5 mm Through Hole Trimmer Single-Turn Cermet

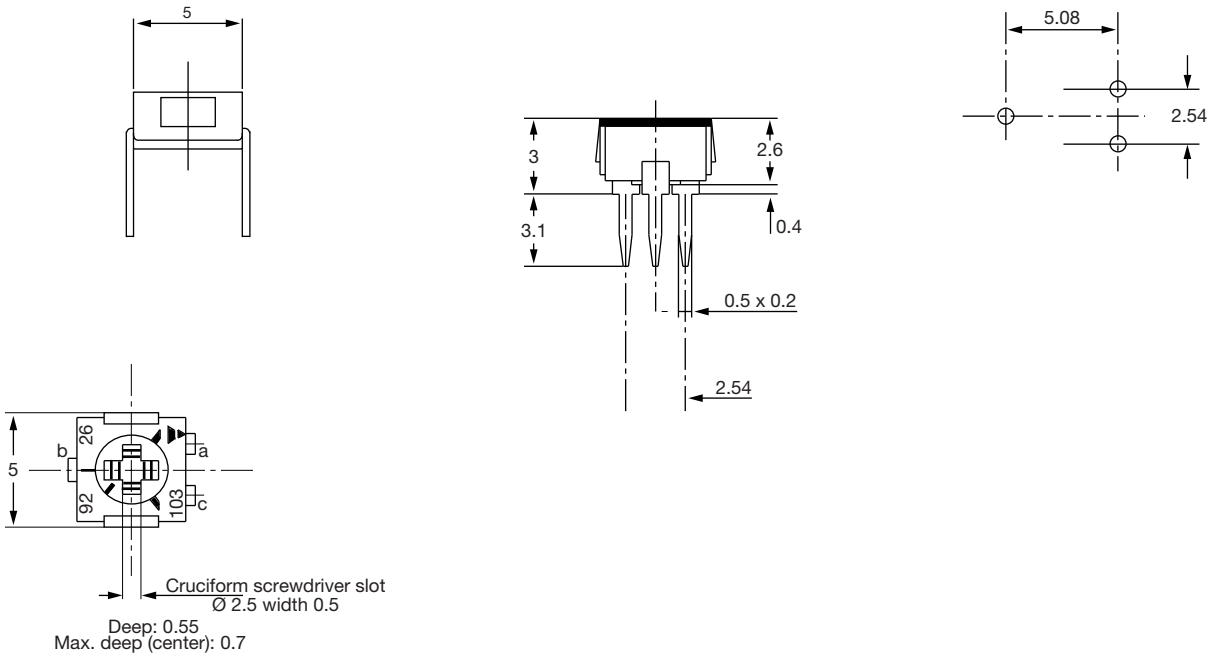
The T53 trimming potentiometer volumetric efficiency (5 mm x 5 mm x 2.7 mm) with high performance and stability. The T53 design is suitable for both manual or automatic operation.

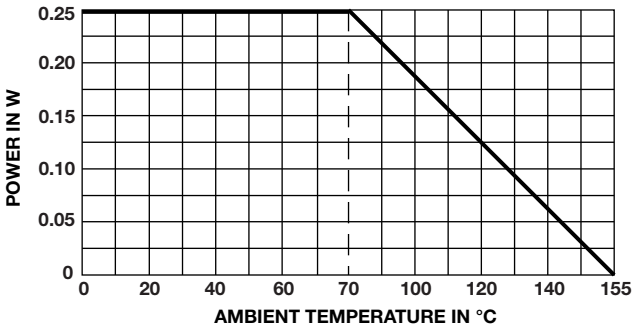
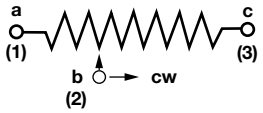
FEATURES

- 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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

DIMENSIONS in millimeters (± 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 %
	On request	± 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 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
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: ΔR < 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 %	$\Delta V_{1-2}/V_{1-3} \leq \pm 2$ %
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 %	$\Delta V_{1-2}/V_{1-3} \leq \pm 1$ %
Vibration	MIL-STD 202 method 204/D 20 g - 12 h	± 1 %	$\Delta V_{1-2}/V_{1-3} \leq \pm 1$ %

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability.

STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	LINEAR LAW			TYPICAL TCR - 55 °C + 125 °C
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. WIPER CURRENT	
Ω	W	V	mA	ppm/°C
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, kΩ, MΩ) 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)

T	5	3	Y	5	0	4	M	B	4	1			

Model	STYLE	OHMIC VALUE	TOLERANCE	PACKAGING	SPECIAL NUMBER
T53	**Y**	From 10 Ω to 1 MΩ 504 = 500 kΩ	20 % On request: ± 10 %	B41 = box 250 pieces	(If applicable) Given by Vishay for custom design

DESCRIPTION (for information only)

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

RELATED DOCUMENTS

APPLICATION NOTES	
Potentiometers and Trimmers	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029

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