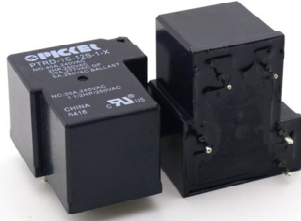


# 40 Amp Power PCB Relay PTRD



### 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

### UL / CUL Ratings

**cUL** us E93379

Load Type	Voltage	Cycles	1 Form A (SPST-NO)	1 Form B (SPDT-NC)	1 Form C (SPDT)	
					NO	NC
General Purpose	240 VAC	6,000	30 A	20 A	30 A	20 A
	277 VAC	6,000	30 A	20 A	30 A	20 A
	280 VAC	6,000	5 A	5 A	5 A	5 A
Resistive	240 VAC	250,000	40 A	30 A	40 A	30 A
	240 VAC		20 A	—	20 A	—
	277 VAC	100,000	25 A	—	25 A	—
	30 VDC	—	40 A	30 A	40 A	30 A
Motor	250 VAC	30,000	2 HP	1.5 HP	2 HP	1.5 HP
	120 VAC	30,000	1 HP	—	1 HP	—
Ballast	280 VAC	6,000	5 A	5 A	5 A	5 A

### CONTACT DATA

Material	AgCdO, AgSnO <sub>2</sub> In <sub>2</sub> O <sub>3</sub> , 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 <sup>7</sup> Operations
	Electrical	5 x 10 <sup>4</sup> Operations

\*6 pin version meets UL 508  
5 pin (-1) version meets UL 508 and UL 873 spacing - 3.18 mm through air, 6.36 mm over surface.

### CHARACTERISTICS

Dielectric Strength	1,500 V, 50 Hz Between Open Contacts
	2,500 V, 50 Hz Between Contacts and Coil
H Version	4,000 V, 50 Hz Between Contacts and Coil
Shock Resistance	200 m/s <sup>2</sup> 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

### Additional UL / CUL Ratings for AgSnO Contacts

Load Type	Voltage	Cycles	Temp.	1 Form A (SPST-NO)	1 Form C (SPDT-NO)
Resistive	277/250 VAC	30,000	40°C	30 A	30 A

### ORDERING INFORMATION

Model:	Example: PTRD	-1C	-12	S				-1	-X			G
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: AgSnO <sub>2</sub> In <sub>2</sub> O <sub>3</sub>											
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 <sup>(1)</sup> ; 0.6: 0.6 W; 1.1: 1.1 W											
Gold Plated Contacts:	Nil: None; G: AgCdO+Au											

Box Quantity: 600; Inner Box 300

(1) 0.9 W is Industry Standard

**COIL DATA**

Coil Voltage (VDC) (2)		Coil Power (W)			Coil Power (W)		Must Release Voltage Min (VDC) (3)
Rated	Max	Resistance (Ohms ± 10%)			Must Operate Voltage Max (VDC)		
		0.6 W	0.9 W (1)	1.1 W	0.6 W & 0.9 W (2)	1.1 W	
3	3.9	15	10	—	2.25	—	0.3
5	6.5	42	28	—	3.75	—	0.5
6	7.8	60	40	33	4.50	4.8	0.6
9	11.7	135	90	—	6.75	—	0.9
12	15.6	240	150	131	9.00	9.6	1.2
15	19.5	375	260	—	10.25	—	1.5
18	23.4	540	380	—	13.50	—	1.8
24	31.2	960	640	524	18.00	19.2	2.4
48	62.4	3840	2560	2095	36.00	38.4	4.8
110	143	20167	13445	—	82.50	—	11.0

**NOTES:**

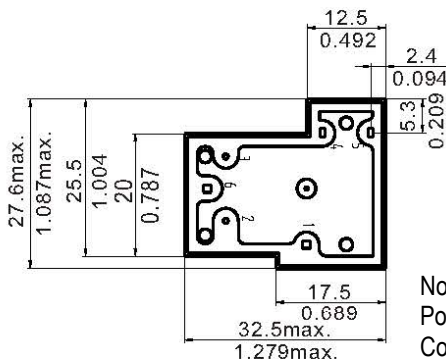
- (1) 0.9 W is Industry Standard
- (2) The use of any coil voltage less than the rated voltage will compromise the operation of the relays.
- (3) Must Operate Voltage and Must Release Voltages are for test purposes only and are not to be used as design criteria.

**COIL DATA Continued**

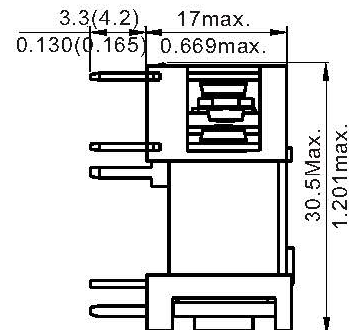
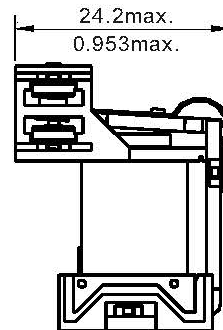
Operate Time	Less than 15 ms.
Release Time	Less than 10 ms
Power Consumption	0.6 W, 0.9 W, 1.1 W

**DIMENSIONS (mm/inches)**

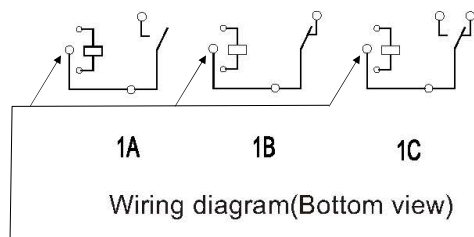
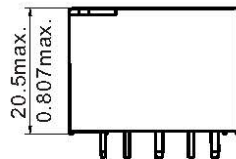
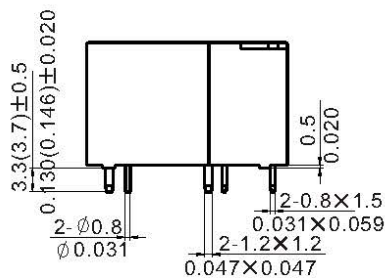
Knock off, on top corner, nib for ventilation after soldering and water wash.



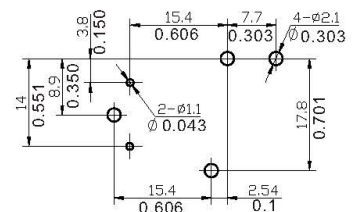
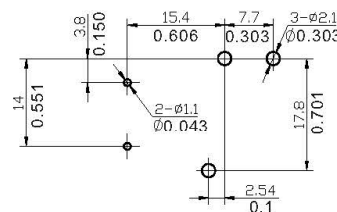
Note:  
Power Pins are 0.8 mm x 1.5 mm  
Coil Pins are Ø0.8 mm



Open type



**-1 with Pin 6 Omitted**

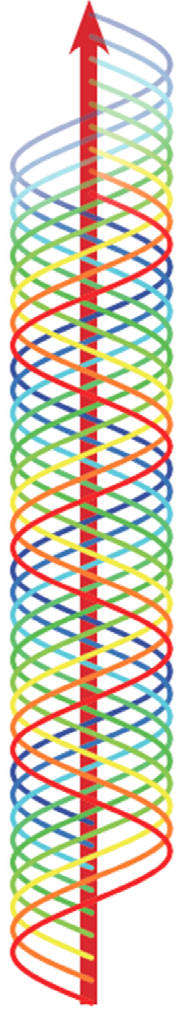
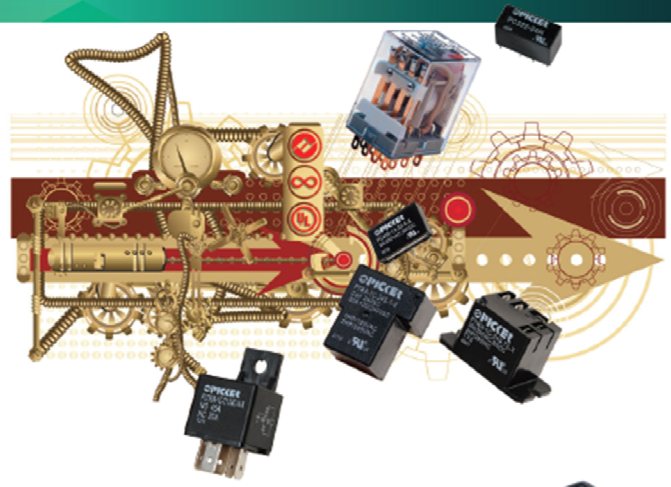


Mounting (Bottom view)

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

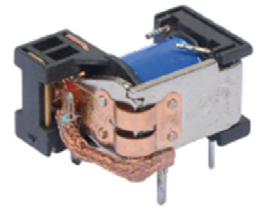


# T90 Style Relays



**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**     **PTRD 45 Amp 277 VAC 12,500 VA**

*New*

- >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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