


**CUI INC<sup>®</sup>**
**date** 11/14/2014

**page** 1 of 8

**SERIES:** ETSA 12W UD | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

- 12 W power
- compact size
- universal input (90~264 Vac)
- single regulated output from 5~24 V
- over voltage and short circuit protection
- UL/cUL and GS safety approvals
- level V efficiency
- custom designs available


**MODEL**

|              | <b>output<br/>voltage</b><br><br>(Vdc) | <b>output<br/>current<br/>max</b><br>(A) | <b>output<br/>power<br/>max</b><br>(W) | <b>ripple<br/>and noise<sup>1</sup><br/>max</b><br>(mVp-p) | <b>efficiency<br/>level</b> |
|--------------|----------------------------------------|------------------------------------------|----------------------------------------|------------------------------------------------------------|-----------------------------|
| ETSA050200UD | 5                                      | 2                                        | 10                                     | 150                                                        | V                           |
| ETSA060200UD | 6                                      | 2                                        | 12                                     | 150                                                        | V                           |
| ETSA090133UD | 9                                      | 1.33                                     | 12                                     | 150                                                        | V                           |
| ETSA120100UD | 12                                     | 1                                        | 12                                     | 150                                                        | V                           |
| ETSA150080UD | 15                                     | 0.8                                      | 12                                     | 150                                                        | V                           |
| ETSA180066UD | 18                                     | 0.66                                     | 12                                     | 150                                                        | V                           |
| ETSA240050UD | 24                                     | 0.5                                      | 12                                     | 150                                                        | V                           |

Notes: 1. At full load, 100 ~ 240 Vac input, 20 MHz bandwidth oscilloscope, each output terminated with 10  $\mu$ F aluminum electrolytic and 0.1  $\mu$ F ceramic capacitors.

**PART NUMBER KEY**
**ETSA120100U D X - XX - SZ - CXX**

Base Number  
example of 12 Vdc, 1 A

AC Input Plug:  
D = IEC 320 C8 plug

Input Cable:  
"Blank" = No Cable  
C = North American input cable  
2 = European input cable  
3 = United Kingdom input cable  
4 = Australian input cable  
5 = China input cable  
6 = South Korea input cable  
7 = Brazil input cable  
8 = South Africa input cable  
9 = Japan input cable

DC Plug type:  
see output plug options  
on page 7

Factory  
Designation

Reserved for Custom  
Configurations

## INPUT

| parameter                 | conditions/description | min | typ | max  | units |
|---------------------------|------------------------|-----|-----|------|-------|
| voltage                   |                        | 85  |     | 264  | Vac   |
| frequency                 |                        | 47  |     | 63   | Hz    |
| current                   |                        |     |     | 0.3  | A     |
| inrush current            | 115 Vac, cold start    |     |     | 30   | A     |
|                           | 230 Vac, cold start    |     |     | 60   | A     |
| leakage current           |                        |     |     | 0.25 | mA    |
| no load power consumption |                        |     |     | 0.3  | W     |

## OUTPUT

| parameter       | conditions/description | min | typ | max | units |
|-----------------|------------------------|-----|-----|-----|-------|
| line regulation | 5V model               |     | ±1  |     | %     |
|                 | all other models       |     | ±5  |     |       |
| load regulation |                        |     | ±5  |     | %     |

## PROTECTIONS

| parameter                | conditions/description                              | min | typ | max | units |
|--------------------------|-----------------------------------------------------|-----|-----|-----|-------|
| over voltage protection  | output voltage clamped by internal protection zener |     |     |     |       |
| short circuit protection | output shut down and auto restart                   |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter            | conditions/description                                                                                          | min | typ | max   | units |
|----------------------|-----------------------------------------------------------------------------------------------------------------|-----|-----|-------|-------|
| isolation voltage    | input to output at 10 mA for 1 minute                                                                           |     |     | 3,000 | Vac   |
|                      |                                                                                                                 |     |     | 4,242 | Vdc   |
| isolation resistance | input to output at 500 V dc                                                                                     | 100 |     |       | MΩ    |
| safety approvals     | UL 60950-1, EN 60950-1/IEC 60950-1                                                                              |     |     |       |       |
| EMI/EMC              | FCC class B, CE, VCCI, EN 61204-3, EN 55022, EN 55024 EN 61000-3-(2, 3), IEC 61000-4-(2, 3, 4, 5, 6, 8, 11), CE |     |     |       |       |
| RoHS                 | 2011/65/EU                                                                                                      |     |     |       |       |

## ENVIRONMENTAL

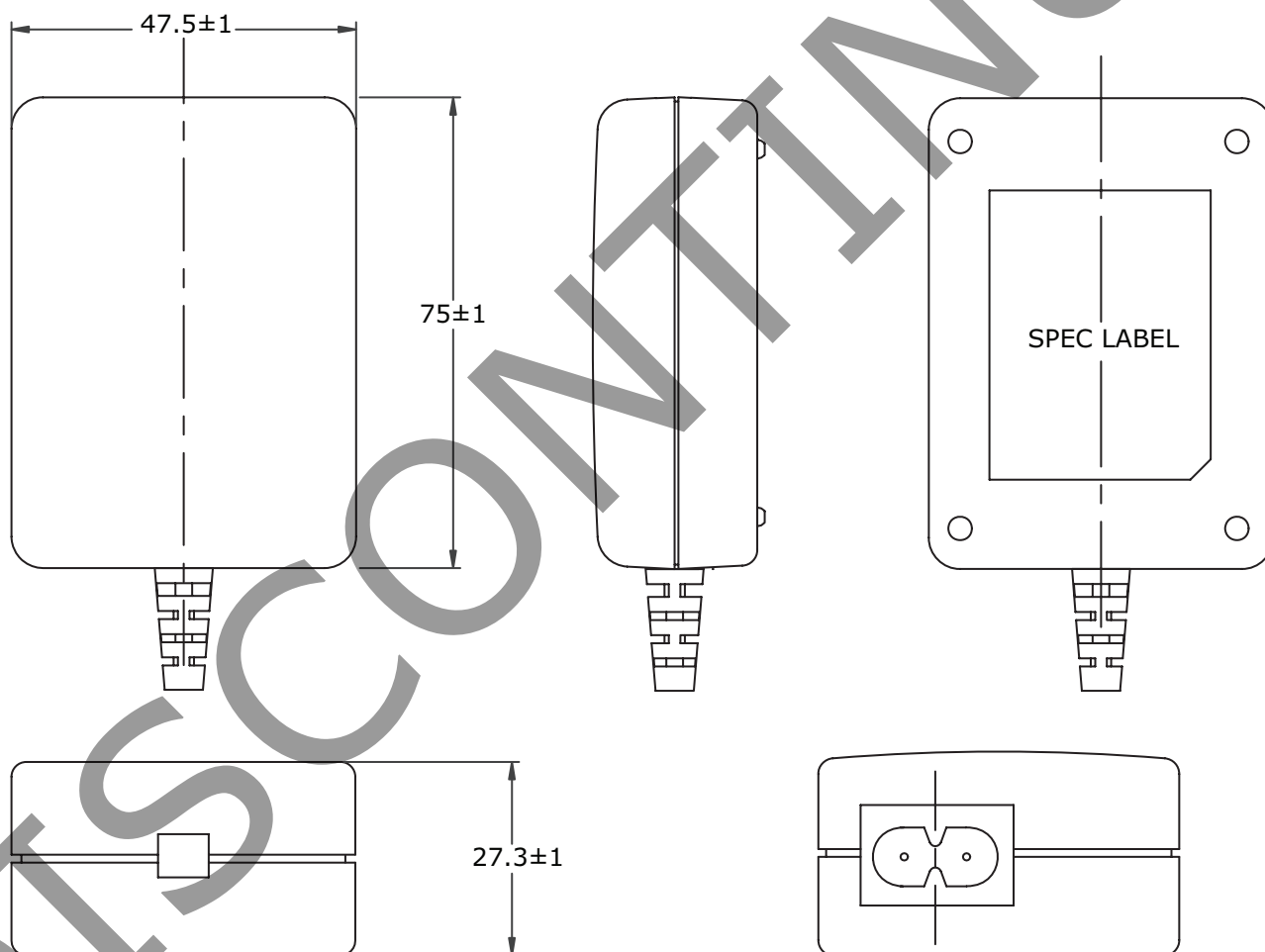
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 40  | °C    |
| storage temperature   |                        | -10 |     | 70  | °C    |
| operating humidity    |                        | 20  |     | 80  | %     |
| storage humidity      |                        | 10  |     | 90  | %     |

## MECHANICAL

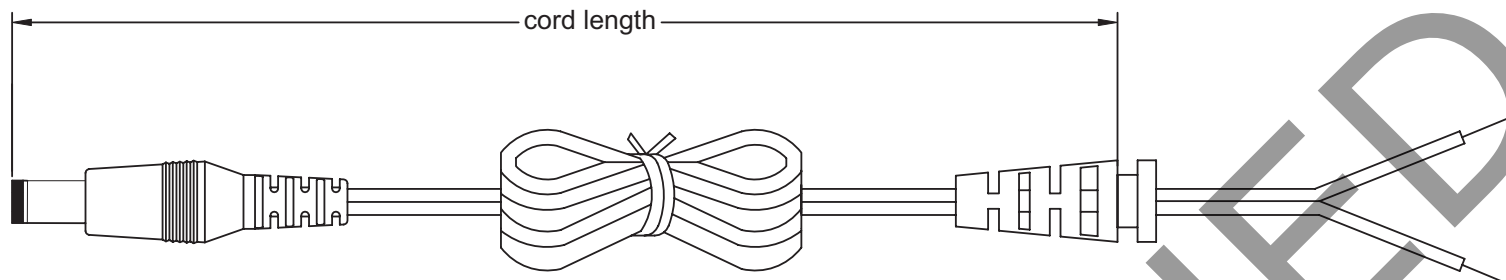
| parameter  | conditions/description                      | min | typ | max | units |
|------------|---------------------------------------------|-----|-----|-----|-------|
| dimensions | 2.953 x 1.870 x 1.075 (75 x 47.5 x 27.3 mm) |     |     |     | inch  |
| input plug | IEC320 / C8                                 |     |     |     |       |

## MECHANICAL DRAWING

units: mm  
tolerance:  $\pm 1$ mm



## DC CORD

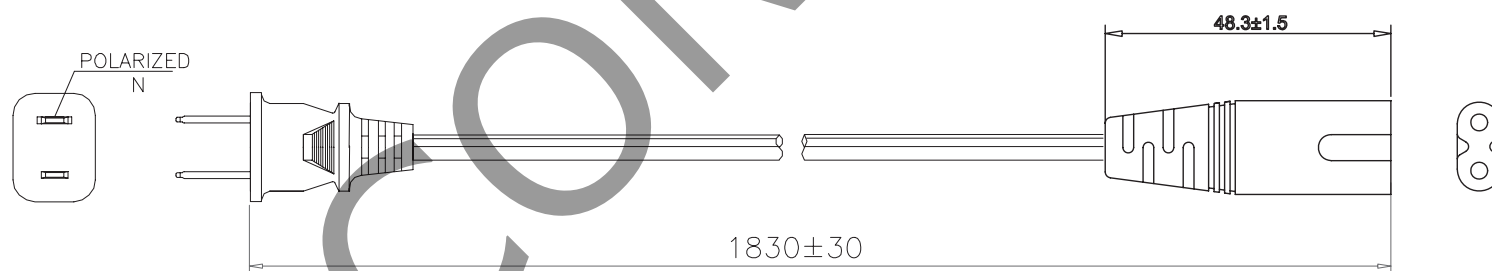


| MODEL NO.    | CABLE GAUGE |
|--------------|-------------|
| ETSA050200UD | 20 AWG      |
| ETSA060200UD | 18 AWG      |
| ETSA090133UD | 20 AWG      |
| ETSA120100UD | 22 AWG      |
| ETSA150080UD | 22 AWG      |
| ETSA180066UD | 24 AWG      |
| ETSA240050UD | 24 AWG      |

## AC CORD

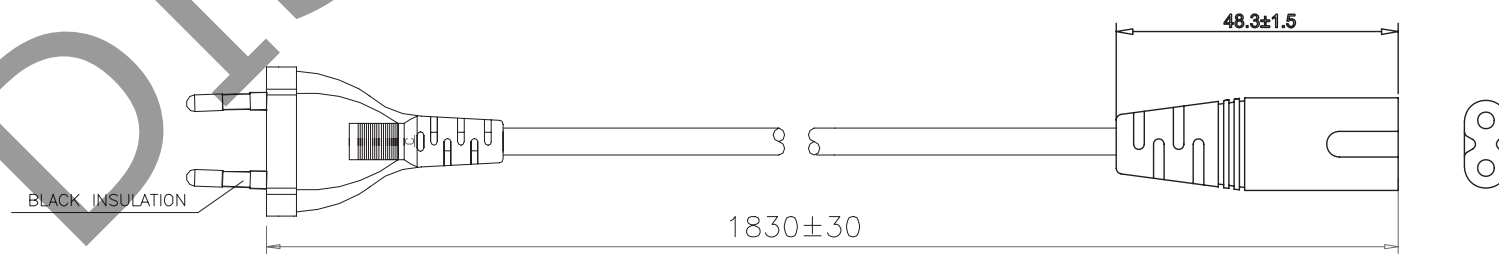
### NORTH AMERICAN INPUT CABLE

units: mm



### EUROPEAN INPUT CABLE

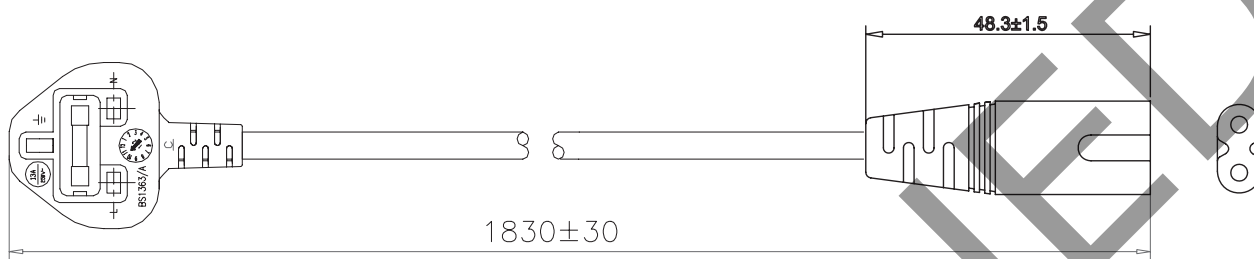
units: mm



## AC CORD (CONTINUED)

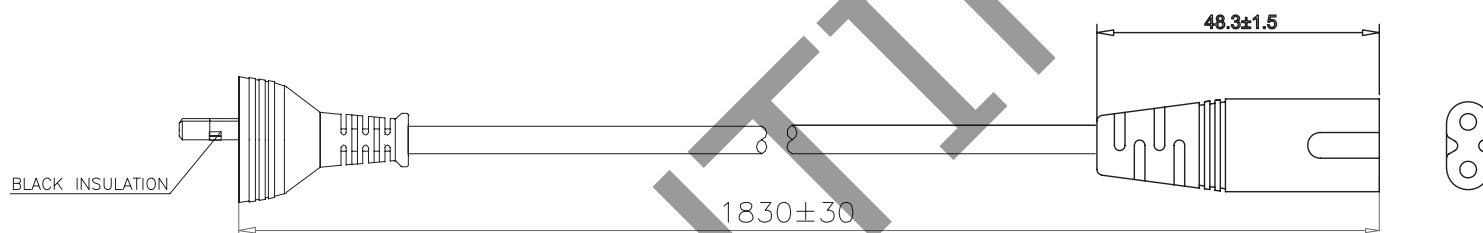
### UNITED KINGDOM INPUT CABLE

units: mm



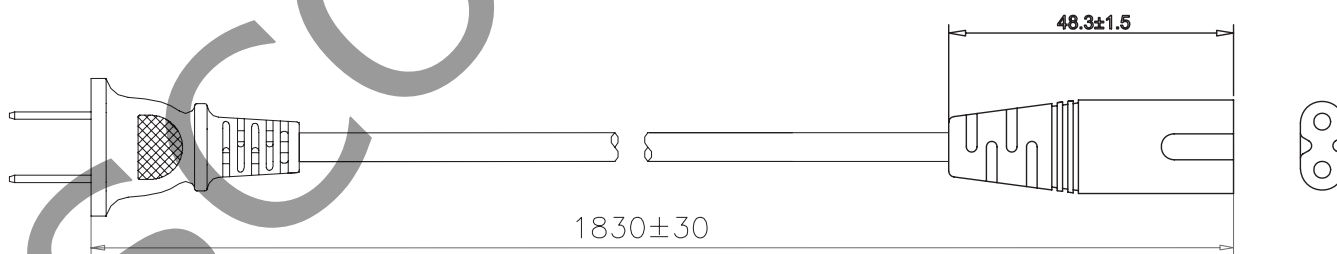
### AUSTRALIAN INPUT CABLE

units: mm



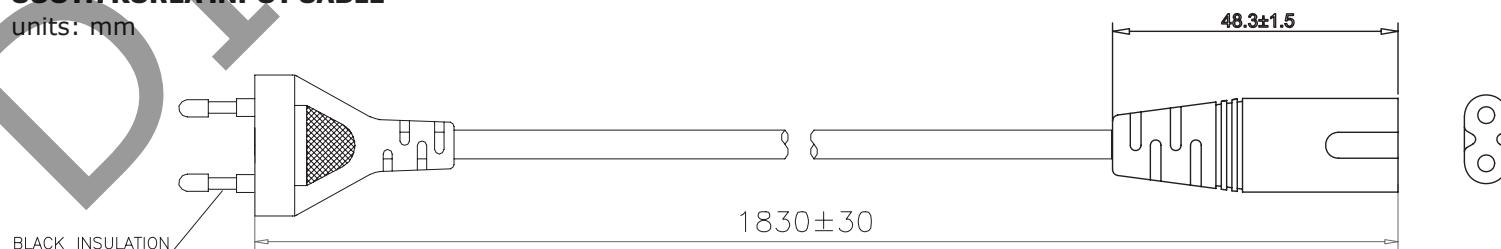
### CHINA INPUT CABLE

units: mm



### SOUTH KOREA INPUT CABLE

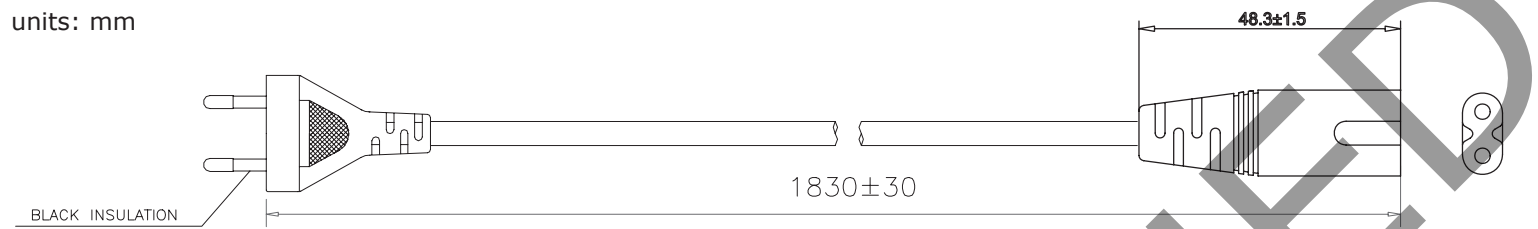
units: mm



## AC CORD (CONTINUED)

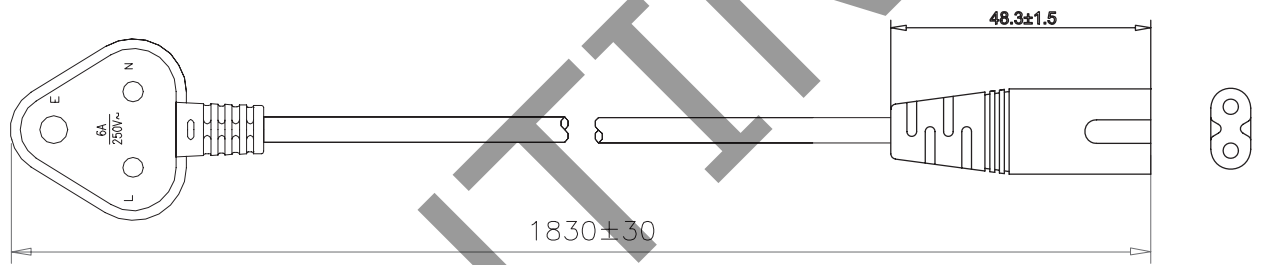
### BRAZIL INPUT CABLE

units: mm



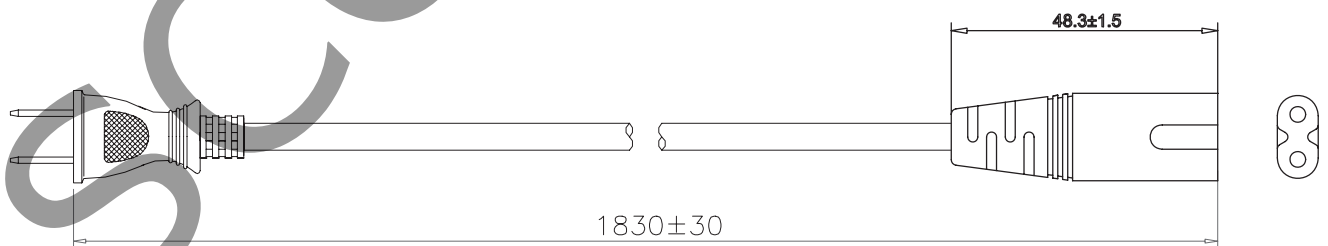
### SOUTH AFRICA INPUT CABLE

units: mm



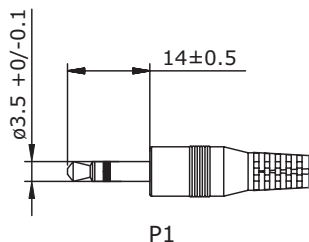
### JAPAN INPUT CABLE

units: mm

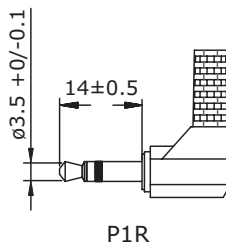


## OUTPUT PLUG OPTIONS

### 3.5 mm Phono Plug



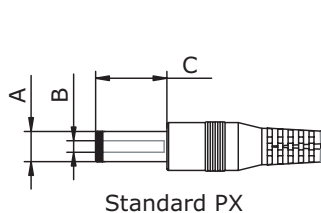
P1



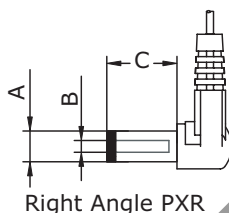
P1R

\*Tip positive

### Standard DC Plug



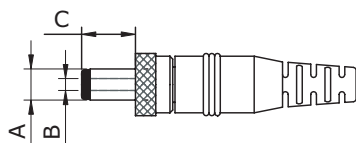
Standard PX



Right Angle PXR

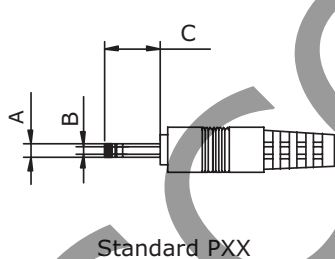
|        | A   | B    | C   | Unit |
|--------|-----|------|-----|------|
| P5/P5R | 5.5 | 2.1  | 9.5 | mm   |
| P6/P6R | 5.5 | 2.5  | 9.5 | mm   |
| P7/P7R | 3.5 | 1.35 | 9.5 | mm   |
| P8/P8R | 3.8 | 1.35 | 9.5 | mm   |
| P9/P9R | 3.8 | 1.05 | 9.5 | mm   |

### Locking DC Plug

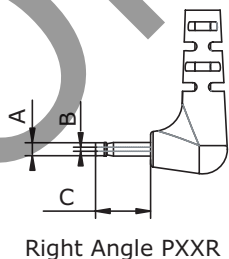


|     | A   | B   | C   | Unit |
|-----|-----|-----|-----|------|
| P10 | 5.5 | 2.1 | 9.5 | mm   |
| P11 | 5.5 | 2.5 | 9.5 | mm   |

### EIAJ Plugs

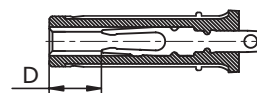


Standard PXX

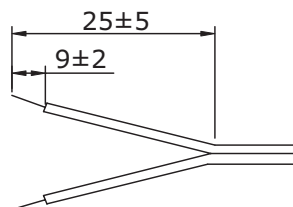


Right Angle PXXR

|          | EIAJ   | A    | B   | C   | D   | Unit |
|----------|--------|------|-----|-----|-----|------|
| P12/P12R | EIAJ-1 | 2.35 | 0.7 | 9.5 | NA  | mm   |
| P13/P13R | EIAJ-2 | 4.0  | 1.7 | 9.5 | 5.0 | mm   |
| P14/P14R | EIAJ-3 | 4.75 | 1.7 | 9.5 | 5.0 | mm   |



### Stripped and Tinned



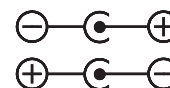
### DC PLUG TYPE

**PXX XX**

Plug Type:  
PXX = See above plug options  
ST = Stripped and Tinned

Plug Angle:  
"blank" = Straight  
R = Right Angle

Plug Polarity:  
P = Center Positive  
N = Center Negative



\*Contact CUI for additional plug options

## REVISION HISTORY

| rev. | description                                                  | date       |
|------|--------------------------------------------------------------|------------|
| 1.0  | initial release                                              | 01/25/2010 |
| 1.01 | new template applied                                         | 12/22/2011 |
| 1.02 | updated P7/P7R B dimension                                   | 04/06/2012 |
| 1.03 | V-Infinity branding removed, safety and EMI/EMC data updated | 08/21/2012 |
| 1.04 | updated series/model numbers                                 | 11/20/2012 |
| 1.05 | added ac cord options                                        | 11/14/2014 |

The revision history provided is for informational purposes only and is believed to be accurate.



**Headquarters**  
20050 SW 112th Ave.  
Tualatin, OR 97062  
**800.275.4899**

Fax 503.612.2383  
**cui.com**  
techsupport@cui.com

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

CUI offers a one (1) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.