Ceramic Trimmer Capacitors

TZC3 Series

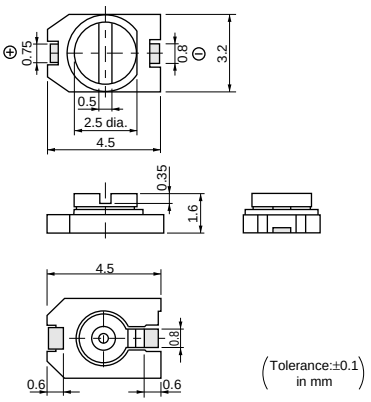
■ Features

1. Small size with external dimension of 3.2(W)x4.5(L)x1.6(H)mm (Cross slot type : 1.7(H)mm)
2. Color coded stator permits easy identification of capacitance and reduces mounting errors.
3. Can be adjusted with conventional adjustment tools having a thickness of 0.5mm.
4. Available for cross slot type to provide better adjustability.
5. Providing mechanism to prevent air leak offers better mountability with automatic mounter. (Cross slot type)
6. Designed for automatic placement in surface mount applications.
7. Heat resistant resin withstands reflow soldering temperatures.

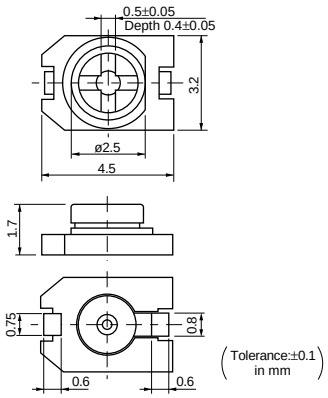
■ Applications

•Compact radios •Headphone stereos
•Pagers •Portable radio equipments
•Hybrid ICs •Cellular telephones
•Cordless telephones •Remote keyless entry systems

Standard Type



Cross Slot Type

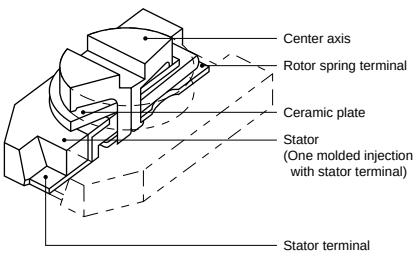


Part Number	Cmin. (pF)	Cmax. (pF)	TC	Q	Rated Voltage	Withstanding Voltage	Stator/Case Color
TZC3Z030A□□□	1.4 max.	3.0 +50/-0%	NP0±300ppm/°C	300min. at 1MHz, Cmax.	100Vdc	220Vdc	Brown
TZC3Z060A□□□	2.0 max.	6.0 +50/-0%	NP0±300ppm/°C	500min. at 1MHz, Cmax.	100Vdc	220Vdc	Blue
TZC3R100A□□□	3.0 max.	10.0 +50/-0%	N750±300ppm/°C	500min. at 1MHz, Cmax.	100Vdc	220Vdc	White
TZC3P200A□□□	5.0 max.	20.0 +50/-0%	N1200±500ppm/°C	300min. at 1MHz, Cmax.	100Vdc	220Vdc	Red
TZC3P300A□□□	6.5 max.	30.0 +50/-0%	N1200±500ppm/°C	300min. at 1MHz, Cmax.	100Vdc	220Vdc	Green

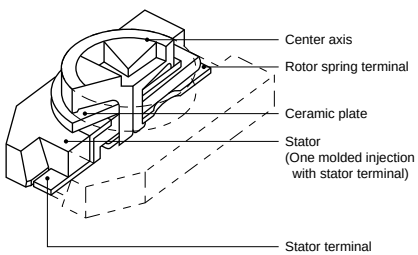
Insulation Resistance : 10000M ohm min. Torque : 1.5~10.0mNm Operating Temperature Range : -25~+85°C
The last three digits show the slot type. 110:standard(minus) type, 310:plus type.

■ Construction

Standard Type



Cross Slot Type

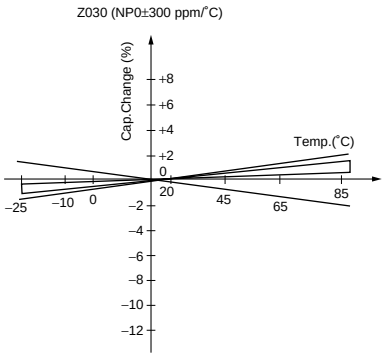


Continued on the following page.

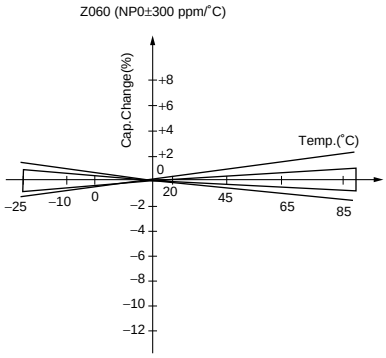
Continued from the preceding page.

■ Temperature Characteristics

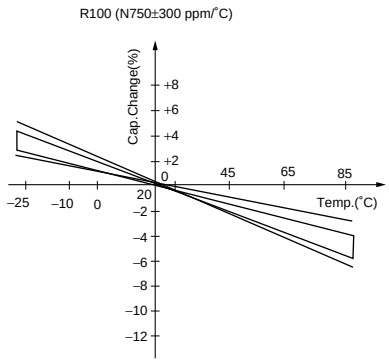
TZC3Z030



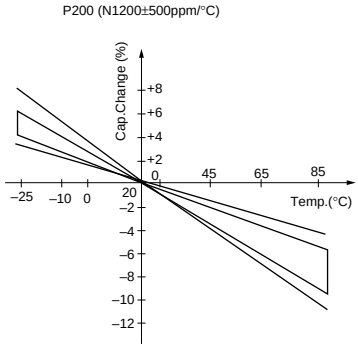
TZC3Z060



TZC3R100

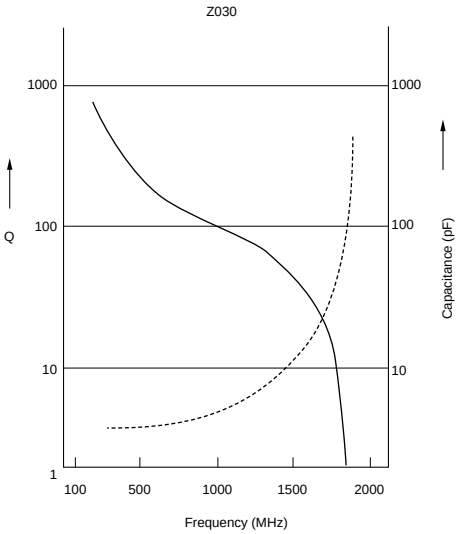


TZC3P200

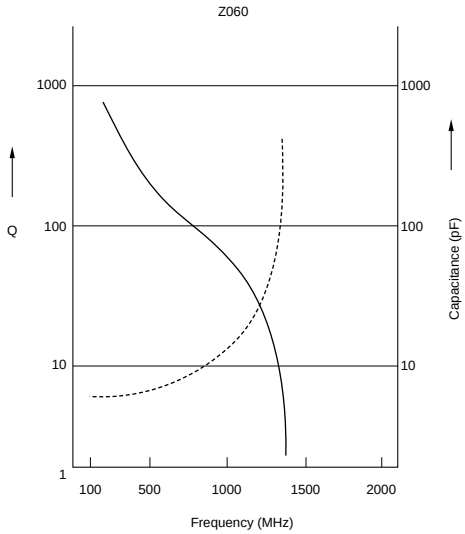


■ Frequency Characteristics

TZC3Z030



TZC3Z060

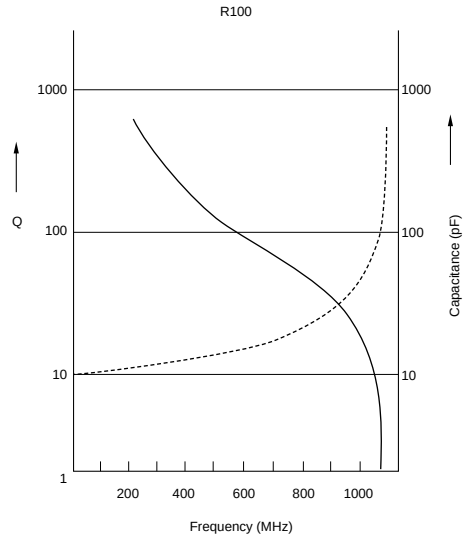


Continued on the following page.

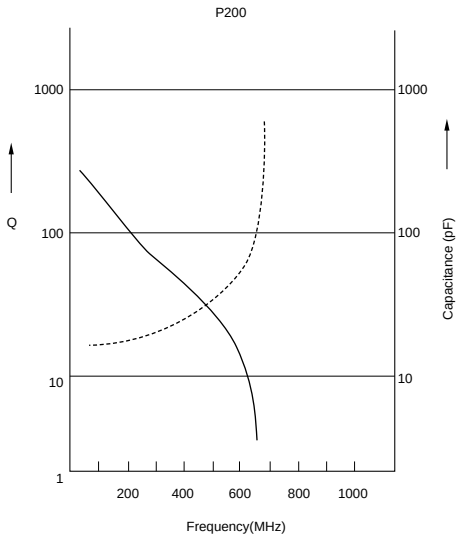
Continued from the preceding page.

■ Frequency Characteristics

TZC3R100

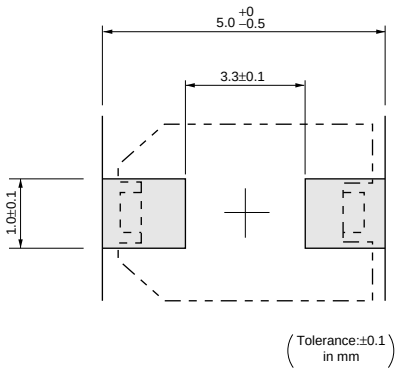


TZC3P200

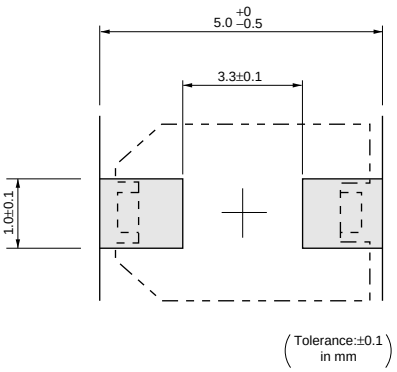


■ Land Pattern

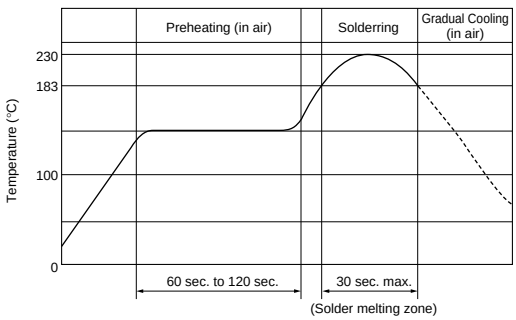
Standard Type



Cross Slot Type



■ Temperature Profile



Continued on the following page.

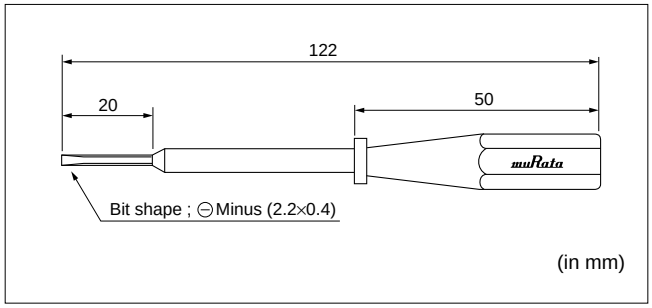
5

Continued from the preceding page.

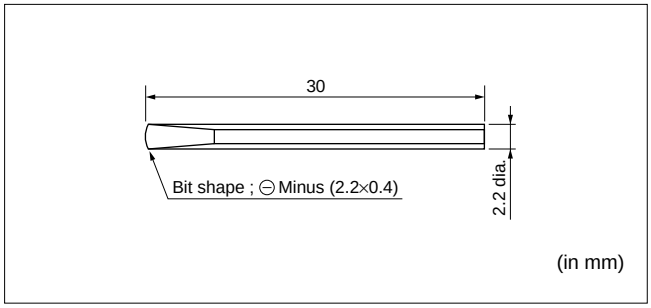
■ Standard Type Screwdriver and Screwdriver Bit

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. : **KMDR010**



Screwdriver Bit for Automatic Adjustment
Murata Part No. : **KMBT010**

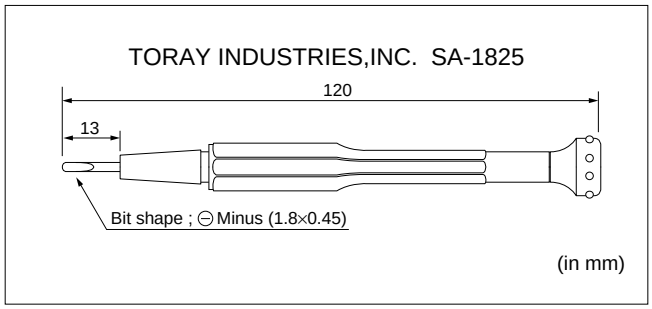


■ Cross Slot Type Screwdriver and Screwdriver Bit

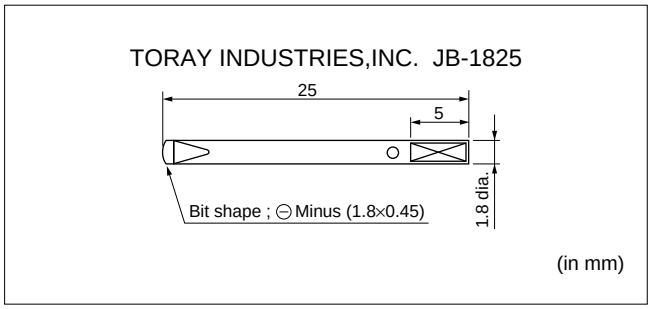
Please use the following recommended screwdriver.
You can order this driver with below part number.
Though you can also adjust the capacitance value by commercial products, please use one which has the same head size as the below driver.

5

Screwdriver for Manual Adjustment
Murata Part No. : **KMDR040**



Screwdriver Bit for Automatic Adjustment
Murata Part No. : **KMBT040**



■ 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 deliverly.
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.
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 oxie 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

■ Notice (Soldering)

1. Soldering
   (1) TZC3 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:

Continued on the following page.

Continued from the preceding page.

> 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 150micro m to 200micro 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 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 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.

(8) When soldering the TZC3 series, the solder should not flow into the staking part of the substrate. If such flow does occur, driver slot rotation will be damaged.

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. (2.5mm external diameter and 1.5mm 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
Standard type --> MURATA : KMDR010
Cross slot type --> TORAY : SA-1825
(Murata P/N is KMDR040)

(2) Recommended screwdriver bit for automatic adjustment
Standard type --> MURATA : KMBT010
Cross slot type --> TORAY : JB-1825
(Murata P/N is KMBT040)

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.