

| Document Receipt Acknowledgement |
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| Date: |
| Section: |
| Name: |



DM-TA17-002-A2127
Date; Jun.,26,2018

Attention:

DIGI-KEY/THIEF RIVER FALLS/MN/HQ

Product Withdrawal Notice

Ceramic Trimmer Capacitor TZ Series

Dear Valued Customer,

Thank you very much for your great and continuous support for business with Murata. This is the official notification that one of our products will be discontinued as detailed below. Please review documents and kindly indicate your feedback for this Notice in writing by due date. Also, please place Last Time Buy Order by the Last Time Order Due Date as needed. Your understanding and support are highly appreciated.

1. Product Type, Customer/Murata/Alternative Part Numbers:

Product Type: Ceramic Trimmer Capacitor TZ Series

It includes all Trimmer Capacitors (TZ***) and all adjustment tools (KM***).

Please refer to the attached documents for detailed competitors Part Numbers' information.

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| Accumulation delivery quantity after April, 2013 |
| 1,812,240 |

2. Reasons/Background:

Demand decreased due to the rise of alternative adjustment method of mechanical adjustment method using TZ series product. Because production scale reduced with demand decrease, business maintenance became difficult.

3. Product Withdrawal Schedule and Feedback Due

| Feedback items | Feedback Due | Explanation |
|---------------------------------|--------------|--|
| 1. Confirmation Letter (Page 2) | Mar.,31,2019 | Please choose an applicable response from choices mentioned in Page 2. Please fill out required quantity if you need after April 1, 2019. |
| 2. Last Time Order Due | Mar.,31,2019 | If it is difficult to meet Last time Due or Last Shipment Due Dates written in left column, please fill out your requested due date in confirmation letter (Page 2). |
| 3. Last Shipment Due | Mar.,31,2021 | |


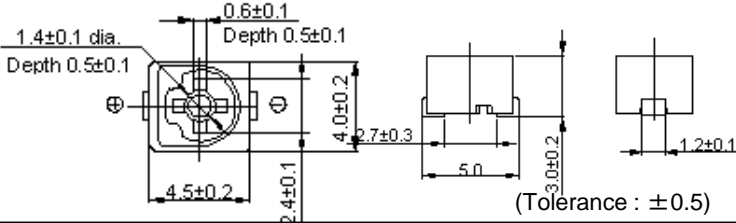
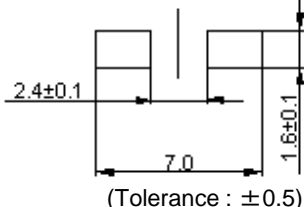



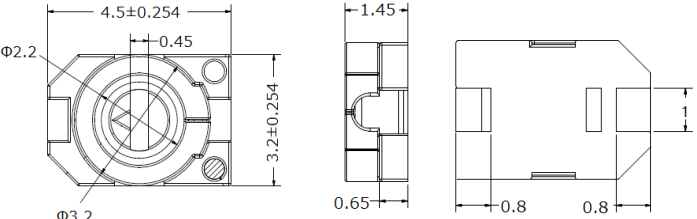
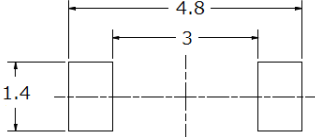
4. Contact Window:

Should you have any questions or concerns, please contact Murata Sales, Representative, or Distributor in your area.

Truly Yours. Thank you.

Murata Manufacturing, Co., Ltd.
Planning and Promotion Department. Sensor Products Division.
General Manager, Yoshitaka Nagao

Comparison Table / TZB4_A series VS VOLTRONICS

| | Series Name | Appearance | Dimensions (Unit:mm) | Land Pattern(Unit : mm) | URL |
|-------------|---|---|--|---|---|
| Current | TZB4 ****A series MURATA |  |  (Tolerance : ±0.5) |  (Tolerance : ±0.5) | http://www.murata.com/ja-jp/products/capacitor/trimmer/tzb4 |
| Replacement | JZ series  DLJ-Johanson MFG-Novacap-Syfer-Voltronics  |  |  |  | http://www.knowlescapacitors.com/Products/Trimmer/Half-Turn/JZ-Series.aspx |

| | MURATA P/N | Stator color | Capacitance (pF) | | Temp. Characteristics (ppm/°C) | Q at 1MHz (min.) | Rated voltage | Withstanding Voltage | |
|-------------|----------------|---------------|------------------|---------------|--------------------------------|------------------|---------------|----------------------|-----|
| | VOLTRONICS P/N | | Min.(+0%) | Max.(+50/-0%) | | | | | |
| Current | TZB4Z030A | Brown | 1.4 | 3 | NP0±200 | 300 | 100Vdc | 220Vdc | |
| Replacement | JZ030 | Black | 1.5 | | | | | | |
| Current | TZB4Z060A | Blue | 2.0 | 6 | NP0±200 | 500 | | | |
| Replacement | JZ060 | | NP0±300 | | | | | | |
| Current | TZB4Z100A | White | 3.0 | 10 | NP0±300 | 500 | 250Vdc | 550Vdc | |
| Replacement | JZL100 | Gray | 4.0 | | N1200±500 | | | | |
| Replacement | JZ100 | White | 2.0 | | NP0±300 | | | | |
| Current | TZB4R200A | Red | 4.5 | 20 | N750±400 | 300 | 250Vdc | 550Vdc | |
| Replacement | JZL200 | | 7.0 | | N1200±500 | | | | |
| Replacement | JZ200 | | 4.5 | | NP0±500 | | 500 | | |
| Current | TZB4P300A | Green | 6.5 | 30 | N1200±500 | 300 | 100Vdc | 220Vdc | |
| Replacement | JZ300 | Orange | 5.5 | | N1500±1000 | | | | 200 |
| Current | TZB4P400A | Yellow | 8.5 | | N1200±500 | | | | 300 |
| Replacement | JZ400 | | 8.0 | N1500±1000 | 200 | | | | |
| Current | TZB4Z250A | Black+Marking | 4.0 | 25(+100/-0%) | NP0±300 | 300 | 50Vdc | 110Vdc | |
| Replacement | JZL250 | - | 6.0 | 25 | N1200±500 | 300 | 250Vdc | 550Vdc | |
| Current | TZB4R500A | Black+Marking | 7.0 | 50(+100/-0%) | N750±300 | 300 | 50Vdc | 110Vdc | |
| Replacement | JZ500 | Yellow | 8.0 | 50 | N1500±1000 | 200 | 100Vdc | 220Vdc | |

Comparison Table / TZC3 series VS VOLTRONICS

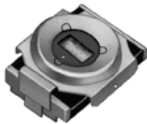
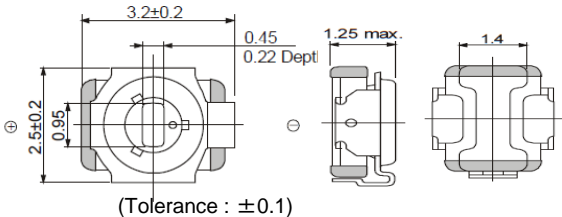
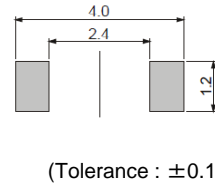
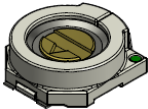
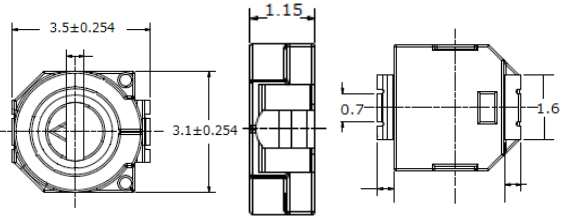
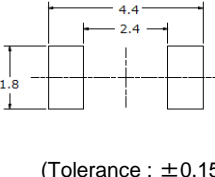


| | Appearance | Dimensions (Unit : mm) | Land Pattern (Unit : mm) | URL |
|-------------|---|------------------------|--------------------------|---|
| Current | <p>TZC3 series MURATA</p> | | | http://www.murata.com/ja-ip/products/capacitor/trimmer/tzc3 |
| Replacement | <p>JZ series</p> <p>knowles DLJ-Johanson MFG-Novacap-Syfer-Voltronics</p> <p>Voltronics CORPORATION</p> | | | http://www.knowlescapacitors.com/Products/Trimmer/Half-Turn/JZ-Series.aspx |

| | MURATA P/N | Stator color(Current) Marking | Capacitance (pF) | | Temp. Characteristics (ppm/°C) | Q at 1MHz (min.) | Rated voltage | Withstanding Voltage | |
|-------------|----------------|-------------------------------|------------------|---------------|--------------------------------|------------------|---------------|----------------------|--------|
| | VOLTRONICS P/N | | Min.(+0%) | Max.(+50/-0%) | | | | | |
| Current | TZC3Z030 | Brown ※1 | 1.4 | 3 | NP0±300 | 300 | 100Vdc | 220Vdc | |
| Replacement | JZ030 | Black | 1.5 | | NP0±200 | | | | 500 |
| Current | TZC3Z060 | Blue ※1 | 2.0 | 6 | NP0±300 | 500 | 100Vdc | 220Vdc | |
| Replacement | JZ060 | Blue | | | | | | | |
| Current | TZC3R100 | White ※1 | 3.0 | 10 | N750±300 | 500 | 100Vdc | 220Vdc | |
| Replacement | JZL100 | Gray | 4.0 | | N1200±500 | | 500 | 250Vdc | 550Vdc |
| | JZ100 | — | 2.0 | | NP0±300 | | | 100Vdc | 220Vdc |
| Current | TZC3P200 | Red ※1 | 5.0 | 20 | N1200±500 | 300 | 100Vdc | 220Vdc | |
| Replacement | JZL200 | Red | 7.0 | | N1200±500 | | 250Vdc | 550Vdc | |
| | JZ200 | | 4.5 | | NP0±500 | | 500 | 100Vdc | 220Vdc |
| Current | TZC3P300 | Green ※1 | 6.5 | 30 | N1200±500 | 300 | 100Vdc | 220Vdc | |
| Replacement | JZ300 | Orange | 5.5 | | N1500±1000 | | | | 200 |

※1 : Stator color of TZC3□▲▲▲AA01 is black.

Comparison Table / TZY2 series VS VOLTRONICS

| | Series Name | Appearance | Dimensions (Unit : mm) | Land Pattern (Unit: mm) | URL |
|-------------|---|---|---|--|---|
| Current | TZY2 series MURATA |  |  (Tolerance : ±0.1) |  (Tolerance : ±0.1) | http://www.murata.com/ja-ip/products/capacitor/trimmer/tzy2 |
| Replacement | JR series knowles DLJ-Johanson MFG-Novacap-Syfer-Voltronics Voltronics CORPORATION |  |  (Tolerance : ±0.15) |  (Tolerance : ±0.15) | http://www.knowlescapacitors.com/Products/Trimmer/Half-Turn/JR-Series.aspx |

| | MURATA P/N | Capacitance (pF) | | Temp. Characteristics (ppm/°C) | Q at 1MHz (min.) | Rated voltage | Withstanding Voltage |
|-------------|----------------|------------------|----------------|--------------------------------|------------------|---------------|----------------------|
| | VOLTRONICS P/N | Min.(+0%) | Max.(+100/-0%) | | | | |
| Current | TZY2Z010AC01 | 0.6 | 1 | NP0±300 | 200 | 25Vdc | 55Vdc |
| Replacement | | Nonexistent | | | | | |
| Current | TZY2Z2R5AC01 | 1.0 | 2.5 | NP0±300 | 200 | 25Vdc | 55Vdc |
| Replacement | JR030 | 1.5 | 3 | NP0±200 | 500 | 100Vdc | 220Vdc |
| Current | TZY2Z030AC01 | 1.5 | 3 | NP0±300 | 300 | 25Vdc | 55Vdc |
| Replacement | JR030 | | | NP0±200 | 500 | 100Vdc | 220Vdc |
| Current | TZY2Z060AC01 | 2.5 | 6 | NP0±300 | 500 | 25Vdc | 55Vdc |
| Replacement | JR060 | 2.0 | | NP0±300 | | 100Vdc | 220Vdc |
| Current | TZY2Z100AC01 | 3.0 | 10 | NP0±300 | 500 | 25Vdc | 55Vdc |
| Replacement | JRL100 | 4.0 | | N1200±500 | | 250Vdc | 550Vdc |
| | JR100 | 2.0 | | NP0±300 | | 100Vdc | 220Vdc |
| Current | TZY2R200AC01 | 4.5 | 20 | N750±500 | 500 | 25Vdc | 55Vdc |
| Replacement | JRL200 | 7 | | N1200±500 | 300 | 250Vdc | 550Vdc |
| | JR200 | 4.5 | | N750±500 | 500 | 100Vdc | 220Vdc |
| Current | TZY2R250AC01 | 5.5 | 25 | N750±500 | 300 | 25Vdc | 55Vdc |
| Replacement | JRL250 | | | N1200±500 | 300 | 250Vdc | 550Vdc |
| Current | TZY2K450AC01 | 8.0 | 45 | N1000±500 | 300 | 25Vdc | 55Vdc |
| Replacement | JR400 | | 40 | N1500±1000 | 200 | 100Vdc | 220Vdc |