

5 mm Through Hole Trimmer Single-Turn Cermet



The T53 trimming potentiometer volumetric efficiency (5 mm x 5 mm x 2.7 mm) with high performance and stability. The T53 design is suitable for both manual or automatic operation.

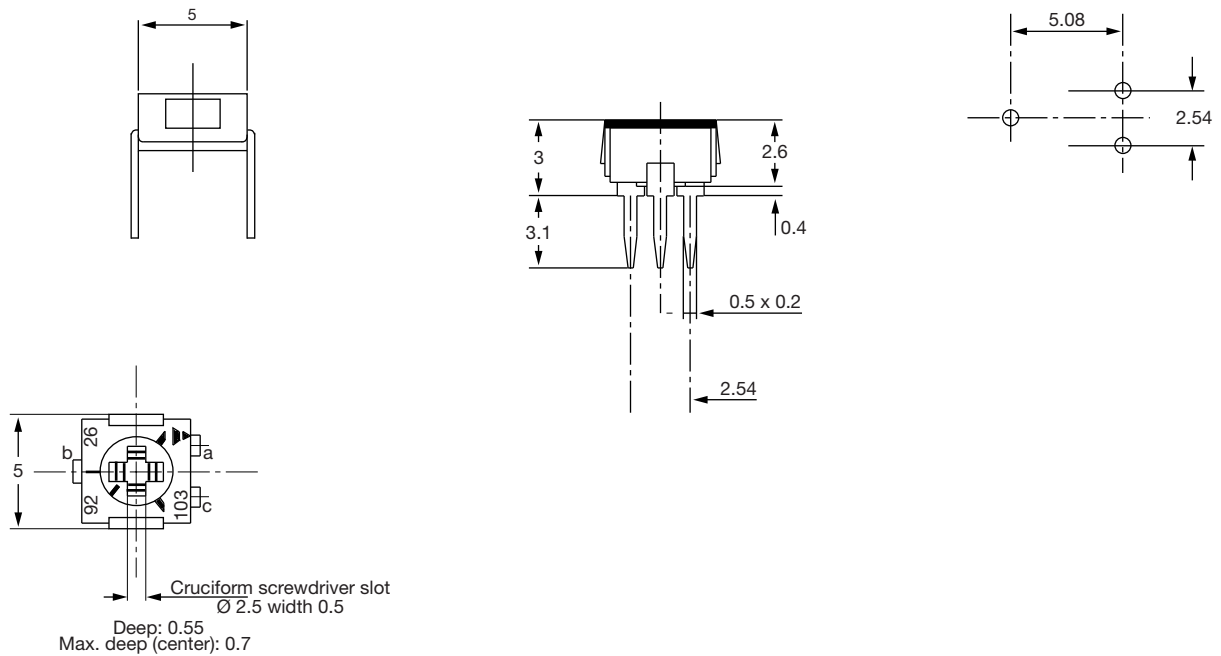
FEATURES

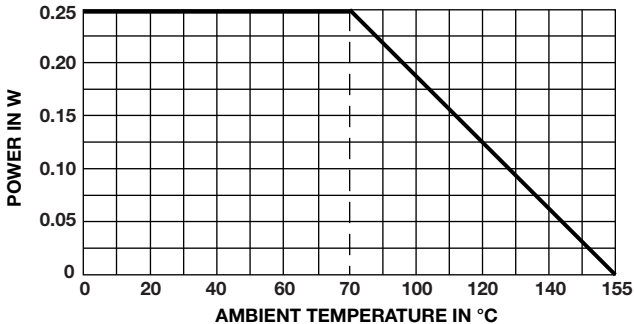
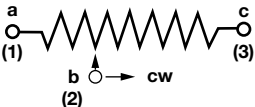
- Fully sealed
- 0.25 W at 70 °C
- Wide ohmic range (10 Ω to 1 MΩ)
- Low contact resistance variation (2 % or 3 Ω)
- Small size for optimum packaging density
- Suitable for both manual or automatic operation
- For SMD version see TS53Y series
- Tests according to CECC 41000 or IEC 60393-1
- Compliant to RoHS Directive 2002/95/EC



RoHS
COMPLIANT

DIMENSIONS in millimeters (± 0.25 mm)



| ELECTRICAL SPECIFICATIONS | | |
|---------------------------------------|---|------------|
| Resistive element | Cermet | |
| Electrical travel | $220^\circ \pm 15^\circ$ | |
| Resistance range | 10 Ω to 1 M Ω | |
| Standard series | 1 - 2 - 5 | |
| Tolerance | Standard | $\pm 20\%$ |
| | On request | $\pm 10\%$ |
| Power rating | linear 0.25 W at + 70 °C  | |
| Circuit diagram |  | |
| Temperature coefficient | See Standard Resistance Element Data table | |
| Limiting element voltage (linear law) | 200 V | |
| Contact resistance variation | 2 % or 3 Ω | |
| End resistance (typical) | 0.1 % or 3 Ω | |
| Dielectric strength (RMS) | 1000 V | |
| Insulation resistance | 10 ⁶ M Ω | |
| Specification | In accordance with CECC 41100 | |

| MECHANICAL SPECIFICATIONS | |
|-----------------------------|--------------------------|
| Mechanical travel | $270^\circ \pm 10^\circ$ |
| Operating torque (max. Ncm) | 1.5 |
| End stop torque (max. Ncm) | 3.5 |
| Unit weight (max. g) | 0.15 |
| Terminals | Pure Sn (code e3) |

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



| 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 90°/30° - ambient temp. + 70 °C | ± 2 % Contact res. variation: $\Delta R < 1\%$ Rn | 3 % |
| Moisture resistance | MIL-STD 202 method 106 10 cycles of 24 h constituted with damp heat - cold - vibrations | ± 2 % Dielectric strength: 1000 V _{RMS} Insulation resistance: > 10 ⁴ MΩ | ± 3 % |
| Long term damp heat | Temperature 40 °C - RH 93 % 56 days | ± 2 % Dielectric strength: 1000 V _{RMS} Insulation resistance: > 10 ⁴ MΩ | ± 3 % |
| Thermal shock | - 55 °C to + 125 °C - 5 cycles | ± 1 % | $\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 2\%$ |
| Rotational life (electrical and mechanical) | 100 cycles - rated power | ± (3 % + 5 Ω) | |
| Shock | MIL-STD 202 method 213/1 100 g - 6 ms 3 successive shocks in 3 directions | ± 1 % | $\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 1\%$ |
| Vibration | MIL-STD 202 method 204/D 20 g - 12 h | ± 1 % | $\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 1\%$ |

| STANDARD RESISTANCE ELEMENT DATA | | | | |
|----------------------------------|---------------------|----------------------|--------------------|--|
| STANDARD RESISTANCE VALUES | LINEAR LAW | | | TYPICAL TCR - 55 °C + 125 °C ppm/°C |
| | MAX. POWER AT 70 °C | MAX. WORKING VOLTAGE | MAX. WIPER CURRENT | |
| Ω | W | V | mA | |
| 10 | 0.25 | 1.58 | 158 | ± 100 |
| 20 | 0.25 | 2.24 | 112 | |
| 50 | 0.25 | 3.54 | 71 | |
| 100 | 0.25 | 5.00 | 50 | |
| 200 | 0.25 | 7.07 | 35 | |
| 500 | 0.25 | 11.2 | 22 | |
| 1K | 0.25 | 15.8 | 16 | |
| 2K | 0.25 | 22.4 | 11 | |
| 5K | 0.25 | 35.4 | 7 | |
| 10K | 0.25 | 50.0 | 5 | |
| 20K | 0.25 | 70.7 | 3.5 | |
| 50K | 0.25 | 112 | 2.2 | |
| 100K | 0.25 | 158 | 1.6 | |
| 200K | 0.20 | 200 | 1.0 | |
| 500K | 0.08 | 200 | 0.4 | |
| 1M | 0.04 | 200 | 0.2 | |



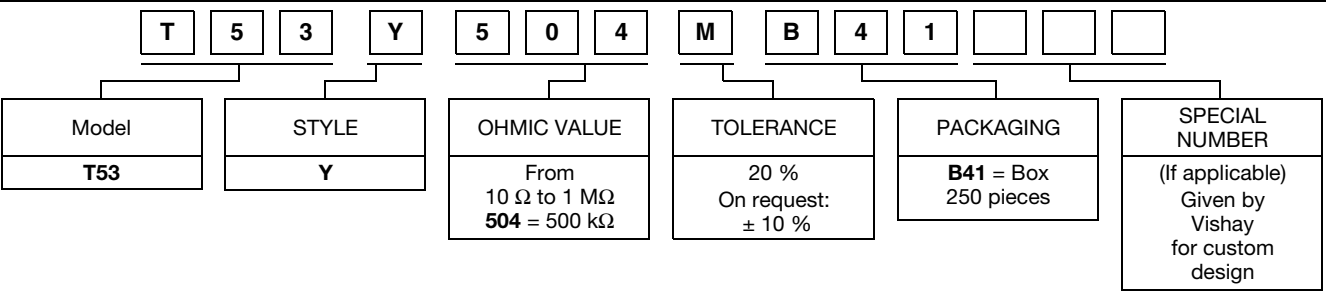
MARKING

- Vishay trademark
- Ohmic value (in Ω , $k\Omega$, $M\Omega$) is indicated by a three figure code, the first two are significant figures, the third one is a multiplier.
 Example: 100 = 10 Ω
 101 = 100 Ω
 102 = 1000 Ω
 503 = 50 000 Ω
- Manufacturing date is indicated by four digits, the first two for the year, the last for the week number.

PACKAGING

- In box of 250 pieces code B41 (B0250)

ORDERING INFORMATION (Part Number)



DESCRIPTION (for information only)

| | | | | | | |
|------------|----------|-------------|-------------|---------|-----------|-------------|
| T53 | Y | 500K | 20 % | | B0 | e3 |
| MODEL | STYLE | VALUE | TOLERANCE | SPECIAL | PACKAGING | LEAD FINISH |



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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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