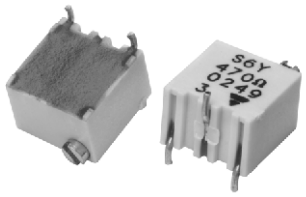
Multi-Turn Surface Mount 1/4" Square Cermet Trimmers, Fully Sealed



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

The TS6 multi-turn trimmer has been designed for use in PCB surface mounting applications.

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

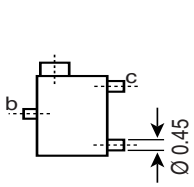
FEATURES

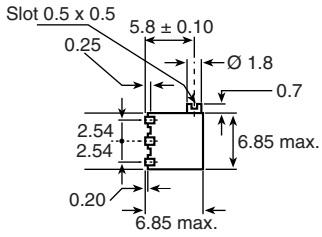
- 0.25 W at 70 °C
- Military and professional grade
- Multi-turn operation
- A low contact resistance variation (down to 2 % Rn)
- Low end contact resistance (1 Ω typical)
- Full sealing
- Tests according to CECC 41000 or IEC 60393-1
- Material categorization: For definitions of compliance please see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

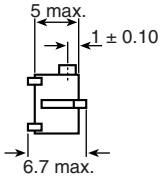
RoHS COMPLIANT

DIMENSIONS in millimeters (± 0.5 mm)

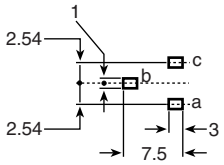
TS6X



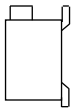


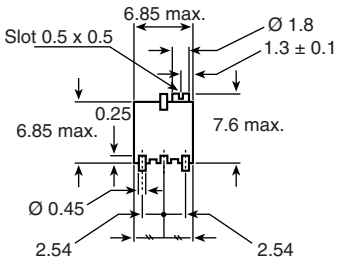


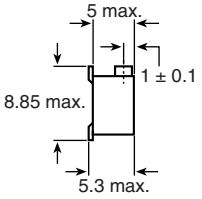
RECOMMENDED SOLDERING AREAS

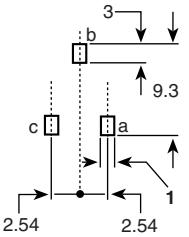


TS6Z

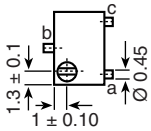


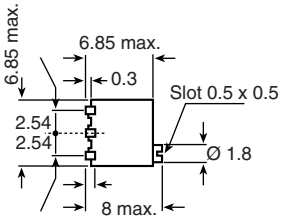


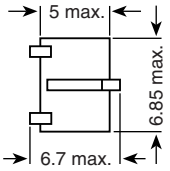


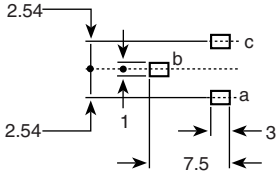


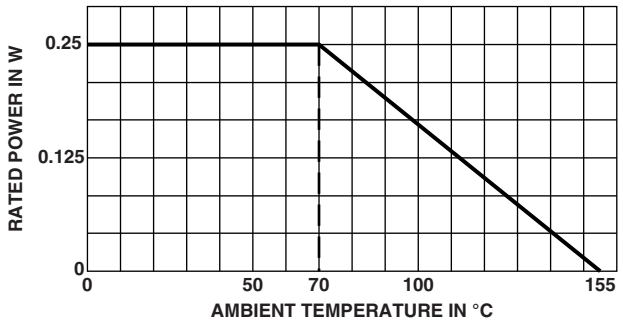
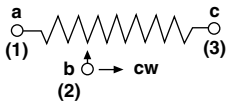
TS6Y









ELECTRICAL SPECIFICATIONS		
Resistive Element		Cermet
Electrical Travel		14 turns ± 2
Resistance Range		10 Ω to 2 MΩ
Standard Series E3		1 - 2.2 - 4.7 and on request 1 - 2 - 5
Tolerance	**Standard**	± 10 %
	On Request	± 5 %
Power Rating	**Linear**	0.25 W at 70 °C 
Circuit Diagram		
Temperature Coefficient		See Standard Resistance Element table
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 MΩ

MECHANICAL SPECIFICATIONS	
Mechanical Travel	15 turns ± 5
Operating Torque (max. Ncm)	1.5
End Stop Torque	Clutch action
Net wWeight (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	Fully sealed IP67
MSL Level	1

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

PERFORMANCES

TESTS	CONDITIONS	REQUIREMENTS		OTHER	TYPICAL VALUES AND DRIFTS		
		$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)		$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER
Electrical Endurance	1000 h at rated power 90'/30' - ambient temp. 70 °C	± 2 %	± 4 %	Contact res. variation: < 3 % Rn	± 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 %		± 0.5 %	± 1 %	
Damp Heat Steady State	40 °C 93 % RH 56 days	± 2 %	± 3 %	Dielectric strength: 250 V_{RMS} Insulation resistance: > 100 MΩ	± 0.5 %	± 1 %	Dielectric strength: 1000 V_{RMS} Insulation resistance: > 10^4 MΩ
Charge of Temperature	- 55 °C to + 125 °C 5 cycles	± 1.5 %		$\Delta V_{1-2}/\Delta V_{1-3}$ ≤ ± 2 %	± 0.5 %		$\Delta V_{1-2}/\Delta V_{1-3}$ < ± 1 %
Mechanical Endurance	200 cycles at rated power	± 2 %		Contact res. variation: < 3 % Rn	± (2 % + 3 Ω)		Contact res. variation: < 1 % Rn
Shock	50 *g* at 11 ms 3 successive shocks in 3 directions	± 1 %		$\Delta V_{1-2}/\Delta V_{1-3}$ ≤ ± 2 %	± 0.1 %		$\Delta V_{1-2}/\Delta V_{1-3}$ ≤ 0.2 %
Vibration	10 Hz to 55 Hz 0.75 mm or 10 *g* for 6 h	± 1 %		$\Delta V_{1-2}/\Delta V_{1-3}$ ≤ ± 2 %	± 0.1 %		$\Delta V_{1-2}/\Delta V_{1-3}$ ≤ ± 0.2 %

STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	LINEAR LAW			TYPICAL TCR - 55 °C + 125 °C
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. WIPER CURRENT	
Ω	W	V	mA	ppm/°C
10	0.25	158	158	
22	0.25	2.34	107	
47	0.25	3.43	73	
100	0.25	5.00	50	
220	0.25	7.42	34	
470	0.25	10.8	23	
1K	0.25	15.8	15.8	
2.2K	0.25	23.4	10.7	
4.7K	0.25	34.3	7.3	± 100
10K	0.25	50	5	
22K	0.25	74.2	3.37	
47K	0.25	108.4	2.31	
100K	0.25	158	1.58	
220K	0.25	234	1.97	
470K	0.13	250	0.53	
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.

PACKAGING

- In tube of 50 pieces code T20 (TU50)
- In reel of 500 pieces code R10 (TR500)

ORDERING INFORMATION (Part Number)

T	S	6	Y	4	7	4	K	R	1	0				

MODEL	STYLE	OHMIC VALUE	TOLERANCE	PACKAGING	SPECIAL NUMBER
TS6	**X** **Y** **Z**	From 10 Ω to 2 MΩ **474** = 470 kΩ	**K** = 10 % On request **J** = 5 %	**T20** = Tube 50 pieces On request **R10** = Reel 500 pieces	(If applicable) Given by Vishay for custom design

DESCRIPTION (for information only)

TS6	Y	470K	10 %		TU	e3
MODEL	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD FINISH

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Trimmer Resistors - SMD ***category:***

Click to view products by Vishay ***manufacturer:***

Other Similar products are found below :

43WR5KLFTR 5712-305-403E17 TS3YJ503MR15 TS4YL203MR10 43WR100KLFTR G32AT-B101 G32AT-B201 G32AT-B501 G32AT-B503 G32BT-B502 G32BT-B503 G43AT-B201 G43AT-B203 G43SAT1-B101 G43SAT1-B102 G43SAT1-B201 G43SAT1-B202 G43SAT1-B501 G43SAT1-B502 G43SAT1-B503 PVG5A102C03R00 PVG5A203C03R00 35WR5KLFTR 35WR10KLFTR 35WR1KLFTR CA6XVSMD-100KA2525 CA6XVSMD-10KA2525 CA6XVSMD-2K5A2525 1806WSMD-1K 1806WSMD-5K 1806PSMD-5K 3214G-1-203E 43WR10LFTR PVG5A202C03R00 PVG5A502C03R00 3314G-1-103E PVG3G103C01R00 PVG3A205C01R00 PVG3A200C01R00 PVG5H102C03B00 3214W-1-103G 3224W-2-101E 3361S-1-200GLF 3224W-2-201E 3224W-1-502G 3224W-1-105G 3214X-2-502E 3214X-2-103E 3214W-2-201E 3214W-1-102G