

# 1/4" Multi-Turn Fully Sealed Container Cermet Trimmer



Due to their square shape and small size (6.8 mm x 6.8 mm x 5 mm), the multi-turn trimmers of the T63 series are ideally suited for PCB use, enabling high density board mounting with reduced space requirement between cards.

Six versions are available differing by the top or side position of the adjustment screw and by PC pins configuration.

The use of cermet for the resistive track ensures an excellent stability of nominal specifications throughout life.

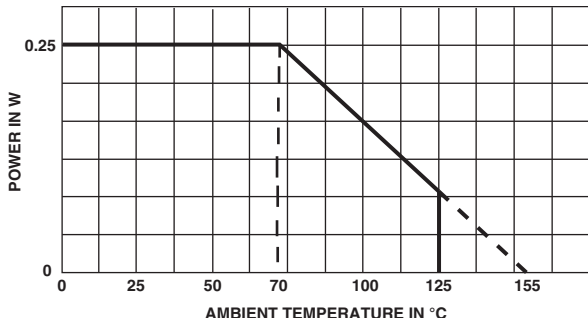
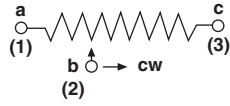
## FEATURES

- 0.25 W at 70 °C
- Industrial grade
- Tests according to CECC 41000 or IEC 60393-1
- Multi-turn operation
- Low contact resistance variation 1 % typical
- 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) |  |  | Terminal Spacing on a 2.54 PCB |
|-------------------------------------------|--|--|--------------------------------|
| <b>T63XA</b>                              |  |  |                                |
| <b>T63XB</b>                              |  |  |                                |
| <b>T63YA</b>                              |  |  |                                |
| <b>T63YB</b>                              |  |  |                                |
| <b>T63ZA</b>                              |  |  |                                |
| <b>T63ZB</b>                              |  |  |                                |

| ELECTRICAL SPECIFICATIONS                    |                                                                                                                 |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Resistive element                            | Cermet                                                                                                          |
| Electrical travel                            | 14 turns $\pm$ 2                                                                                                |
| Resistance range                             | 10 $\Omega$ to 2.2 M $\Omega$                                                                                   |
| Standard series and on request series E3     | 1 - 2 - 5 (1 - 2.2 - 4.7)                                                                                       |
| Tolerance                                    | Standard $\pm$ 10 %                                                                                             |
|                                              | On request $\pm$ 5 %                                                                                            |
| Power rating                                 | Linear<br>0.25 W at 70 °C<br> |
| Circuit diagram                              |                               |
| Temperature coefficient                      | See Standard Resistance Element table                                                                           |
| Limiting element voltage (linear law)        | 250 V                                                                                                           |
| Contact resistance variation                 | 2 % R <sub>n</sub> or 2 $\Omega$                                                                                |
| End resistance (typical)                     | 1 $\Omega$                                                                                                      |
| Dielectric strength (RMS)                    | 1000 V                                                                                                          |
| Insulation resistance (500 V <sub>DC</sub> ) | 10 <sup>6</sup> M $\Omega$                                                                                      |

| MECHANICAL SPECIFICATIONS   |                            |
|-----------------------------|----------------------------|
| Mechanical travel           | 15 turns $\pm$ 5           |
| Operating torque (max. Ncm) | 1.5                        |
| End stop torque             | Clutch action              |
| Unit weight (max. g)        | 0.5                        |
| Wiper (actual travel)       | Positioned at approx. 50 % |
| Terminals                   | Pure Sn (code e3)          |

| ENVIRONMENTAL SPECIFICATIONS |                     |
|------------------------------|---------------------|
| Temperature range            | -55 °C to +155 °C   |
| Climatic category            | 55/125/56           |
| Sealing                      | Fully sealed - IP67 |

| PERFORMANCES             |                                                                                                             |                           |                          |                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------|-------------------------------------------------------------------------------------------|
| TESTS                    | CONDITIONS                                                                                                  | TYPICAL VALUES AND DRIFTS |                          |                                                                                           |
|                          |                                                                                                             | $\Delta R_T/R_T$          | $\Delta R_{1-2}/R_{1-2}$ | OTHER                                                                                     |
| Electrical endurance     | 1000 h at rated power<br>90'/30' - ambient temperature 70 °C                                                | ± 1 %                     | ± 2 %                    | Contact res. variation: < 1 % Rn                                                          |
| Climatic sequence        | Phase A dry heat 125 °C - 30 % Pr<br>Phase B damp heat<br>Phase C cold -55 °C<br>Phase D damp heat 5 cycles | ± 0.5 %                   | ± 1 %                    | -                                                                                         |
| Damp heat, steady state  | 56 days<br>40 °C, 93 % RH                                                                                   | ± 0.5 %                   | ± 1 %                    | Dielectric strength: 1000 V <sub>RMS</sub><br>Insulation resistance: > 10 <sup>4</sup> MΩ |
| Rapid temperature change | 5 cycles<br>-55 °C to +125 °C                                                                               | ± 0.5 %                   | -                        | $\Delta V_{1-2}/V_{1-3} \leq \pm 1 \%$                                                    |
| Shock                    | 50 g at 11 ms<br>3 successive shocks<br>in 3 directions                                                     | ± 0.1 %                   | ± 0.2 %                  | -                                                                                         |
| Vibration                | 10 Hz to 55 Hz<br>0.75 mm or 10 g<br>during 6 h                                                             | ± 0.1 %                   | -                        | $\Delta V_{1-2}/V_{1-3} \leq \pm 0.2 \%$                                                  |
| Mechanical endurance     | 200 cycles                                                                                                  | ± (2 % + 3 Ω)             | -                        | Contact res. variation: < 1 % Rn                                                          |

**Note**

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

| STANDARD RESISTANCE ELEMENT DATA |                           |                            |                          |                                     |
|----------------------------------|---------------------------|----------------------------|--------------------------|-------------------------------------|
| STANDARD<br>RESISTANCE<br>VALUES | LINEAR LAW                |                            |                          | TYPICAL<br>TCR<br>-55 °C<br>+125 °C |
|                                  | MAX.<br>POWER<br>AT 70 °C | MAX.<br>WORKING<br>VOLTAGE | MAX.<br>WIPER<br>CURRENT |                                     |
| Ω                                | W                         | V                          | mA                       | ppm/°C                              |
| 10                               | 0.25                      | 1.58                       | 158                      | ± 100                               |
| 20                               | 0.25                      | 2.23                       | 112                      |                                     |
| 50                               | 0.25                      | 3.5                        | 77                       |                                     |
| 100                              | 0.25                      | 35                         | 50                       |                                     |
| 200                              | 0.25                      | 7.07                       | 35                       |                                     |
| 500                              | 0.25                      | 11.2                       | 22                       |                                     |
| 1K                               | 0.25                      | 15.8                       | 15.8                     |                                     |
| 2K                               | 0.25                      | 22.3                       | 11.2                     |                                     |
| 5K                               | 0.25                      | 35.3                       | 7.1                      |                                     |
| 10K                              | 0.25                      | 50                         | 5                        |                                     |
| 20K                              | 0.25                      | 70.7                       | 3.5                      |                                     |
| 25K                              | 0.25                      | 79                         | 3.2                      |                                     |
| 50K                              | 0.25                      | 112                        | 2.2                      |                                     |
| 100K                             | 0.25                      | 158                        | 1.6                      |                                     |
| 200K                             | 0.25                      | 224                        | 1.1                      |                                     |
| 250K                             | 0.25                      | 250                        | 1.1                      |                                     |
| 500K                             | 0.13                      | 250                        | 0.5                      |                                     |
| 1M                               | 0.06                      | 250                        | 0.25                     |                                     |
| 2.2M                             | 0.03                      | 250                        | 0.125                    |                                     |

**MARKING**

- Vishay trademark
- Model
- Style
- Ohmic value (in Ω, kΩ, MΩ)
- Tolerance (in %) only if non standard
- Manufacturing date
- Marking of terminal 3

**PACKAGING**

- In tube of 50 pieces code T20 (TU50)



**ORDERING INFORMATION** (part number)

|       |   |                                  |   |   |                                                               |   |   |                                |   |                         |   |                                                               |  |  |
|-------|---|----------------------------------|---|---|---------------------------------------------------------------|---|---|--------------------------------|---|-------------------------|---|---------------------------------------------------------------|--|--|
| T     | 6 | 3                                | X | A | 1                                                             | 0 | 4 | K                              | T | 2                       | 0 |                                                               |  |  |
| MODEL |   | STYLE                            |   |   | OHMIC VALUE                                                   |   |   | TOLERANCE                      |   | PACKAGING               |   | SPECIAL NUMBER                                                |  |  |
| T63   |   | XA<br>XB<br>YA<br>YB<br>ZA<br>ZB |   |   | From<br>10 $\Omega$ to 2.2 M $\Omega$<br>104 = 100 k $\Omega$ |   |   | K = 10 %<br>on request J = 5 % |   | T20 = Tube<br>50 pieces |   | (If applicable)<br>Given by<br>Vishay<br>for custom<br>design |  |  |

**DESCRIPTION** (for information only)

|       |       |       |           |         |           |                |
|-------|-------|-------|-----------|---------|-----------|----------------|
| T63   | XA    | 100K  | 10 %      |         | TU        | e3             |
| MODEL | STYLE | VALUE | TOLERANCE | SPECIAL | PACKAGING | LEAD (Pb)-FREE |



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