Vishay Sfernice



Surface Mount Miniature Trimmers Single-Turn Cermet Sealed





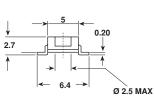
The TS53 trimming potentiometer has been designed for surface mount applications and offers volumetric efficiency (5 \times 5 \times 2.7 mm) with high performance and stability.

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

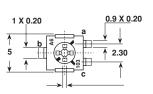
FEATURES

- 0.20 Watt at 85°C
- GAM T1
- For PCB version see T53Y series
- · Excellent stability
- · Wide ohmic range
- · Low temperature coefficient
- · Low contact resistance variation
- · Small size for optimum packing density
- Suitable for both manual or automatic operation

DIMENSIONS in millimeters TS53YL

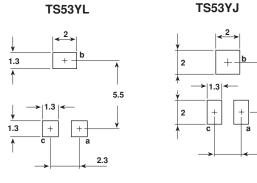


MAY

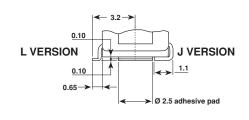


cruciform screwdriver slot ø 2.5, width 0.5 deep: 0.55 max deep (center): 0.7

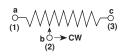
RECOMMENDED SOLDERING AREAS



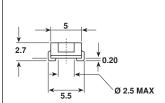
ADHESIVE PAD (detail)

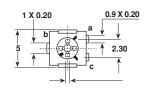


CIRCUIT DIAGRAM



TS53YJ





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



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

MECHANICAL SPECIFICATIONS

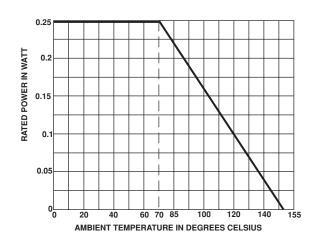
Mechanical Travel $270^{\circ} \pm 10^{\circ}$ **Operating Torque (max. Ncm)** 1.5 **End Stop Torque (max. Ncm)** 3.5 Unit Weight (max. g) 0.15

ENVIRONMENTAL SPECIFICATIONS

Temperature Range -55°C to $+125^{\circ}\text{C}$ **Climatic Category** 55 / 125 / 56 Sealing sealed container

solder immersion 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 + 85°C	\pm 2% Contact resistance variation: ΔR <	± 3 % 1% Rn			
Moisture Resistance	MIL STD 202 Method 106 10 cycles of 24 hours constituted with damp heat - cold - vibrations	10 cycles of 24 hours constituted Dielectric strength: 1000 V RMS				
Long Term Damp Heat	Temperature 40°C - RH 93 % 56 days	$\pm~2~\%$ Dielectric strength: 1000 V RMS Insulation resistance: > $10^4~M\Omega$	± 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 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \le \pm 1\%$			
Vibration	MIL STD 202 Method 204/D 20 g - 12 hours	± 1 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 1\%$			

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For technical questions, contact: sfer@vishay.com

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STANDARD RESISTANCE ELEMENT DATA							
STANDARD	LINEAR LAW			т.			
RESISTANCE VALUES	MAX. POWER AT 85°C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH ELEMENT	T.C. -55°C +125°C			
Ω	W	V	mA	ppm/°C			
10	0.20	1.41	141				
20		2	100	0			
50		3.16	63	+ 200			
100		4.47	45				
200		6.32	32				
500		10	20				
1k		14.1	14				
2k		20	10				
5k		31.6	6.3				
10k		44.7	4.5				
20k	V	63.2	3.2	± 100			
50k	0.2	100	2				
100k	0.2	141	1.4				
200k	0.2	200	1				
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: $100 = 10\Omega$

 $101 = 100\Omega$ $102 = 1000\Omega$ $503 = 50000\Omega$

SOLDERING RECOMMENDATIONS

Vapor phase: 215°C/20 to 40 seconds.

Reflow: 230°C/20 seconds.

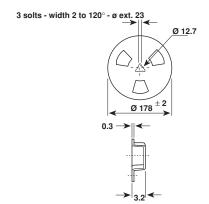
Do not exceed peak 260°C or with an IRON 40W: 3 seconds

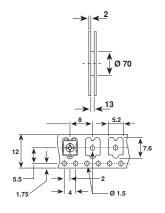
at 350°C.

Soldering is possible by wave, reflow and vapor phase.

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 YL 500K Ω \pm 20% TR500 SERIES STYLE OHMIC VALUE TOLERANCE PACKAGING

TR: Tape and reel 500 pcs. on request: TR1: Tape and reel 2000 pcs.

SAP PART NUMBERING GUIDELINES

See the end of this data book for conversion tables

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Legal Disclaimer Notice



Vishay

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