

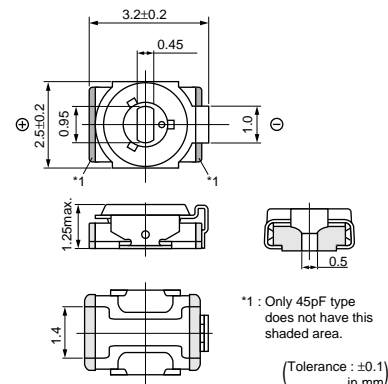
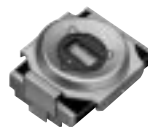
# Ceramic Trimmer Capacitors



## TZY2 Series

### ■ Features

1. Small and thin size available-just 2.5(W)x3.2(L)x1.25(H)mm.
2. New shape of cover can improve the flux invasion compared with current products.
3. Improvement of the adhesion between rotor and stator leads superior stability.
4. Unique construction with no plastic material provides superior soldering heat resistance to maintain excellent characteristic performance after reflow soldering.



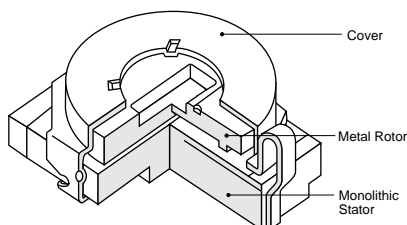
### ■ Applications

- Crystal oscillators
- Crystal filters
- Pagers
- Cordless telephones
- PHS
- Hand radios
- Cellular telephones
- Watches
- Remote keyless entry systems
- W-LAN
- Radars detectors
- Compact radios
- DVD
- Burglarproof devices
- Headphone stereos

Part Number	Cmin. (pF)	Cmax. (pF)	TC	Q	Rated Voltage	Withstanding Voltage
TZY2Z010A001	0.5 max.	1.0 +100/-0%	NP0±300ppm/°C	200min. at 200MHz, Cmax.	25Vdc	55Vdc
TZY2Z2R5A001	0.65 max.	2.5 +100/-0%	NP0±300ppm/°C	200min. at 200MHz, Cmax.	25Vdc	55Vdc
TZY2Z030A001	1.5 max.	3.0 +100/-0%	NP0±300ppm/°C	300min. at 1MHz, Cmax.	25Vdc	55Vdc
TZY2Z060A001	2.5 max.	6.0 +100/-0%	NP0±300ppm/°C	500min. at 1MHz, Cmax.	25Vdc	55Vdc
TZY2Z100A001	3.0 max.	10.0 +100/-0%	NP0±300ppm/°C	500min. at 1MHz, Cmax.	25Vdc	55Vdc
TZY2R200A001	4.5 max.	20.0 +100/-0%	N750±500ppm/°C	500min. at 1MHz, Cmax.	25Vdc	55Vdc
TZY2R250A001	5.5 max.	25.0 +100/-0%	N750±500ppm/°C	300min. at 1MHz, Cmax.	25Vdc	55Vdc
TZY2K450A001	8.0 max.	45.0 +100/-0%	N1000±500ppm/°C	300min. at 1MHz, Cmax.	25Vdc	55Vdc

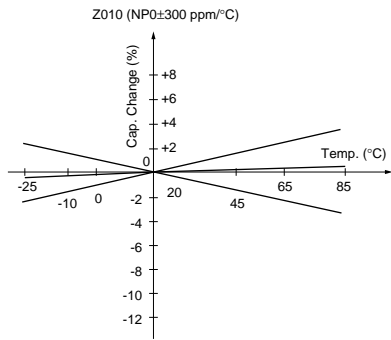
Insulation Resistance : 10000M ohm min. Torque : 0.5~5.0mNm Operating Temperature Range : -25~+85°C

### ■ Construction

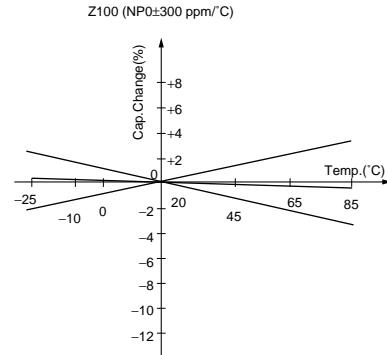


## Temperature Characteristics

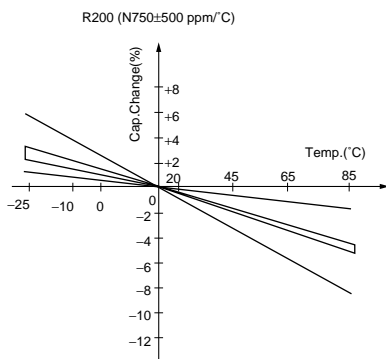
TZY2Z010



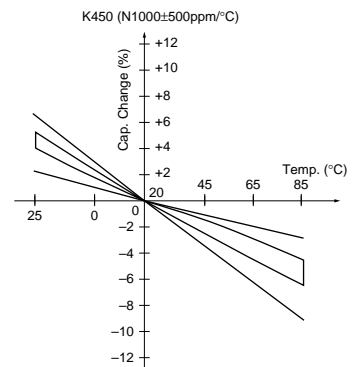
TZY2Z100



TZY2R200

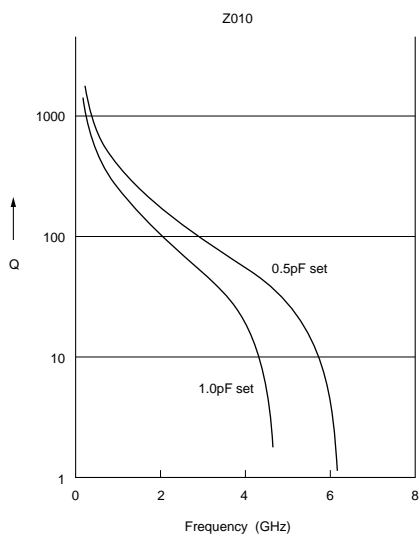


TZY2K450

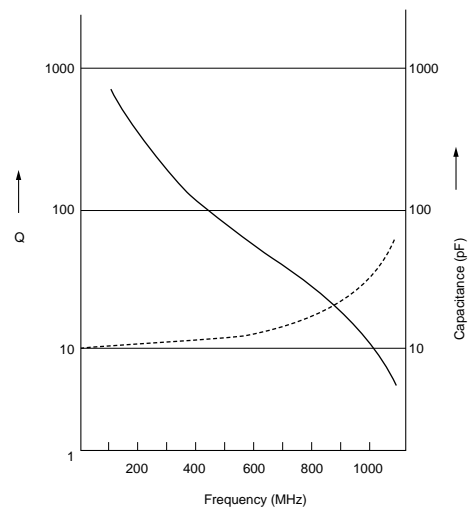


## Frequency Characteristics

TZY2Z010



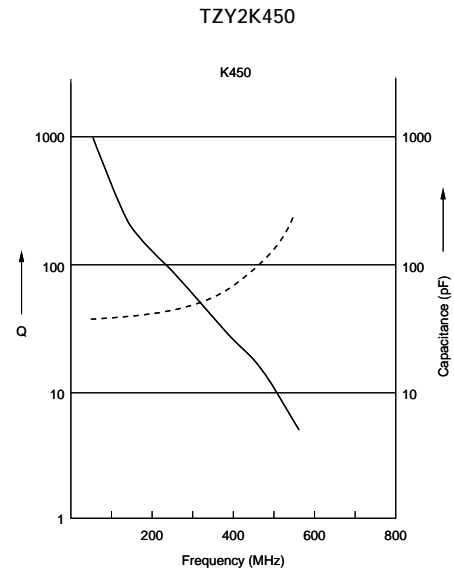
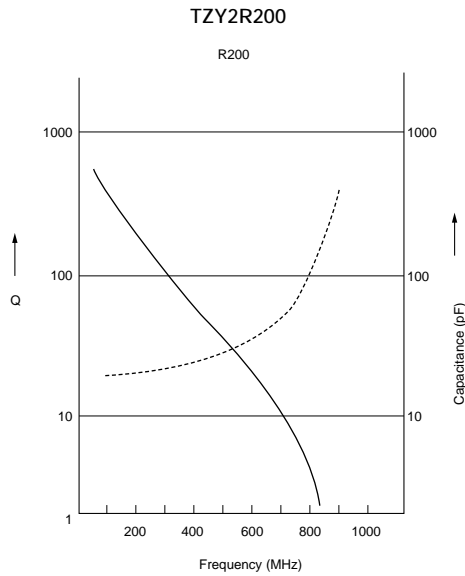
TZY2Z100



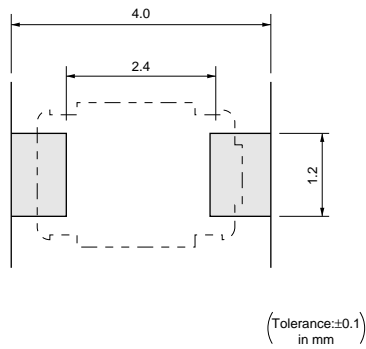
Continued on the following page. ↗

Continued from the preceding page.

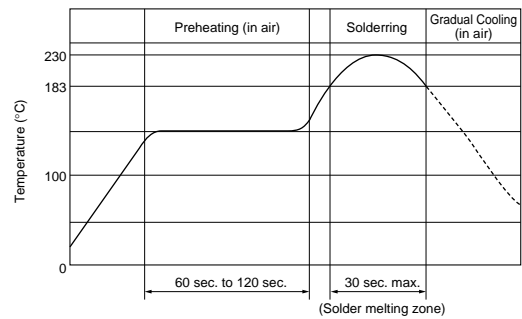
### Frequency Characteristics



### Land Pattern



### Temperature Profile

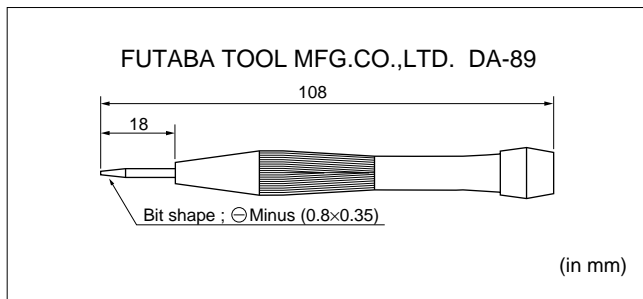


### Screwdriver and Screwdriver Bit

Please use the following recommended screwdriver.  
You can order this driver with below part number.  
Though you can also adjust the capacitance value by commercial products, please use one which has the same head size as the below driver.

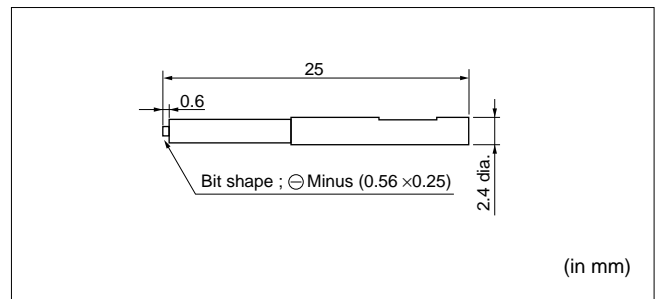
Screwdriver for Manual Adjustment

Murata Part No. : **KMDR060**



Screwdriver Bit for Automatic Adjustment

Murata Part No. : **KMBT060**



### ■ Notice (Storage and operating condition)

1. Do not use the trimmer capacitor under atmosphere of RTV silicone rubber (Room Temperature Vulcanizing Silicone Rubber) except Acetone liberating silicone sealant.
2. Before using trimmer capacitor, please store under the condition of -10 to +40 C. and 30 to 85%RH.
3. Do not store in or near corrosive gasses.
4. Use within 6 months of delivery.
5. Open the package just before using.
6. Prior to storing previously opened packages, the packaging should be heat-sealed. Avoid using rubber bands for repackage.
7. Do not store under direct sunlight.

### ■ Notice (Soldering)

1. Soldering
  - (1) TZY2 series can be soldered by reflow soldering method and soldering iron. Do not use flow soldering method (dipping).
  - (2) Standard soldering condition
    - (a) Reflow soldering : Refer to the standard temperature profile.
    - (b) Soldering iron :
      - > Temperature of tip 260±10 C.
      - > Soldering time 3 sec. max.
      - > Diameter 1mm max.
      - > Wattage of iron 20W max.

Before using other soldering conditions than those listed above, please consult with Murata factory representative prior to using. If the soldering conditions are not suitable, e.g., excessive time and/or excessive temperature, the trimmer capacitor may deviate from the specified characteristics.

  - (3) The amount of solder is critical.
  - (4) The thickness of solder paste should be printed from 120micro m to 170micro m and the dimension of land pattern should be used Murata's standard land pattern at reflow soldering.

Insufficient amounts of solder can lead to insufficient soldering strength on PCB.  
Excessive amounts of solder may cause the bridging between the terminals or the contact failure due to flux wicking up.
  - (5) When using soldering iron, the diameter of the string solder shall be less than 0.5mm. The string solder shall be applied to the lower part of the terminal only and do not apply flux

8. Do not use the trimmer capacitor under the conditions listed below.
  - (1) Corrosive gasses atmosphere  
(Ex. Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, etc.)
  - (2) In liquid (Ex. water, oil, medical liquid, organic solvent, etc.)
  - (3) Dusty / dirty atmosphere
  - (4) Direct sunlight
  - (5) Static voltage nor electric/magnetic fields
  - (6) Direct sea breeze
  - (7) Other variations of the above

except the terminals. Excessive amounts of solder and/or applying solder to the upper part of the terminal may cause fixed metal rotor or the contact failure due to flux invasion into the movable part and/or the contact point. The soldering iron should not come in contact with the monolithic stator of the trimmer capacitor. If such contact does occur, the trimmer capacitor may be damaged.

- (6) Our recommendable chlorine content of solder is as follows.
    - (a) Solder paste : 0.2wt% max.
    - (b) String solder : 0.5wt% max.
  - (7) Do not use water-soluble flux (for water cleaning). To prevent the deterioration of trimmer capacitor characteristics, apply flux only to terminals.
2. Mounting
    - (1) Do not apply excessive force (preferable 5.0N (Ref.; 500gf)max.), when the trimmer capacitor is mounted on the PCB.
    - (2) Do not warp and/or bend PCB to prevent trimmer capacitor from breakage.
    - (3) Use the suitable dimension of the pick-up nozzle. (1.8mm external diameter and 1.3mm bore diameter.)
  3. Cleaning  
Can not be cleaned because of open construction.
  4. Other  
Note the polarity of the trimmer capacitor to minimize influence by stray capacitance.  
(Refer to the dimensions concerning the polarity.)

### ■ Notice (Handling)

1. Use suitable screwdrivers that fit comfortably in driver slot.
  - (1) Recommended screwdriver for manual adjustment  
FUTABA : DA-89  
(Murata P/N is KMDR060)
  - (2) Recommended screwdriver bit for automatic adjustment  
MURATA : KMBT060
2. When adjusting with a screwdriver, do not apply

- excessive force(preferable 1.0N(Ref; 100gf) max.) to minimize capacitance drift. If excessive force applied to the screwdriver slot, it may cause deformation of the products.
3. Do not apply adhesive, lock paints, or any other substances to the trimmer capacitor to secure the rotor position. They may cause corrosion or electrical contact problems.

### ■ Notice (Other)

1. Before using trimmer capacitor, please test after assembly in your particular mass production system.
2. We have an application manual for trimmer capacitor. (Only for chip type) If you need it, please feel free to contact us.