

DC Input Solid State Relay

c  us E93379

PCS15



FEATURES

- 10 Amp to 40 Amp Output
- 3~32VDC DC Input
- Built-In RC Snubber
- Optical Isolation Between Input and Output
- TRIAC Output



INPUT PARAMETERS (Ta = 30°C)

Control Voltage Range	4~32 VDC with LED
Must Turn-On Voltage	4 VDC with LED
Must Turn-Off Voltage	1 VDC
Max Input Current	25 mA
Max Reverse Protection Voltage	-32 VDC

OUTPUT CURRENT PARAMETERS (Ta = 30°C)

Load Current (100mA min)*	10A	15A	20A	25A	40A
Max Surge Current (10 ms, Apk)	120	250	250	250	420
Max I ² t (10 ms, A ² s)	72	112	200	312	882
Thermal Resistance Junction to Case (R _{jc}) (C/W)	2.35	2.15	1.55	1.15	1.15

*Minimum current loading over range required to fully turn on device. Standard UL endurance ratings are 6,000 cycles.

OUTPUT VOLTAGE PARAMETERS

	240A	380A
Load Voltage Range (VAC)	48~280	48~440
Max Transient Voltage (V _{pk})	600	800
Max Turn-On Time	Zero Crossing Random	1/2 cycle + 1 ms 1ms
Max Turn-Off Time	1/2 cycle + 1 ms	
Max Off-State Leakage Current	10 mA	
Max On-State Voltage Drop	1.5 Vrms	
Min Power Factor	0.5	
Min Off-State (dv/dt)	200 V/us	

CHARACTERISTICS

Dielectric Strength	2500VAC, 50~60 Hz, 1 min Input, Output to Base 4000VAC, 50~60 Hz, 1 min Input to Output
Insulation Resistance	1000MΩ at 500 VDC
Operating Temperature	-30°C ~ 80°C
Storage Temperature	-30°C ~ 100°C
Relative Humidity	45% ~ 85%
Weight	~70g

LOAD VOLTAGE / LOAD CURRENT AVAILABILITY

		Load Voltage	
		240	380
Load Current	10		X
	15		
	20		
	25		X
	40		X

Standard Options denoted by "X", contact factory for other combinations

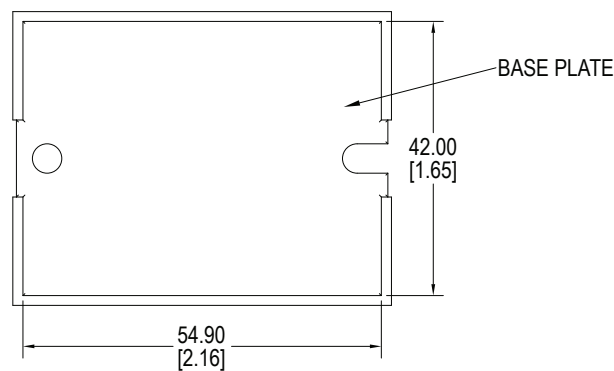
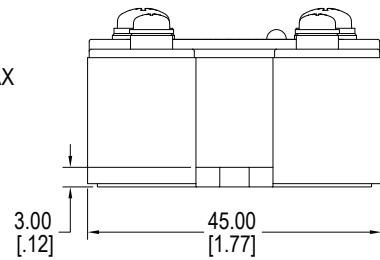
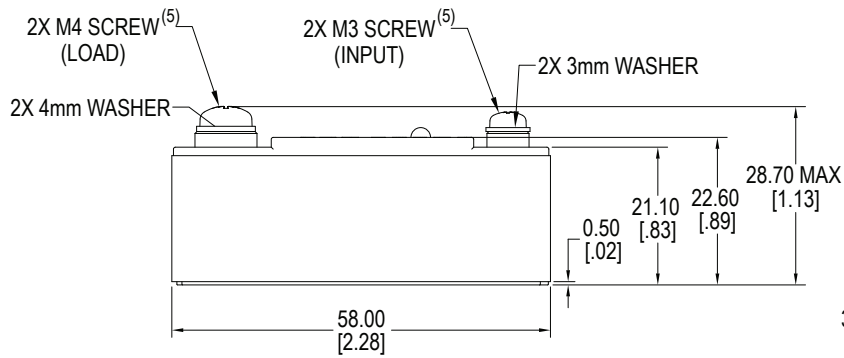
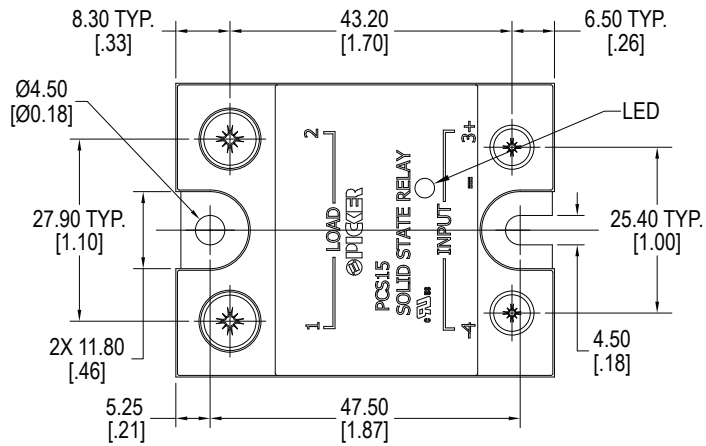
ORDERING INFORMATION

Example	PCS15	-D	-240A	-10	Z		L
Model:	PCS15						
Control Voltage	D = 4~32VDC with LED						
Load Voltage: <i>Note Load Voltage / Load Current Availability Chart</i>	240A = 48~280VAC 380A = 48~440VAC						
Load Current: <i>Note Load Voltage / Load Current Availability Chart</i>	10 = 10 Amp 15 = 15 Amp 20 = 20 Amp 25 = 25 Amp 40 = 40 Amp						
Switching Type	Z = Zero Crossing R = Random Turn-On / Instantaneous Turn-On, See PRECAUTIONS #7						
Over Voltage Protection	Nil = None Y = With Varistor (MOV)						
Status LED	L = Indicator LED, Standard						
Terminal Type	Nil = Screw Terminal See PRECAUTIONS #5 for torque specification Q = Quick Connect 0.250 x 0.32, 4pls., Faston terminals. Input and Load. Housing is fully epoxy resin filled						

PRECAUTIONS

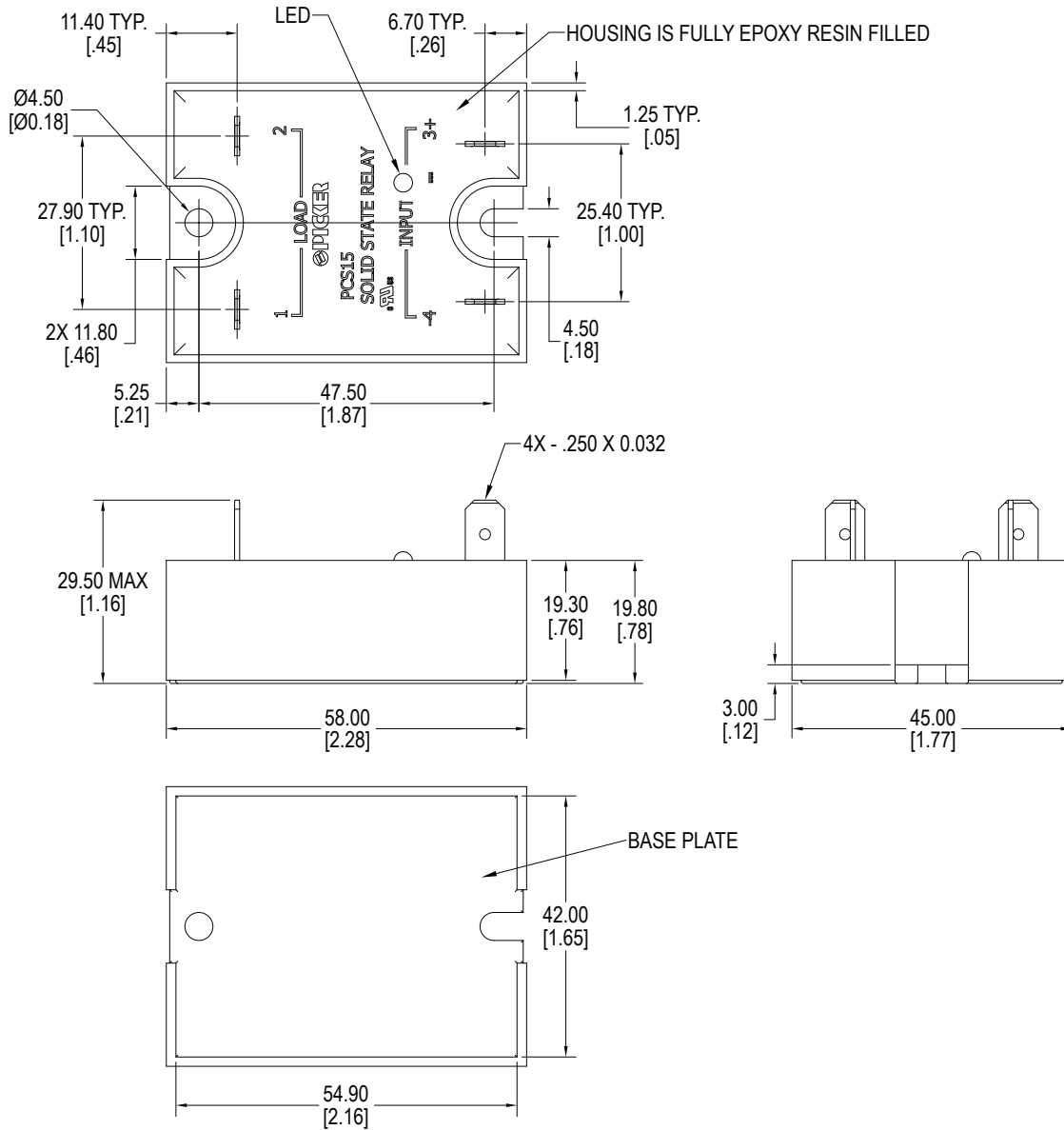
- When choosing a Solid State Relay (SSR), note the actual load current and ambient temperature and reference the Characteristic Curves.
- SSRs require an adequate heat sinking or other effective cooling measure.
- With ambient temperature above 25°C, refer to the curve of Max Load Current vs. Ambient Temperature for load current derating.
- Apply heat-conducting silicon grease or a thermal transfer pad on the space between the SSR and heat sink and screw the SSR firmly to the heat sink to avoid damage from overheating.
- Tighten the SSR terminal screws properly. We recommend screw installation torque as follows:
M4 screw mounting torque range is (0.98~1.37)N * m
M3 screw mounting torque range is (0.56~0.98)N * m
Loose screws will damage the SSR with heat generated from connections. Also, excessive screw torque may damage the relay's internal components.
- It is recommended to use a heat sink matched to the Current Load. With any heat sink, test that the SSR base temperature does not exceed 65°C.
- When using the PCS15 relay with an inductive load, it is suggested to select Random Turn-On. (i.e. a model with "R" Switching Type)
- The PCS15 is not suitable for capacitive loads; if you must, then do not choose products with varistor protection. (i.e. a model with the "Y" Over Voltage Protection)
- Listed parameters are based on resistive loads. Do not use the relay beyond the described current, temperature, load or voltage limits as described in this datasheet.

DIMENSIONS mm (inches)

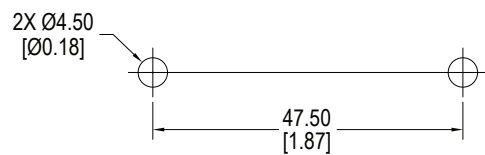


Screw Terminal

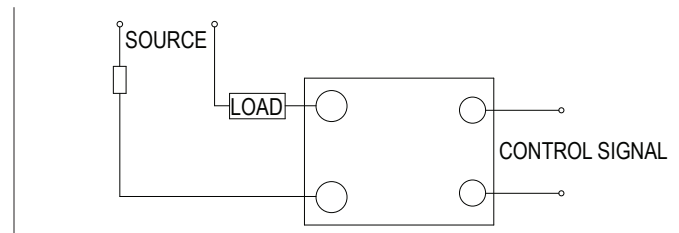
DIMENSIONS mm (inches)



MOUNTING LAYOUT



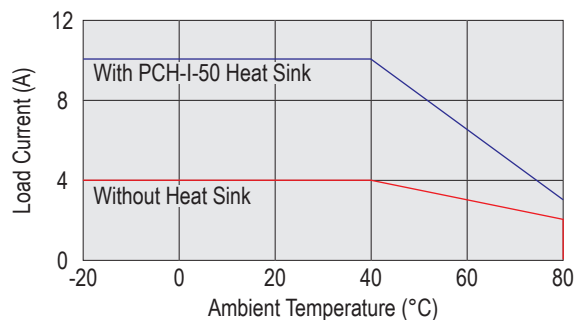
WIRING DIAGRAM



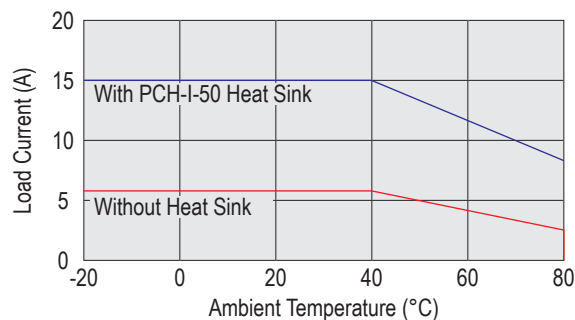
ACCESSORIES

Heat Transfer Pad	HTP100
Protective Cover	SSR100
Heat Sink	PCH-I-50 for applications up to 25 Amp @ 25°C Ambient Temperature PCH-M-120 for applications up to 35 Amp @ 25°C Ambient Temperature PCH-H-150 for applications up to 40 Amp @ 25°C Ambient Temperature

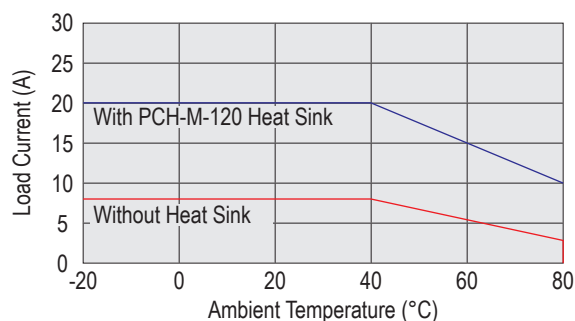
CHARACTERISTIC CURVES



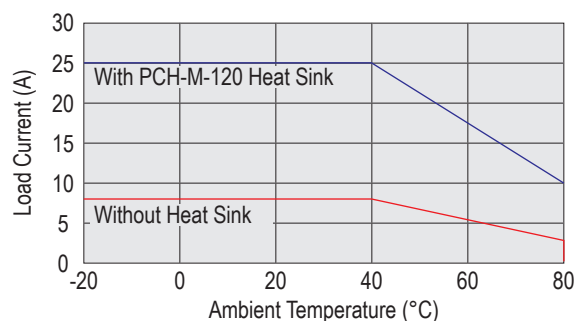
Max Load Current vs. Ambient Temperature - 10A



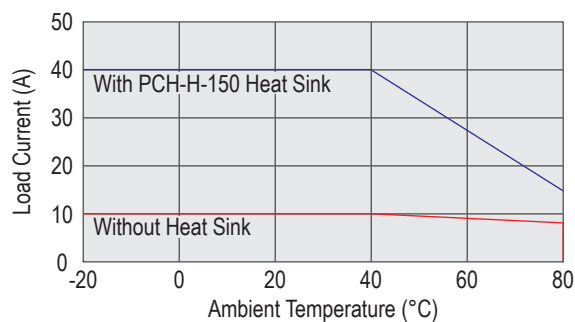
Max Load Current vs. Ambient Temperature - 15A



Max Load Current vs. Ambient Temperature - 20A



Max Load Current vs. Ambient Temperature - 25A

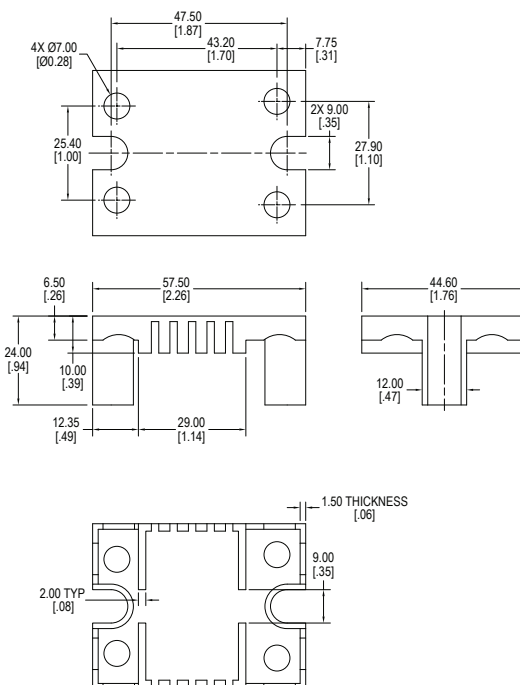


Max Load Current vs. Ambient Temperature - 40A

ACCESSORIES

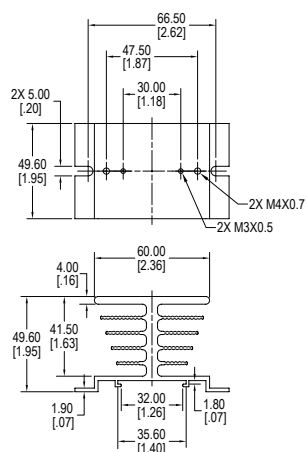


HTP100 — Heat Transfer Pad

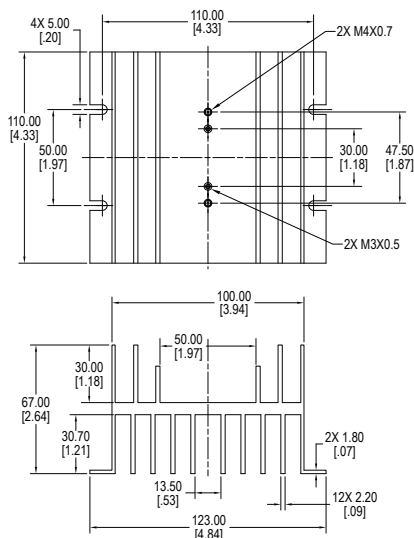


SSR100— Protective Cover

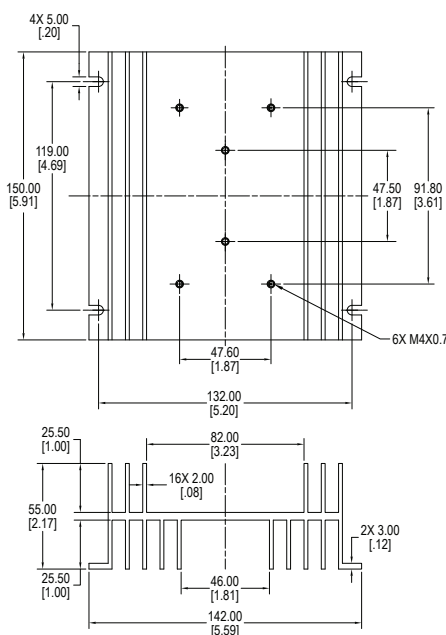
Removable, made of UL94V-O approved clear polycarbonate



PCH-I-50 Heat Sink



PCH-M-120 Heat Sink



PCH-H-150 Heat Sink