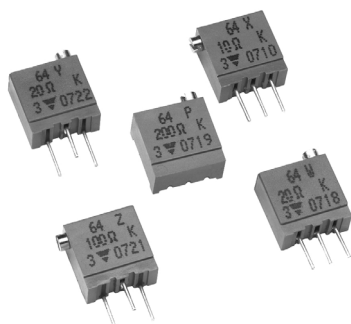


## 3/8" Square (10 mm) Multi-Turn Cermet Trimmer

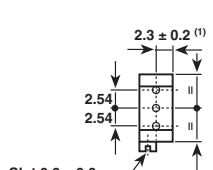
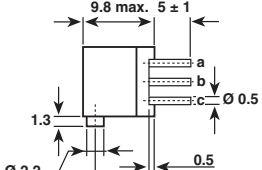
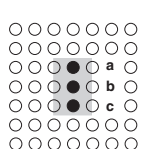
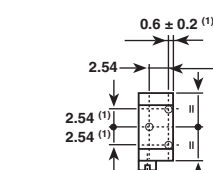
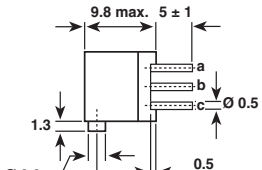
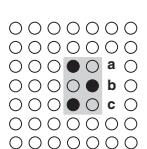
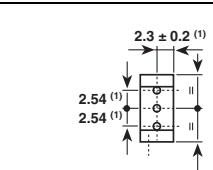
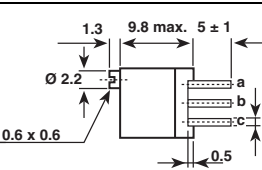
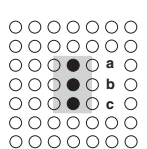
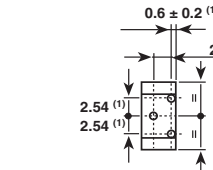
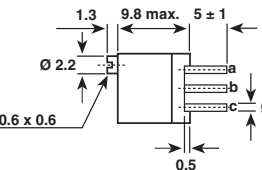
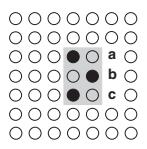
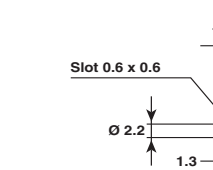
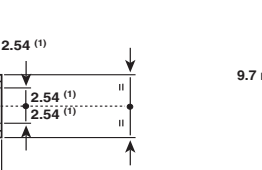
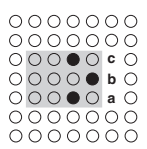


### FEATURES

- Industrial grade
- 0.5 W at 70 °C
- Tests according to CECC 41000 or IEC 60393-1
- Contact resistance variation < 1 % typical
- Compliant to RoHS Directive 2002/95/EC



The Model 64 is a small size trimmer - 3/8" x 3/8" x 3/16" - answering PC board mounting requirements. Five versions are available which differ by the position of the control screw in relation to the PC board plane and by the spacing of the terminals. Excellent operational stability is provided by the use of a cermet element.

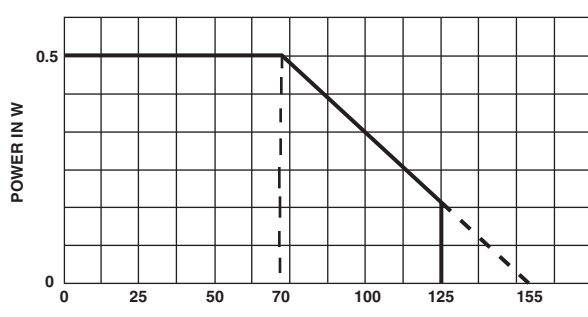
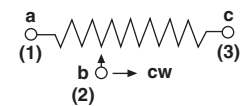
| DIMENSIONS in millimeters ( $\pm 0.5$ mm) |                                                                                     |                                                                                     |                                                                                                                               |
|-------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>64X</b>                                |   |   | <b>Terminal Spacing on a 2.54 PCB</b><br> |
| <b>64Z</b>                                |  |  |                                          |
| <b>64W</b>                                |  |  |                                          |
| <b>64Y</b>                                |  |  |                                          |
| <b>64P</b>                                |  |  |                                          |

### Note

(1) To be measured at base level

# 3/8" Square (10 mm) Multi-Turn Cermet Trimmer

Vishay Spectrol

| ELECTRICAL SPECIFICATIONS                    |                                                                                     |
|----------------------------------------------|-------------------------------------------------------------------------------------|
| Resistive element                            | Cermet                                                                              |
| Electrical travel                            | 21 turns $\pm$ 2                                                                    |
| Resistance range                             | 10 $\Omega$ to 2.2 M $\Omega$                                                       |
| Standard series E3                           | 1 - 2 - 2.5 - 5                                                                     |
| Tolerance                                    | Standard 10 %                                                                       |
|                                              | On request 5 %                                                                      |
| Power rating                                 | 0.5 W at + 70 °C                                                                    |
|                                              | linear                                                                              |
|                                              |   |
| 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           | 23 turns $\pm$ 5           |
| Operating torque (max. Ncm) | 1.5                        |
| End stop torque             | Clutch action              |
| Net weight                  | Approx. 0.82 g             |
| 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 |

## STANDARD RESISTANCE ELEMENT DATA

| STANDARD<br>RESISTANCE<br>VALUES | LINEAR LAW             |                         |                               | TYPICAL<br>TCR<br>- 55 °C<br>+ 125 °C |
|----------------------------------|------------------------|-------------------------|-------------------------------|---------------------------------------|
|                                  | MAX. POWER<br>AT 70 °C | MAX. WORKING<br>VOLTAGE | MAX. CURRENT<br>THROUGH WIPER |                                       |
| $\Omega$                         | W                      | V                       | mA                            | ppm/°C                                |
| 10                               | 0.5                    | 2.2                     | 224                           | ± 100                                 |
| 20                               | 0.5                    | 3.2                     | 158                           |                                       |
| 50                               | 0.5                    | 5                       | 100                           |                                       |
| 100                              | 0.5                    | 7.1                     | 71                            |                                       |
| 200                              | 0.5                    | 10                      | 50                            |                                       |
| 250                              | 0.5                    | 11.2                    | 45                            |                                       |
| 500                              | 0.5                    | 15.8                    | 32                            |                                       |
| 1K                               | 0.5                    | 22.4                    | 22                            |                                       |
| 2K                               | 0.5                    | 31.6                    | 16                            |                                       |
| 2.5K                             | 0.5                    | 35.4                    | 14                            |                                       |
| 5K                               | 0.5                    | 50                      | 10                            |                                       |
| 10K                              | 0.5                    | 70.7                    | 7.1                           |                                       |
| 20K                              | 0.5                    | 100                     | 5                             |                                       |
| 25K                              | 0.5                    | 112                     | 4.5                           |                                       |
| 50K                              | 0.5                    | 158                     | 3.2                           |                                       |
| 100K                             | 0.5                    | 224                     | 2.2                           |                                       |
| 200K                             | 0.31                   | 250                     | 1.3                           |                                       |
| 250K                             | 0.25                   | 250                     | 1                             |                                       |
| 500K                             | 0.125                  | 250                     | 0.5                           |                                       |
| 1M                               | 0.063                  | 250                     | 0.25                          |                                       |
| 2M                               | 0.031                  | 250                     | 0.13                          |                                       |

## 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 temp. 70 °C                                                       | ± 1 %<br>Contact res. variation: < 1 % Rn                                                                    | ± 2 %                                          |
| 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 %                                          |
| Long term damp heat      | 56 days<br>40 °C, 93 % RH                                                                                    | ± 0.5 %<br>Dielectric strength: 1000 V <sub>RMS</sub><br>Insulation resistance: > 10 <sup>4</sup> M $\Omega$ | ± 1 %                                          |
| Rapid temperature change | 5 cycles<br>- 55 °C to + 125 °C                                                                              | ± 0.5 %                                                                                                      | $\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 1$ %   |
| 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 %                                                                                                      | $\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 0.2$ % |
| Rotational life          | 200 cycles                                                                                                   | ± 4 %<br>Contact res. variation: < 1 % Rn                                                                    | -                                              |

## MARKING

- Vishay trademark
- Model
- Style
- Ohmic value (in  $\Omega$ , k $\Omega$ , M $\Omega$ )
- Tolerance (in %)
- Manufacturing date
- Marking of terminal 3

3/8" Square (10 mm) Multi-Turn Cermet  
Trimmer

Vishay Spectrol

**PACKAGING**

- In box of 200 pieces code B40 (BO200)
- On request:
- In box of 100 pieces code B30 (BO100)
  - In tube of 50 pieces code T20 (TU50)

**ORDERING INFORMATION** (Part Number)

|       |                       |   |   |                                                               |   |   |                                   |   |                                                                                              |   |                                                         |  |  |
|-------|-----------------------|---|---|---------------------------------------------------------------|---|---|-----------------------------------|---|----------------------------------------------------------------------------------------------|---|---------------------------------------------------------|--|--|
| M     | 6                     | 4 | P | 2                                                             | 2 | 4 | K                                 | B | 4                                                                                            | 0 |                                                         |  |  |
| Model | STYLE                 |   |   | OHMIC VALUE                                                   |   |   | TOLERANCE                         |   | PACKAGING                                                                                    |   | SPECIAL NUMBER                                          |  |  |
| M64   | P<br>W<br>X<br>Y<br>Z |   |   | From<br>10 $\Omega$ to 2.2 M $\Omega$<br>224 = 220 k $\Omega$ |   |   | K = 10 %<br>On request<br>J = 5 % |   | B40 = Box<br>200 pieces<br>On request:<br>B30 = Box<br>100 pieces<br>T20 = Tube<br>50 pieces |   | (If applicable)<br>Given by Vishay<br>for custom design |  |  |

**DESCRIPTION** (for information only)

|       |       |       |           |         |           |             |
|-------|-------|-------|-----------|---------|-----------|-------------|
| 64    | P     | 220K  | 10 %      |         | BO200     | e3          |
| MODEL | STYLE | VALUE | TOLERANCE | SPECIAL | PACKAGING | LEAD FINISH |



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**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

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