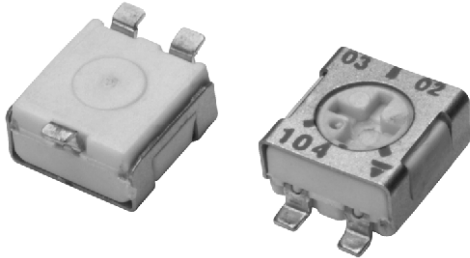


Surface Mount Miniature Trimmers Single-Turn Cermet Sealed



FEATURES

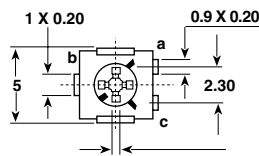
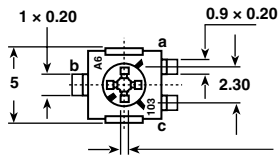
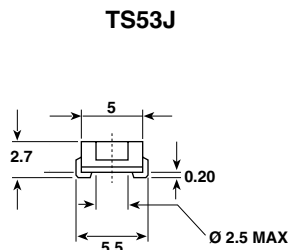
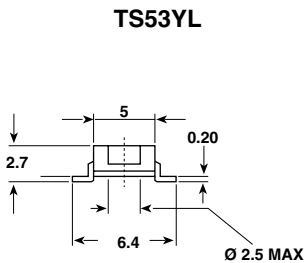
- 0.25 Watt at 70 °C
- For PCB version see T53Y series
- Wide ohmic range (10 Ω to 1 MΩ)
- Small size for optimum packing density
- Suitable for both manual or automatic operation



The TS53 trimming potentiometer has been designed for surface mount applications and offers volumetric efficiency (5 x 5 x 2.7 mm) with high performance and stability.

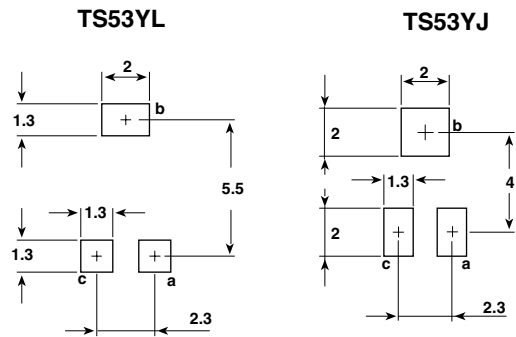
The TS53 design is suitable for both manual or automatic operation, and can withstand wave, and reflow soldering techniques.

DIMENSIONS in millimeters

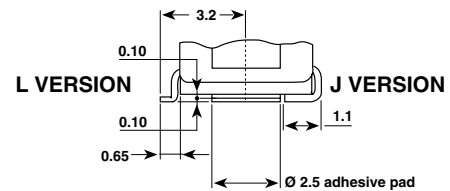


cruciform screwdriver slot
 ø 2.5, width 0.5
 deep: 0.55
 max deep (center): 0.7

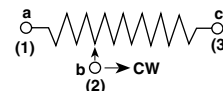
**RECOMMENDED
SOLDERING AREAS**



ADHESIVE PAD (detail)



CIRCUIT DIAGRAM



Tolerances unless otherwise specified ± 0.25 mm



| ELECTRICAL SPECIFICATIONS | | |
|---------------------------------------|-------------|--------------------------------------|
| Resistive Element | | Cermet |
| Electrical Travel | | 220° ± 15° |
| Resistance Range | | 10 Ω to 1 MΩ |
| Standard Series | | 1 - 2 - 5 |
| Tolerance Standard | | ± 20 % |
| Power Rating | Linear | 0.25 W at 70 °C |
| | Logarithmic | not applicable |
| Temperature Coefficient | | See Standard Resistance Element Data |
| Limiting Element Voltage (Linear Law) | | 200 V |
| Contact Resistance Variation | | 1 % or 3 Ω |
| End Resistance (Typical) | | 0.1 % or 3 Ω |
| Dielectric Strength (RMS) | | 1000 V |
| Insulation Resistance | | 10 ⁶ MΩ |

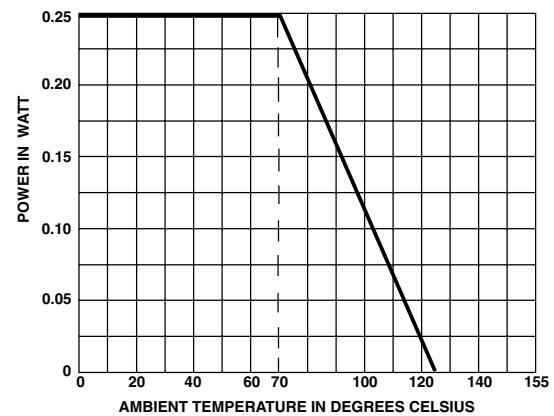
MECHANICAL SPECIFICATIONS

| | |
|-----------------------------|------------|
| Mechanical Travel | 270° ± 10° |
| Operating Torque (max. Ncm) | 1.5 |
| End Stop Torque (max. Ncm) | 3.5 |
| Unit Weight (max. g) | 0.15 |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-------------------|---------------------|
| Temperature Range | - 55 °C to + 125 °C |
| Climatic Category | 55/125/56 |
| Sealing | sealed container |

POWER RATING CHART



| PERFORMANCE | | | |
|---|--|---|--|
| TESTS | CONDITIONS | TYPICAL VALUES AND DRIFTS | |
| | | $\frac{\Delta RT}{RT}$ (%) | $\frac{\Delta R_{1-2}}{R_{1-2}}$ (%) |
| Load Life | 1000 hours at rated power 90°/30' - ambient temperature + 70 °C | ± 2 % Contact resistance variation: ΔR < 1 % Rn | ± 3 % |
| Climatic Sequence | Phase A dry heat 125 °C Phase B damp heat Phase C cold - 55 °C Phase D damp heat 5 cycles | ± 2 % | ± 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 % | $\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 2 \%$ |
| Rotational Life (Electrical and Mechanical) | 100 cycles - rated power | ± 3 % | |
| Shock | 50 g - 11 ms 3 successive shocks in 3 directions | ± 1 % | $\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 1 \%$ |
| Vibration | 10 - 55 Hz 0.75 mm or 10 g - 6 hours | ± 1 % | $\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 1 \%$ |

| STANDARD RESISTANCE ELEMENT DATA | | | | |
|----------------------------------|---------------------|----------------------|---------------------------|--|
| STANDARD RESISTANCE VALUES | LINEAR LAW | | | TCR - 55 °C + 125 °C ppm/°C |
| | MAX. POWER AT 70 °C | MAX. WORKING VOLTAGE | MAX. CUR. THROUGH ELEMENT | |
| Ω | W | V | mA | |
| 10 | 0.25 | 1.58 | 158 | 0 + 200 |
| 20 | | 2.24 | 112 | |
| 50 | | 3.54 | 71 | |
| 100 | ↓ | 5.00 | 50 | ± 100 |
| 200 | | 7.07 | 35 | |
| 500 | | 11.2 | 22 | |
| 1K | | 15.8 | 16 | |
| 2K | | 22.4 | 11 | |
| 5K | | 35.4 | 7 | |
| 10K | | 50.0 | 5 | |
| 20K | | 70.7 | 3.5 | |
| 50K | | 112 | 2.2 | |
| 100K | | 0.25 | 158 | |
| 200K | 0.20 | 200 | 1.0 | |
| 500K | 0.08 | 200 | 0.4 | |
| 1M | 0.04 | 200 | 0.2 | |

MARKING

VISHAY trademark, ohmic value, manufacturing date.

The ohmic value is indicated by a 3 figure code, the first two are significant figures, the third one is the multiplier.

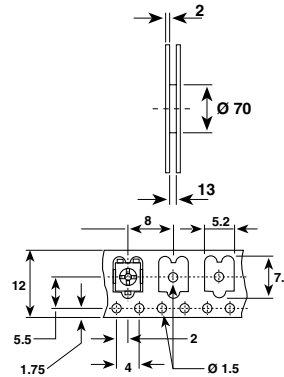
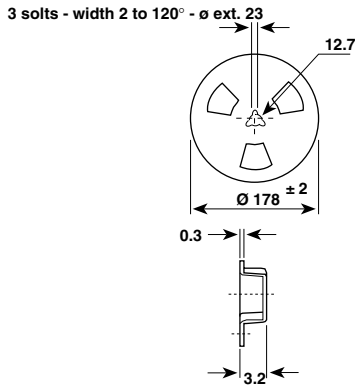
Example:
 100 = 10 Ω
 101 = 100 Ω
 102 = 1000 Ω
 503 = 50 000 Ω

SOLDERING RECOMMENDATIONS

see Application notes

PACKAGING

On tape and reel of 500 pieces, code TR and 2000 pieces, code TR1

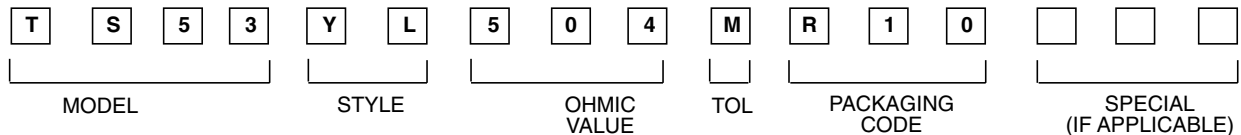


Cover tape panel strength specifications EIA 481 A and CEI 60286-3.

ORDERING INFORMATION

| TS53 SERIES | YL STYLE | 500 KΩ OHMIC VALUE | ± 20 % TOLERANCE | TR500 PACKAGING | e3 LEAD FINISH |
|-------------|----------|--------------------|------------------|--|----------------|
| | | | | TR: Tape and reel 500 pcs on request: TR1: Tape and reel 2000 pcs | e3: pure Sn |

SAP PART NUMBERING GUIDELINES



See the end of this data book for conversion tables



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