

# CERAMIC TRIMMER SMD CAPACITOR



## ●Applications

This STC series is SMD type, miniature size ceramic trimmer capacitor, which are widely used for electronic communication and electronic applied equipment.

## ●Part Number

The part number consists of capacitor category, outer diameter of ceramic dielectric, temperature characteristics, maximum nominal capacitance and package type,

Example :

$\frac{\text{STC}}{\text{(a)}}$        $\frac{3}{\text{(b)}}$        $\frac{100}{\text{(c)}}$        $\frac{T}{\text{(d)}}$       ( 100 is  $10 \times 100 = 10 \text{ PF}$  )

(a) **Category** : Ceramic Trimmer Capacitor

(b) **Outer size** : SMD Type 3 mm (3.2(W) × 4.5(L) × 1.7mm(H))

(c) **Maximum nominal capacitance** : PF unit in 3 digits (The 1st and 2nd figure indicate the significant figure, and the 3rd indicate the number of naughts.)

(d) **Package type** : T (Taping package)

●**Rated Voltage** : 100 VDC

●**Temperature Range**: -25℃ to +85℃

●**Test Circumstance**: Testing shall be done at temperature 5~35℃, humidity 45~85%, under such circumstance, the standard testing status is at temperature of  $20 \pm 2^\circ\text{C}$ , humidity of  $65 \pm 5\%$  [ ordinary temperature (5~35℃), ordinary humidity (relative humidity 45~85%) and ordinary atmospheric pressure (860~1,060 hPa) ]

## ●Parts And Material

Part Name	Material	Plating
Rotor Ceramic	Ceramic	Ag Metallized
Stator	Ceramic	Ag plate
Stator terminal	Brass	Ag plate
Shaft	Copper	Ag plate

●**Dimensions** : Please refer to the attached drawings

# STC3

## ELECTRICAL CHARACTERISTICS

### a) Capacitance drift after adjustment

Rotation shall be made for 5 cycles for  $180^\circ$  at a rate of 20r/min. The capacitance value immediately changed after the shaft is stopped at the position of the maximum capacitance value, and after 24 hours, the measured value is 5pF,  $10\text{pF} \pm 1.5\%$  and  $30\text{pF} \pm 2\%$

### b) Withstanding voltage

Applied 220VDC (1 less than 5mA) for 5 seconds between the terminals, no defect was found.

### c) Insulation resistance

The test was made under almost at maximum capacitance setting, shall be not less than  $10,000\text{M}\Omega$ , when measured at the 100VDC applied between terminals for 1 minute.

### d) Q (Quality Factor)

When measured at  $20^\circ\text{C}$ , 0.5V to 5V, 1MHz and maximum capacitance, The Q factor shall be not less than specified.

### e) Temperature Coefficient

Capacitance change measurement at 80 to 90 percent of maximum rated capacitance, shall be made at temperature specified in Table 3 and frequency at 1MHz. Each measurement shall be made after the capacitor has reached thermal stability. (Thermal stability has been reached when no further changed in capacitance is obtained between two successive measurements taken at 5 minutes intervals)

TABLE 1

Step	1	2	3	4	5
Temperature ( $^\circ\text{C}$ )	$20 \pm 2$	$-25 \pm 2$	$20 \pm 2$	$85 \pm 2$	$20 \pm 2$

The capacitance change shall be within the limits that specified in Table 1.

$$\text{TC}(\text{PPM}/^\circ\text{C}) = \frac{(C2 - C1) \cdot 10^6}{(T2 - T1) \cdot C1}$$

C1 : Initial capacitance value in PF at step 3

T1 :  $20^\circ\text{C}$

C2 : Capacitance in specified temperature in PF

T2 : Test temperature in  $^\circ\text{C}$  at (step 2 or 4)

### f) Temperature Capacitance drift

Calculation of temperature capacitance drift shall be based on the maximum deviation between two of three times of measurements for capacitance at  $20^\circ\text{C}$  (see table 1) The temperature capacitance drift shall be within  $\pm 3\%$

## MECHANICAL CHARACTERISTICS

### Torque

The torque test should be done by rotating the rotor through one full turn within 15~100gf.cm. Please noted that it might cause the torque will decrease against the rotation increase.

### Vibration

The maximum capacitance was set at 80 to 90% , however it shall be subjected to vibration test at 1.5mm amplitude, with frequency range from 10 to 55 Hz ,and then return to 10 Hz for 1 minute applied for 2 hours in each of three mutually perpendicular planes. (total 6 hours) The capacitor shall be rigidly mounted by their normal mounting means .The vibration capacitance shall be within  $\pm 0.25\text{pF}$  or  $\pm 2\%$  ( whichever is greater )

### Solder ability

When test under the condition of table 2, the dipped of the terminal shall be at least 75% wetted with new solder coating..

TABLE 2

Item	Condition
Flux	Rosin (25%) + Methanol
Solder Temperature	$260 \pm 5^\circ\text{C}$
Dipping duration	$3 \pm 0.5$ seconds

## SPECIAL TEST

### Moisture resistance

The capacitor set at 80 to 90 percent of maximum rated capacitance, shall be kept at  $40 \pm 20^\circ\text{C}$  with 90 to 95 percent relative humidity for  $96 \pm 4$  hours. After removed from the humidity chamber, the capacitor shall be kept for 24 hours at the ambient conditions specified for the initial measurements,the moisture resistance shall be within  $\pm 5\%$ .

### Rotational life

The capacitor set at the maximum capacitance position, its rotor shall be rotated for 180 clockwise,return to original position, and rotate  $180^\circ$  counter clockwise, and return to the original position,this counted as 1 cycle. By changing the direction of rotation successively, the rotor shall be rotated continuously for 20 cycles. Measurement shall be made at the maximum capacitance position. After test , the changed capacitance shall be within  $\pm 0.5\text{pF}$  or  $\pm 12\%$  ( whichever is greater )

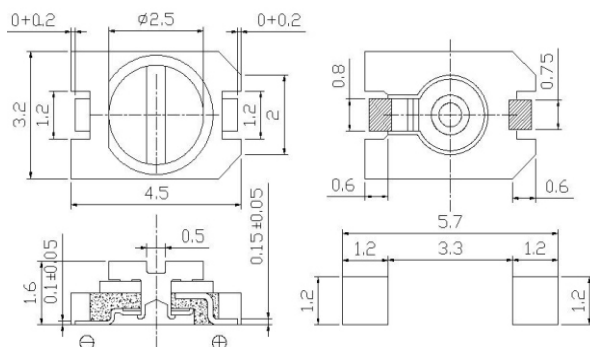
### Lifetime (High Temperature Loading)

The capacitor set at 80 to 90 percent of maximum rated capacitance, shall be subjected to  $96 \pm 4$  hours at  $85 \pm 3^\circ\text{C}$  with 200 percent loading of rated voltage. After life test, the changed capacitance shall be within  $\pm 0.5\text{pF}$  or  $\pm 5\%$  ( whichever is greater ) .

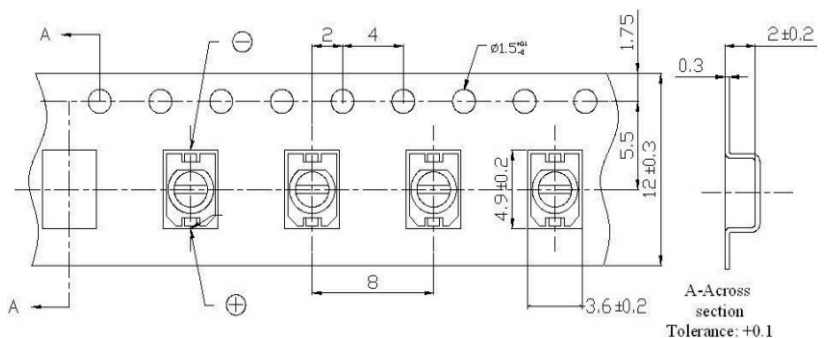
Part No	Capacitance (PF)		Q (1MHz, Cmax)	Temperature (1MHz, Coefficient( ppm / °C )	Remark
	Minimum Max	Maximum +50% -0%			
STC3030	1.7	3.0	500min	NPO $\pm 300$	
STC3060	2.5	6.0	500min	NPO $\pm 300$	
STC3100	3.5	10.0	500min	N 750 $\pm 300$	
STC3200	5.5	20.0	300min	N 1200 $\pm 500$	
STC3300	7.5	30.0	300min	N 1800 $\pm 600$	

## PACKAGING

### Product Dimension



### Taping Package Dimension



### Wheel Package Dimension

