40 Amp Power PCB Relay

FEATURES
- Popular Power PCB Relay Footprint - T90
- 40 Amp 240 VAC General Purpose UL Rating
- 2 HP 250 VAC Rating
- UL Class F Insulation Standard
- 4 kV Dielectric Option (-H) Available
- Meets UL 508 and UL 873 Spacing with Pin 6 Omitted*
- RoHS Compliant

CONTACT DATA
- Material: AgCdO, AgSnO2In2O3, AgCdO+Au
- Initial Contact Resistance: 50 mΩ Max. @ 1 A, 6 VDC
- Maximum Switching Voltage: 110 VDC, 300 VAC
- Maximum Switching Current: 40 A
- Maximum Switching Power: 1,200 W, 10,000 VA
- Service Life: Mechanical 1 x 10^7 Operations, Electrical 5 x 10^6 Operations

CHARACTERISTICS
- Dielectric Strength: 1,500 V, 50 Hz Between Open Contacts, 2,500 V, 50 Hz Between Contacts and Coil, 4,000 V, 50 Hz Between Contacts and Coil
- Shock Resistance: 200 m/s², 11 ms
- Vibration Resistance: 10 Hz - 55 Hz Double Amplitude 1.5 mm
- Terminal Strength: 10N
- Solderability: 260°C for 5 seconds
- Storage Temp. Range: -55°C to 125°C
- Operating Temp. Range: -55°C to 100°C
- Relative Humidity: 85% (at 40°C)
- Weight: 30 grams, 27 grams Open
- Material Compliant To: EU RoHS V2, EU REACH V3
- Insulation Resistance: 1,000 MΩ min, at 500 V

ORDERING INFORMATION
- Example: PTRD -1C -12 S -X G

Model:
- PTRD

Contact Form:
- 1A, 1B, 1C

Coil Voltage:
- 3, 5, 6, 9, 12, 15, 18, 24, 48, 110

Enclosure:
- Nil: Open Frame; S: Sealed

Insulation Material:
- Nil: Class F

Contact Material:
- Nil: AgCdO; T: AgSnO2In2O3

Spacing:
- Nil: UL508; -1: UL 508 and UL 873 (Pin #6 Omitted)

RoHS/Dielectric:
- X: RoHS Compliant; XH: RoHS plus 4 kV Dielectric (H Version has Pin #6 Omitted)

Coil Sensitivity:
- Nil: 0.9 W/(1); 0.6: 0.6 W; 1.1: 1.1 W

Gold Plated Contacts:
- Nil: None; G: AgCdO+Au

Box Quantity: 600; Inner Box 300
## COIL DATA

<table>
<thead>
<tr>
<th>Coil Voltage (VDC) (2)</th>
<th>Coil Power (W)</th>
<th>Must Operate Voltage Max (VDC)</th>
<th>Must Release Voltage Min (VDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.6 W</td>
<td>0.9 W (1)</td>
<td>1.1 W</td>
</tr>
<tr>
<td>Rated</td>
<td>Max</td>
<td>Resistance (Ohms ± 10%)</td>
<td>0.6 W &amp; 0.9 W (2)</td>
</tr>
<tr>
<td>3</td>
<td>3.9</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>6.5</td>
<td>42</td>
<td>28</td>
</tr>
<tr>
<td>6</td>
<td>7.8</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>11.7</td>
<td>135</td>
<td>90</td>
</tr>
<tr>
<td>12</td>
<td>15.6</td>
<td>240</td>
<td>150</td>
</tr>
<tr>
<td>15</td>
<td>19.5</td>
<td>375</td>
<td>260</td>
</tr>
<tr>
<td>18</td>
<td>23.4</td>
<td>540</td>
<td>380</td>
</tr>
<tr>
<td>24</td>
<td>31.2</td>
<td>960</td>
<td>640</td>
</tr>
<tr>
<td>48</td>
<td>62.4</td>
<td>3840</td>
<td>2560</td>
</tr>
<tr>
<td>110</td>
<td>143</td>
<td>20167</td>
<td>13445</td>
</tr>
</tbody>
</table>

### NOTES:

1. 0.9 W is Industry Standard
2. The use of any coil voltage less than the rated voltage will compromise the operation of the relays.
3. Must Operate Voltage and Must Release Voltages are for test purposes only and are not to be used as design criteria.

### COIL DATA Continued

<table>
<thead>
<tr>
<th>Operate Time</th>
<th>Less than 15 ms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release Time</td>
<td>Less than 10 ms</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>0.6 W, 0.9 W, 1.1 W</td>
</tr>
</tbody>
</table>

### DIMENSIONS (mm/inches)

Knock off, on top corner, nib for ventilation after soldering and water wash.

Note:
- Power Pins are 0.8 mm x 1.5 mm
- Coil Pins are Ø0.8 mm

Pin 6 omitted when using 4 kV dielectric option (-H) and/or (-1) Option.

Dimensions are listed for reference purposes only.
T90 Style Relays

50 Amp
- PTRE 50/35 Amp 1,500 W, 12,000 VA
  - Larger Contacts than PTRD
  - Braided Copper Wire Added to Dissipate Heat from Contacts to the Coil Frame and PCB Pins
  - 50 Amp 240 VAC 10,000 Cycle UL Resistive Rating
  - Class F Material -40° to 125° C Standard

45 Amp
- PTVR 45 Amp 277 VAC 12,500 VA
  - >1.8 mm Contact Gap
  - 2.25 Watt Coil for Vibration Tolerance
  - Class F Material -40° to 85° C Standard
  - Designed for PV Inverter & Motor Control Applications

New

40 Amp
- PTRD 40/30 Amp 1,200 W, 10,000 VA
- PTRA AC Coil Options from 12 to 277 VAC
  - Larger Contacts than PTRH
  - 40 Amp 240 VAC UL Resistive Rating
  - 25 Amp 277 VAC 100K Cycles UL Resistive Rating
  - Class F Material -40° to 125° C Standard

30 Amp
- PTRH 30/20 Amp 900 W, 7,500 VA
  - 30 Amp 277 VAC UL General Purpose Rating
  - 30 Amp 250 VAC 100K Cycle UL Resistive Rating
  - Class B -40° to 100° C Standard, Optional Class F

Packaging Options (i.e. PTRH-T)

- Dust Cover or Sealed with Scratch off Nib
- -T (T2 & T3) with PC Pins and Contact QC
- -T (T4 & T5) w/QC Tabs & Mounting Ears
- -OT (OT2 & OT3) with PC Pins and Contact QC
- -OT (OT4 & OT5) w/QC Tabs & Mounting Ears

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