mm from the end of lead bend.		,		No defects	
Per-treatment Per-treatment Per-treatment Per-treatment Per-treatment Per-treatment Post-treatment Post-treatment Post-treatment Post-treatment Post-treatment Post-treatment Post-treatment Per-treatment Per-		iron method)			_
- Pre-treatment Capacitor should be stored at 150+0/-10°C for one hour, then place at "room condition for 24±2 hours before initial measuremer - Post-treatment Capacitor should be stored for 24±2 hours at "room condition. Appearance No defects or abnormalities. Capacitance Within ±12.5% I.R. 1,000MΩ or 50MΩ·μF min. (Whichever is smaller) Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20 seconds.). Let sit for 24±2 hours at "room condition, then measure. Step 1 2 Temp. ("C) -55+0/-3 150+3/-0 Time (min.) 15±3 15±3 -Pretreatment -Pretreatment -Pretreatment -Pretreatment -Pretreatment -Pretreatment -Pretreatment at 150+0/-10°C for 60±5 min and then let sit for 24±2 hours at "room condition. 15 ESD Appearance No defects or abnormalities. Capacitance Within the specified tolerance. D.F. 0.025 max. I.R. More than 10,000MΩ or 500MΩ·μF (Whichever is smaller) Lead wire should be stored at 150+0/-10°C for 60±5 min and then let sit for 24±2 hours at "room condition. The terminal of a capacitor is dipped into a solution of ethanol uniform coating on the axial direction over 95% of the circumferential direction. The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5 seconds. In both cast the depth of dipping 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 Lead Free Solder (Sn-3.0Ag-0.5Cu)			`		Crimp Lead : 1.5 to 2.0mm from the end of lead bend.
Capacitor should be stored at 150+0/-10°C for one hour, then place at "room condition for 24±2 hours before initial measuremer - Post-treatment Capacitor should be stored for 24±2 hours at "room condition. 14 Thermal Appearance No defects or abnormalities. Capacitance Change D.F. 0.05 max. I.R. 1,000MΩ or 50MΩ·μF min. ((Whichever is smaller) Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20 seconds.). Let sit for 24±2 hours at "room condition, then measure. Step 1 2 2 Temp. ("C) -55+0/-3 150+3/-0 Time (min.) 15±3 15±3 Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5 min and then let sit for 24±2 hours at "room condition." Per AEC-Q200-002 Appearance No defects or abnormalities. Capacitance Within the specified tolerance. D.F. 0.025 max. I.R. More than 10,000MΩ or 500MΩ·μF (Whichever is smaller) The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5 seconds. In both cas the depth of dipping 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			terminais)		. Dre treetment
then place at *room condition for 24±2 hours before initial measuremer • Post-treatment Capacitor should be stored for 24±2 hours at *room condition. 14 Thermal Appearance No defects or abnormalities. Shock Capacitance Within ±12.5% Change D.F. 0.05 max. I.R. 1,000MΩ or 50MΩ•μF min. (Whichever is smaller) Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20 seconds.). Let sit for 24±2 hours at *room condition, then measure. Step 1 2 Temp. (*C*) -55+0/-3 150+3/-0 (*C*) -55+0/-3 150+3/-0 (*C*) -55+0/-3 150+3/-0 (*C*) -55+0/-3 150+3/-0 (*C*) -75+0/-3					
Post-treatment Capacitor should be stored for 24±2 hours at *room condition.					· ·
Capacitor should be stored for 24±2 hours at *room condition.					
Thermal Shock Shock Capacitance Capacitance Change D.F. 0.05 max. Let sit for 24±2 hours at "room condition, then measure.					
Shock Capacitance Change D.F. 0.05 max. I.R. 1,000MΩ or 50MΩ*μF min. (Whichever is smaller) SESD Appearance D.F. 0.025 max. I.R. Appearance D.F. 0.025 max. I.R. Appearance D.F. 0.025 max. I.R. More than 10,000MΩ or 500MΩ*μF (Whichever is smaller) Temp. (*C') -55+0/-3 150+3/-0 Time (min.) -7retreatment Perform the heat treatment at 150+0/-10°C for 60±5 min and then let sit for 24±2 hours at *room condition. Per AEC-Q200-002 Solderability The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5 seconds. In both cas the depth of dipping 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	14	Thermal	Appearance	No defects or abnormalities.	
Change D.F. 0.05 max. Step 1 2 Temp. -55±0/-3 150±3/-0 Time (min.) 15±3 1					, , , , , , , , , , , , , , , , , , , ,
D.F. 0.05 max. Step 1 2 Temp. (°C) -55+0/-3 150+3/-0 Time (min.) 15±3			Change		
(Whichever is smaller) (Whichever is smaller) (C) Time (min.) *Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5 min and then let sit for 24±2 hours at *room condition. Per AEC-Q200-002 Appearance D.F. 0.025 max. I.R. More than 10,000MΩ or 500MΩ·μF (Whichever is smaller) Lead wire should be soldered with uniform coating on the axial direction over 95% of the circumferential direction. The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5 seconds. In both case the depth of dipping 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			D.F.	0.05 max.	Step 1 2
(Whichever is smaller) ("C) -55+0/-3 150+3/-0 Time (min.) 15±3 15±3 *Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5 min and then let sit for 24±2 hours at *room condition. Per AEC-Q200-002 Appearance No defects or abnormalities. Capacitance Within the specified tolerance. D.F. 0.025 max. I.R. More than 10,000MΩ or 500MΩ·μF (Whichever is smaller) Lead wire should be soldered with uniform coating on the axial direction over 95% of the circumferential direction. The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5 seconds. In both case the depth of dipping 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			I.R.	1,000MΩ or 50MΩ•μF min.	Temp
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245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu) 235±5°C H60A or H63A Eutectic Solder					and dopan or dipping to up to about 1.0 to 2000 months the terminal body.
245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu) 235±5°C H60A or H63A Eutectic Solder					Temp. of solder:
235±5°C H60A or H63A Eutectic Solder					·
					, ,
* "room condition" Temperature : 15 to 35°C, Relative humidity : 45 to 75%, Atmosphere pressure : 86 to 106kPa	* "roor	n condition" T	emperature : 15	to 35°C, Relative humidity : 45 to 75%, Atm	

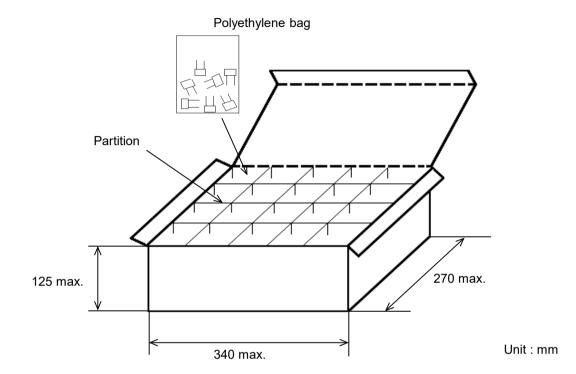
Reference only

				Reference of	only T					
No.		C-Q200 st Item	Specifications		AEC-Q200 Test Method					
17	Electrical	Appearance	No defects or a	abnormalities.	Visual inspection.					
	Characte- Capacitance		Within the spe	cified tolerance.	The capacitance/D.F. should be measured at 25°C at the					
ļ	rization	D.F.	0.025 max.		frequency and voltage shown in the table.					
					Nominal Cap. Frequency Voltage					
					C≦10µF 1±0.1kHz AC1±0.2V (r.m.s.)					
ļ					C>10µF 120±24Hz AC0.5±0.1V(r.m.s.)					
ļ		Insulation	Room	10,000MΩ or 500MΩ•μF min.	The insulation resistance should be measured at 25±3 °C with					
		Resistance	Temperature	(Whichever is smaller)	a DC voltage not exceeding the rated voltage at normal temperature					
			remperature	(Willichever is smaller)						
		(I.R.)			and humidity and within 2 min. of charging.					
				100110 5110 5	(Charge/Discharge current ≤ 50mA.)					
			High _	100MΩ or 5MΩ•μF min.	The insulation resistance should be measured at 150±3 °C with					
			Temperature	(Whichever is smaller)	a DC voltage not exceeding the rated voltage at normal temperature					
					and humidity and within 2 min. of charging.					
					(Charge/Discharge current ≦ 50mA.)					
		Dielectric	Between	No defects or abnormalities.	The capacitor should not be damaged when DC voltage of 250%					
		Strength	Terminals		of the rated voltage is applied between the terminations for					
					1 to 5 seconds.					
					(Charge/Discharge current ≤ 50mA.)					
			Body	No defects or abnormalities.	The capacitor is placed in a container with metal					
			Insulation		balls of 1mm diameter so that each terminal, short-circuit is kept approximately 2mm from the balls, and 250% of the rated DC voltage is					
					impressed for 1 to 5 seconds between					
					capacitor terminals and metal balls. Meta					
					(Charge/Discharge current ≤ 50mA.) balls					
18	Terminal	Tensile	Termination no	ot to be broken or loosened.	As in the figure, fix the capacitor body, apply the force gradually					
	Strength	Strength			to each lead in the radial direction of the capacitor until reaching					
					10N and then keep the force applied for 10±1 seconds.					
					<u>'////</u>					
					↓					
					F I I					
ļ		Bending	Termination no	ot to be broken or loosened.	Each lead wire should be subjected to a force of 2.5N and then					
		Strength			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.					
19	Capacitance	•	Within the spe	cified Tolerance.	The capacitance change should be measured after 5min.					
	Temperature		-55 to 125°C :	within ±15%	at each specified temperature step.					
	Characteristic	s	125 to 150°C :	within +15/-40%	Stan Tanananatura (°C)					
ļ					Step Temperature(°C)					
					1 25±2					
ļ					2 -55±3					
					3 25±2 4 150±3					
ļ										
					5 25±2					
					The ranges of capacitance change compared with the above					
					25°C value over the temperature ranges shown in the table					
ļ					should be within the specified ranges.					
ļ					•Pretreatment					
					Perform the heat treatment at 150+0/-10°C for 60±5 min and					
			1		I					
j					then let sit for 24±2 hours at *room condition.					
					then let sit for 24±2 hours at *room condition. Perform the initial measurement.					

6. Packing specification

•Bulk type (Packing style code : B)

The size of packing case and packing way



The number of packing = $^{^{\star1}}$ Packing quantity × $^{^{\star2}}$ n

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

*2 : Standard n = 20 (bag)

Note)

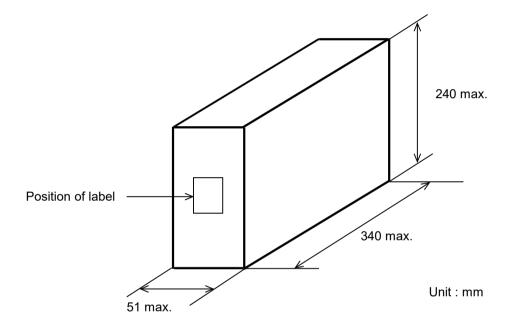
The outer package and the number of outer packing be changed by the order getting amount.

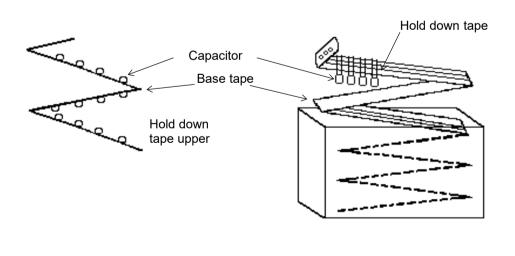
JKBCRPE02

·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



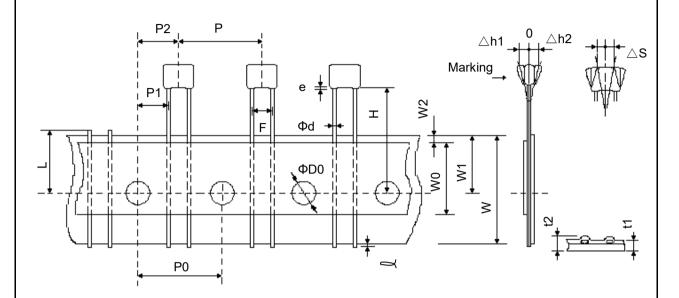


7. Taping specification

7-1. Dimension of capacitors on tape

Straight taping type < Lead Style : DB >

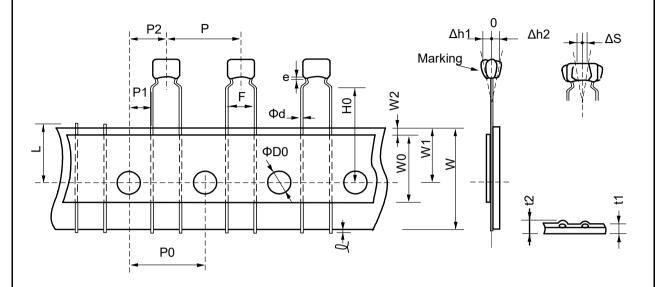
Pitch of component 12.7mm / Lead spacing 2.5mm



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	5.1+/-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	Н	16.0+/-0.5	
Protrusion length	l	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 agrees tape	Δh1	1.0 max.	
Deviation across tape	Δh2	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	1.5 max.	

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

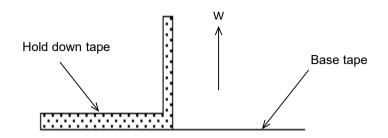


Unit : mm

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

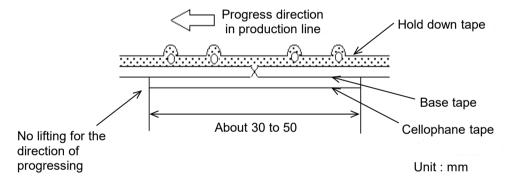
7-2. Splicing way of tape

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



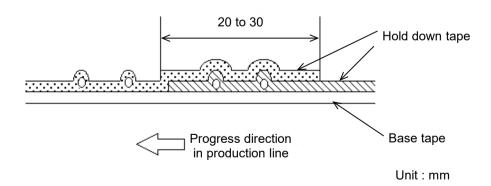
2) Splicing of tape

- 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.

ETP2R01