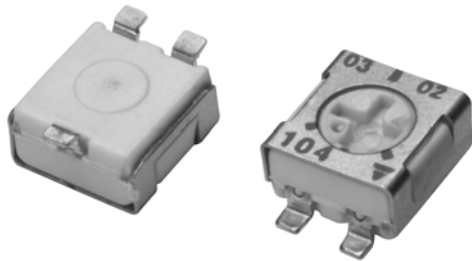


## Surface Mount Miniature Trimmers Single-Turn Cermet Sealed



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.

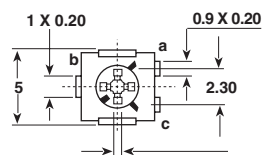
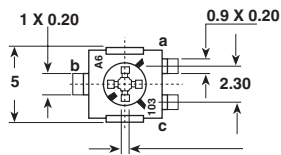
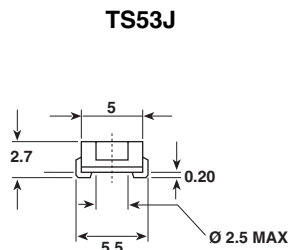
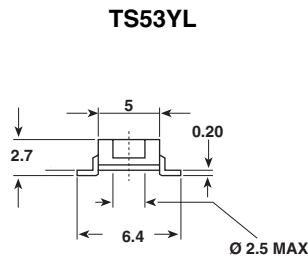
The TS53 design is suitable for both manual or automatic operation, and can withstand waves, and reflow soldering techniques.

### FEATURES

- 0.25 Watt at 70 °C
- 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

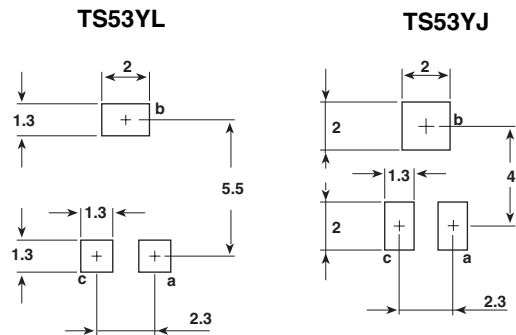


### DIMENSIONS in millimeters

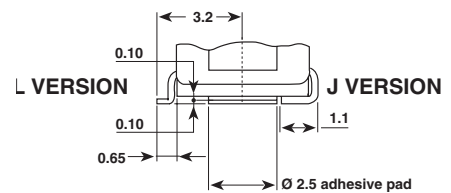


**cruciform screwdriver slot**  
 ø 2.5, width 0.5  
 deep: 0.55  
 max deep (center): 0.7

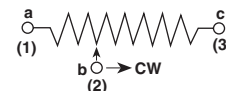
### RECOMMENDED SOLDERING AREAS



### 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 <sup>6</sup> MΩ

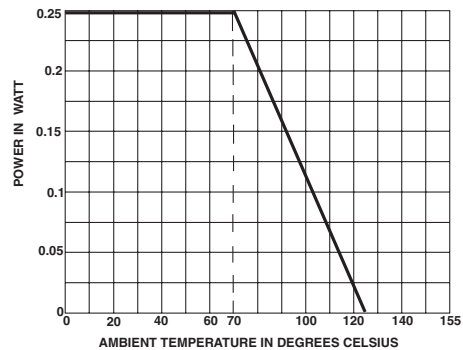
**MECHANICAL SPECIFICATIONS**

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 <sup>4</sup> 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			T.C. - 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	50	± 100
200		7.07	35	
500		11.2	22	
1k		15.8	16	
2k		22.4	11	
5k		35.4	7	
10k		50	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 = 50000 Ω

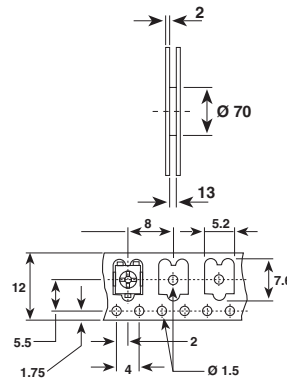
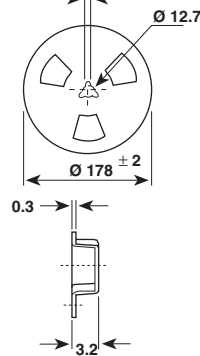
### SOLDERING RECOMMENDATIONS

See application notes

### PACKAGING

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

3 slots - width 2 to 120° - ø ext. 23



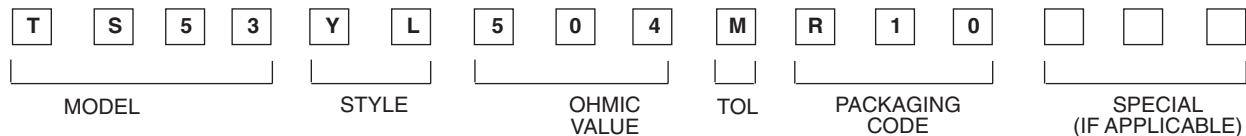
Cover tape panel strength specifications EIA 481 A and CEI 60286-3.

### ORDERING INFORMATION

TS53 SERIES	YL STYLE	500 KΩ OHMIC VALUE	± 20 % TOLERANCE	TR500 PACKAGING	e3 LEAD FINISH
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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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