Size: 11.06in x 4.13in x 1.61in (281mm x 105mm x 40.8mm)

OPTIONS

- System
  -48V System
  -60V System
- Operation Mode
  -PV Mode
  -HVDC Mode
  -AC Mode

FEATURES

- Wide Operating Input Ranges of 90V~430VDC (PV (Solar) Mode), 90V~420VDC (HVDC Mode), & 90V~290VAC (AC Mode)
- High Efficiency
- High Power Density
- Full Function Digital Controls
- Supports Solar System Input (integrated MPPT control)
- Supports Voltage Adjustment, Current Limiting and Current Sharing
- Supports Hot Swap
- Supports CAN Bus Communication
- Supports LED Warning Signals
- Soft Start
- Parallel Operations
- Input Over & Under Voltage Protection
- Over Voltage, Short Circuit, and Over Voltage Protection
- TUV & CE Approvals

DESCRIPTION

The PSRAD series of AC/DC rectifiers offers up to 3000 watts of output power in a 11.06” x 4.13” x 1.61” package. This series consists of single output models with three wide operating input ranges and two system types. These models feature high efficiency, high power density, soft start, parallel operations, input under and over voltage protection, as well as over voltage, short circuit, and over voltage protection. The PSRAD series supports solar system input, voltage adjustment, current limiting, current sharing, hot swap, CAN bus communication, soft start, and it also has TUV and CE approvals. Please contact factory for ordering information.

MODEL SELECTION TABLE

Model Number	Input Voltage Range	Nominal Output Voltage	Output Voltage Range	Output Over Voltage Protection	Ripple & Noise
PSRAD-48S	PV (Solar) Mode: 90V~430VDC HVDC Mode: 90V~420VDC AC Mode: 90V~290VAC	53.5VDC	42~58VDC	56VDC~60VDC	≤200mVp-p
PSRAD-60S		67VDC	52.2~72VDC	70~75.5VDC	

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range	Solar Mode		90		430	VDC
	HVDC Mode		90		420	VDC
	AC Mode		90		290	VAC
Input Over Voltage Protection	Solar Mode	Set Point		≥435		VDC
		Recover Range	425		434	
	HVDC Mode	Set Point		≥430		VDC
		Recover Range	420		430	
	AC Mode	Set Point	298		310	VAC
		Recover Range	290		298	
Input Under Voltage Protection	Solar Mode	Set Point			83	VDC
		Recover Range	85		90	
	HVDC Mode	Set Point		≤85		VDC
		Recover Range		≤90		
	AC Mode	Set Point		≤85		VAC
		Recover Range		≤90		
Power Factor	AC Mode, 100% Load			≥0.99		
THD	AC Mode, Load: ≥50%			≤5		%
Standby Power Dissipation(1)				≤5		W

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS			Min	Typ	Max	Unit
OUTPUT SPECIFICATIONS							
Output Voltage					See Table		
Voltage Regulation					≤±0.6		%Vo
Output Power	Solar Mode & HVDC Mode	200VDC~400VDC	48V System		2500		W
			60V System		3000		
		90VDC~200VDC Linear Derating	48V System		1250		
			60V System		1250		
	AC Mode	176VAC~290VAC	48V System		2500		
			60V System		3000		
		90VAC~176VAC Linear Derating	48V System		1250		
			60V System		1250		
Output Current Limited					See Output Characteristic Curves		
Phone Noise Voltage					≤2		mV
Ripple & Noise	≤20MHz Bandwidth				≤200		mVp-p
Transient Response	Overshoot				≤±5		%Vo
	Recovery Time				≤200		us
Start-Up Time	HVDC Mode & AC Mode			3		10	S
Output Hold Time				10			mS
Broadband Noise Voltage	3.4KHz~150KHz				≤50		mV
	0.15MHz~30MHz				≤20		
MPPT Accuracy	Solar Mode				≥99		%
		Peak Value				99.8	
Night Time Standby Power Dissipation[2]	Solar Mode				≤2.5		W
PROTECTION							
Short Circuit Protection	System will resume after short circuit situation removed.						
Over Voltage Protection	Built-In, system resume when ambient temperature lower than 75ºC						
Lightning Protection					5		KA
ENVIRONMENTAL SPECIFICATIONS							
Operating Temperature				-40		+75	ºC
Storage Temperature	Without Package			-40		+75	ºC
Relative Humidity	Non-condensing			5		95	%
Altitude[3]					≤4000		m
MTBF				500,000			Hours
GENERAL SPECIFICATIONS							
Efficiency	Solar Mode & HVDC Mode	Peak			≥96.5		%
		30%~80% Load			≥95.5		
	AC Mode	Peak			≥96		
		30%~80% Load			≥95		
Audio Noise	Sound Pressure, 25ºC				≤52		dB
PHYSICAL SPECIFICATIONS							
Weight					≤5.5lbs (2.5kg)		
Dimensions (D x W x H)					11.06in x 4.13in x 1.61in (281mm x 105mm x 40.8mm)		
Cooling					Built In Fan Cooling with Thermal Speed Control		
SAFETY CHARACTERISTICS							
Safety Approvals	TUV, CE						

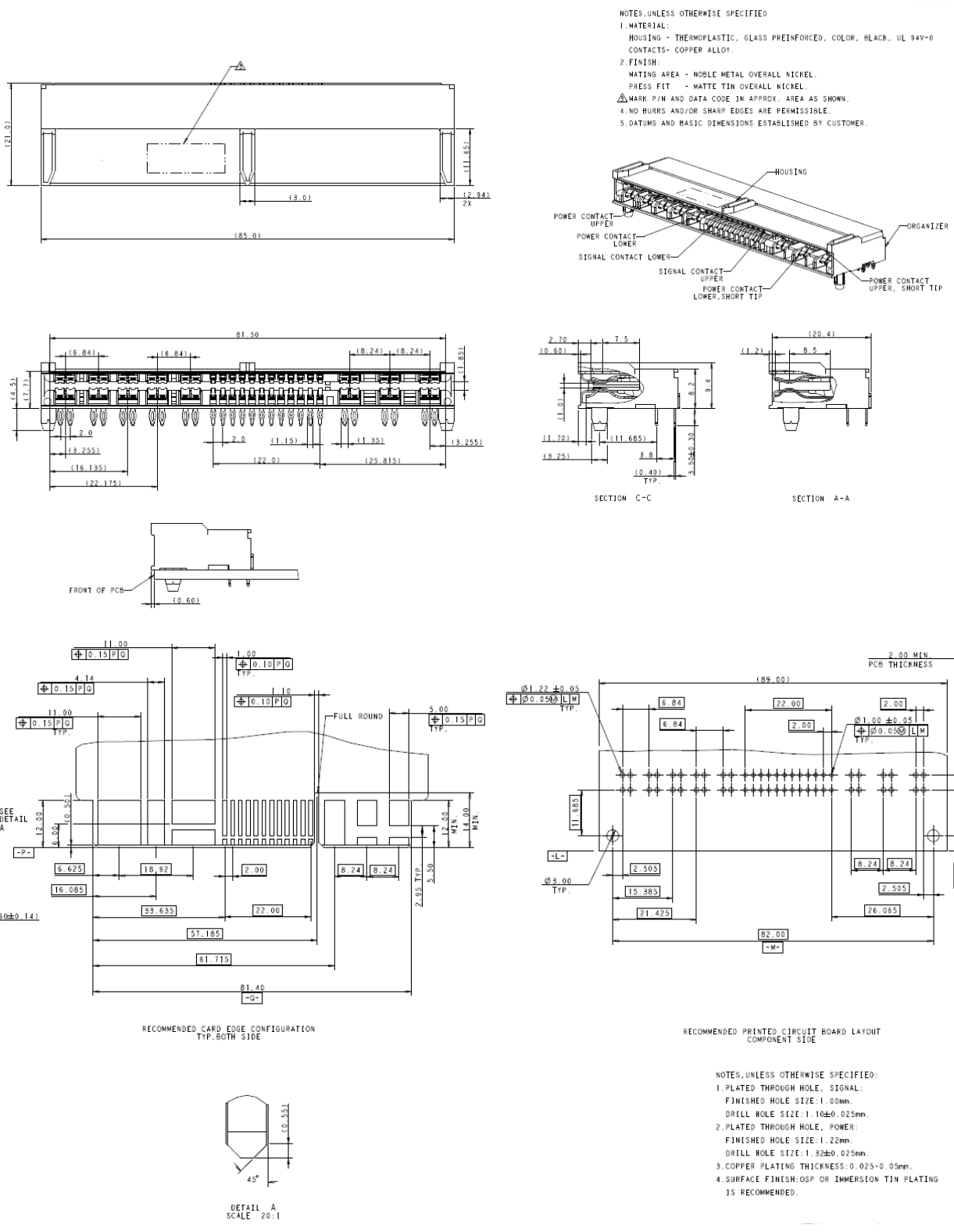
NOTES

1. Input standby power dissipation refers to power dissipation during sleep mode.
2. Night time power dissipation refers to night time no power output consumption of the battery power.
3. 2000m~4000m, for every 200m altitude rise, temperature decrease 1ºC

**Due to advances in technology, specifications subject to change without notice.*

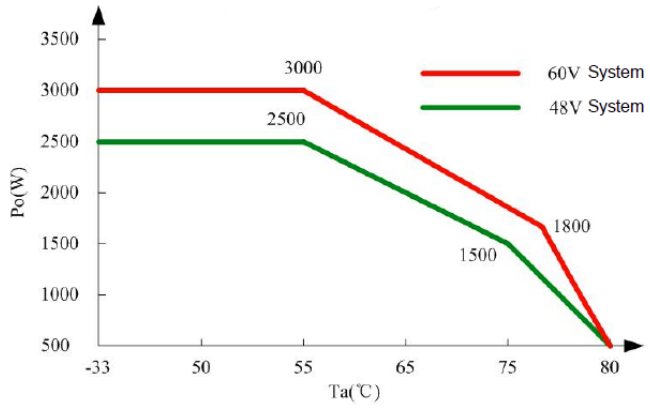
MECHANICAL DRAWINGS

PSRAD-60S for PCB Board Mount



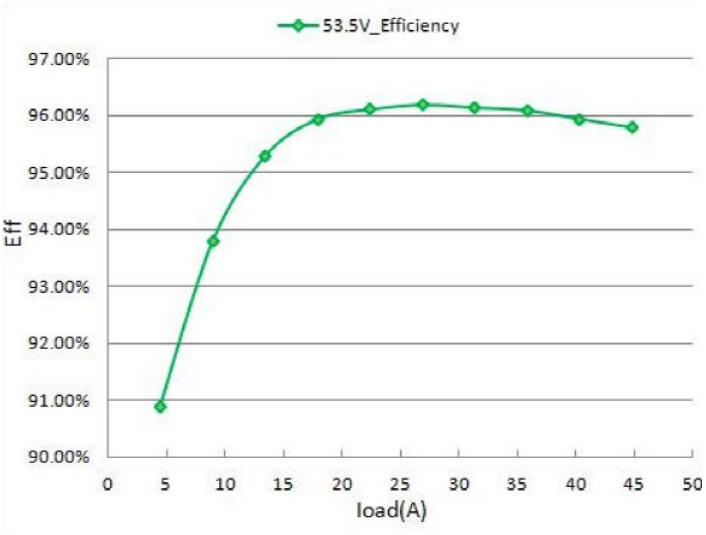
DERATING CURVES

Power Derating Curve

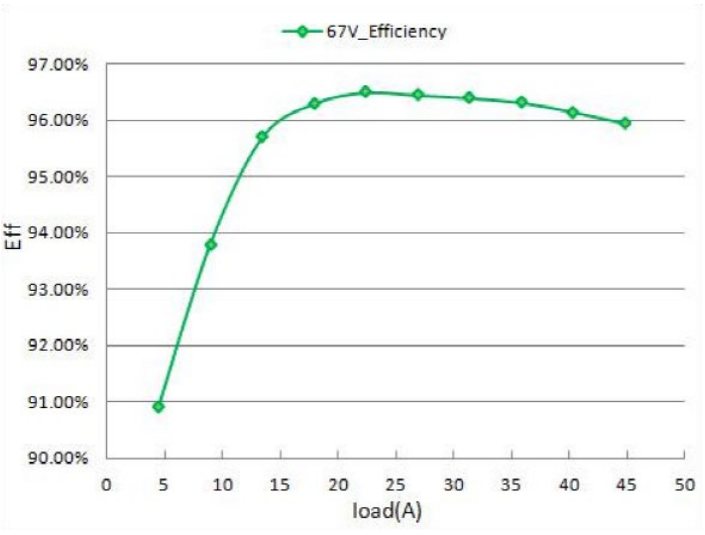


EFFICIENCY GRAPHS

Efficiency Curve 48V System

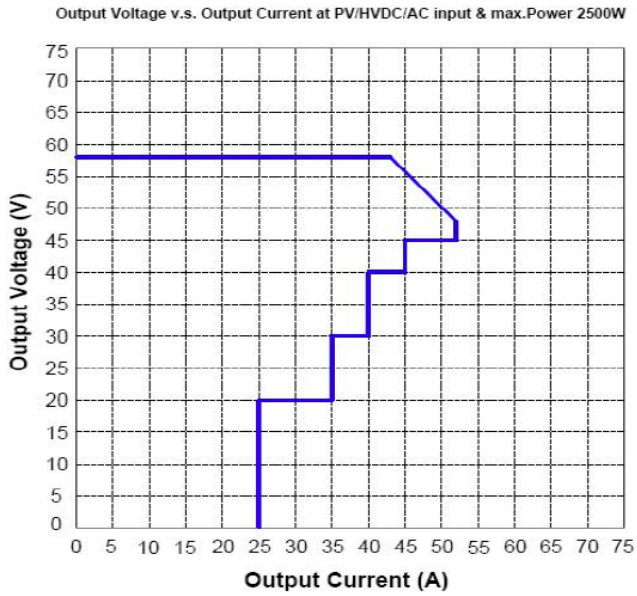


Efficiency Curve 60V System

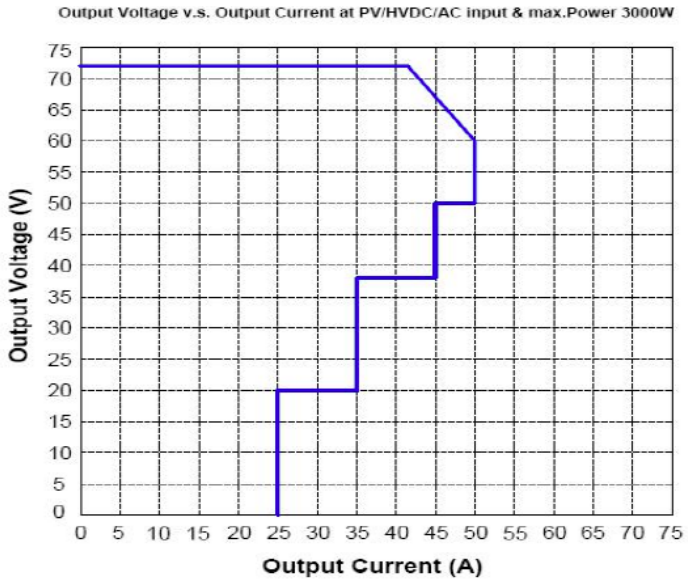


OUTPUT CHARACTERISTIC CURVES

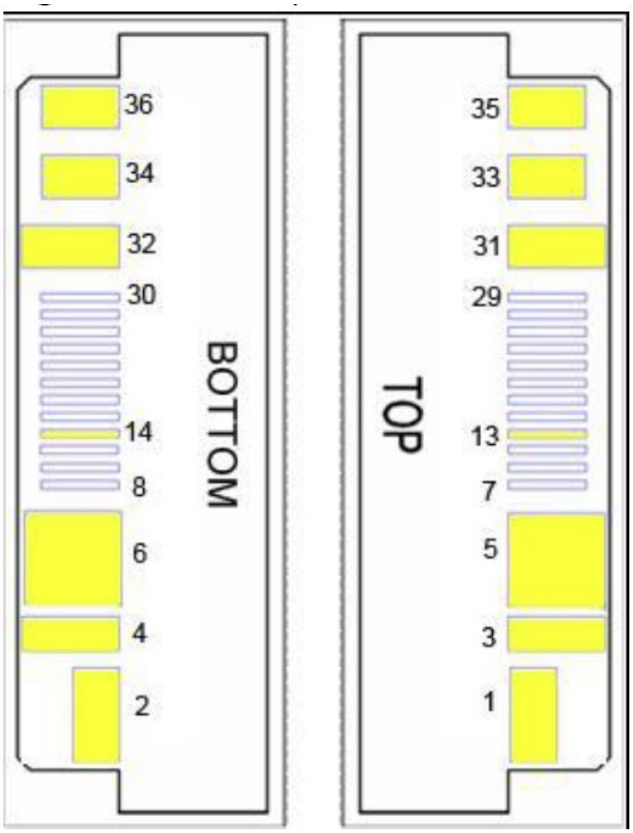
Characteristic Curve 48V System



Characteristic Curve 60V System



INTERFACE



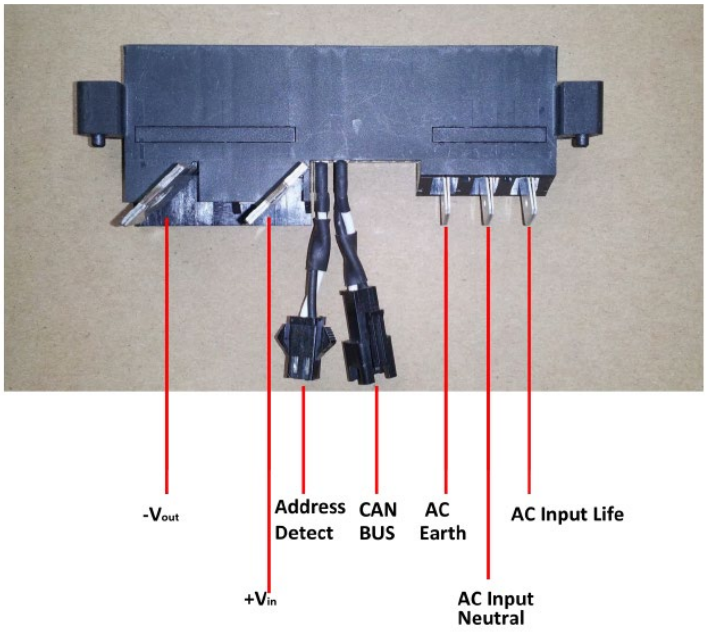
Module Output Pin Definitions

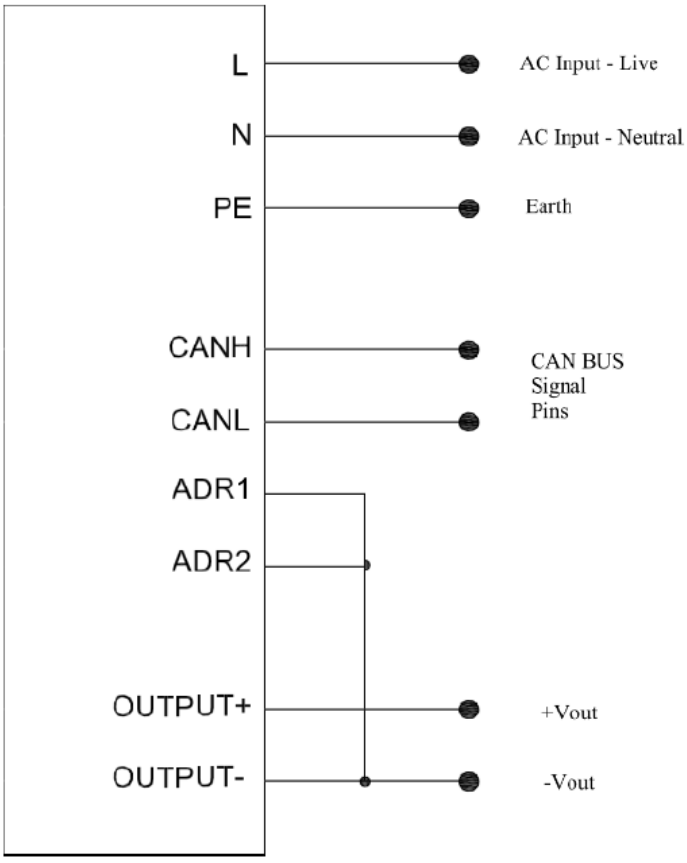
Pin	Definition	Function
35, 36	L	Ac input line/PV-/HVDC-
33, 34	N	AC input neutral/PV+/HVDC+
31, 32	PE	Protection ground
13	CANL	CANL
14	CANH	CANH
5, 6	OUTPUT+	Output 48+/60+
1, 2	OUTPUT-	Output 48-/60-
3, 4	Pre-Charge	Pre-Charge
7~12, 15~30	Reserved	Reserved

PIN DEFINITIONS

PSRAD-60S Model

For Direct Wiring





Note:
1. The 2 wires of the address detect signal pins must be connected to – output to get the 53.5V output.
2. If the CAN BUS is not required, please keep them open.

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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