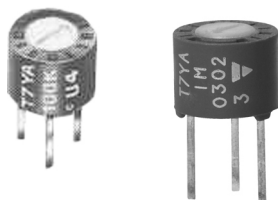


# 7 mm Diameter Miniature Single-Turn Cermet Trimmer



## LINKS TO ADDITIONAL RESOURCES



A dust sealed plastic case protecting a quality cermet track guarantees high performance and proven reliability. Adjustments are made easier by the clear scale readings. T7 is ideally suited to all industrial applications.

## FEATURES

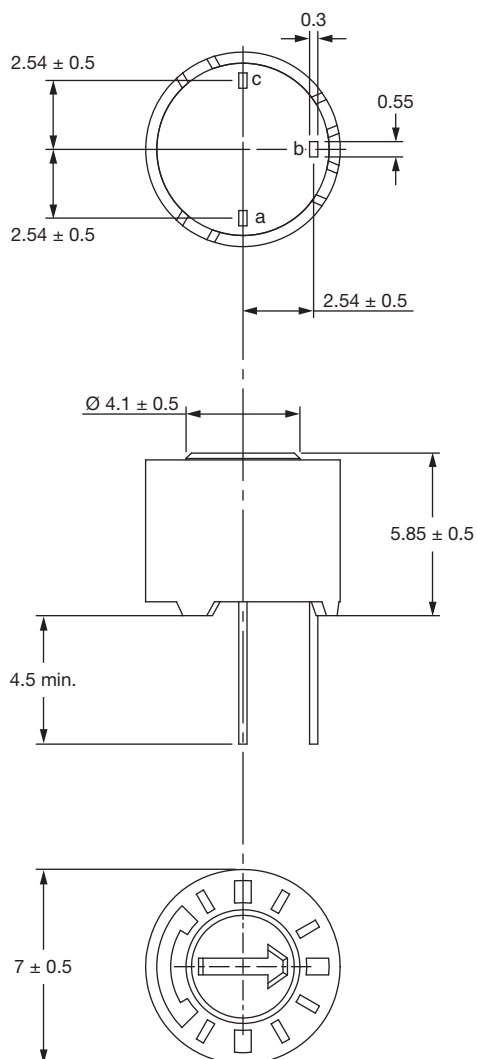
- Industrial grade
- 0.5 W at 70 °C
- Tests according to CECC 41100 or IEC 60393-1
- Low temperature coefficient (100 ppm/K typical)
- Wide resistance range (10  $\Omega$  to 2.2 M $\Omega$ )
- Easy to read scale
- 7 mm (0.275") diameter
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



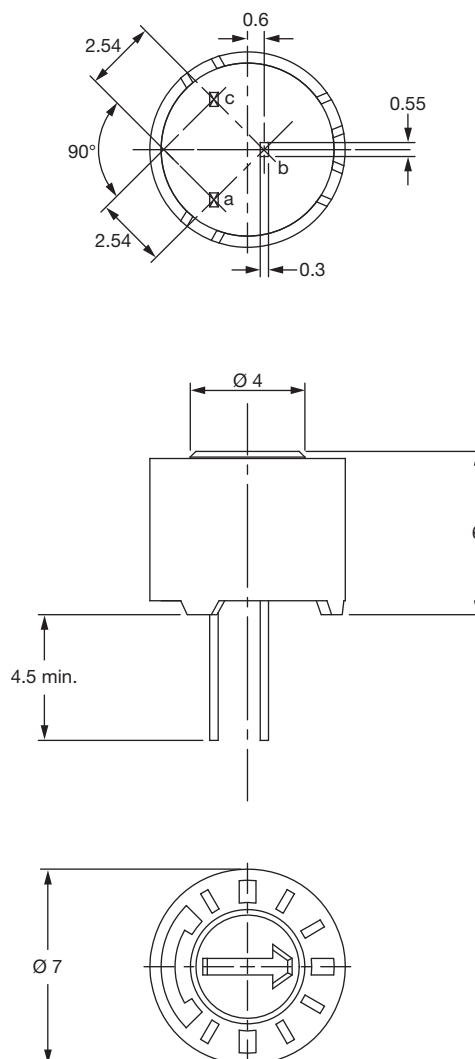
**RoHS**  
COMPLIANT

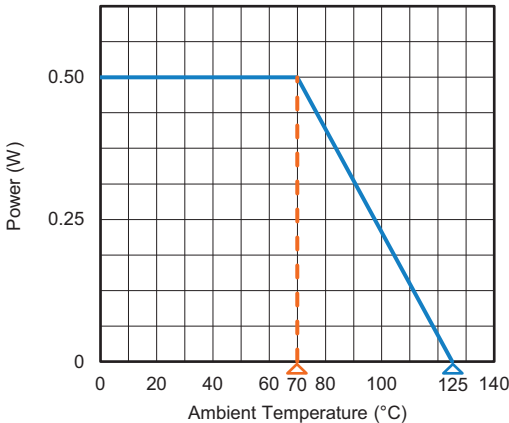
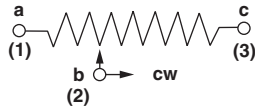
## DIMENSIONS in millimeters ( $\pm 0.5$ mm)

### T7 YA



### T7 YB



| <b>ELECTRICAL SPECIFICATIONS</b>      |                                                                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Resistive element                     | Cermet                                                                                                                               |
| Electrical travel                     | $270^\circ \pm 15^\circ$                                                                                                             |
| Resistance range                      | $10\ \Omega$ to $2.2\ \text{M}\Omega$                                                                                                |
| Standard series E3                    | 1 - 2.2 - 4.7 and on request 1 - 2 - 5                                                                                               |
| Tolerance standard                    | standard $\pm 20\ \%$                                                                                                                |
|                                       | on request $\pm 10\ \%$                                                                                                              |
| Power rating                          | <div>0.5 W at <math>70^\circ\text{C}</math></div>  |
| Circuit diagram                       |                                                   |
| Temperature coefficient               | See Standard Resistance Element Data                                                                                                 |
| Limiting element voltage (linear law) | 250 V                                                                                                                                |
| Contact resistance variation          | 3 % or $3\ \Omega$                                                                                                                   |
| End resistance (typical)              | $1\ \Omega$                                                                                                                          |
| Dielectric strength (RMS)             | 1000 V                                                                                                                               |
| Insulation resistance                 | $10^6\ \text{M}\Omega$                                                                                                               |

| <b>MECHANICAL SPECIFICATIONS</b> |                         |
|----------------------------------|-------------------------|
| Mechanical travel                | $300^\circ \pm 5^\circ$ |
| Operating torque (max. Ncm)      | 1.5                     |
| End stop torque (max. Ncm)       | 3                       |
| Unit weight (max. g)             | 0.5                     |
| Terminals                        | SnAg alloy (code e2)    |

| <b>ENVIRONMENTAL SPECIFICATIONS</b> |                                                                                                                                                     |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature range                   | $-55^\circ\text{C}$ to $+125^\circ\text{C}$                                                                                                         |
| Climatic category                   | 55 / 100 / 56                                                                                                                                       |
| Sealing                             | IP64<br>For board cleaning, Vishay recommends testing before usage. Water immersion is forbidden. Ultrasonic may cause component damage or failure. |



| PERFORMANCES             |                                                                                                   |                                                                                                        |                                                |
|--------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------|
| TESTS                    | CONDITIONS                                                                                        | TYPICAL VALUES AND DRIFTS                                                                              |                                                |
|                          |                                                                                                   | $\Delta R_T/R_T$ (%)                                                                                   | $\Delta R_{1-2}/R_{1-2}$ (%)                   |
| Load life                | 1000 h at rated power<br>90°/30° - ambient temperature 70 °C                                      | $\pm 3$ %<br>Contact resistance variation:<br>< 3 % Rn                                                 | $\pm 4$ %                                      |
| Climatic sequence        | Phase A dry heat 100 °C<br>Phase B damp heat<br>Phase C cold -55 °C<br>Phase D damp heat 5 cycles | $\pm 2$ %                                                                                              | $\pm 3$ %                                      |
| Long term damp heat      | 56 days                                                                                           | $\pm 2$ %<br>Dielectric strength: 1000 V <sub>RMS</sub><br>Insulation resistance: > 10 <sup>4</sup> MΩ | $\pm 3$ %                                      |
| Rapid temperature change | 5 cycles -55 °C at +125 °C                                                                        | $\pm 1$ %                                                                                              | $\Delta V_{1-2}/\Delta V_{1-3}$<br>≤ $\pm 2$ % |
| Shock                    | 50 g - 11 ms<br>3 successive shocks<br>in 3 directions                                            | $\pm 0.5$ %                                                                                            | $\pm 1$ %                                      |
| Vibration                | 10 Hz to 55 Hz<br>0.75 mm or 10 g during 6 h                                                      | $\pm 0.5$ %                                                                                            | $\Delta V_{1-2}/\Delta V_{1-3}$<br>≤ $\pm 1$ % |
| Rotational life          | 200 cycles                                                                                        | $\pm 3$ %<br>Contact resistance variation:<br>< 3 % Rn                                                 |                                                |

**Note**

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

| STANDARD RESISTANCE ELEMENT DATA |                     |                      |                    |                                  |
|----------------------------------|---------------------|----------------------|--------------------|----------------------------------|
| STANDARD<br>RESISTANCE VALUES    | LINEAR LAW          |                      |                    | TYPICAL TCR<br>-55 °C to +125 °C |
|                                  | MAX. POWER AT 70 °C | MAX. WORKING VOLTAGE | MAX. WIPER CURRENT |                                  |
| Ω                                | W                   | V                    | mA                 | ppm/°C                           |
| 10                               | 0.5                 | 2.2                  | 224                | $\pm 100$                        |
| 22                               | 0.5                 | 3.3                  | 150                |                                  |
| 47                               | 0.5                 | 4.8                  | 103                |                                  |
| 100                              | 0.5                 | 7.0                  | 70                 |                                  |
| 220                              | 0.5                 | 10.5                 | 47                 |                                  |
| 470                              | 0.5                 | 15.3                 | 32                 |                                  |
| 1K                               | 0.5                 | 22.4                 | 22                 |                                  |
| 2.2K                             | 0.5                 | 33.2                 | 15                 |                                  |
| 4.7K                             | 0.5                 | 48.5                 | 10                 |                                  |
| 10K                              | 0.5                 | 70.7                 | 7.0                |                                  |
| 22K                              | 0.5                 | 105                  | 4.8                |                                  |
| 47K                              | 0.5                 | 153                  | 3.2                |                                  |
| 100K                             | 0.5                 | 224                  | 2.2                |                                  |
| 220K                             | 0.28                | 250                  | 1.1                |                                  |
| 470K                             | 0.13                | 250                  | 1.53               |                                  |
| 1M                               | 0.06                | 250                  | 0.25               |                                  |
| 2.2M                             | 0.028               | 250                  | 0.11               |                                  |

| MARKING                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Vishay trademark</li> <li>Model</li> <li>YA or YB style</li> <li>Ohmic value (in Ω, kΩ, MΩ)</li> <li>Manufacturing date</li> <li>Marking of terminal: 3</li> </ul> |



## PACKAGING

- In box of 200 pieces, code B40
- On request: In tube of 50 pieces, code T20 (TU50)

## ORDERING INFORMATION (part number)

|       |          |                                                    |   |                                     |   |                                                             |   |                                                         |   |   |  |  |  |  |
|-------|----------|----------------------------------------------------|---|-------------------------------------|---|-------------------------------------------------------------|---|---------------------------------------------------------|---|---|--|--|--|--|
| T     | 7        | Y                                                  | A | 4                                   | 7 | 4                                                           | M | B                                                       | 4 | 0 |  |  |  |  |
| MODEL | STYLE    | OHMIC VALUE                                        |   | TOLERANCE                           |   | PACKAGING CODE                                              |   | SPECIAL NUMBER                                          |   |   |  |  |  |  |
| T7    | YA<br>YB | From 10 $\Omega$<br>to 2.2 M $\Omega$<br>103 = 10K |   | M = 20 %<br>On request:<br>K = 10 % |   | B40 = box 200 pieces<br>On request:<br>T20 = tube 50 pieces |   | (If applicable)<br>Given by Vishay for<br>custom design |   |   |  |  |  |  |

## DESCRIPTION (for information only)

|       |       |       |           |         |           |             |
|-------|-------|-------|-----------|---------|-----------|-------------|
| T7    | YA    | 470K  | 20 %      |         | BO        | e2          |
| 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> |
| Selector guide                                                    | <a href="http://www.vishay.com/doc?49286">www.vishay.com/doc?49286</a> |

## ACCESSORIES

|                                    |                                                                        |
|------------------------------------|------------------------------------------------------------------------|
| Screwdrivers (to order separately) | <a href="http://www.vishay.com/doc?57015">www.vishay.com/doc?57015</a> |
|------------------------------------|------------------------------------------------------------------------|



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