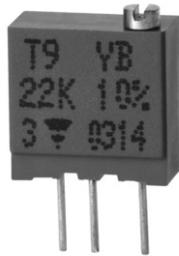


3/8" Square Multi-Turn Fully Sealed Container Cermet Trimmers



FEATURES

- Military and Professional Grade
- 0.5 W at 70 °C
- CECC 41 101-004 (A, B, C, D, E)
- Tests according to CECC 41 000
- GAM T1
- Fully sealed
- Operating temperature range - 55 °C to + 155 °C
- Wide ohmic range from 10 Ω to 2M2 Ω
- Lead (Pb)-free and RoHS compliant



DIMENSIONS in millimeters (± 0.5 mm)			
T9XA (PM81A) A			Terminal Spacing on a 2.54 PCB
T9XB (PM81B) C			
T9YA (PM82A) B			
T9YB (PM82B) D			
T9Z (PM83) E			

Note

* to be measured at base level

Undergoes European Quality Assurance System (CECC)

ELECTRICAL SPECIFICATIONS																	
Resistive Element	Cermet																
Electrical Travel	21 turns \pm 2																
Resistance Range	10 Ω to 2.2 M Ω																
Standard Series E3	1 - 2.2 - 4.7 and on request 1 - 2 - 5																
Tolerance	standard	10 %															
	on request	5 %															
Power Rating	linear	0.5 W at + 70 °C															
	logarithmic	not applicable															
<p>CIRCUIT DIAGRAM</p>																	
<table border="1"> <caption>Power Rating vs Ambient Temperature</caption> <thead> <tr> <th>Ambient Temperature (°C)</th> <th>Power Rating (W)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.5</td></tr> <tr><td>25</td><td>0.5</td></tr> <tr><td>50</td><td>0.5</td></tr> <tr><td>70</td><td>0.5</td></tr> <tr><td>100</td><td>0.25</td></tr> <tr><td>125</td><td>0.125</td></tr> <tr><td>155</td><td>0</td></tr> </tbody> </table>		Ambient Temperature (°C)	Power Rating (W)	0	0.5	25	0.5	50	0.5	70	0.5	100	0.25	125	0.125	155	0
Ambient Temperature (°C)	Power Rating (W)																
0	0.5																
25	0.5																
50	0.5																
70	0.5																
100	0.25																
125	0.125																
155	0																
Temperature Coefficient	see Standard Resistance Element Table																
Limiting Element Voltage (Linear Law)	250 V																
Contact Resistance Variation	2 % Rn or 1 Ω																
End Resistance (Typical)	1 Ω																
Dielectric Strength (RMS)	1000 V																
Insulation Resistance (500 VDC)	10 ⁶ M Ω																

MECHANICAL SPECIFICATIONS	
Mechanical Travel	23 turns \pm 5
Operating Torque (Max. Ncm)	1.5
End Stop Torque	Clutch action
Net Weight	Approx. 0.82 g
Wiper (Actual Travel)	Positioned at approx. 50 %

ENVIRONMENTAL SPECIFICATIONS	
Temperature Range	- 55 °C to + 155 °C
Climatic Category	55/125/56
Sealing	Fully sealed - Container IP67

**STANDARD RESISTANCE ELEMENT DATA**

STANDARD RESISTANCE VALUES	LINEAR LAW			TYPICAL TCR - 55 °C + 125 °C ppm/°C
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH WIPER	
Ω	W	V	mA	
10	0.5	2.2	224	± 100
22	↓	3.3	150	
47		4.8	103	
100		7	70	
220		10.5	47	
470		15.3	32	
1K		22.4	22	
2.2K		33.2	15	
4.7K		48.5	10	
10K		70.7	7	
22K		105	4.8	
47K		153	3.2	
100K		0.5	224	
220K	0.28	250	1.1	
470K	0.13	250	0.53	
1M	0.06	250	0.25	
2.2M	0.028	250	0.11	

MARKING

Printed:

- VISHAY trademark
- Model
- Style
- Ohmic value (in Ω, kΩ, MΩ)
- Tolerance (in %)
- Manufacturing date
- Marking of terminal C

PACKAGING

- In magazine pack by 50 pieces (tube) code TU50



3/8" Square Multi-Turn Fully Sealed Container
Cermet Trimmers

Vishay Sfernice

PERFORMANCES					
CECC 41100		REQUIREMENTS		TYPICAL VALUES AND DRIFTS	
TESTS	CONDITIONS	$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)
Climatic Sequence	Phase A dry heat 125 °C Phase B damp heat Phase C cold - 55 °C Phase D damp heat 5 cycles	± 2 %	± 3 %	± 0.5 %	± 1 %
Long Term Damp Heat	56 days 40 °C, 93 % RH	± 2 % Dielectric strength: 700 V Insulation resistance: > 100 MΩ	± 3 %	± 0.5 % Dielectric strength: 1000 V Insulation resistance: > 10 ⁴ MΩ	± 1 %
Rotational Life	200 cycles	± 2 % Contact res. variation: < 3 % Rn	-	± 2 % Contact res. variation: < 1 % Rn	-
Load Life	1000 h at rated power 90'/30' - ambient temp. 70 °C	± 2 % Contact res. variation: < 3 % Rn	± 3 %	± 1 % Contact res. variation: < 1 % Rn	± 2 %
Rapid Temperature Change	5 cycles - 55 °C to + 125 °C	± 1.5 %	$\Delta V_{1-2}/\Delta V_{1-3}$ ± 1 %	± 0.5 %	$\Delta V_{1-2}/\Delta V_{1-3}$ < ± 1 %
Shocks	50 g at 11 ms 3 successive shocks in 3 directions	± 1 %	± 2 %	± 0.1 %	± 0.2 %
Vibrations	10 to 55 Hz 0.75 mm or 10 g during 6 h	± 1 %	$\Delta V_{1-2}/\Delta V_{1-3}$ ± 2 %	± 0.1 %	$\Delta V_{1-2}/\Delta V_{1-3}$ < ± 0.2 %

SAP ORDERING INFORMATION (Part Number 15 digits)													
T	9	X	A	4	7	4	K	T	2	0			
MODEL	STYLE	OHMIC VALUE		TOLERANCE		PACKAGING		SPECIAL NUMBER					
	XA XB YA YB Z	From 10 Ω to 2.2 MΩ 474 = 470 kΩ		K = 10 % on request J = 5 %		T20 = Tube 50 pieces		(if applicable) Given by VISHAY for custom design					

PART NUMBER DESCRIPTION (for information only)							
T9	XA	470K	± 10 %		TU		e3
MODEL	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	SPECIAL	LEAD (Pb)-FREE



Disclaimer

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

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.