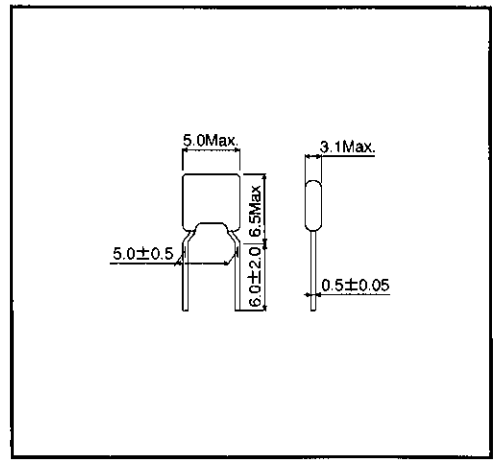
Multi-layer ceramic capacitors
SR24 (radial lead type capacitor)

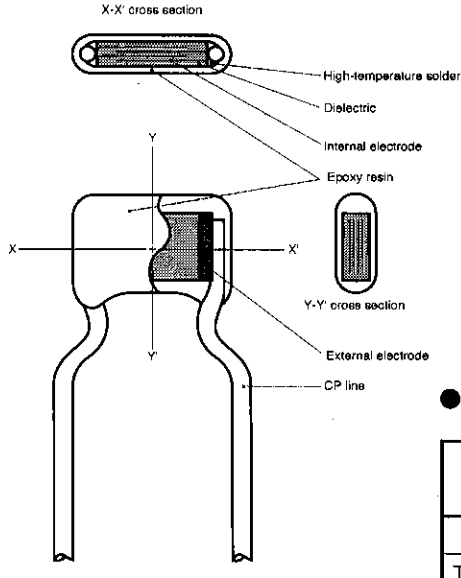
●Features

1)Ceramic chip capacitor with radial leads and epoxy resin coating for superior humidity resistance and insulation.
2)No polarity.
3)Automatic insertion possible with radial tape (5mm pitch).

●External dimensions (Units: mm)



●Structure



●Capacitance range of high dielectric constant components

(Units : pF)

Name	C (X7R) characteristic	F (Y5V) characteristic
	50V	50V
SR24	10,000	10,000・100,000
Tolerance (%)	K (±10)	Z (+80, −20)

●Makeup of the part number

- When ordering, please specify the part number.
- Please check to be sure of what combination of features you wish to order.
- Fill in the blanks from left to right.

Three-digit number indicates the number of picofarads. The first two digits are the significant digits; the last digit gives number of zeros.
Examples: 103=10,000pF、104=100,000pF

Series name | Shape・Dimensions | Nominal capacitance

S R 2 4 5 F 1 0 4 Z B 6

Rated voltage

Symbol	Voltage
5	50V

Capacitance temperature characteristics

Symbol	EIA code	Operating temp. range (°C)	Temp. coefficient or percent change
C	X7R	−55~+125 (−25~+85)	±15% (±10%)
F	Y5V	−30~+85	+22%, −82%

Capacitance tolerance

Symbol	Tolerance	Application
K	±10%	C characteristics
Z	+80, −20%	F characteristics

Packaging specification

Symbol	Packaging style	Basic ordering unit
B6	Box; Taping dimensions 16±0.5mm	2000pcs

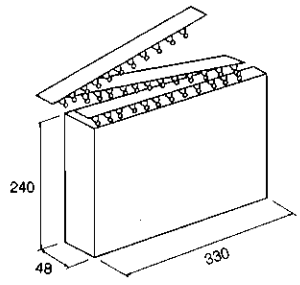
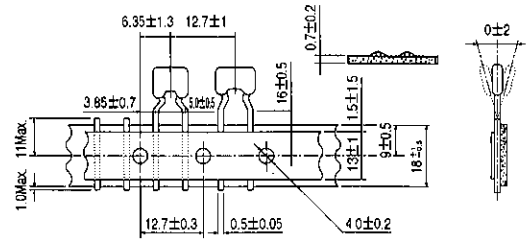
ROHM

●Characteristics

Item \ Temperature characteristics		C (X7R)	F (Y5V)	Test methods/conditions (based on JIS C 5102)
Operating temperature range		−55℃~+125℃	−25℃~+85℃	———
Nominal capacitance (C)		Must be within the specified tolerance range.		Based on paragraph 7.8・9 Measured at room temperature and standard humidity. Measurement frequency : 1±0.1kHz Measurement voltage : 1±0.2Vrms.
Dissipation factor (tan δ)		2.5% or less	5.0% or less	
Insulation resistance (IR)		10,000 MΩ or larger, or 500 ΩF or larger, whichever is smaller		Based on paragraph 7.6 is applied for 60±5s Measurement is made after rated voltage.
Withstanding voltage	Between terminals	There must be no irregularities.		Based on paragraph 7.1 for 1 to 5s then measure Apply 250% of the rated voltage.
	Between terminals and body			
Temperature characteristics		Within±15%	+22,−82%	Based on paragraph 7.12, table 12 The temperature coefficients are the value at 20℃, with no voltage applied.
Terminal strength	Tensile	There must be no broken leads, or damage to the capacitor.		Paragraph 8.1 test conditions, table 13
	Torsional	There must be no broken leads.		Paragraph 8.1 test conditions, table 14
Resistance to vibration	Appearance	There must be no noticeable irregularities.		Based on paragraph 8.2 (class A) Measured after 48±4 hours in the manner specified.
	Rate of capacitance change	Must be within initial tolerance.		
	Dissipation factor	Must satisfy initial specified value.		
Solderability		At least 3/4 of the area of the immersed lead must be covered with new solder.		Based on paragraph 8.13, Soldering temperature : 235±5℃ Soldering time : 2±0.5s
Resistance to solder heat	Appearance	There must be no noticeable irregularities.		Based on paragraph 8.5 Soldering temperature SR series : 260±5℃ Soldering time SR series : 10±1s Capacitance measured after 48±2 hrs.
	Rate of capacitance change	Within ±5.0%	Within ±20.0%	
	Dissipation factor	Must satisfy initial specified value.		
	Insulation resistance	10,000 MΩ or larger, or 500 ΩF or larger, whichever is smaller		
	Withstanding voltage	There must be no irregularities.		
Temperature and soldering cycling	Appearance	There must be no noticeable irregularities.		Based on paragraph 9.18 Number of cycles. Temperature cycles : 5 cycles Soldering cycles : 2 cycles Capacitance measured after 48±4 hrs.
	Rate of capacitance change	Within ±10.0%	Within ±30.0%	
	Dissipation factor	5.0% or less	7.5% or less	
	Insulation resistance	1,000MΩ or larger, or 50 ΩF or larger, whichever is smaller		
	Withstanding voltage	There must be no irregularities.		
Humidity load test	Appearance	There must be no noticeable irregularities.		Based on paragraph 9.9 Test temperature : 40±2℃ Relative humidity : 90~95% Applied voltage : rated voltage Test time : 500 to 524 hrs. Capacitance measured after 48±4 hrs.
	Rate of capacitance change	Within ±10.0%	Within ±30.0%	
	Dissipation factor	5.0% or less	7.5% or less	
	Insulation resistance	500MΩ or larger, or 25 ΩF or larger, whichever is smaller		
High-temperature load test	Appearance	There must be no noticeable irregularities.		Based on paragraph 9.10 Test temperature : Max. operating temp. Applied voltage : rated voltage x 200% Test time : 1,000 to 1,048 hrs. Capacitance measured after 48±4 hrs.
	Rate of capacitance change	Within ±10.0%	Within ±30.0%	
	Dissipation factor	5.0% or less	7.5% or less	
	Insulation resistance	1,000MΩ or larger, or 50 ΩF or larger, whichever is smaller		

●Packaging

(Units : mm)

Box	Taping
	

●Electrical characteristics

Rate of capacitance change vs. temperature characteristics

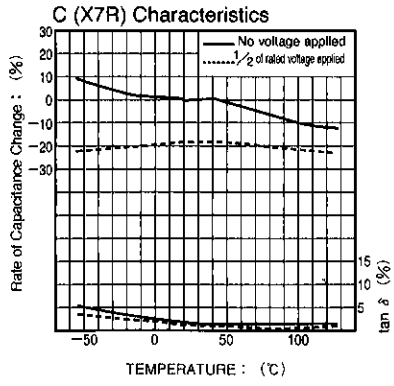


Fig.1

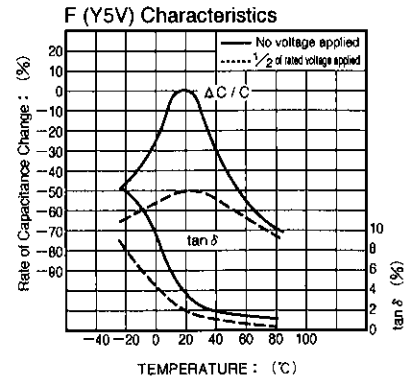


Fig.2

Rate of capacitance change vs. DC voltage characteristics

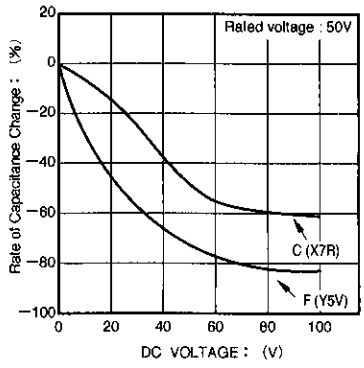


Fig.3

Impedance vs. frequency characteristics

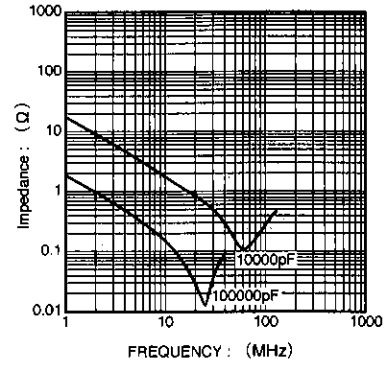


Fig.4

●Electrical characteristics

Temperature cycling test

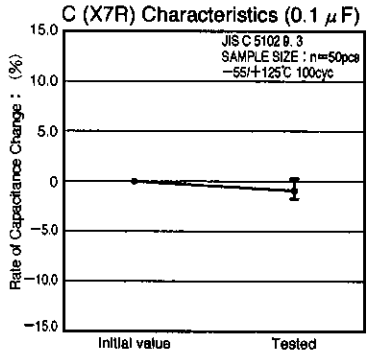


Fig.5 Rate of capacitance change

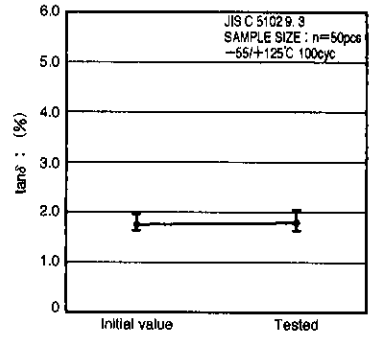


Fig.6 Dissipation factor

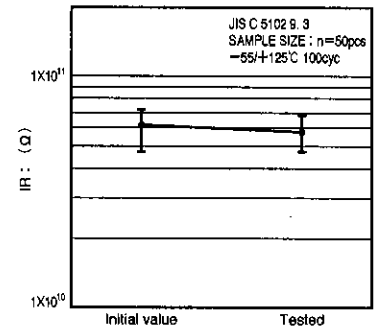


Fig.7 Insulation resistance

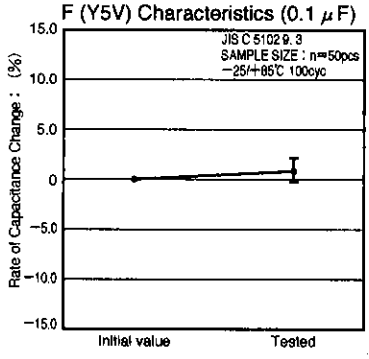


Fig.8 Rate of capacitance change

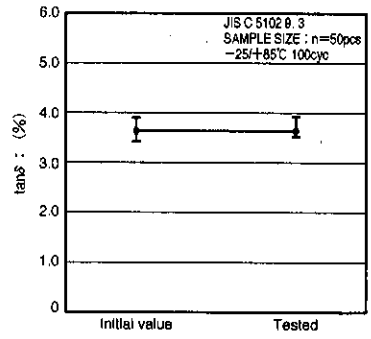


Fig.9 Dissipation factor

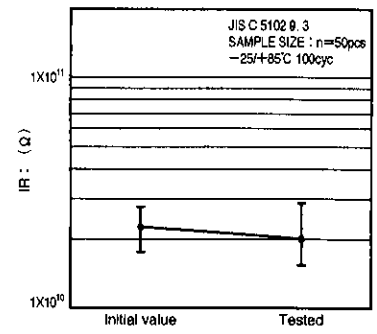


Fig.10 Insulation resistance

High-temperature load test

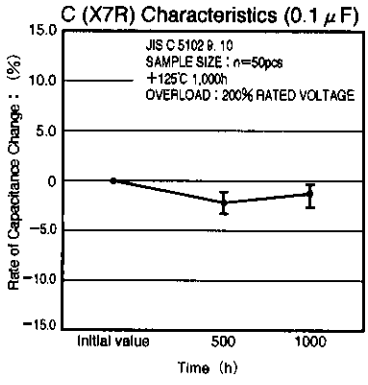


Fig.11 Rate of capacitance change

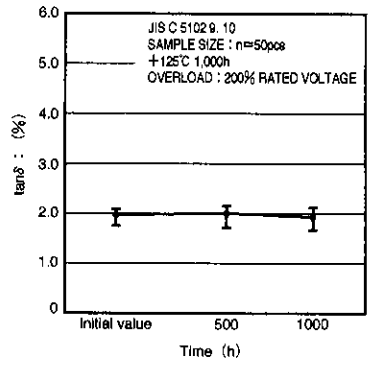


Fig.12 Dissipation factor

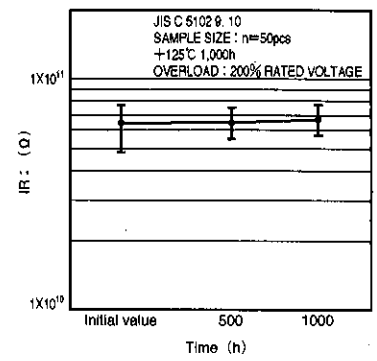


Fig.13 Insulation resistance

●Electrical characteristics

High-temperature load test

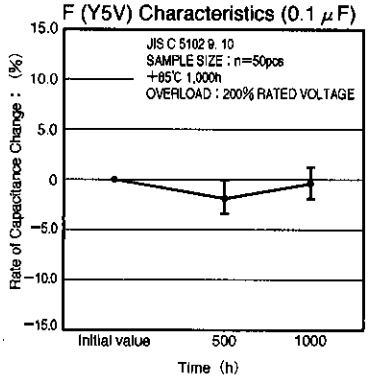


Fig.14 Rate of capacitance change

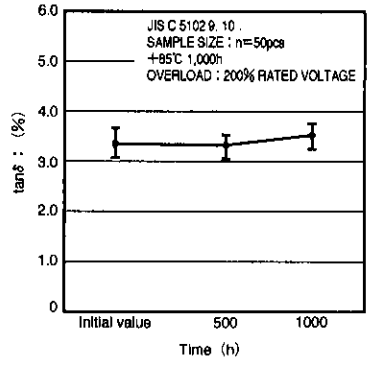


Fig.15 Dissipation factor

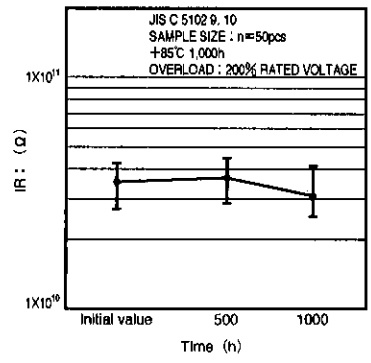


Fig.16 Insulation resistance

Humidity load test

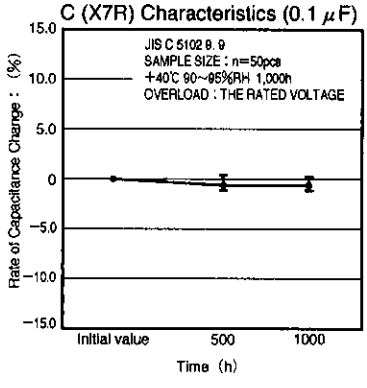


Fig.17 Rate of capacitance change

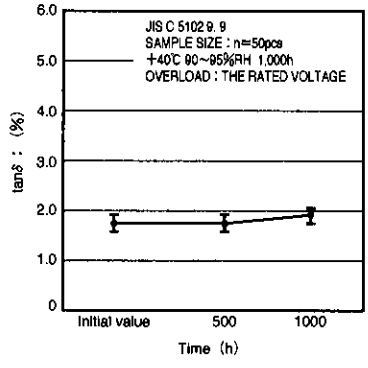


Fig.18 Dissipation factor

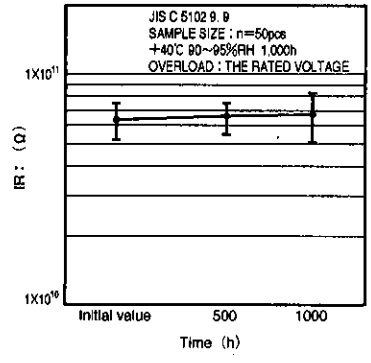


Fig.19 Insulation resistance

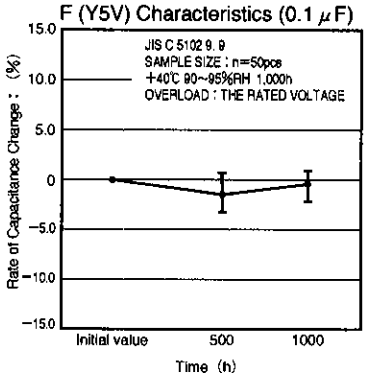


Fig.20 Rate of capacitance change

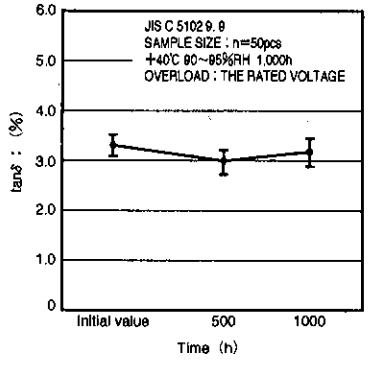


Fig.21 Dissipation factor

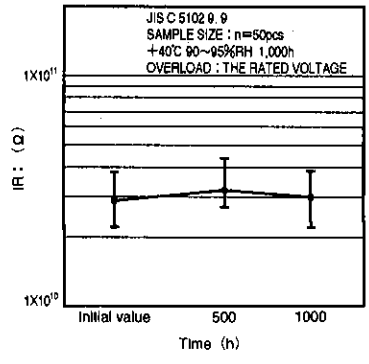


Fig.22 Insulation resistance

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