

Multi-Turn Surface Mount Miniature 1/4" Square Cermet Trimmers, Fully Sealed



The TS63 multiturn trimmer has been designed for use in PCB surface mounting applications.

Three variations are available according to the positioning of the control screw and contact positions.

The cermet track gives a high stability performance with an extended ohmic capacity of 10 Ω to 2 M Ω .

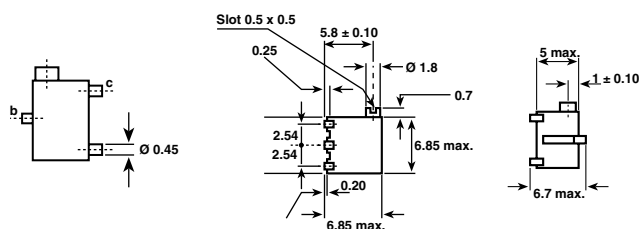
FEATURES

- 0.25 W at 85 °C
- Industrial grade
- Multi-turn operation
- A low contact resistance variation (down to 2 % R_n)
- Low end contact resistance (1 Ω typical)
- Full sealing
- Tests according to CECC 41 000

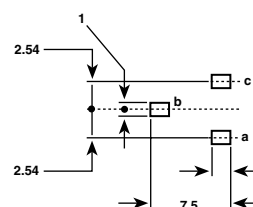


DIMENSIONS in millimeters

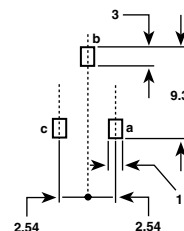
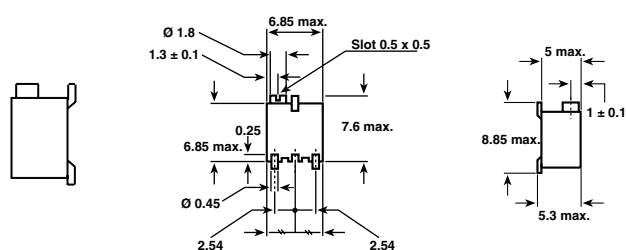
TS63X



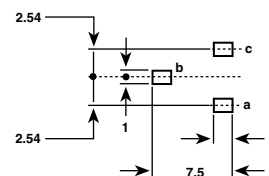
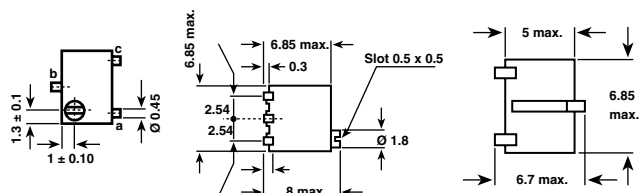
RECOMMENDED SOLDERING AREAS



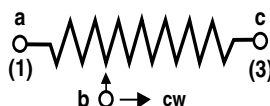
TS63Z



TS63Y



CIRCUIT DIAGRAM



Tolerance unless otherwise specified ± 0.5

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Vishay Sfernice

ELECTRICAL SPECIFICATIONS

Resistive Element	Cermet	
Electrical Travel	13 turns $\pm$ 2	
Resistance Range	10 Ω to 2 M Ω	
Standard Series	1 - 2 - 5	
Tolerance	Standard	$\pm$ 10 %
	On request	$\pm$ 5 %
Power Rating	Linear	0.25 W at 85 °C
	Logarithmic	Not applicable
Temperature Coefficient	See standard resistance element data	
Limiting Element Voltage (Linear Law)	250 V	
Contact Resistance Variation	2 % Rn or 2 Ω	
End Resistance (Typical)	1 Ω	
Dielectric Strength (RMS)	1000 V	
Insulation Resistance	10 ⁶ M Ω	

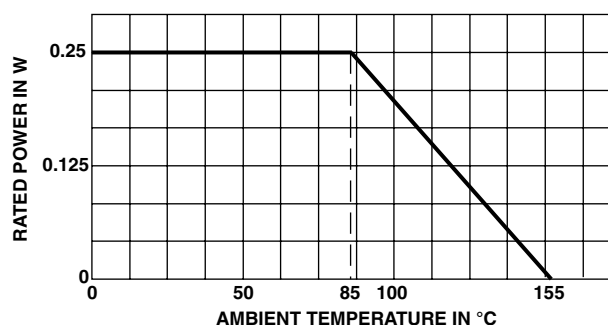
MECHANICAL SPECIFICATIONS

Mechanical Travel	15 turns $\pm$ 5
Operating Torque (max. Ncm)	1.5
End Stop Torque	Clutch action
Unit Weight (max. g)	0.5
Wiper (actual travel)	Positioned at approx. 50 %

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	- 55 °C to + 155 °C
Climatic Category	55/125/56
Sealing	Sealed container solder immersion IP67

POWER RATING CHART



PERFORMANCE

CECC 41100				TYPICAL VALUES AND DRIFTS	
TESTS	CONDITIONS	$\frac{\Delta RT}{RT}$ (%) REQUIREMENTS	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)	$\frac{\Delta RT}{RT}$ (%)	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)
Climatic Sequence	Phase A dry heat 125 °C Phase B damp heat Phase C cold - 55 °C Phase D damp heat 5 cycles	$\pm$ 2 %	$\pm$ 3 %	$\pm$ 0.5 %	$\pm$ 1 %
Long Term Damp Heat	56 days 40 °C 93 % RH	$\pm$ 2 % Dielectric strength: 250 V _{RMS} Insulation resistance: > 100 M Ω	$\pm$ 3 %	$\pm$ 0.5 % Dielectric strength: 1000 V _{RMS} Insulation resistance: > 10 ⁴ M Ω	$\pm$ 1 %
Rotational Life (Electrical, Mechanical)	200 cycles at rated power	$\pm$ 2 % Contact res. variat.: < 3 % Rn		$\pm$ (2 % + 3 Ω) Contact res. variat.: < 1 % Rn	
Load Life	1000 h at rated power 90°/30° - ambient temp. 85 °C	$\pm$ 2 % Contact res. variat.: < 3 % Rn	$\pm$ 4 %	$\pm$ 1 % Contact res. variat.: < 1 % Rn	$\pm$ 2 %
Thermal Shock	5 cycles - 55 °C to + 125 °C	$\pm$ 1.5 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$ $\pm$ 1 %	$\pm$ 0.5 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$ < $\pm$ 1 %
Shock	50 g at 11 ms 3 successive shocks in 3 directions	$\pm$ 1 %	$\pm$ 2 %	$\pm$ 0.1 %	$\pm$ 0.2 %
Vibration	10 Hz to 55 Hz 0.75 mm or 10 g for 6 h	$\pm$ 1 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$ $\pm$ 2 %	$\pm$ 0.1 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$ < $\pm$ 0.2 %

STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	LINEAR LAW			TYPICAL TCR - 55 °C + 125 °C
	MAX. POWER AT 85 °C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH WIPER	
Ω	W	V	mA	ppm/°C
10	0.25 ↓	1.58	158	± 100
20		2.23	112	
50		3.53	77	
100		5.00	50	
200		7.07	35	
500		11.2	22	
1K		15.8	15.8	
2K		22.3	11.2	
5K		35.3	7.1	
10K		50.0	5.0	
20K		70.7	3.5	
25K		79.0	3.2	
50K		112	2.2	
100K		158	1.6	
200K	0.25	224	1.1	
250K	0.25	250	1.1	
500K	0.13	250	0.50	
1M	0.06	250	0.25	
2M	0.03	250	0.125	

MARKING

Printed: VISHAY trademark, model, style, ohmic value (in Ω, kΩ, MΩ), tolerance (in %) only if non standard, manufacturing date, marking of terminal 3.

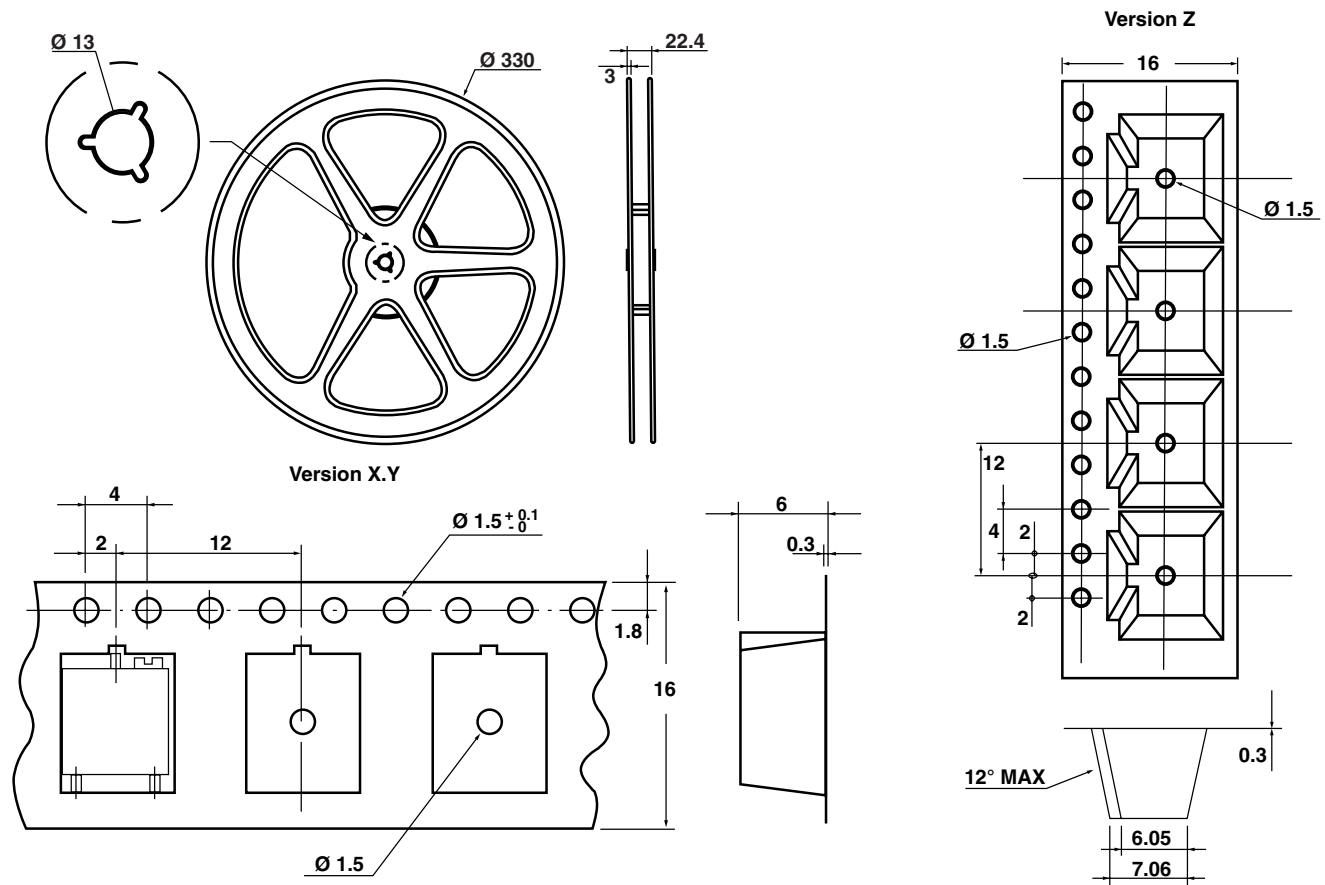
SOLDERING RECOMMENDATION

Soldering cycle: 10 s at 220 °C max or with an 40 W iron:
3 s at 350 °C

Soldering is recommended by reflow or vapour phase.

PACKAGING

- X, Y and Z types: on tape and reel (dia. 330 mm) of 500 pieces, code TR500.
- On request in magazine pack by 50 pieces (Tube) code TU.



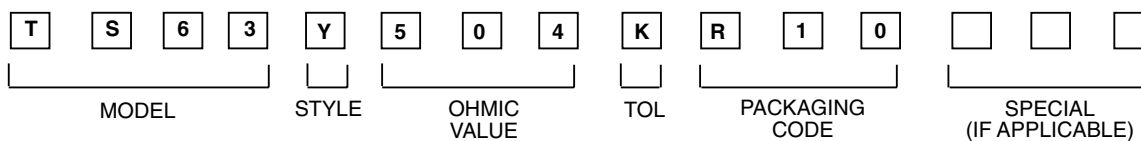


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ORDERING INFORMATIONTS63
MODELY
STYLE500 k Ω
OHMIC VALUE $\pm 10\%$
TOLERANCETR500
PACKAGINGe3
LEAD FINISHTR500: Tape and reel
On request: TU50: Tube

e3: Pure Sn

SAP PART NUMBERING GUIDELINES

See the end of this data book for conversion tables



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All product specifications and data are subject to change without notice.

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