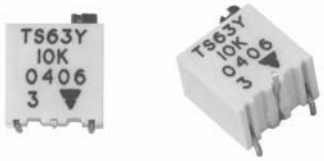
Multi-Turn Surface Mount 1/4" Square Cermet Trimmers, Fully Sealed



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
- Compliant to RoHS Directive 2002/95/EC

RoHS COMPLIANT

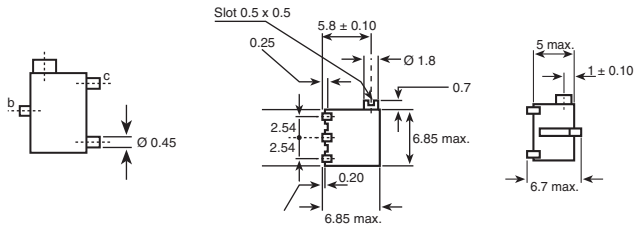
The TS63 multiturn trimmer has been designed for use in PCB surface mounting applications.

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

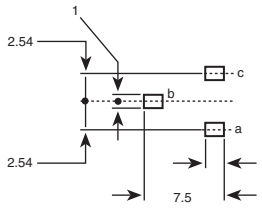
The cermet track gives a high stability performance with an extended ohmic capacity of 10 Ω to 2 MΩ.

DIMENSIONS in millimeters (± 0.5 mm)

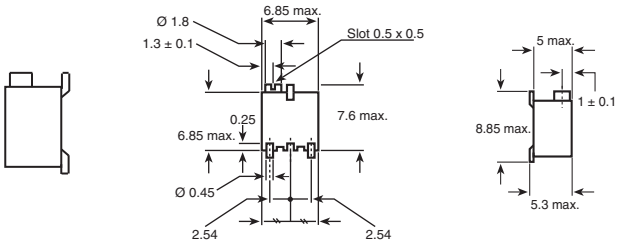
TS63X

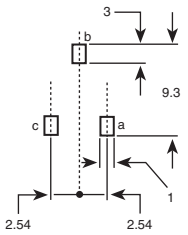


RECOMMENDED SOLDERING AREAS

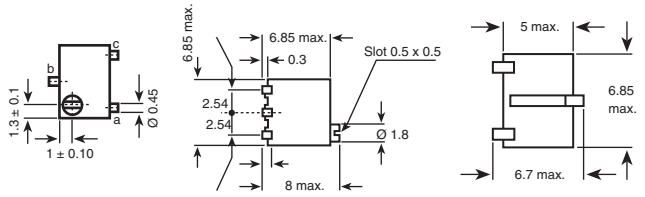


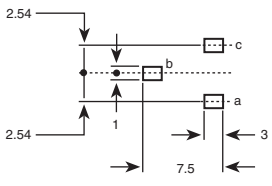
TS63Z





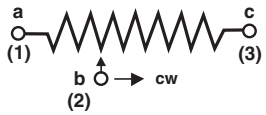
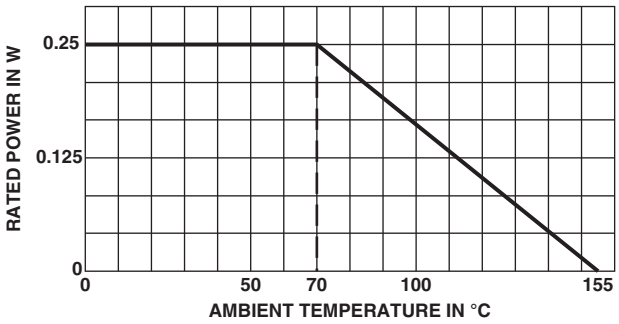
TS63Y





For technical questions, contact: sfer@vishay.com
See also Application Note: www.vishay.com/doc?51001 and www.vishay.com/doc?52029

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

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

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 %		$\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 2$ %

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	

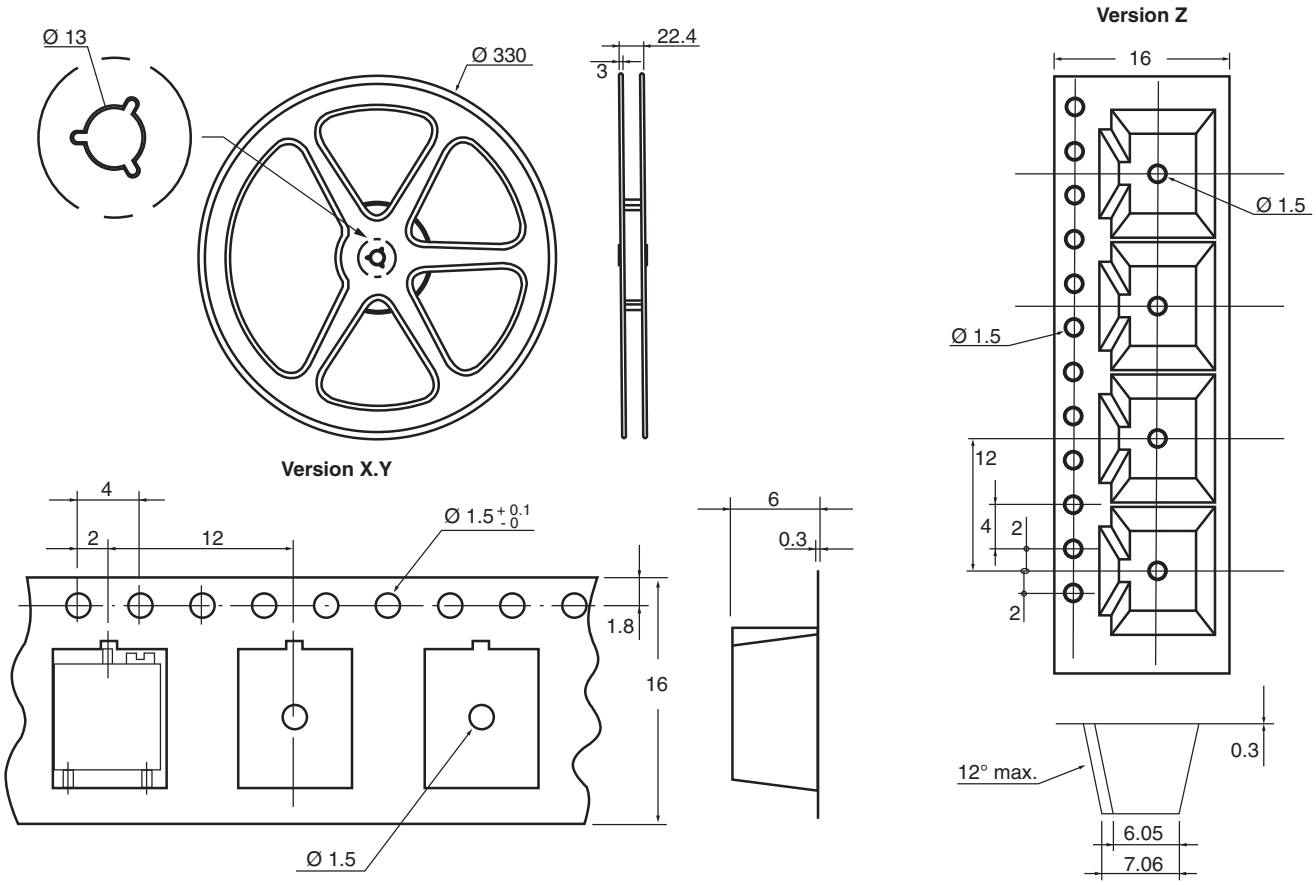
MARKING

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

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

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 2000 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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