

# 8.5 mm Diameter 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

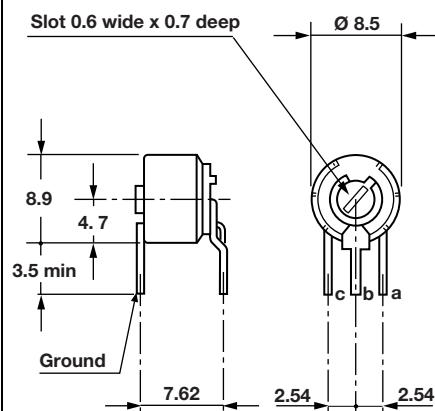
- Military and professional grade
- 1 W at 70 °C, P8PT
- 0.5 W at 70 °C, P8PX - P8PY
- Product qualification according to CECC 41101-002 (A, B)
- Fully sealed
- Multi-finger wiper contact in precious metal
- Tests according to CECC 41000 or IEC 60393-1
- Material categorization: for definitions of compliance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



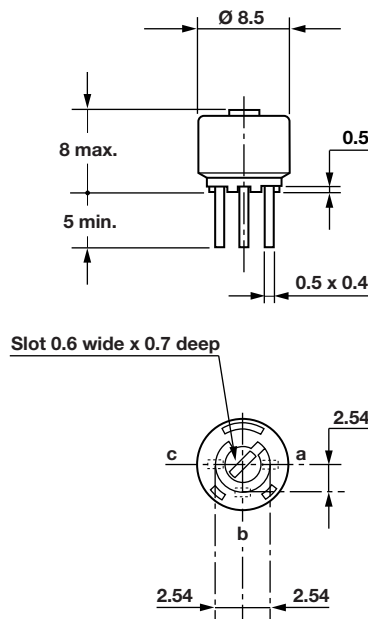
**RoHS**  
COMPLIANT

## DIMENSIONS in millimeters ( $\pm 0.5$ mm)

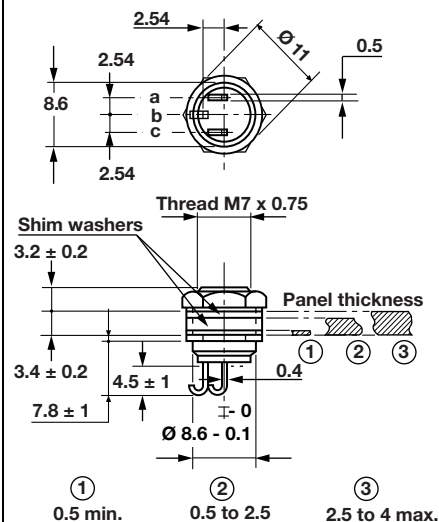
### P8PX - (PC 39) B



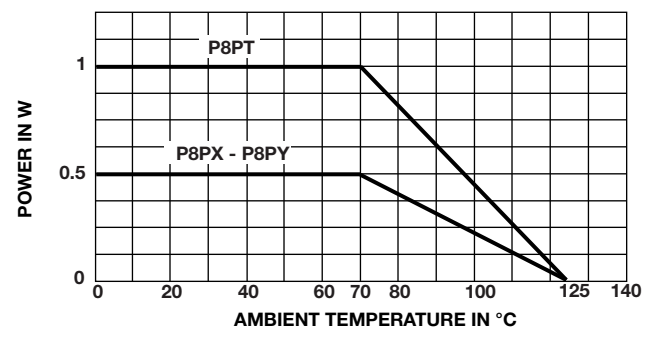
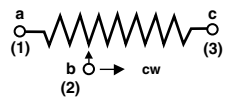
### P8PY - (PC 19) B



### P8PT



Consult Vishay Sfernice for panel sealed type

| ELECTRICAL SPECIFICATIONS                                                          |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 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<br>P8PT                                                                 |
|                                                                                    | 0.5 W at +70 °C<br>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 $\Omega$                                                                        |

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

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



| STANDARD RESISTANCE ELEMENT DATA |                        |                            |                                     |                        |                            |                                     |                                     |
|----------------------------------|------------------------|----------------------------|-------------------------------------|------------------------|----------------------------|-------------------------------------|-------------------------------------|
| STANDARD<br>RESISTANCE<br>VALUES | P8PX - P8PY            |                            |                                     | P8PT                   |                            |                                     | TYPICAL<br>TCR<br>-55 °C<br>+125 °C |
|                                  | MAX. POWER<br>AT 70 °C | MAX.<br>WORKING<br>VOLTAGE | MAX.<br>CURRENT<br>THROUGH<br>WIPER | MAX. POWER<br>AT 70 °C | MAX.<br>WORKING<br>VOLTAGE | MAX.<br>CURRENT<br>THROUGH<br>WIPER |                                     |
| $\Omega$                         | 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                        | 1.53                                | 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                                                                                        | $\Delta R_{RT}$ (%) | REQUIREMENTS                  | $\Delta R_{1-2}$ (%)      | $\Delta R_{1-2}$ (%)                            |
| Climatic sequence        | Phase A dry heat 125 °C<br>Phase B damp heat<br>Phase C cold -55 °C<br>Phase D damp heat 5 cycles | ± 2 %               |                               | ± 3 %                     | ± 0.5 % ± 1 %                                   |
| Long term damp heat      | 56 days<br>40 °C, 93 % RH                                                                         | ± 2 %               |                               | ± 3 %                     | ± 0.5 % ± 1 %                                   |
| Rotational life          | 200 cycles                                                                                        | ± 2 %               |                               |                           | ± 1 %                                           |
| Load life                | 1000 h at rated power<br>90°/30° - ambient temp. 70 °C                                            | ± 2 %               |                               | ± 3 %                     | ± 1 % ± 2 %                                     |
| Rapid temperature Change | 5 cycles<br>-55 °C to +125 °C                                                                     | ± 1.5 %             | $\Delta V_{1-2}$<br>$V_{1-3}$ | ≤ ± 1 %                   | ± 0.2 % $\Delta V_{1-2}$<br>$V_{1-3}$ ≤ ± 0.5 % |
| Shock                    | 50 g at 11 m s<br>3 successive shocks<br>in 3 directions                                          | ± 1 %               |                               | ± 2 %                     | ± 0.1 % ± 0.5 %                                 |
| Vibration                | 10 Hz to 55 Hz<br>0.75 mm or 10 g<br>during 6 h                                                   | ± 1 %               | $\Delta V_{1-2}$<br>$V_{1-3}$ | ≤ ± 2 %                   | ± 0.2 % $\Delta V_{1-2}$<br>$V_{1-3}$ ≤ ± 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)

|       |   |                |   |                                                              |   |   |                                |   |                     |   |                                                               |  |  |  |
|-------|---|----------------|---|--------------------------------------------------------------|---|---|--------------------------------|---|---------------------|---|---------------------------------------------------------------|--|--|--|
| P     | 8 | P              | Y | 1                                                            | 0 | 3 | K                              | B | 2                   | 5 |                                                               |  |  |  |
| Model |   | STYLE          |   | OHMIC VALUE                                                  |   |   | TOLERANCE                      |   | PACKAGING           |   | SPECIAL NUMBER                                                |  |  |  |
| P8    |   | PT<br>PX<br>PY |   | From<br>10 $\Omega$ to 2.2 M $\Omega$<br>103 = 10 k $\Omega$ |   |   | K = 10 %<br>on request J = 5 % |   | B25 = box 50 pieces |   | (If applicable)<br>Given by<br>Vishay<br>for custom<br>design |  |  |  |

## DESCRIPTION (for information only)

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

## RELATED DOCUMENTS

### APPLICATION NOTES

|                                                                   |                                                                        |
|-------------------------------------------------------------------|------------------------------------------------------------------------|
| 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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