

## 8.5 mm Diameter Single-Turn Fully Sealed Container Cermet Trimmer



Models P8PX and P8PY feature a TO-5 transistor type, rugged metal case housing.

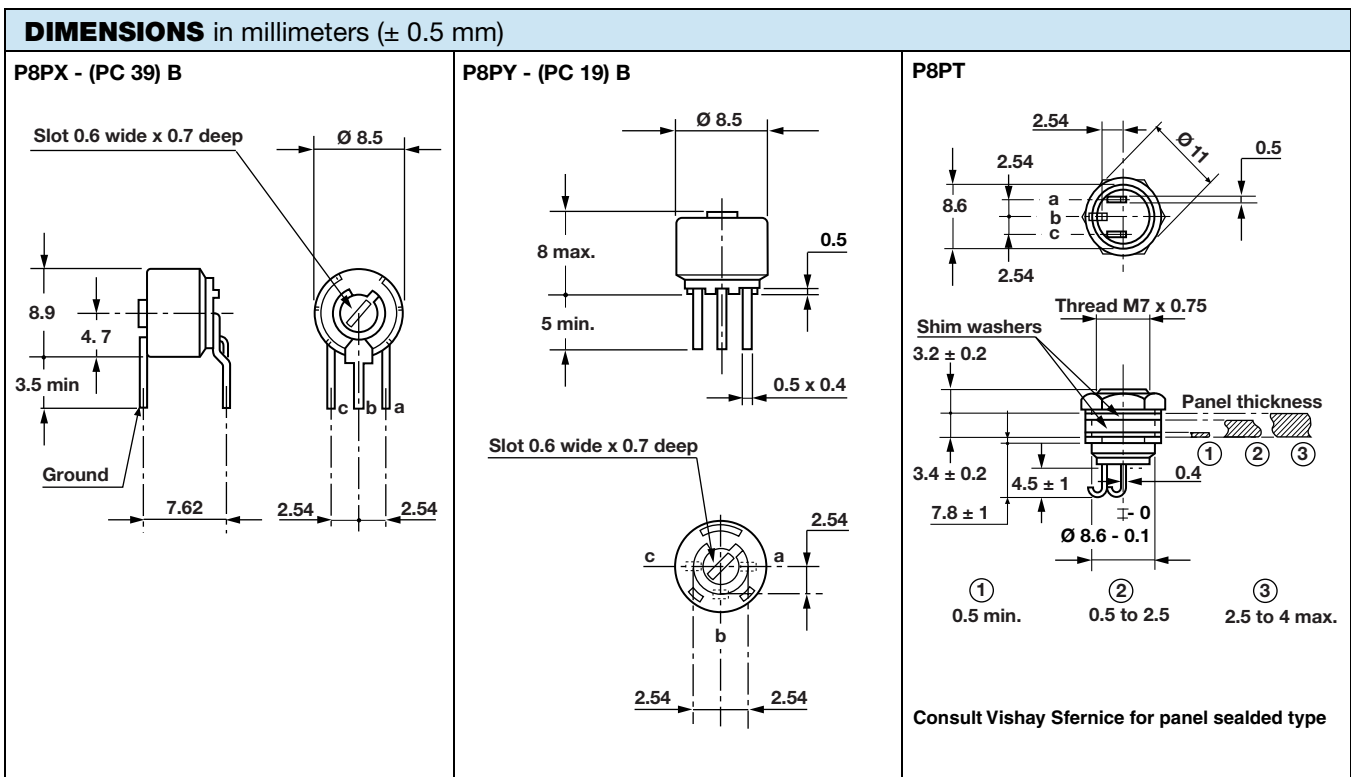
The cermet track is printed to an alumina substrate allowing high dissipation and ensuring reliable performance under extreme environmental conditions.

### FEATURES

- Military and professional grade
- 1 W at 70 °C, P8PT
- 0.5 W at 70 °C, P8PX - P8PY
- Product qualification according to CECC 41101-002 (A, B)
- Fully sealed
- Multi-finger wiper contact in precious metal
- Tests according to CECC 41000 or IEC 60393-1
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT



<b>ELECTRICAL SPECIFICATIONS</b>		
Resistive element	Cermet	
Electrical travel	$270^\circ \pm 15^\circ$	
Resistance range	10 $\Omega$ to 2.2 M $\Omega$	
Standard series E3	1 - 2.2 - 4.7 and on request 1 - 2 - 5	
Tolerance	standard	$\pm 10\%$
	on request	$\pm 5\%$
Power rating	P8PX - P8PY	0.5 W at +70 °C
	P8PT	1 W at 70 °C
Circuit diagram		
Temperature coefficient	See standard resistive element table	
Limiting element voltage (linear law)	250 V	
Contact resistance variation	2 % R <sub>n</sub> or 1 $\Omega$	
End resistance (typical)	1 $\Omega$	
Dielectric strength	1000 V	
Insulation resistance (500 V <sub>DC</sub> )	1 G $\Omega$	

<b>MECHANICAL SPECIFICATIONS</b>		
Mechanical travel	$300^\circ \pm 5^\circ$	
Operating torque (max. Ncm)	3	
End stop torque (max. Ncm)	6	
Unit weight (max. g)	P8PX - P8PY	1.1
	P8PT	3.6
Terminals	SnAg alloy (code e2)	

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



STANDARD RESISTANCE ELEMENT DATA							
STANDARD RESISTANCE VALUES	P8PX - P8PY			P8PT			TYPICAL TCR -55 °C +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	0.50	2.24	224	1.0	3.16	316	± 100
22	0.50	3.32	150	1.0	4.69	213	
47	0.50	4.85	103	1.0	6.86	146	
100	0.50	7.07	70	1.0	10.0	100	
220	0.50	10.5	47	1.0	14.8	67	
470	0.50	15.3	32	1.0	21.7	46	
1K	0.50	22.4	22	1.0	31.6	32	
2.2K	0.50	33.2	15	1.0	46.9	21	
4.7K	0.50	48.5	10	1.0	68.6	15	
10K	0.50	70.7	7.0	1.0	100.0	10.0	
22K	0.50	105	4.8	1.0	148	6.7	
47K	0.50	153	3.2	1.0	217	4.6	
100K	0.50	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	

PERFORMANCE						
CECC 41100					TYPICAL VALUES AND DRIFTS	
TESTS	CONDITIONS	ΔRT RT (%)	REQUIREMENTS	ΔR <sub>1-2</sub> R <sub>1-2</sub> (%)	ΔRT RT (%)	ΔR <sub>1-2</sub> R <sub>1-2</sub> (%)
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 %	± 1 %
Rotational life	200 cycles	± 2 %	Contact res. variat.: < 5 % Rn		± 1 %	Contact res. variat.: < 2 % Rn
Load life	1000 h at rated power 90°/30° - ambient temp. 70 °C	± 2 %	Contact res. variat.: < 5 % Rn	± 3 %	± 1 %	± 2 %
Rapid temperature Change	5 cycles -55 °C to +125 °C	± 1.5 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$	≤ ± 1 %	± 0.2 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$ ≤ ± 0.5 %
Shock	50 g at 11 m s 3 successive shocks in 3 directions	± 1 %		± 2 %	± 0.1 %	± 0.5 %
Vibration	10 Hz to 55 Hz 0.75 mm or 10 g during 6 h	± 1 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$	≤ ± 2 %	± 0.2 %	$\frac{\Delta V_{1-2}}{V_{1-3}}$ ≤ ± 0.5 %

**Note**

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



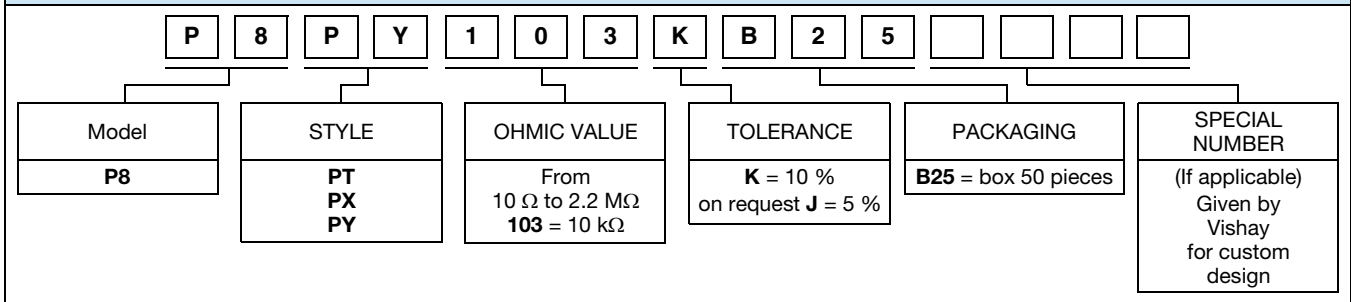
**MARKING**

- Vishay trademark
- Model
- Style
- Ohmic value (in  $\Omega$ , k $\Omega$ , M $\Omega$ )
- Manufacturing date
- Tolerance (in %)
- Marking of terminal: 3

**PACKAGING**

- Box of 50 pieces code B25 (BL50)

**ORDERING INFORMATION (part number)**



**DESCRIPTION (for information only)**

P8	P	Y	10K	10 %		BL	e2
MODEL	STYLE	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD FINISH

**RELATED DOCUMENTS**

<b>APPLICATION NOTES</b>	
Potentiometers and Trimmers	<a href="http://www.vishay.com/doc?51001">www.vishay.com/doc?51001</a>
Guidelines for Vishay Sfernice Resistive and Inductive Components	<a href="http://www.vishay.com/doc?52029">www.vishay.com/doc?52029</a>



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