8.5 mm Diameter Single-Turn Fully Sealed Container Cermet Trimmer

The P8S series trimmers are well adapted for all industrial applications as their maximum resistance contact variation is within 3 % of Rn and as they are fully sealed.

For more stringent requirements the P8P series is recommended.

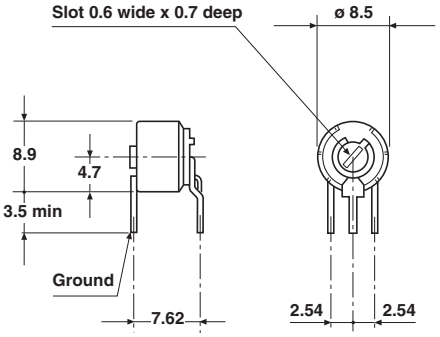
FEATURES

- Industrial grade
- High quality cermet resistive track:
  - 1 W at 70 °C, P8ST
  - 0.5 W at 70 °C, P8SX and P8SY
- Test according to CECC 41000 or IEC 60393-1
- Wide resistance range (10 Ω to 2.2 MΩ)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

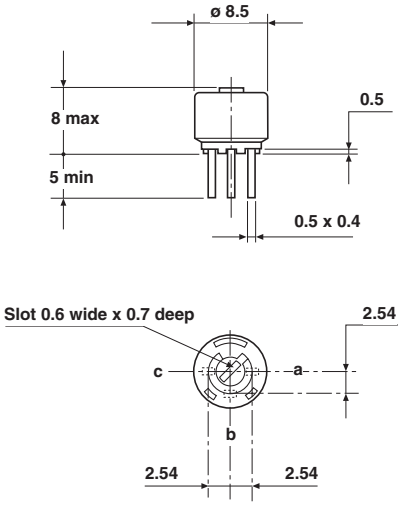
RoHS COMPLIANT

DIMENSIONS in millimeters (± 0.5 mm)

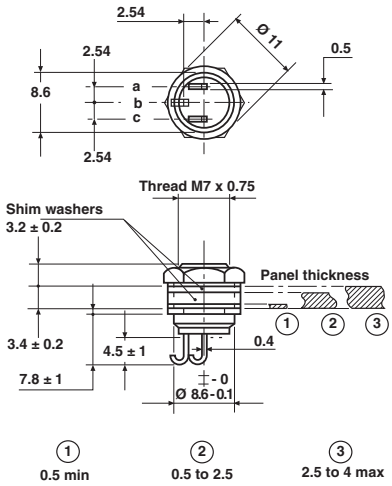
P8SX



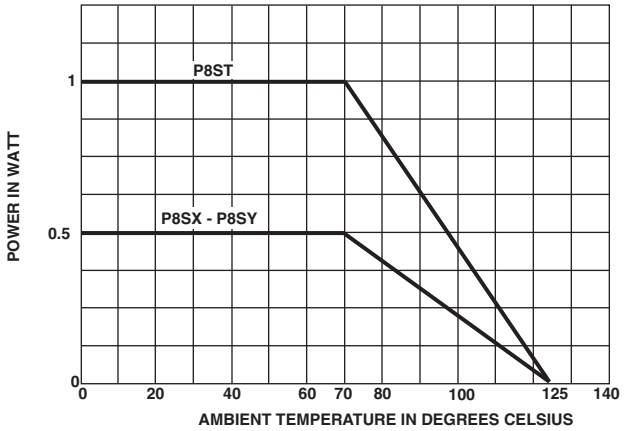
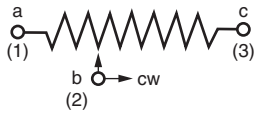
P8SY



P8ST



Consult Vishay Sfernice for panel sealed type

ELECTRICAL SPECIFICATIONS		
Resistive element		Cermet
Electrical travel		270° ± 15°
Resistance range		10 Ω to 2.2 MΩ
Standard series E3		1 - 2.2 - 4.7 and on request 1 - 2 - 5
Tolerance	standard	± 10 %
	on request	± 5 %
Power rating	P8SX, P8SY	0.5 W at 70 °C
	P8ST	1 W at 70 °C
Power rating chart		
Circuit diagram		
Temperature coefficient		See Standard Resistance Element Table
Limiting element voltage (linear law)		250 V
Contact resistance variation		3 % Rn or 3 Ω
End resistance (typical)		1 Ω
Dielectric strength (RMS)		1000 V
Insulation resistance (500 V_{DC})		1 GΩ

MECHANICAL SPECIFICATIONS		
Mechanical travel		300° ± 5°
Operating torque (max. Ncm)		3
End stop torque (max. Ncm)		6
Unit weight (max. g)	P8SX, P8SY P8ST	1.1 3.6
Terminals		SnAg alloy (code e2)

ENVIRONMENTAL SPECIFICATIONS	
Temperature range	-55 °C to +125 °C
Climatic category	55/125/56
Sealing	IP67 Fully sealed

PERFORMANCES

TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS	
		$\Delta R_T/R_T$ (%)	$\Delta R_{1\text{-}2}/R_{1\text{-}2}$ (%)
Load life	1000 h at rated power 90'/30' - ambient temperature 70 °C	± 2 % Contact res. variation: < 3 % Rn	± 3 %
Climatic sequence	Phase A dry heat 100 °C Phase B damp heat Phase C cold -55 °C Phase D damp heat 5 cycles	± 0.5 %	± 1 %
Long term damp heat	56 days 40 °C, 93 % RH	± 1 % Dielectric strength: 1000 V_{RMS} Insulation resistance: > 10^4 MΩ	± 2 %
Rapid temperature change	5 cycles -55 °C to +125 °C	± 0.5 %	$\Delta V_{1\text{-}2}/\Delta V_{1\text{-}3}$ ≤ ± 1 %
Shock	50 *g* at 11 ms 3 successive shocks in 3 directions	± 0.2 %	± 0.5 %
Vibration	10 Hz to 55 Hz 0.75 mm or 10 *g* during 6 h	± 0.2 %	$\Delta V_{1\text{-}2}/\Delta V_{1\text{-}3}$ ≤ ± 0.5 %
Rotational life	200 cycles	± 3 % Contact res. variation: < 3 % Rn	

Note

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

STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	P8SX, P8SY			P8ST			TYPICAL TCR -55 °C to +125 °C
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CURRENT THROUGH WIPER	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CURRENT THROUGH WIPER	
Ω	W	V	mA	W	V	mA	ppm/°C
10	0.5	2.2	224	1	3.16	316	
22	0.5	3.3	150	1	4.69	213	
47	0.5	4.8	103	1	6.86	146	
100	0.5	7.0	70	1	10.0	100	
220	0.5	10.5	47	1	14.8	67	
470	0.5	15.3	32	1	21.7	46	
1K	0.5	22.4	22	1	31.6	32	
2.2K	0.5	33.2	15	1	46.9	21	
4.7K	0.5	48.5	10	1	68.6	15	± 100
10K	0.5	70.7	7.0	1	100	10	
22K	0.5	105	4.8	1	148	6.7	
47K	0.5	153	3.2	1	217	4.6	
100K	0.5	224	2.2	0.63	250	2.5	
220K	0.28	250	1.1	0.28	250	1.1	
470K	0.13	250	0.53	0.13	250	0.53	
1M	0.06	250	0.25	0.06	250	0.25	
2.2M	0.028	250	0.11	0.03	250	0.11	

MARKING

- Vishay trademark
- Model
- Style
- Ohmic value (in Ω, kΩ, MΩ)
- Tolerance (in %)
- Manufacturing date
- Marking of terminal: 3

PACKAGING

- In plastic box of 50 pieces, code B25 (BL50)

ORDERING INFORMATION (part number)

P	8	S	X	1	0	4	K	B	2	5				

MODEL	STYLE	OHMIC VALUE	TOLERANCE	PACKAGING CODE	SPECIAL NUMBER
P8	**ST** **SX** **SY**	From 10 Ω to 2.2 MΩ **103** = 10K	**K** = 10 % On request: **J** = 5 %	**B25** = box 50 pieces	(If applicable) Given by Vishay for custom design

PART NUMBER DESCRIPTION (for information only)

P8	S	X	100K	10 %		BL	e2
MODEL	STYLE	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD FINISH

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

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