

# 30 Amp Power PCB Relay PTRH-T



### FEATURES

- Popular Power PCB Relay Footprint - T91
- 30 Amp 250 VAC General Purpose UL Rating
- Two Versions:
  - ◆ T2 (1A), T3 (1C) PC Pins & QC Pins
  - ◆ T4 (1A), T5 (1C) QC Pins with Mounting Tabs
- UL Class F Insulation Optional
- IP67 Epoxy Sealed Version Available
- Meets UL 508 and UL 873 Spacing
- RoHS Compliant

### UL / CUL Ratings

**UL** **us** **E93379**

Load Type	Voltage	1 Form A (SPST-NO)	1 Form B (SPDT-NC)	1 Form C	
				NO	NC
General Purpose	240 VAC*	30 A*	20 A*	30 A*	20 A*
	30 VDC	30 A	20 A	30 A	20 A
Resistive (100,000 Cycles)	120 VAC	30 A	20 A	30 A	20 A
	250 VAC	30 A	20 A	30 A	20 A
Motor (30,000 Cycles)	240 VAC	2 HP	---	2 HP	---
	120 VAC	1 HP	---	1 HP	---
LRA/FLA	240 VAC	80 A/30 A	---	80 A/30	---
	120 VAC	96 A/30 A	---	96 A/30	---

\*UL Approval

### 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	30 A	
Maximum Switching Power	900 W, 7,500 VA	
Service Life	Mechanical	1 X 10 <sup>7</sup> Operations
	Electrical	5 X 10 <sup>4</sup> Operations

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

### CHARACTERISTICS

Operate Time	Less than 15 ms
Release Time	Less than 10 ms
Insulation Resistance	1,000 MΩ min, at 500 VDC, 50% RH
Dielectric Strength	50 Hz 2,500 V 1 Min Between Coil and Contacts
	4,000 V without Pin 6
	50 Hz 1,500 V 1 min. Between Contacts
Power Consumption	0.9 W, 0.6 W
Shock Resistance	200 m/s, 11 ms
Vibration Resistance	10 - 55 Hz Double Amplitude

### CHARACTERISTICS Continued

Terminal Strength	10N
Solderability	260 °C for 5 seconds
Operating Temperature Range	- 55°C to 100°C Class B
Operating Temperature Range	- 55°C to 125°C Class F
Relative Humidity	85% (at 40°C)
Weight	13.5 gr Approximately
Material Compliant To	EU RoHS V2. EU REACH V3

### ORDERING INFORMATION

Example:	PTRH	-1C	-12	S	F	T	-T5	-X	67			
Model:	<b>PTRH (PTRH-T)</b>											
Contact Form:	<b>1A, 1B, 1C</b>											
Coil Voltage:	<b>3, 5, 6, 9, 12, 15, 24, 48, 110</b>											
Enclosure:	T2 & T3: <b>C</b> : Dust Cover; <b>S</b> : Sealed; T4 & T5: <b>S</b> : Covered, not Washable											
Insulation Material:	<b>Nil</b> : Class B; <b>F</b> : Class F											
Contact Material:	<b>Nil</b> : AgCdO; <b>T</b> : AgSnO <sub>2</sub> In <sub>2</sub> O <sub>3</sub>											
Mounting Type:	<b>T2</b> : 1 Form A PCB & QC; <b>T3</b> : 1 Form C PCB & QC; <b>T4</b> : 1 Form 1A Panel all QC; <b>T5</b> : 1 Form C Panel all QC											
RoHS Compliant:	<b>-X</b>											
IP67 Epoxy Sealed:	<b>67</b> (Water Proof)											
Pinout:	<b>A</b> : Alternate Quick Connect Pinout											
Coil Sensitivity:	<b>Nil</b> : 0.9 W**; <b>0.6</b> : 0.6 W (**0.9 W is Industry Standard)											
Gold Plated Contacts:	<b>Nil</b> : None; <b>G</b> : AgCdO+Au											

T2 & T3 Box Quantity: 600; Inner Box 300, T4 & T5 Box Quantity: 400; Inner Box:100

**COIL DATA**

Coil Voltage		Coil Power (W)		Must Operate Voltage Max (VDC)	Must Release Voltage Min (VDC)
Rated	Max	Resistance (Ohms ± 10%)			
		0.6 W	0.9 W		
3	3.9	15	10	2.25	0.3
5	6.5	42	28	3.75	0.5
6	7.8	60	40	4.50	0.6
9	11.7	135	90	6.75	0.9
12	15.6	240	150	9.00	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	18.00	2.4
28	36.4	1307	871	21.0	2.8
48	62.4	3840	2560	36.00	4.8
110	143	20167	13445	82.50	11.0

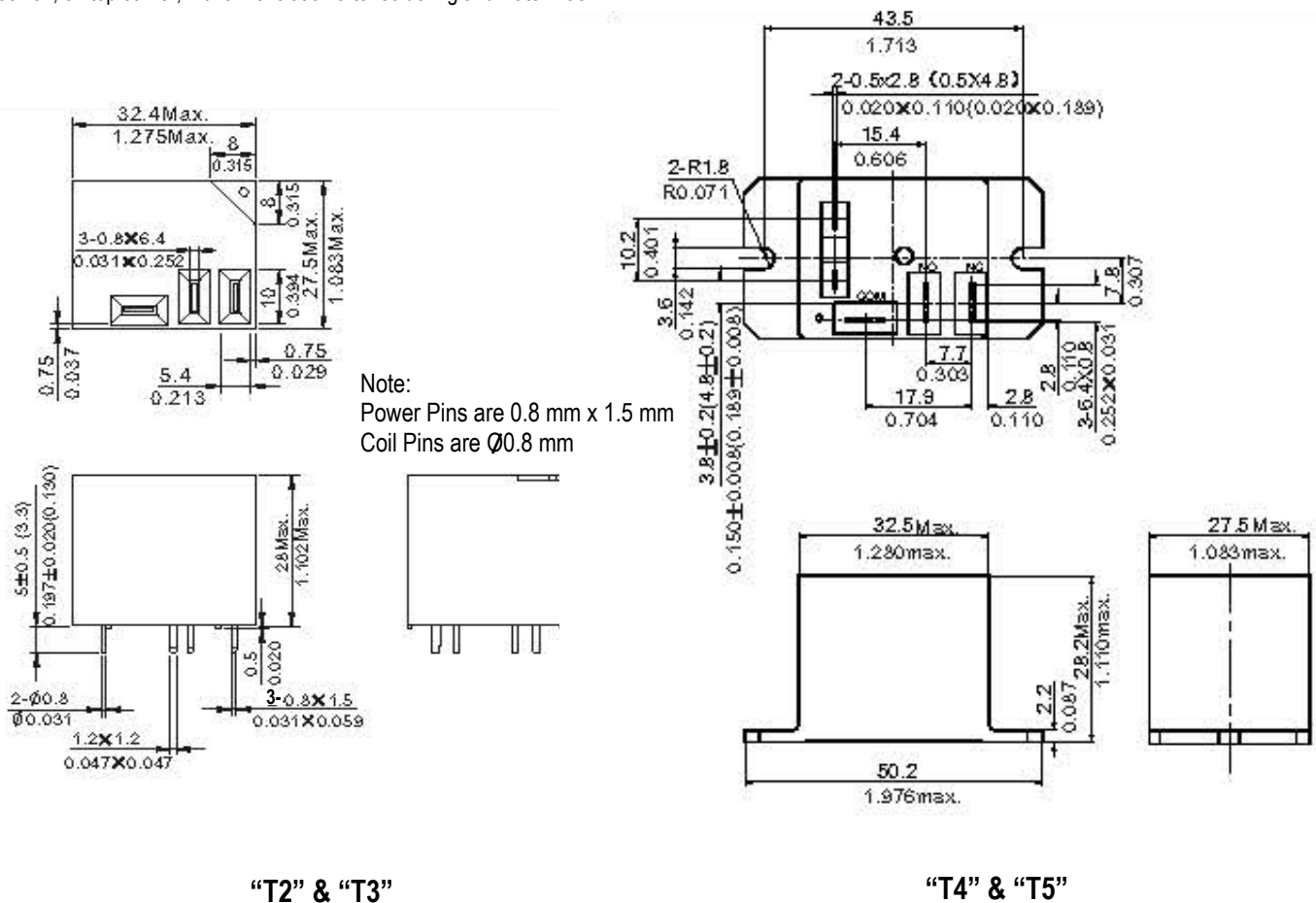
\*0.9 W is Industry Standard

**NOTES:**

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.

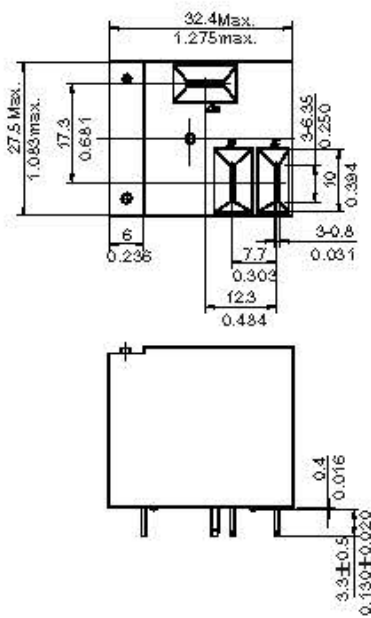
**MOUNTING TYPE (mm/inches)**

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

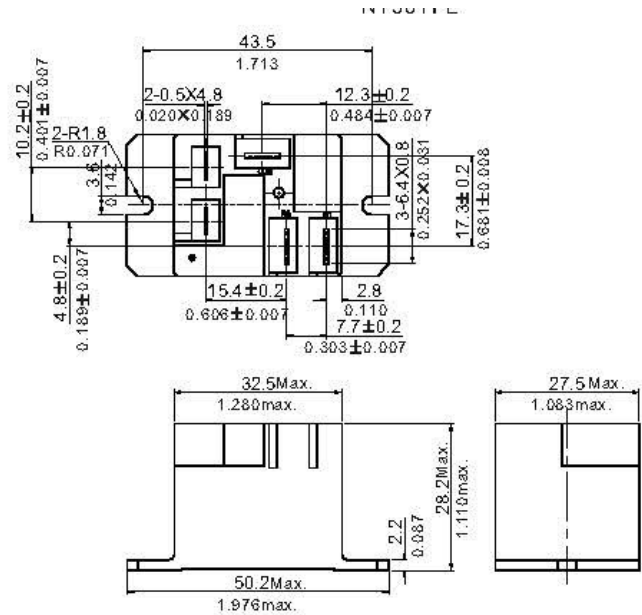


**ALTERNATE MOUNTING TYPE (mm/inches)**

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

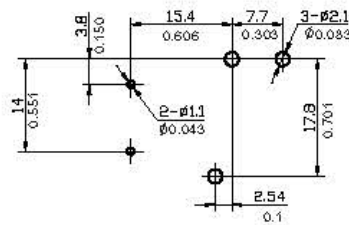


**"A"**  
**T2 & T3**



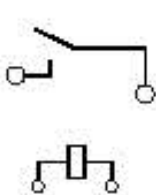
**"A"**  
**T4 & T5**

**PRINTED CIRCUIT BOARD LAYOUT**

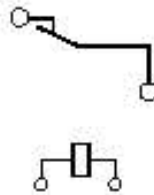


(Bottom View)

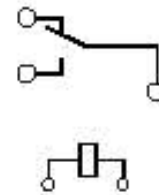
**CONTACT FORMS**



**1A**



**1B**

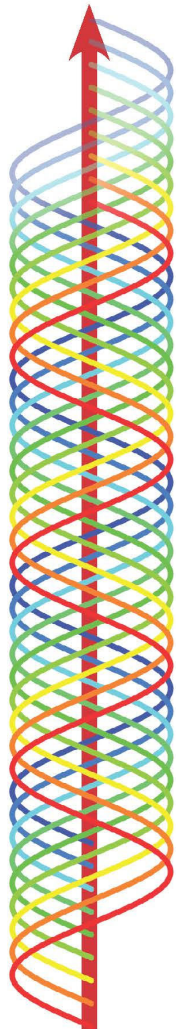
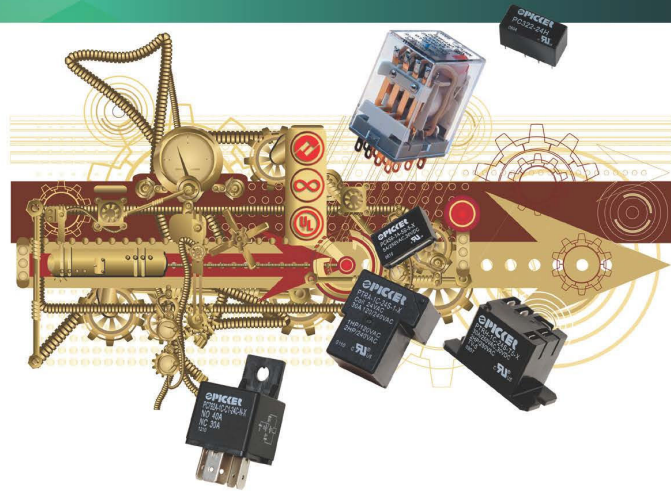


**1C**

(Bottom View)



# T90 Style Relays



## 50 Amp **PTRE 50/35 Amp 1,500 W, 12,000 VA**

- Larger Contacts than PTRD/PTRDE
- **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



## 40+ Amp **PTRDE 40/30 Amp 1,200 W, 10,000 VA**

- **Braided Copper Wire Added to Dissipate Heat from Contacts to the Coil Frame and PCB Pins**
- 40 Amp 240 VAC 50,000 Cycle UL Resistive Rating
- Class F Material -40° to 125° C Standard

## 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 240VAC 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