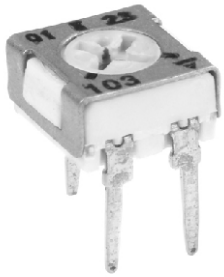
Miniature Trimmer Single-Turn Cermet



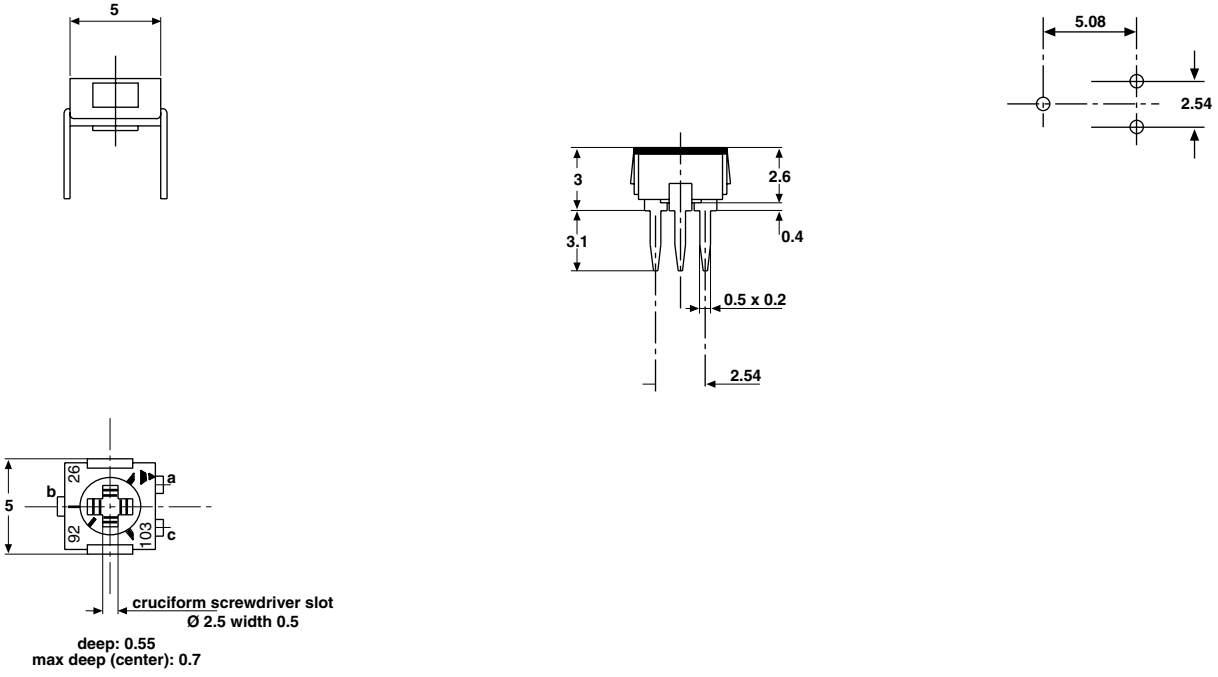
The T53 trimming potentiometer volumetric efficiency (5 x 5 x 2.7 mm) with high performance and stability.
The T53 design is suitable for both manual or automatic operation.

FEATURES

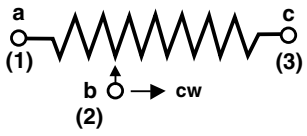
- Fully sealed
- 0.25 Watt at 70 °C
- Wide ohmic range (10 Ω to 1 MΩ)
- Low contact resistance variation (2 % or 3 Ω)
- Small size for optimum packing density
- Suitable for both manual or automatic operation
- For SMD version see TS53Y series

RoHS COMPLIANT

DIMENSIONS in millimeters



CIRCUIT DIAGRAM



Tolerances unless otherwise specified ± 0.25

For technical questions, contact: sfer@vishay.com
See also: Application notes

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		2 % or 3 Ω
End Resistance (Typical)		0.1 % or 3 Ω
Dielectric Strength (RMS)		1000 V
Insulation Resistance		10^6 MΩ
Specification		in accordance with CECC 41100

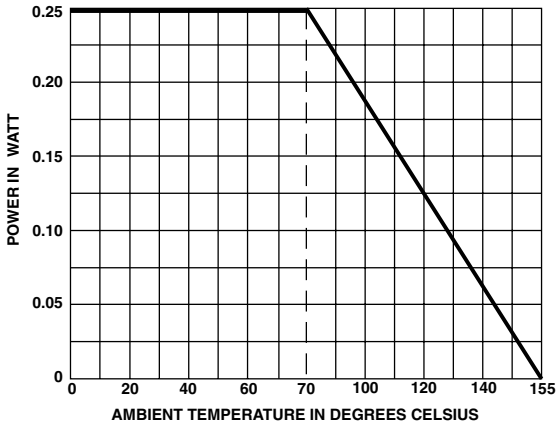
MECHANICAL SPECIFICATIONS

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 + 155 °C
Climatic Category	55/125/56
Sealing	enables cleaning IP67

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 %	± 3 % Contact resistance variation: ΔR < 1 % Rn
Moisture Resistance	MIL STD 202 Method 106 10 cycles of 24 hours 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 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 2$ %
Rotational Life (Electrical and Mechanical)	100 cycles - rated power	± 3 %	
Shock	MIL STD 202 Method 213/1 100 g - 6 ms 3 successive shocks in 3 directions	± 1 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 1$ %
Vibration	MIL STD 202 Method 204/D 20 g - 12 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
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. WIPER CUR.	
Ω	W	V	mA	ppm/°C
10	0.25	1.58	158	
20		2.24	112	0
50		3.54	71	+ 200
100		5.00	50	
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	± 100
50K		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, 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

The manufacturing date is indicated by four digits, the first two for the year, the last two for the week number.

SOLDERING RECOMMENDATIONS

see Application notes

PACKAGING

– In bulk (plastic box of 250 pieces), code BO250

ORDERING INFORMATION

T53	Y	500 kΩ	± 20 %	BO250	e3
SERIES	STYLE	OHMIC VALUE	TOLERANCE	PACKAGING	LEAD FINISH
					e3: pure Sn

SAP PART NUMBERING GUIDELINES

T	5	3	Y	5	0	4	M	B	4	1			
MODEL			STYLE	OHMIC VALUE			TOL	PACKAGING CODE			SPECIAL (IF APPLICABLE)		

See the end of this data book for conversion tables

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