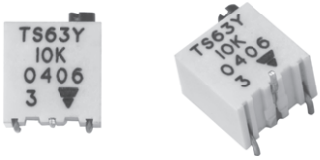
Multi-Turn Surface Mount 1/4" Square Cermet Trimmers, Fully Sealed



FEATURES

- 0.25 W at 70 °C
- Industrial grade
- Multi-turn operation
- A low contact resistance variation (down to 2 % Rn)
- Low end contact resistance (1 Ω typical)
- Full sealing
- Tests according to CECC 41000 or IEC 60393-1
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models

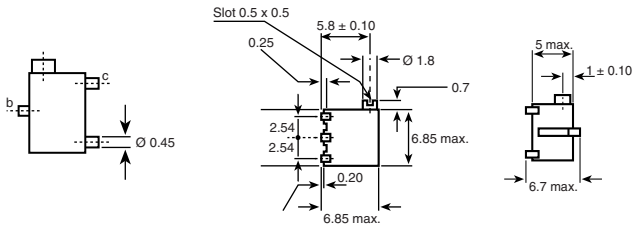
The TS63 multiturn trimmer has been designed for use in PCB surface mounting applications.

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

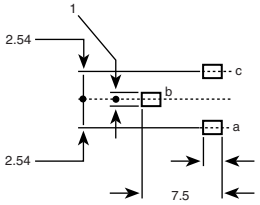
The cermet track gives a high stability performance with an extended ohmic capacity of 10 Ω to 2 MΩ.

DIMENSIONS in millimeters (± 0.5 mm)

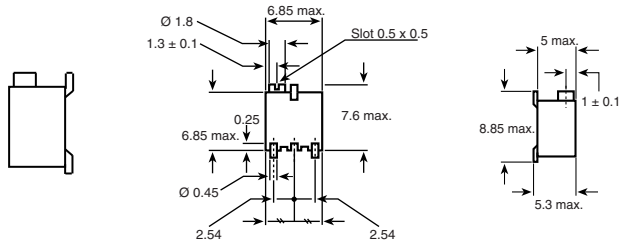
TS63X

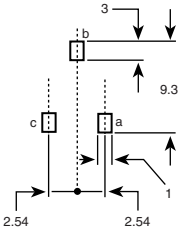


RECOMMENDED SOLDERING AREAS

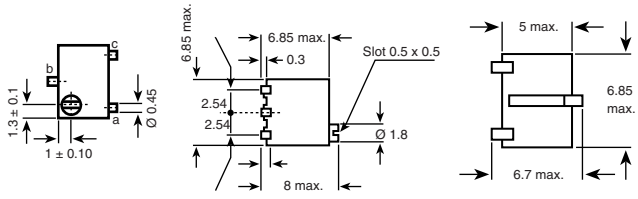


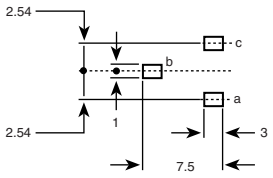
TS63Z





TS63Y





For technical questions, contact: sferpottrimmers@vishay.com

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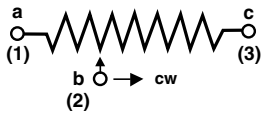
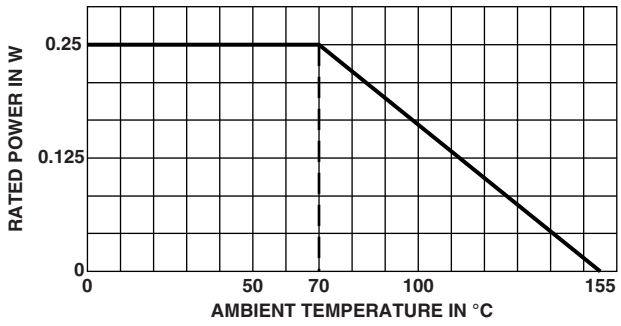
ELECTRICAL SPECIFICATIONS		
Resistive element		Cermet
Electrical travel		14 turns ± 2
Resistance range		10 Ω to 2 MΩ
Standard series		1 - 2 - 5
Tolerance	Standard	± 10 %
	On request	± 5 %
Circuit diagram		
Power rating	Linear	0.25 W at 70 °C 
Temperature coefficient		See Standard Resistance Element Data table
Limiting element voltage		250 V
Contact resistance variation (typical)		2 % Rn or 2 Ω
End resistance (typical)		1 Ω
Dielectric strength (RMS)		1000 V
Insulation resistance		10^6 MΩ

MECHANICAL SPECIFICATIONS	
Mechanical travel	15 turns ± 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 IP67
MSL level	1

SOLDERING RECOMMENDATIONS
Recommended reflow profile 2, see Application Note www.vishay.com/doc?52029

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PERFORMANCES

TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS		
		$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER
Electrical endurance	1000 h at rated power 90'/30' - ambient temp. 70 °C	± 1 %	± 2 %	Contact res. variation: < 1 % Rn
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 %	
Damp heat steady state	40 °C 93 % RH 56 days	± 2 %	± 3 %	Dielectric strength: 1000 V_{RMS} Insulation resistance: > 10^4 MΩ
Charge of temperature	-55 °C to +125 °C 5 cycles	± 1 %		$\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 2$ %
Mechanical endurance	200 cycles at rated power	± (2 % + 3 Ω)		Contact res. variation: < 3 % Rn
Shock	50 *g*'s at 11 ms 3 successive shocks in 3 directions	± 1 %		$\Delta V_{1-2}/\Delta V_{1-3} \leq 1$ %
Vibration	10 Hz to 55 Hz 0.75 mm or 10 *g*'s for 6 h	± 1 %		$\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 2$ %

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. CURRENT THROUGH WIPER	
Ω	W	V	mA	ppm/°C
10	0.25	1.58	158	
20	0.25	2.23	112	
50	0.25	3.53	77	
100	0.25	5.00	50	
200	0.25	7.07	35	
500	0.25	11.2	22	
1K	0.25	15.8	15.8	
2K	0.25	22.3	11.2	
5K	0.25	35.3	7.1	
10K	0.25	50.0	5.0	± 100
20K	0.25	70.7	3.5	
25K	0.25	79.0	3.2	
50K	0.25	112	2.2	
100K	0.25	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	200	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

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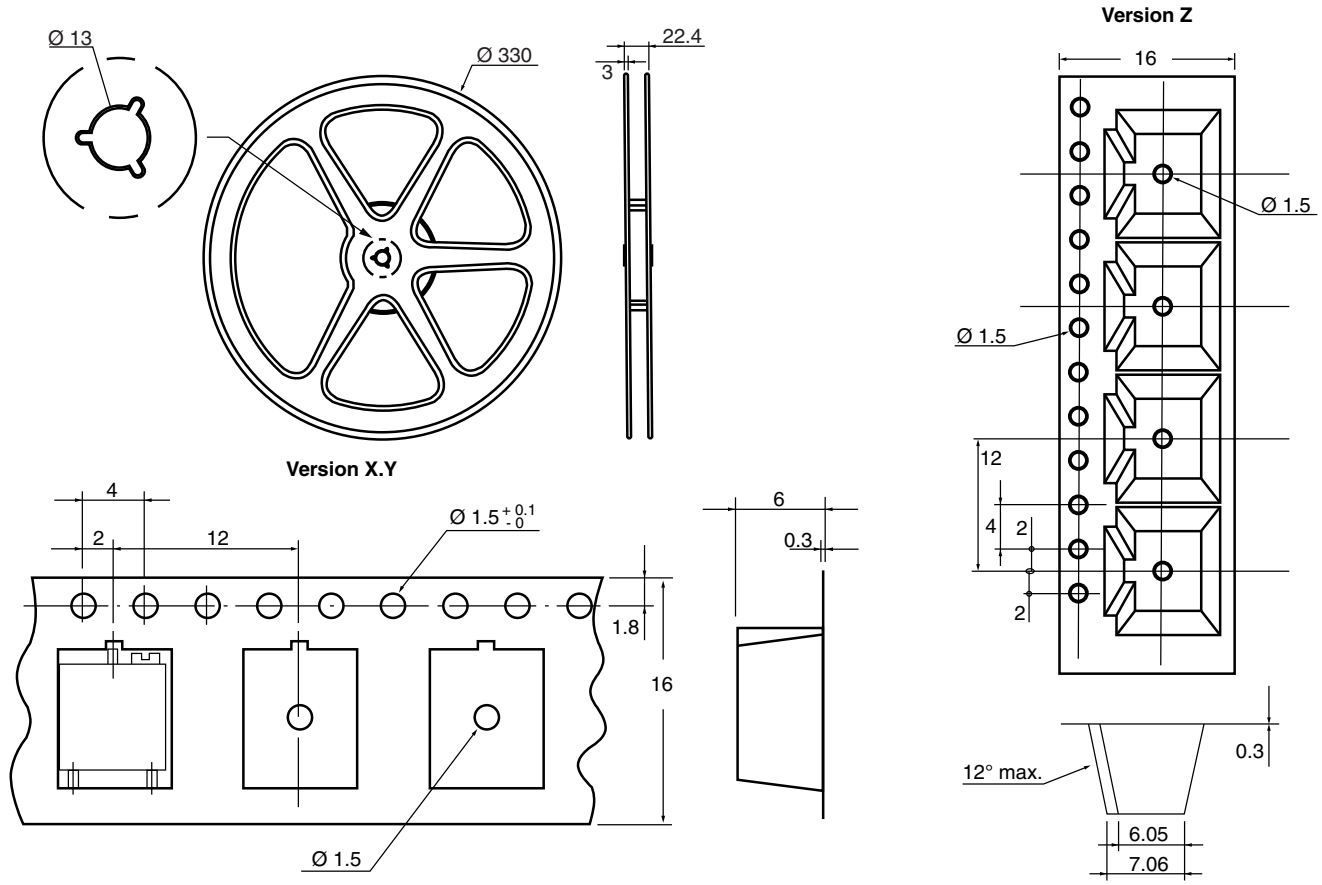
PACKAGING in millimeters

- 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



ORDERING INFORMATION (part number)

T	S	6	3	Y	5	0	4	K	R	1	0				

MODEL	STYLE	OHMIC VALUE	TOLERANCE	PACKAGING	SPECIAL NUMBER
TS63	X Y Z	From 10 Ω to 2 MΩ 504 = 500 kΩ	**K** = ± 10 % On request **J** = ± 5 %	R10 = reel 500 pieces On request T20 = tube 50 pieces	(If applicable) Given by Vishay for custom design

DESCRIPTION (for information only)

TS63	Y	**500K**	**10 %**		TR	**e3**
MODEL	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD FINISH

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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

ACCESSORIES	
Screwdrivers (to order separately)	www.vishay.com/doc?57015

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