Industrial Conductive Plastic and Custom, Single-Turn Models

FEATURES

• Long life: from 2 million to 30 million cycles
• Custom designs available:
  – Special electrical angles
  – Various shaft types
  – Outputs by flying leads and connectors
• Cost-effective component solutions
• Different models (sizes and shapes)

APPLICATIONS

• Servo control of industrial valves
• Various functions for fork-lift trucks and tractors
• Joysticks
• Wheel balancing equipment for cars

RESOURCES

• For technical questions contact sferprecisionpot@vishay.com
<table>
<thead>
<tr>
<th>Model</th>
<th>Electrical Travel (°)</th>
<th>High Accuracy (Linearity)</th>
<th>Ohmic Values</th>
<th>Starting Torque (N.cm)</th>
<th>Operating Life (Millions of Cycles)</th>
<th>Temperature Range (ºC)</th>
<th>External Diameter (mm)</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>157-1 °1</td>
<td>340, ± 4</td>
<td>&lt; ± 2 % to &lt; ± 0.25 %</td>
<td>1 kΩ to 100 kΩ</td>
<td>0.2 max.</td>
<td>5</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>357 °1</td>
<td>340, ± 3</td>
<td>&lt; ± 2 % to &lt; ± 1 %</td>
<td>1 kΩ to 50 kΩ</td>
<td>0.4 max.</td>
<td>5</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>78 PB/RB °1</td>
<td>340, ± 5</td>
<td>&lt; ± 2 % to &lt; ± 0.35 %</td>
<td>1 kΩ to 50 kΩ</td>
<td>0.5 max.</td>
<td>5</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>78 PS/RS °2</td>
<td>340, ± 5</td>
<td>&lt; ± 2 % to &lt; ± 0.35 %</td>
<td>1 kΩ to 50 kΩ</td>
<td>0.5 max.</td>
<td>5</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>157-2 °2</td>
<td>340, ± 4</td>
<td>&lt; ± 2 % to &lt; ± 0.25 %</td>
<td>1 kΩ to 100 kΩ</td>
<td>0.2 max.</td>
<td>10</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>50 CB °1</td>
<td>330, ± 5</td>
<td>&lt; ± 1 % to &lt; ± 0.25 %</td>
<td>1 kΩ to 20 kΩ</td>
<td>&lt; 0.5</td>
<td>20</td>
<td>-55 to +125</td>
<td>12.7</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>PP12SR</td>
<td>340, ± 5</td>
<td>± 1 % to ± 0.5%</td>
<td>1 kΩ to 4.7 kΩ</td>
<td>0.1</td>
<td>10</td>
<td>-55 to +125</td>
<td>12.7</td>
<td>Center tap</td>
</tr>
<tr>
<td>50 ES °2</td>
<td>330, ± 5</td>
<td>&lt; ± 1 % to &lt; ± 0.25 %</td>
<td>1 kΩ to 20 kΩ</td>
<td>&lt; 0.2</td>
<td>30</td>
<td>-55 to +125</td>
<td>12.7</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>78 CB °1</td>
<td>340, ± 5</td>
<td>&lt; ± 1 % to &lt; ± 0.25 %</td>
<td>1 kΩ to 20 kΩ</td>
<td>&lt; 0.5</td>
<td>20</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>P22SB</td>
<td>340, ± -3</td>
<td>± 1 %</td>
<td>4.7 kΩ or 10 kΩ</td>
<td>0.5</td>
<td>5 M</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
</tbody>
</table>

*1 Bushing Mount  °2 Servo Mounting  °3 Throttle Potentiometer
<table>
<thead>
<tr>
<th>Model</th>
<th>Electrical Travel (*)</th>
<th>High Accuracy (Linearity)</th>
<th>Ohmic Values</th>
<th>Starting Torque (N.cm)</th>
<th>Operating Life (Millions of Cycles)</th>
<th>Temperature Range (ºC)</th>
<th>External Diameter (mm)</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>78 CS²</td>
<td>340, ± 5</td>
<td>&lt; ± 1% to &lt; ± 0.25%</td>
<td>1 kΩ to 20 kΩ</td>
<td>&lt; 0.5</td>
<td>20</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>78 ES²</td>
<td>340, ± 3</td>
<td>&lt; ± 1% to &lt; ± 0.5%</td>
<td>4.7 kΩ or 10 kΩ</td>
<td>&lt; 0.2</td>
<td>30</td>
<td>-55 to +125</td>
<td>22.2</td>
<td>Center tap</td>
</tr>
<tr>
<td>PP22SS</td>
<td>340, ± -3</td>
<td>&lt; ± 1% to &lt; ± 0.5%</td>
<td>1 kΩ to 50 kΩ</td>
<td>&lt; 0.8</td>
<td>2</td>
<td>-55 to +125</td>
<td>33.3</td>
<td>Stops on request</td>
</tr>
<tr>
<td>138</td>
<td>345, ± 4</td>
<td>&lt; ± 0.5% to &lt; ± 0.25%</td>
<td>1 kΩ to 50 kΩ</td>
<td>&lt; 0.8</td>
<td>2</td>
<td>-55 to +125</td>
<td>33.3</td>
<td>Stops on request</td>
</tr>
<tr>
<td>156 CB²</td>
<td>350, ± 3</td>
<td>&lt; ± 1% to &lt; ± 0.25%</td>
<td>1 kΩ to 20 kΩ</td>
<td>&lt; 0.5</td>
<td>20</td>
<td>-55 to +125</td>
<td>33.3</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>156 CS²</td>
<td>350, ± 3</td>
<td>&lt; ± 1% to &lt; ± 0.25%</td>
<td>1 kΩ to 20 kΩ</td>
<td>&lt; 0.5</td>
<td>20</td>
<td>-55 to +125</td>
<td>33.3</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>PP36</td>
<td>350, ± 3</td>
<td>± 1% to ± 0.5%</td>
<td>4.7 kΩ or 10 kΩ</td>
<td>0.25</td>
<td>20</td>
<td>-55 to +125</td>
<td>33.3</td>
<td>Special electrical angles</td>
</tr>
<tr>
<td>657</td>
<td>240, ± 4</td>
<td>&lt; ± 2%</td>
<td>1 kΩ to 100 kΩ</td>
<td>&lt; 2.5</td>
<td>2</td>
<td>-40 to +125</td>
<td>17.5 x 16 x 12.7</td>
<td>Various bushing sizes</td>
</tr>
<tr>
<td>RMF</td>
<td>340, ± 3 or 350, ± 2</td>
<td>&lt; ± 1% to &lt; ± 0.05%</td>
<td>1 kΩ to 20 kΩ</td>
<td>–</td>
<td>50</td>
<td>-30 to +85</td>
<td>–</td>
<td>Highly flexible design</td>
</tr>
<tr>
<td>PMR416</td>
<td>250, ± -3</td>
<td>&lt; ± 1.5%</td>
<td>4 kΩ</td>
<td>1.5 to 7.5</td>
<td>5 M</td>
<td>-40 to +125</td>
<td>31.5 between fixing holes</td>
<td>Other types of levers</td>
</tr>
<tr>
<td>PMR610</td>
<td>95, ± -1.5</td>
<td>&lt; ± 1.5%</td>
<td>2 x 4 kΩ</td>
<td>1.5</td>
<td>5 M</td>
<td>-40 to +125</td>
<td>31.5 between fixing holes</td>
<td>Other types of levers</td>
</tr>
<tr>
<td>PMR420</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 Bushing Mount  *2 Servo Mounting  *3 Throttle Potentiometer
SEMICONDUCTORS

**MOSFETs Segment**
MOSFETs
- Low-Voltage TrenchFET® Power MOSFETs
- Medium-Voltage Power MOSFETs
- High-Voltage Planar MOSFETs
- High-Voltage Superjunction MOSFETs
- Automotive Grade MOSFETs
ICs
- VRPower® DrMOS Integrated Power Stages
- Power Management and Power Control ICs
- Smart Load Switches
- Analog Switches and Multiplexers

**Diodes Segment**
Rectifiers
- Schottky Rectifiers
- Ultra-Fast Recovery Rectifiers
- Standard and Fast Recovery Rectifiers
- High-Power Rectifiers / Diodes
- Bridge Rectifiers
Small-Signal Diodes
- Schottky and Switching Diodes
- Zener Diodes
- RF PIN Diodes
Protection Diodes
- TVS Diodes or TRANSZORB® (unidirectional, bidirectional)
- ESD Protection Diodes (including arrays)
Thyristors / SCRs
- Phase-Control Thyristors
- Fast Thyristors
IGBTs
- Field Stop Trench
- Punch-Through Trench
Power Modules
- Input Modules (diodes and thyristors)
- Output and Switching Modules (contain MOSFETs, IGBTs, and diodes)
- Custom Modules

**Optoelectronic Components Segment**
Infrared Emitters and Detectors
Optical Sensors
- Proximity
- Ambient Light
- Light Index (RGBW, UV, IR)
- Humidity
- Quadrant Sensors
- Transmissive Reflective
Infrared Remote Control Receivers
Optocouplers
- Phototransistor, Photodarlington
- Linear
- Phototriac
- High-Speed
- IGBT and MOSFET Driver
Solid-State Relays
LEDs and 7-Segment Displays
Infrared Data Transceiver Modules
Custom Products

**Resistors and Inductors Segment**
Film Resistors
- Metal Film Resistors
- Thin Film Resistors
- Thick Film Resistors
- Power Thick Film Resistors
- Metal Oxide Film Resistors
- Carbon Film Resistors
Wirewound Resistors
- Vitreous, Cemented, and Housed Resistors
- Braking and Neutral Grounding Resistors
- Custom Load Banks
Power Metal Strip® Resistors
Battery Management Shunts
Crowbar and Steel Blade Resistors
Thermo Fuses
Chip Fuses
Pyrotechnic Initiators / Igniters
Variable Resistors
- Cermet Variable Resistors
- Wirewound Variable Resistors
- Conductive Plastic Variable Resistors
- Contactless Potentiometers
- Hall Effect Position Sensors
- Precision Magnetic Encoders

**Capacitors Segment**
Tantalum Capacitors
- Molded Chip Tantalum Capacitors
- Molded Chip Polymer Tantalum Capacitors
- Coated Chip Tantalum Capacitors
- Solid Through-Hole Tantalum Capacitors
- Wet Tantalum Capacitors
Ceramic Capacitors
- Multilayer Chip Capacitors
- Disc Capacitors
- Multilayer Chip RF Capacitors
- Chip Antennas
- Thin Film Capacitors
Film Capacitors
Power Capacitors
Heavy-Current Capacitors
Aluminum Electrolytic Capacitors
ENYCAP™ Energy Storage Capacitors
Networks / Arrays
Non-Linear Resistors
- NTC Thermistors
- PTC Thermistors
- Thin Film RTDs
- Varistors
Magnetics
- Inductors
- Wireless Charging Coils
- Planar Devices
- Transformers
- Custom Magnetics
Connectors

**Passive Components**

**Selectors Guide**

4/4

www.vishay.com
VMN-SG2078-1609

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000