

**SERIES:** ETMA 60W UD | **DESCRIPTION:** MEDICAL AC-DC POWER SUPPLY

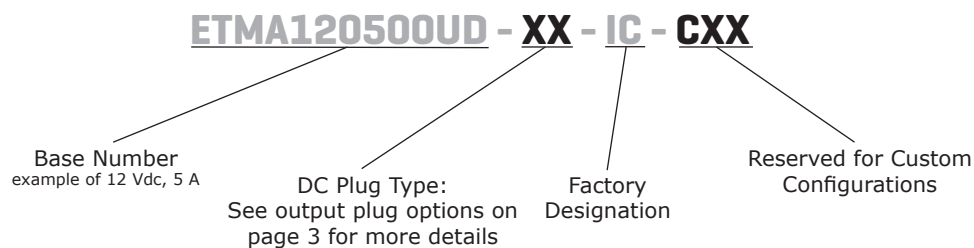
**FEATURES**

- up to 60 W power
- universal input (90~264 Vac)
- single regulated output from 12~48 Vdc
- over voltage and short circuit protections
- medical 60601-1 4th edition safety approvals
- designed for 2 x MOPP applications
- level V efficiency
- custom designs available



| MODEL        | output voltage<br>(Vdc) | output current max<br>(A) | output power max<br>(W) | ripple and noise <sup>1</sup> max<br>(mVp-p) | efficiency level |
|--------------|-------------------------|---------------------------|-------------------------|----------------------------------------------|------------------|
| ETMA120500UD | 12                      | 5                         | 60                      | 120                                          | V                |
| ETMA150400UD | 15                      | 4                         | 60                      | 150                                          | V                |
| ETMA180333UD | 18                      | 3.33                      | 60                      | 180                                          | V                |
| ETMA240250UD | 24                      | 2.5                       | 60                      | 240                                          | V                |
| ETMA360166UD | 36                      | 1.66                      | 60                      | 360                                          | V                |
| ETMA480125UD | 48                      | 1.25                      | 60                      | 480                                          | 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**


## INPUT

| parameter                 | conditions/description | min | typ | max | units |
|---------------------------|------------------------|-----|-----|-----|-------|
| voltage                   |                        | 90  |     | 264 | Vac   |
| frequency                 |                        | 47  |     | 63  | Hz    |
| inrush current            | at 240 Vac             |     |     | 80  | A     |
| no load power consumption |                        |     |     | 0.3 | W     |

## OUTPUT

| parameter                    | conditions/description | min | typ   | max | units |
|------------------------------|------------------------|-----|-------|-----|-------|
| line regulation <sup>1</sup> |                        |     | ±1    |     | %     |
| load regulation <sup>2</sup> | 12 Vdc output          |     | ±5    |     | %     |
|                              | 15 Vdc output          |     | ±3    |     | %     |
|                              | all other outputs      |     | ±2    |     | %     |
| voltage accuracy             |                        |     | ±2    |     | %     |
| hold-up time                 | at 115 Vac             |     | 8     |     | ms    |
| switching frequency          |                        |     | 100   |     | kHz   |
| temperature coefficient      |                        |     | ±0.05 |     | %/°C  |

Note: 1. measured from 100 ~ 240 Vac, full load  
2. measured from 60% to full load and from 60 ~ 20% load (60% ±40% load)

## PROTECTIONS

| parameter                | conditions/description   | min | typ | max | units |
|--------------------------|--------------------------|-----|-----|-----|-------|
| over voltage protection  | TVS component to clamp   |     |     |     |       |
| short circuit protection | continuous, auto restart |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter         | conditions/description                                  | min     | typ | max   | units |
|-------------------|---------------------------------------------------------|---------|-----|-------|-------|
| isolation voltage | input to output                                         |         |     | 5,656 | Vdc   |
| safety approvals  | medical IEC 60601-1, EN 60601-1, UL 60601-1 4th edition |         |     |       |       |
| EMI/EMC           | EN 55011, EN 60601-1-2, EN 61000-3-(2,3)                |         |     |       |       |
| leakage current   |                                                         |         |     | 0.1   | mA    |
| MTBF              | as per MIL-HDBK-217F, 115 Vac, 25 °C                    | 200,000 |     |       | hours |
| RoHS              | 2011/65/EU                                              |         |     |       |       |

## ENVIRONMENTAL

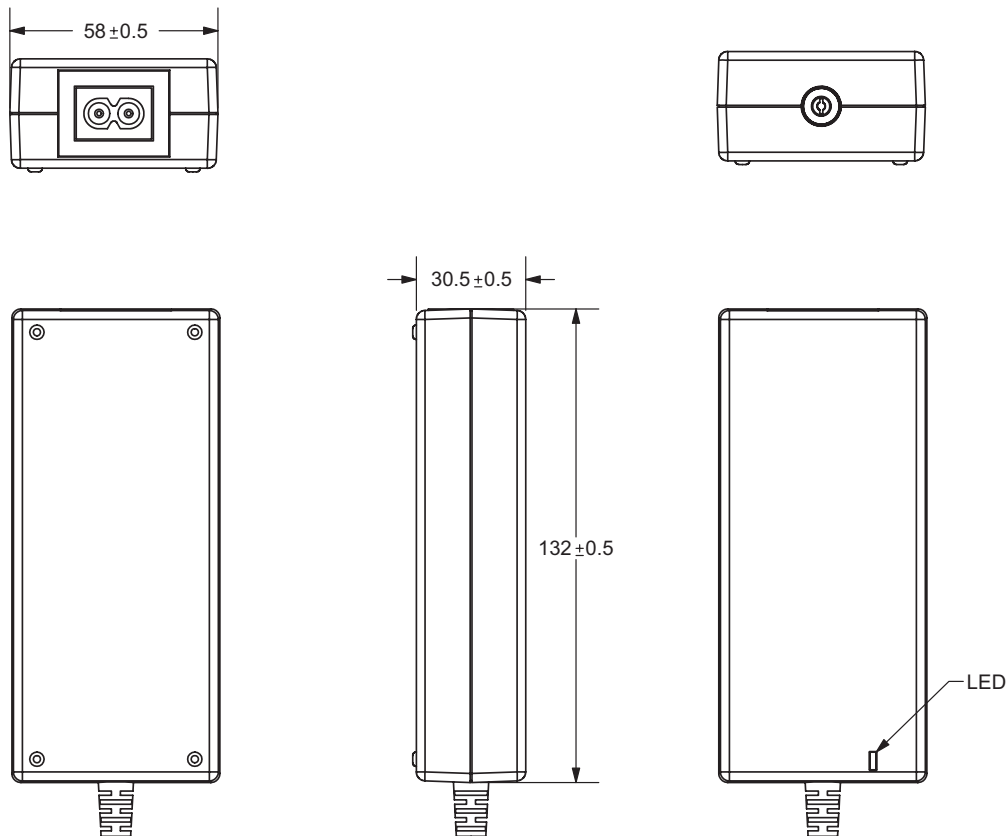
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 40  | °C    |
| storage temperature   |                        | -20 |     | 85  | °C    |
| humidity              | non-condensing         |     |     | 93  | %     |

## MECHANICAL

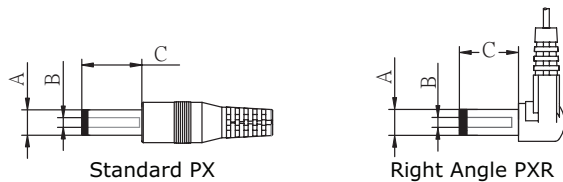
| parameter  | conditions/description                  | min | typ | max | units |
|------------|-----------------------------------------|-----|-----|-----|-------|
| dimensions | 132 x 58 x 30.5 (5.2 x 2.28 x 1.2 inch) |     |     |     | mm    |
| input plug | IEC320 / C8                             |     |     |     |       |
| weight     |                                         |     | 345 |     | g     |

## MECHANICAL DRAWING

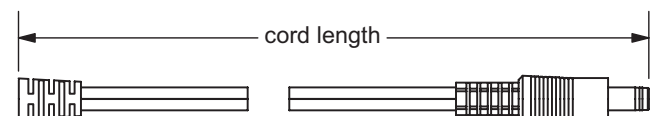
units: mm



## DC OUTPUT PLUG OPTIONS / DC CORD



|        | A   | B   | C   | Unit |
|--------|-----|-----|-----|------|
| P5/P5R | 5.5 | 2.1 | 9.5 | mm   |
| P6/P6R | 5.5 | 2.5 | 9.5 | mm   |



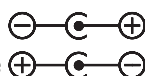
| MODEL NO.    | CABLE GAUGE | CORD LENGTH       |
|--------------|-------------|-------------------|
| ETMA120500UD | 16 AWG      | 720 mm $\pm$ 50   |
| ETMA150400UD | 16 AWG      | 1,220 mm $\pm$ 50 |
| ETMA180333UD | 16 AWG      | 1,500 mm $\pm$ 50 |
| ETMA240250UD | 16 AWG      | 1,800 mm $\pm$ 50 |
| ETMA360166UD | 16 AWG      | 1,800 mm $\pm$ 50 |
| ETMA480125UD | 16 AWG      | 1,800 mm $\pm$ 50 |

### PXXX

Plug Type

Plug Angle:  
"Blank" = Standard  
R = Right Angle

Plug Polarity:  
"Blank" = N/A  
P = Center Positive  
N = Center Negative



## REVISION HISTORY

| rev. | description                            | date       |
|------|----------------------------------------|------------|
| 1.0  | initial release                        | 12/16/2011 |
| 1.01 | updated P7/P7R B dimension             | 03/23/2012 |
| 1.02 | V-Infinity branding removed            | 08/21/2012 |
| 1.03 | updated datasheet                      | 10/31/2012 |
| 1.04 | corrected dc cord table                | 07/02/2013 |
| 1.05 | updated datasheet                      | 07/10/2015 |
| 1.06 | updated to medical 60601-1 4th edition | 06/20/2017 |

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



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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.

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