

## 3 mm Square Surface Mount Miniature Trimmer Single-Turn Cermet Sealed



### FEATURES

- 0.125 W at 70 °C
- Small size for optimum packaging density
- Suitable for both manual and automatic operations
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

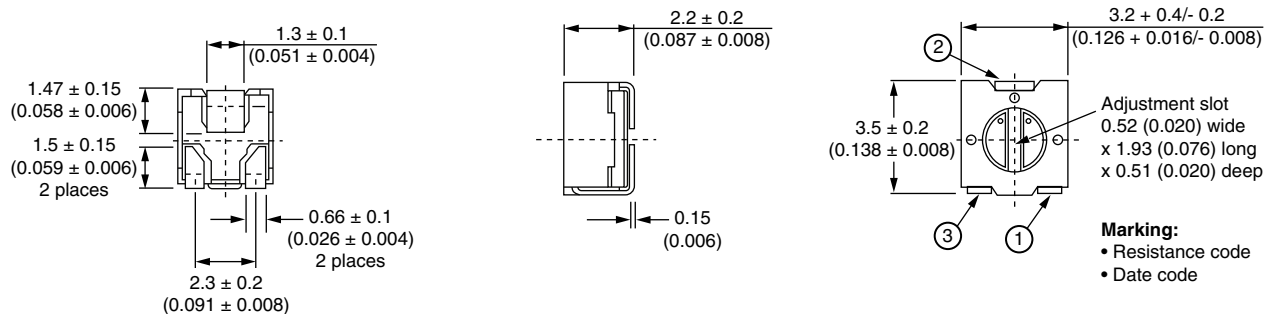

**RoHS**  
COMPLIANT

### DESIGN SUPPORT TOOLS

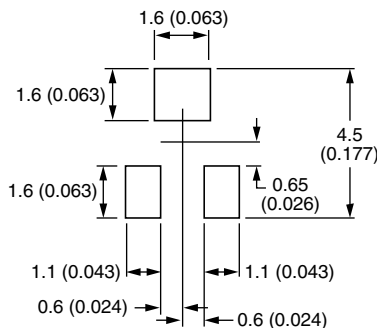
[click logo to get started](#)
**3D**  
Models  
Available

### DIMENSIONS in millimeters (inches) $\pm 0.25$ mm ( $\pm 0.010$ " )

#### TS3YJ



### RECOMMENDED SOLDERING AREAS



**ELECTRICAL SPECIFICATIONS**

|                                              |                                                                                                            |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Resistive element                            | Cermet                                                                                                     |
| Electrical travel                            | 220°                                                                                                       |
| Resistance range                             | 10 $\Omega$ to 2 M $\Omega$                                                                                |
| Stocked range                                | 1 k $\Omega$ to 100 k $\Omega$                                                                             |
| Standard series                              | 1 - 2 - 5                                                                                                  |
| Tolerance standard                           | $\pm 20\%$                                                                                                 |
| Circuit diagram                              |                                                                                                            |
| Power rating                                 | 0.125 W at 70 °C                                                                                           |
| Temperature coefficient (max.)               | $\leq 100\ \Omega \pm 150\ \text{ppm}/^\circ\text{C}$ / $> 100\ \Omega \pm 100\ \text{ppm}/^\circ\text{C}$ |
| Limiting element voltage (max.)              | 200 V                                                                                                      |
| Contact resistance variation                 | 3 % or 3 $\Omega$                                                                                          |
| End resistance                               | 1 % or 3 $\Omega$                                                                                          |
| Dielectric strength (RMS)                    | 500 V (sea level)                                                                                          |
| Insulation resistance (500 V <sub>DC</sub> ) | 100 M $\Omega$                                                                                             |

**MECHANICAL SPECIFICATIONS**

|                             |      |
|-----------------------------|------|
| Mechanical travel           | 250° |
| Operating torque (max. Ncm) | 0.5  |
| End stop torque (min. Ncm)  | 2    |
| Unit weight (max. g)        | 0.1  |
| Mechanical life (cycles)    | 50   |

**Note**

- Nothing stated herein shall be construed as a guarantee of quality or durability

**ENVIRONMENTAL SPECIFICATIONS**

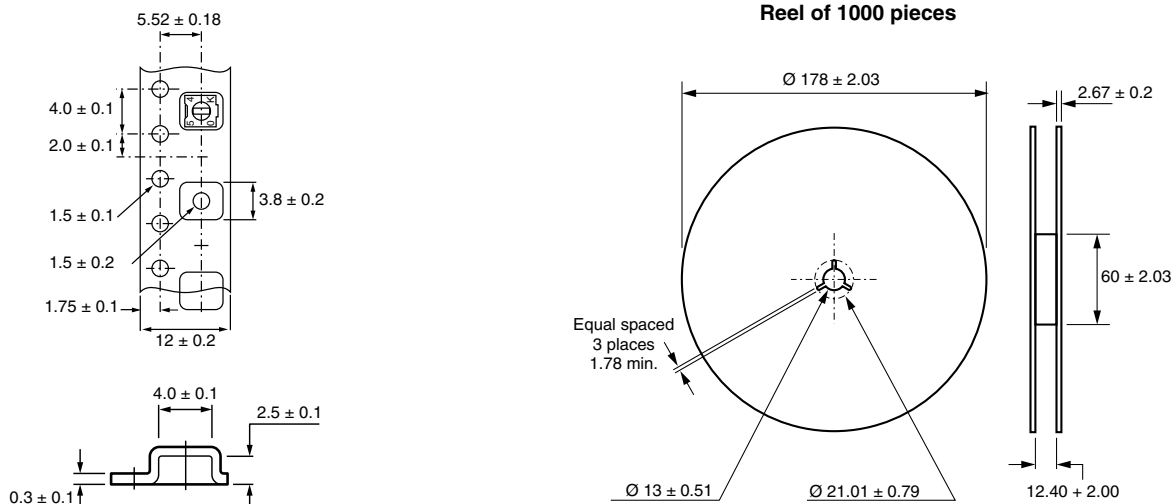
|                   |                       |
|-------------------|-----------------------|
| Temperature range | -55 °C to +125 °C     |
| Sealing           | Sealed container IP67 |
| MSL level         | 1                     |

**SOLEDERING RECOMMENDATIONS**

Recommended reflow profile 2, see Application Note [www.vishay.com/doc?52029](http://www.vishay.com/doc?52029)

**STANDARD RESISTANCE ELEMENT DATA**

| RESISTANCE | PART MARKING CODE | RESISTANCE CODE |
|------------|-------------------|-----------------|
| 10         | A1                | 100             |
| 20         | 21                | 200             |
| 50         | 51                | 500             |
| 100        | A2                | 101             |
| 200        | 22                | 201             |
| 500        | 52                | 501             |
| 1K         | A3                | 102             |
| 2K         | 23                | 202             |
| 5K         | 53                | 502             |
| 10K        | A4                | 103             |
| 20K        | 24                | 203             |
| 50K        | 54                | 503             |
| 100K       | A5                | 104             |
| 200K       | 25                | 204             |
| 500K       | 55                | 504             |
| 1M         | A6                | 105             |
| 2M         | 26                | 205             |

**PACKAGING**

**ORDERING INFORMATION (part number)**

|       |   |       |   |                                     |   |   |            |   |                           |   |                                                               |  |  |  |  |
|-------|---|-------|---|-------------------------------------|---|---|------------|---|---------------------------|---|---------------------------------------------------------------|--|--|--|--|
| T     | S | 3     | Y | J                                   | 5 | 0 | 3          | M | R                         | 1 | 5                                                             |  |  |  |  |
| MODEL |   | STYLE |   | OHMIC VALUE                         |   |   | TOLERANCE  |   | PACKAGING                 |   | SPECIAL NUMBER                                                |  |  |  |  |
| TS3   |   | YJ    |   | From<br>10 Ω to 2 MΩ<br>503 = 50 kΩ |   |   | M = ± 20 % |   | R15 =<br>reel 1000 pieces |   | (if applicable)<br>given by<br>Vishay<br>for custom<br>design |  |  |  |  |

**DESCRIPTION (for information only)**

|       |       |       |           |         |           |             |
|-------|-------|-------|-----------|---------|-----------|-------------|
| TS3   | YJ    | 50K   | 20 %      |         | TR        | e3          |
| MODEL | STYLE | VALUE | TOLERANCE | SPECIAL | PACKAGING | LEAD FINISH |

**RELATED DOCUMENTS**
**APPLICATION NOTES**

|                                                                   |                                                                        |
|-------------------------------------------------------------------|------------------------------------------------------------------------|
| Potentiometers and Trimmers                                       | <a href="http://www.vishay.com/doc?51001">www.vishay.com/doc?51001</a> |
| Guidelines for Vishay Sfernice Resistive and Inductive Components | <a href="http://www.vishay.com/doc?52029">www.vishay.com/doc?52029</a> |



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