

## 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.

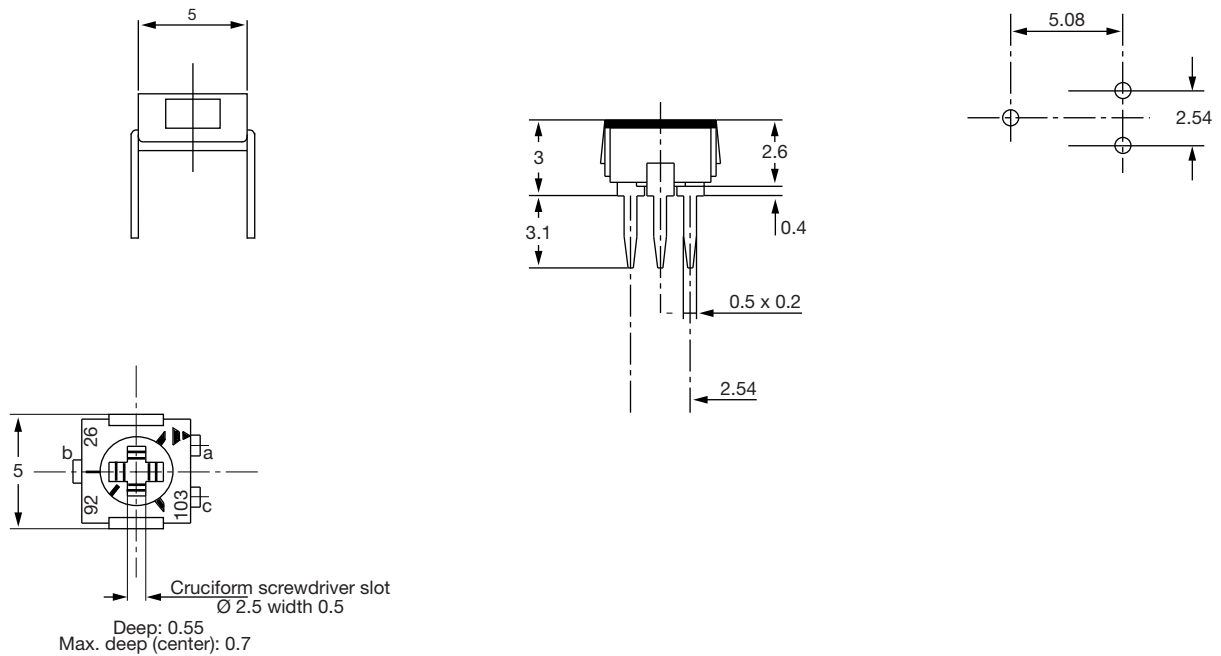
### FEATURES

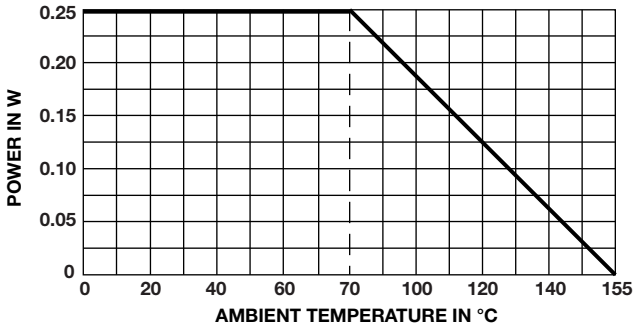
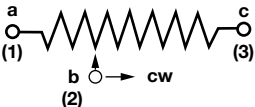
- Fully sealed
- 0.25 W at 70 °C
- Wide ohmic range (10 Ω to 1 MΩ)
- Low contact resistance variation (2 % or 3 Ω)
- Small size for optimum packaging density
- Suitable for both manual or automatic operation
- For SMD version see TS53Y series
- Tests according to CECC 41000 or IEC 60393-1
- Compliant 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 $\Omega$ to 1 M $\Omega$	
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 $\Omega$	
End resistance (typical)	0.1 % or 3 $\Omega$	
Dielectric strength (RMS)	1000 V	
Insulation resistance	10 <sup>6</sup> M $\Omega$	
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

<b>PERFORMANCES</b>			
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 <sub>RMS</sub> Insulation resistance: > 10 <sup>4</sup> MΩ	± 3 %
Long term damp heat	Temperature 40 °C - RH 93 % 56 days	± 2 % Dielectric strength: 1000 V <sub>RMS</sub> Insulation resistance: > 10 <sup>4</sup> 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 %	$\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 1\%$

<b>STANDARD RESISTANCE ELEMENT DATA</b>				
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	



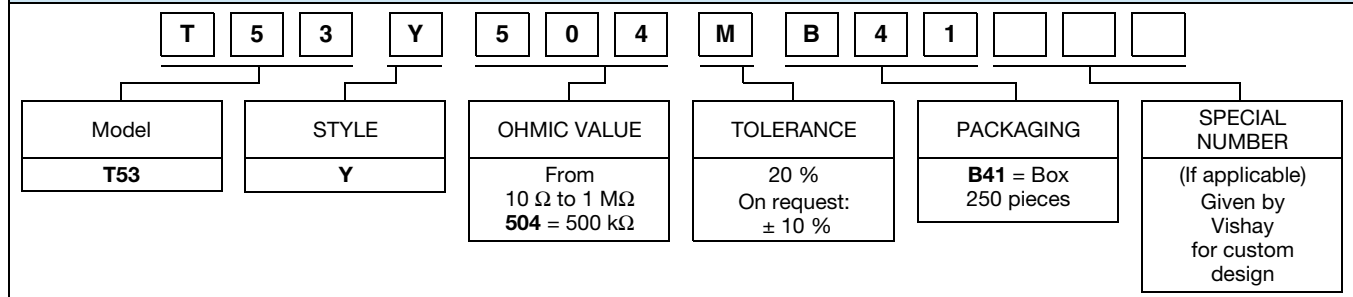
**MARKING**

- Vishay trademark
- Ohmic value (in  $\Omega$ , 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  $\Omega$   
 101 = 100  $\Omega$   
 102 = 1000  $\Omega$   
 503 = 50 000  $\Omega$
- 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)**

<b>T53</b>	<b>Y</b>	<b>500K</b>	<b>20 %</b>		<b>B0</b>	<b>e3</b>
MODEL	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD FINISH



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