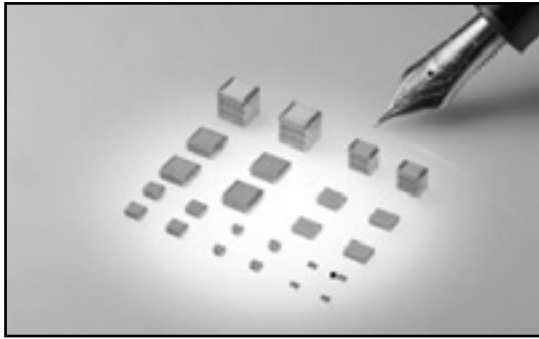


# MULTILAYER CERAMIC CAPACITORS



## MULTILAYER CERAMIC CAPACITORS

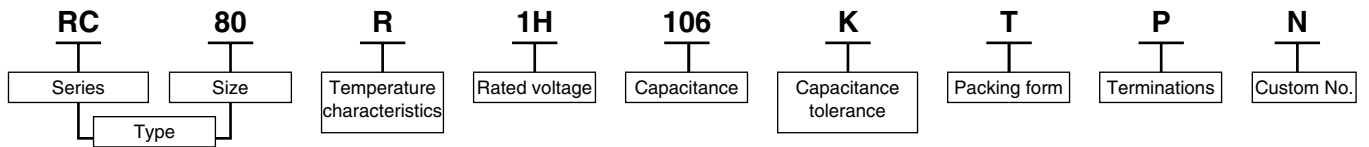
MULTILAYER CERAMIC CAPACITORS are made from extremely pure, fine and uniform synthesized materials. These multilayer ceramic capacitors have several significant attributes, such as high capacitance values in small sizes and excellent high frequency characteristics. In addition, they can be mounted with standard surface mount equipment. Our fully integrated manufacturing and total quality control systems ensure unprecedented high standards of various characteristics.

## STACKED TYPE CERAMIC CAPACITORS

STACKED TYPE CERAMIC CAPACITORS consist of a stack of our KC or VC series capacitors. This stacked capacitor takes up the same board space as one standard chip capacitor, making it an ideal replacement for Aluminum electrolytic capacitors in applications such as compact, high frequency switching power supply.



## Part Number System



## Temperature Characteristics

Class	Temperature characteristics	EIA symbol	Capacitance change	Temperature range	Related series
1	CG	COG	0±30ppm/°C	-55~+125°C	XC series
2	R	X7R	±15%		RC,VC,VH,XC,TC,RS,VS series
	E	Y5U(Z5U)	+20~-55%	-25~+85°C	KC,VC,KS,VS series

## Rated Voltage

Symbol	IC	IE	IH	2A	2E	2V	2J	3A	3C	3D	3F	3H
Rated Voltage (VDC)	16	25	50	100	250	350	630	1000	1600	2000	3000	5000

## Capacitance

Capacity constant	0R1	010	100	101	102	103	104	105	106	107
Capacitance	0.1 (pF)	1 (pF)	10 (pF)	100 (pF)	1000 (pF)	0.01 (μF)	0.1 (μF)	1 (μF)	10 (μF)	100 (μF)

## Packing Form

Symbol	T	B
Packing form	Taping ( 178mm)( 330mm)	Bulk (Sample)

## Capacitance Tolerance

Class	Temperature characteristics	Capacitance tolerance
1	CG	J (±5%)
		K (±10%)
2	R	K (±10%)
		M (±20%)
	E	M (±20%)

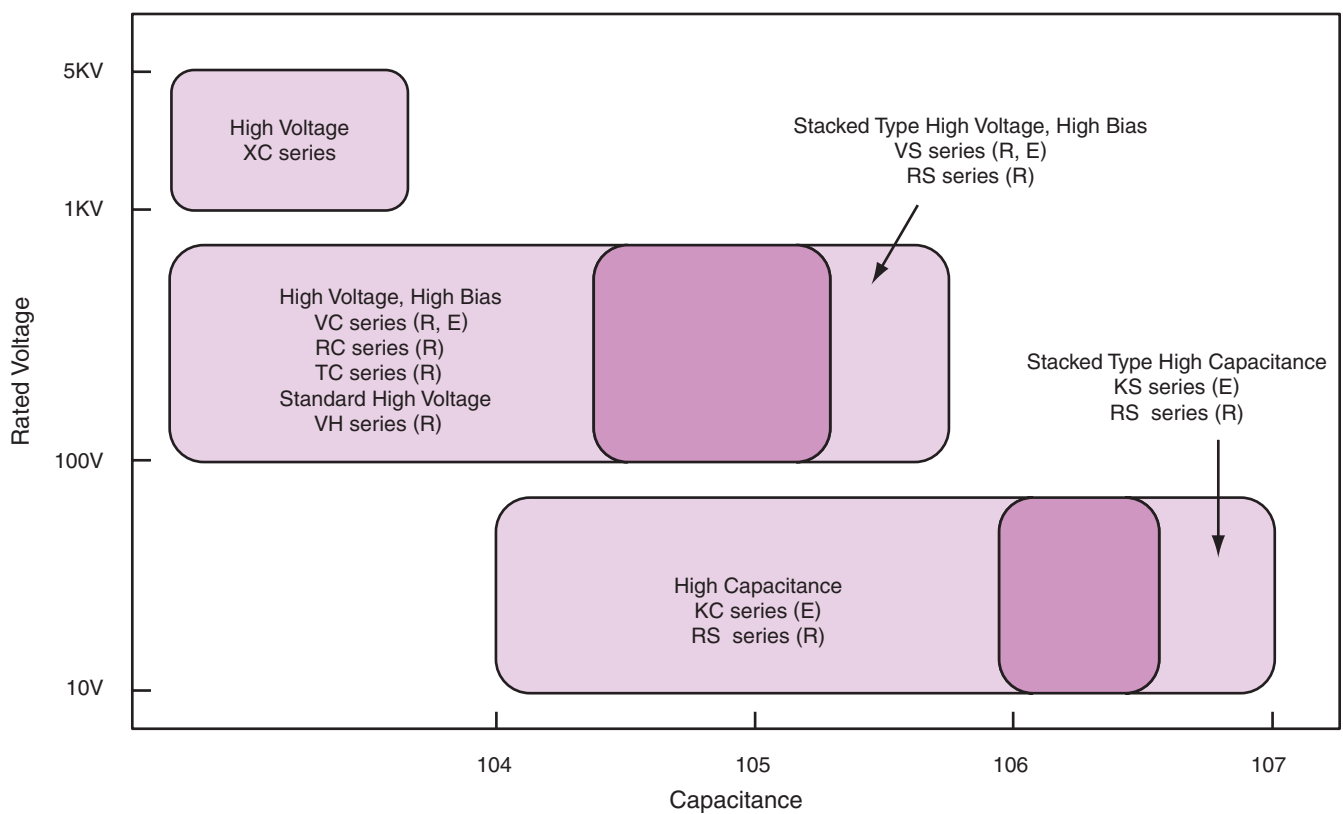
# MULTILAYER CERAMIC CAPACITORS

## ■ Terminations

Symbol	P	R	S
Terminations	Ni-barrier	Ag/Pd	High reliability Ni-barrier
Soldering	Flow/Reflow	Reflow	Flow/Reflow

- \* Highly reliable Ni-barrier Terminations show excellent [Flexion] and [Temperature cycling] .
- \* The P and S terminations are Sn-plated.
- \* 40, 70, 80 types are available for reflow soldering only.

## ■ Map of multilayer ceramic capacitors



# MULTILAYER CERAMIC CAPACITORS

## List of multilayer ceramic capacitors

Series (Pages)	Features	Applications
<b>RC Series (General type)</b> ( P18 ~ 19 )	1) High capacitance in small size. 2) High withstanding voltage.	Power supply snubber circuit. digital circuit whole
<b>KC Series (High capacitance)</b> ( P20 ~ 21 )	Using our unique materials that offer the following exceptional properties, the KC series capacitors make excellent replacements for tantalum electrolytic capacitors. 1) Larger capacitance values in smaller sizes compared to conventional materials. 2) Very little drop in capacitance value when a DC voltage bias is applied. 3) Highly reliable termination with excellent flexion and temperature cycling is available.	DC brushless motor driving circuit. DC/DC converter smoothing circuit. Modem coupling circuit. Consumer electronics and industrial electronic equipment, including LCD control circuit.
<b>VC Series (High voltage high bias type)</b> ( P22 ~ 23 )	Exhibiting the following exceptional properties, the VC series capacitors make excellent replacements for film capacitors. 1) The piezo-electric characteristics are small. 2) Very little drop in capacitance value when a DC voltage bias is applied. 3) Can reduce design size by replacing larger film type capacitors.	Stroboscope circuit Power supply, SSR snubber circuit. Modem ring detector circuit High voltage circuits for PDP, CRTs and in ultrasonic medical equipment.
<b>XC Series (High voltage)</b> ( P24 ~ 25 )	1) High voltage (rated voltage~3kV) 2) Small dielectric loss.	LCD back light, snubber circuit.
<b>VH Series (Medium/high voltage high bias type)</b> ( P26 ~ 27 )	1) Low tan δ 2) Very little drop in capacitance value when a DC bias is applied.	Trigger for strobe circuit. Snubber of switching power supply.
<b>RS Series (High voltage stacked type capacitor)</b> ( P28 ~ 29 ) <b>KS Series (High capacitance stacked type capacitor)</b> <b>VS Series (High voltage stacked type capacitor)</b> ( P30 ~ 31 )	Offering the following exceptional properties, KS • VS • RS stacked capacitors make excellent replacements for aluminum electrolytic capacitors. 1) Low impedance 2) Allowable ripple current is large 3) Long life 4) Non-polar 5) Surface mountable 6) Excellent temperature cycling	Smoothing circuit, snubber circuit of compact switching power supply.
<b>TC Series (For strobe circuit only)</b> ( P32 )	Low profile capacitor with superior emission characteristics 1) Superior in DC bias characteristics. 2) Low dielectric loss 3) Smaller and shorter than previous models	Trigger for strobe circuit.

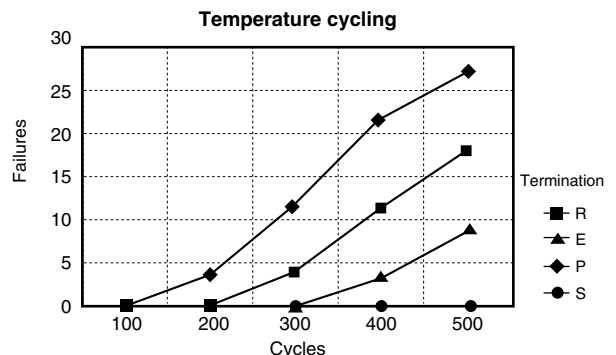
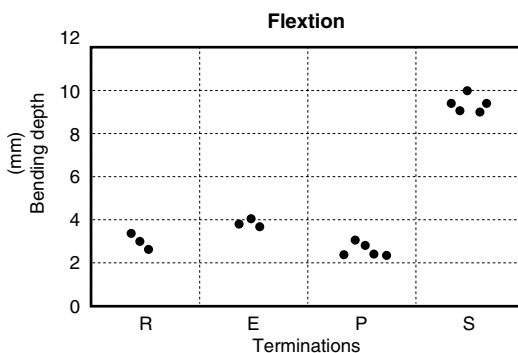
## Features of high reliability "S" terminations

### Features

- Products with highly reliable terminations have the excellent features shown below. They are suitable for circuits that require high reliability.
- 1) Excellent temperature cycle
- 2) Large critical flexion

### Applications

- Suitable for circuits that need high temperature-resistant cycles and circuits in which Aluminum substrates are used.



CERAMIC CAPACITORS