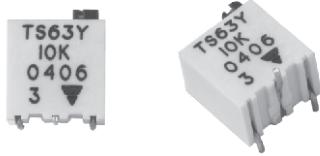


Multi-Turn Surface Mount 1/4" Square Cermet Trimmers, Fully Sealed



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

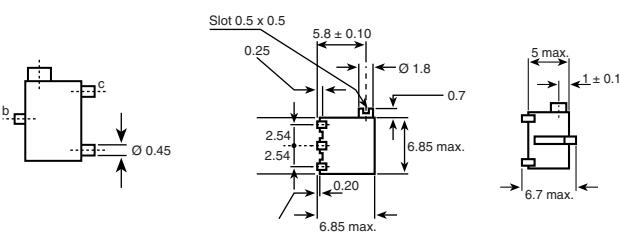
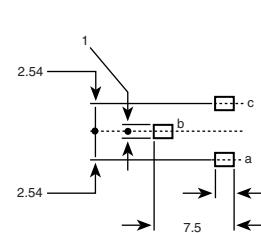
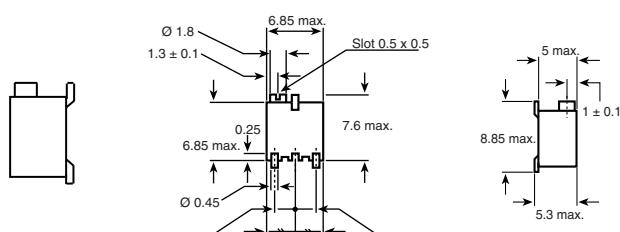
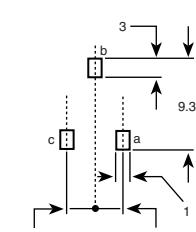
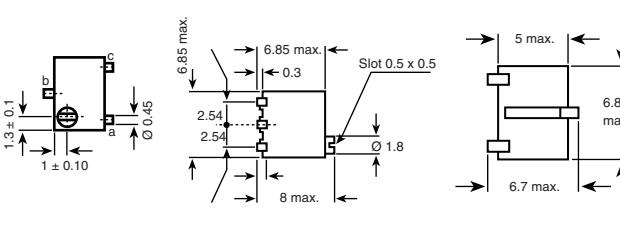
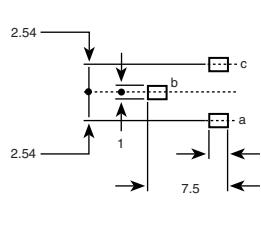
Three variations are available according to the positioning of the control screw and contact positions.

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

FEATURES

- 0.25 W at $70\ ^\circ\text{C}$
- Industrial grade
- Multi-turn operation
- A low contact resistance variation (down to 2 % R_n)
- Low end contact resistance ($1\ \Omega$ 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



DIMENSIONS in millimeters (± 0.5 mm)		RECOMMENDED SOLDERING AREAS
TS63X		
TS63Z		
TS63Y		

ELECTRICAL SPECIFICATIONS													
Resistive element	Cermet												
Electrical travel	14 turns \pm 2												
Resistance range	10 Ω to 2 M Ω												
Standard series	1 - 2 - 5												
Tolerance	Standard \pm 10 % On request \pm 5 %												
Circuit diagram													
Power rating	Linear 0.25 W at 70 °C <table border="1"> <caption>Data points from the power rating graph</caption> <thead> <tr> <th>Ambient Temperature (°C)</th> <th>Rated Power (W)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.25</td></tr> <tr><td>50</td><td>0.25</td></tr> <tr><td>70</td><td>0.25</td></tr> <tr><td>100</td><td>0.125</td></tr> <tr><td>155</td><td>0</td></tr> </tbody> </table>	Ambient Temperature (°C)	Rated Power (W)	0	0.25	50	0.25	70	0.25	100	0.125	155	0
Ambient Temperature (°C)	Rated Power (W)												
0	0.25												
50	0.25												
70	0.25												
100	0.125												
155	0												
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 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 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 %		$\Delta V_{1-2}/\Delta V_{1-3} \leq \pm 2 \%$

Note

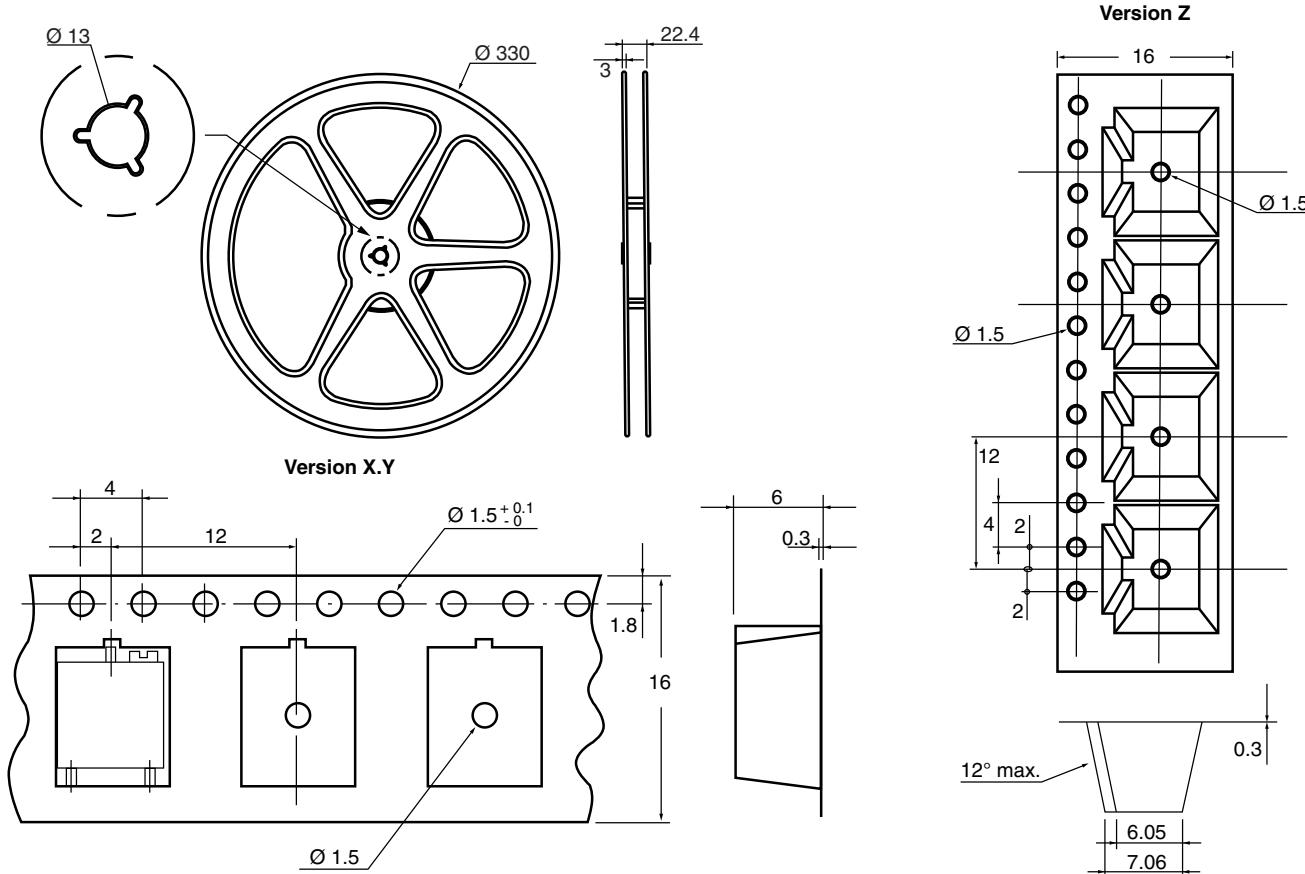
- Nothing stated herein shall be construed as a guarantee of quality or durability.

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.

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

RELATED DOCUMENTS
APPLICATION NOTES

Potentiometers and Trimmers	www.vishay.com/doc?51001
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Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029
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