

# 50 Amp Power PCB Relay - 1.8mm Gap, 2.25 Watt Coil PTRV



### FACTORY RATINGS

us Pending

Load Type	Voltage	Cycles	1 Form A (SPST-NO)
Resistive	277 VAC @ 40°C	20,000	50 A
	277 VAC @ 85°C	50,000	35A

\*Meets UL 508 and UL 873 Spacing - 3.18 mm Through Air, 6.36 mm Over Surface.

### CHARACTERISTICS

Operate Time	15 ms Max.
Release Time	10 ms Max
Insulation Resistance	1,000 MΩ min, at 500 VDC
Dielectric Strength	2,500 V 50 Hz 1 Min Between Coil and Contacts
	4,000 V 50 Hz 1 Min Between Coil and Contacts
	1,500 V 50 Hz 1 min. Between Contacts
Shock Resistance	200 m/s <sup>2</sup> , 11 ms
Vibration Resistance	10 - 55 Hz Double Amplitude, 1.5mm
Terminal Strength	10N
Power Consumption	2.25 W
Solderability	260°C for 5 seconds
Operating Temperature Range	-55°C to 85°C
Relative Humidity	85% @ 40°C
Weight	27 g
Material Compliant To	EU RoHS V2, EU REACH V3

### ORDERING INFORMATION

Example:	PTRV	-1A	-12	S	T	-X
Model:	<b>PTRV</b>					
Contact Form:	<b>1A</b>					
Coil Voltage:	<b>12, 24</b>					
Configuration:	<b>S: Sealed</b>					
Insulation Material:	<b>Nil: Class F</b>					
Contact Material:	<b>T: AgSnO<sub>2</sub></b>					
RoHS Compliant:	<b>-X</b>					

Box Quantity: 600; Inner Box 300

### FEATURES

- Popular Power PCB Relay Footprint - T90
- 50 Amp 277 VAC Resistive Rating
- Contact Gap > 1.8mm
- Conforms To IEC62109-2 & VDE 0126-1-1
- 2.25 W Coil For High Shock & Vibration Tolerance
  - ◊ Coil Power Can Be Reduced to 900mW for Power and Heat Savings
- UL Class F Insulation Standard
- Meets UL 508 and UL 873 Spacing
- RoHS Compliant

### Applications

- Photo Voltaic Systems (PV Inverter)
- Motor Controls
- Compressors
- Appliances

### CROSS REFERENCES

TE (P&B) T9V
T9VV1K15-12S Crosses to PTRV-1A-12ST-X

### CONTACT DATA

Material	AgSnO <sub>2</sub>	
Initial Contact Resistance	30 mΩ Max. @ 1 A, 6 VDC	
Maximum Switching Voltage	300 VAC	
Maximum Switching Current	45 A	
Maximum Switching Power	12,500 VA	
Service Life @ 85°C	Mechanical	5 X 10 <sup>6</sup> Operations
	Electrical	6 X 10 <sup>3</sup> Operations

**COIL DATA**

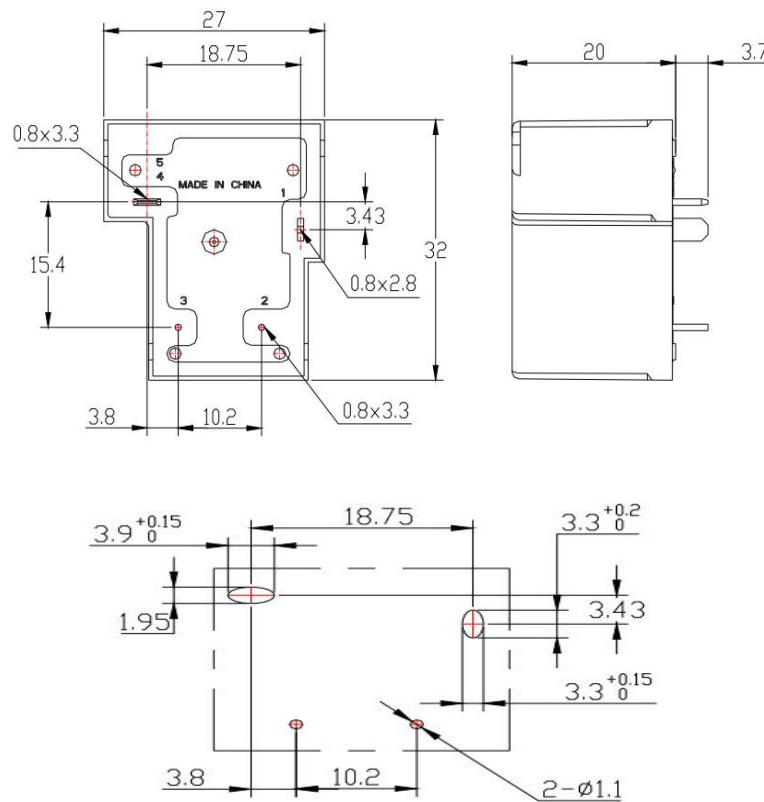
Coil Voltage		Resistance (Ohms ± 10%)	Must Operate Voltage Max (VDC)	Must Release Voltage Min. (VDC)	Coil Power (W)	Operate Time (ms)	Release Time (ms)
Rated	Max						
12	15.6	64.0	9.00	1.2	2.25	≤ 15	≤ 10
24	31.2	255	18.00	2.4			

**NOTES:**

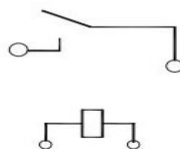
After applying a 2.25 W pulse for a minimum of 50 milliseconds the coil power can be reduced to 900 mW and maintain adequate contact pressure.  
 The use of any coil voltage less than the rated voltage will compromise the operation of the relays.  
 Must Operate Voltage and Must Release Voltages are for test purposes only and are not to be used as design criteria.

**DIMENSIONS (mm/inches)**

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



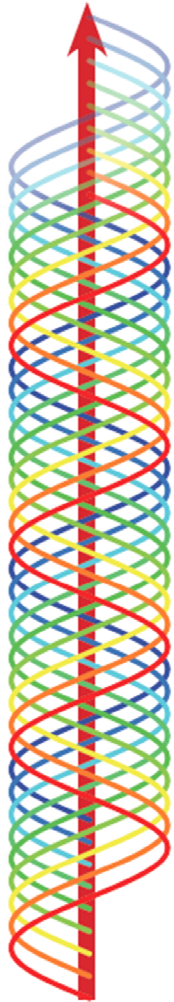
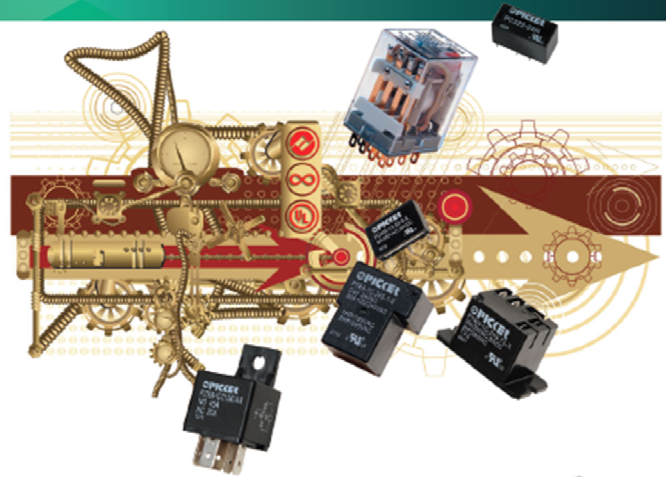
**Mounting (Bottom view)**



**Wiring diagram(Bottom view)**



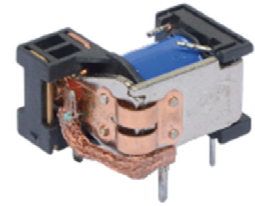
# T90 Style Relays



50 Amp

## **PTRV 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

*New*

## **PTRV 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



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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