

# DC Input / AC Output Compact Solid State Relay

## PCS53



#### INPUT PARAMETERS (Ta = 35°C)

Control Voltage Range (DC Input)	3 - 32 VDC	
	19.2-28.8 VAC (24 VAC Input)	
Control Voltage Range (AC Input)	85-132 VAC (110 VAC input)	
	175-264 VAC (220 VAC Input)	
Must Turn-On Voltage	3 VDC	
Must Turn-Off Voltage	1 VDC	
Max. Input Current	25 mA (DC)	
Max Reverse Protection Voltage	- 32 VDC	

#### **CHARACTERISTICS**

	2,500 VAC, 50 Hz/60 Hz, 1 min, Input to Base	
Dielectric Strength	2,500 VAC, 50 Hz/60 Hz, 1 min, Output to Base	
	4,000 VAC, 50 Hz/60 Hz, 1 min, Input to Output	
Insulation Resistance	1,000 MΩ at 500 VDC	
Operating Temperature	- 30°C to 80°C	
Storage Temperature	- 30°C to 100°C	
Weight	35 g	

### ORDERING INFORMATION

Example:	PCS53	-D	-240A	-10	Z	l
Model:	PCS53					
Control Voltage:	D: 3-32 VDC; 24A: 19.2-28.8 VAC; 120A: 85-132 VAC; 240A: 175-264 VA	С				
Load Voltage:	240A: 48-280 VAC; 380A: 48-440 VAC	;	-			
Load Current:	10: 10 A; 15: 15 A; 20: 20 A; 25: 25 A					
Switching Type:	Z: Zero Crossing; R: Random Turn-On					
RC Snubber:	Nil: Built In					
Status LED :	Nil: Not Included; L: Indicator LED					
Terminal Type:	Nil: Screw Terminal; Q: Quick Connec	t (1/4" Co	ontrol, 3/8	" Power)		

#### Box Quantity: 100; Inner Box: 2

14680 James Road, Rogers, MN 55374 USA

Sales: (763) 535-2339

Dimensions are listed for reference purposes only. PCS53 Rev D 4/9/2019

## FEATURES

- 10 A, 15 A, 20 A or 25 A Output
- Compact Package 1.520" x 1.126" (38.6mm x 28.6mm) Footprint
- DC Input: 3-32 VDC
- Panel Mount
- Built in RC Snubber Standard
- 4,000 VAC Opto-Isolation Between Input and Output
- Encapsulated, Thermally Conductive Epoxy
- RoHS Compliant

#### **CROSS REFERENCES**

Crydom EL
Example: EL240A5-24 crosses to PCS53-D-240A-10ZQ
Opto22 Z Series
Example: Z240D10 crosses to PCS53-D-240A-10ZQ
Panasonic AQJ
Example: AQJ416V crosses to PCS53-D-240A-25ZQ
Crydom PF and SPF Series * see application note
Example: PF240D25 crosses to PCS53-D-240A-25ZQ
Carlo Gavazzi RF1
Example: RF1A23L25 crosses to PCS53-D-240A-25ZQ

#### OUTPUT PARAMETERS (Ta = 35°C)

Load Voltage Range	240 A: 48 - 280 VAC				
Load Vollage Range	380 A: 48—440 VAC				
Max. Transient Voltage	240A: 600 Vpk				
Max. Transient voltage	380 A: 800 Vpk				
Load Current	10	15	20	25	
Load Current Range	0.1 - 10	0.1 - 15	0.1 - 20	0.1 - 25	
Max. I <sup>2</sup> t (10 ms, A <sup>2</sup> s)	78	144	312	312	
Max. Surge Current (10 ms)	100 Apk	150 Apk	200 Apk	250 Apk	
Max. Off-State Leakage Current	5 mA				
Max. On-State Voltage Drop	1.5 VRMS				
Max. Turn-On Time	Zero – Cross: 1/2 Cycles + 1 ms				
Max. Turn-on Time	Random: 1 ms				
Max. Turn-Off Time	1/2 Cycles + 1 ms				
Min. Off-State dv/dt	200 V/us				

Q

For Accessories and Heat Sink see page 3

www.PickerComponents.com

e-mail: sales@pickercomponents.com

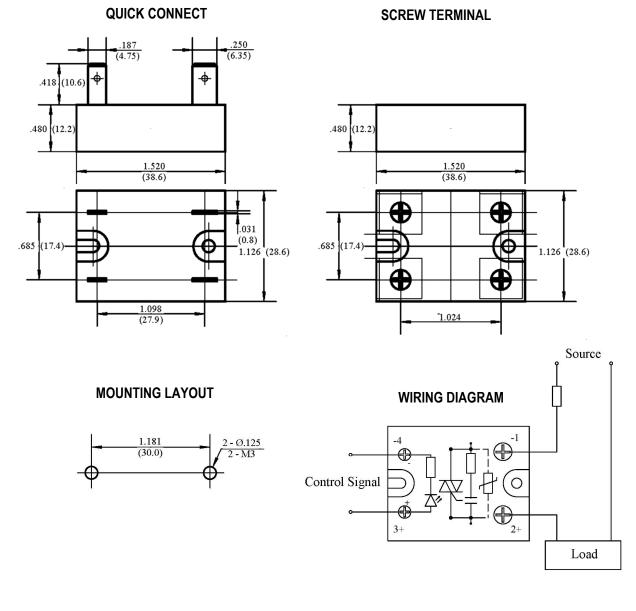
Specifications and Availability subject to change without notice.

## PCS53

## PRECAUTIONS

- 1) When choosing a Solid State Relay (SSR), note the actual load current and ambient temperature and reference the Characteristic Curves below.
- 2) SSRs require a adequate heat sinking or other effective cooling measures.
- 3) With ambient temperature above 25°C refer to the curve of Max. Load Current vs Ambient Temperature for load current derating.
- 4) Apply heat-conducting silicon grease or a thermal transfer pad on the space between SSR and heat sink and screw the SCR firmly in to the heat sink to avoid damage from overheating.
- 5) Tighten the SSR terminal screws properly. We recommended 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.
  - Lose screwswill damage the SSR with heat generated from connections. Also, excessive screw torque may damage relays internal components.
- 6) 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.
- 7) When using the PCS53 relay with an inductive load, it is suggested to select random tum-on (i.e., a model with "R" letter).
- 8) The PCS53 is not suitable for capacitive loads; if you must then do not choose products with varistor protection (i.e., a model with "Y" letter).
- 9) 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 data sheet.

## DIMENSIONS (mm)



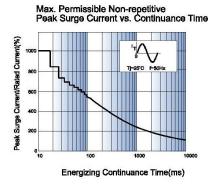
Dimensions are listed for reference purposes only. PCS53 Rev D 4/9/2019 **PCS53** 

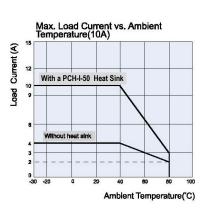
## ACCESSORIES

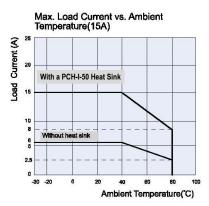
Heat Transfer Pad	HTP50
Protective Cover	SSR50
Heat Sinks	PCH-I-50 for 10 Amp Applications
	PCH-H-110 for 15-25 Amp Application

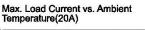
## ACCESSORIES SOLD SEPERATELY

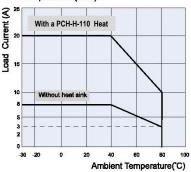
## CHARACTERISTIC CURVES











Max. Load Current vs. Ambient Temperature(25A) 3 Current (A) With a PCH-H-110 Heat Sink 25 Load 16 Without at sink 10 9 8 3 0 -30 -20 0 20 40 60 80 100 Ambient Temperature(°C)

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