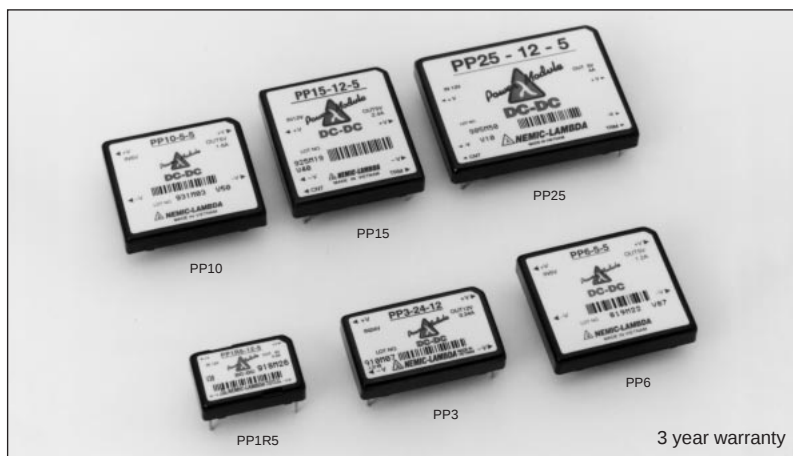




■ Model name

**PP 15-48-5**

Name of series      Output power      Nominal input voltage      Nominal output voltage

## ■ Features

- Compact and single output DC-DC converter  
Ultra-thin profile: 8mm
- Wide input voltage range  
DC5V input: DC4.5 ~ 7.2V (PP25: 4.7V ~ 7.2V)  
DC12V input: DC9 ~ 18V (PP1R5 ~ PP10: 8V ~ 16.5V)  
DC24V input: DC18 ~ 36V (PP1R5 ~ PP10: 18V ~ 32V)  
DC48V input: DC36 ~ 72V (PP1R5 ~ PP10: 32V ~ 63V)
- Operating temperature: -20 ~ +71°C
- Isolation between input and output
- PP15, PP25: Output voltage variable, on/off control
- 3 year warranty

## ■ Specifications

|                                         |                                                                                                                                                                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Input voltage range</b>           | DC5V input: DC4.5 ~ 7.2V (PP25: 4.7 ~ 7.2V)<br>DC12V input: DC9 ~ 18V (PP1R5 ~ PP10: 8 ~ 16.5V)<br>DC24V input: DC18 ~ 36V (PP1R5 ~ PP10: 18 ~ 32V)<br>DC48V input: DC36 ~ 72V (PP1R5 ~ PP10: 32 ~ 63V)                                                                                    |
| <b>2. Output voltage range</b>          | Fixed (PP15, PP25: +5% available with external resistor)                                                                                                                                                                                                                                   |
| <b>3. Cooling</b>                       | Convection cooling                                                                                                                                                                                                                                                                         |
| <b>4. Operating ambient temperature</b> | -20 ~ +71°C<br>PP1R5 ~ PP10: Output derating -20°C ~ +50°C: 100%, +71°C: 20%<br>PP15, PP25: Output derating -20°C ~ +55°C: 100%, +71°C: 50%<br>(5V input of PP25: Output derating -20°C ~ +50°C: 100%, +71°C: 50%)<br>(48V input of PP25: output derating -20°C ~ +40°C: 100%, +71°C: 40%) |
| <b>5. Withstand voltage</b>             | Input-output, Input-case: 500VAC for 1 min.                                                                                                                                                                                                                                                |
| <b>6. Functions</b>                     | Over current protection, PP15, PP25: Remote on/off control & Over voltage protection                                                                                                                                                                                                       |

## ■ Product lineup

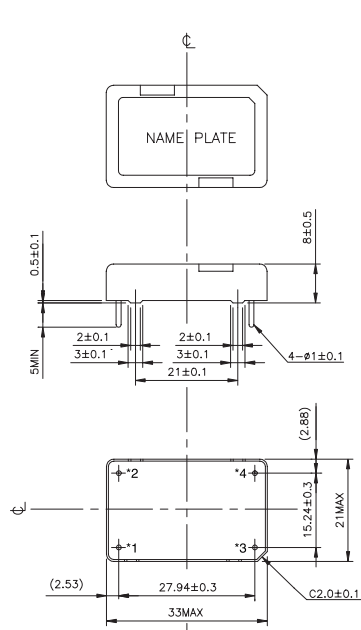
| Model name |             | Output voltage | Output current | Output power | UL | CSA | EN |
|------------|-------------|----------------|----------------|--------------|----|-----|----|
| PP1R5      | PP1R5-5-5   | 5V             | 0.3A           | 1.5W         |    |     |    |
|            | PP1R5-5-12  | 12V            | 0.12A          | 1.44W        |    |     |    |
|            | PP1R5-5-15  | 15V            | 0.1A           | 1.5W         |    |     |    |
|            | PP1R5-12-5  | 5V             | 0.3A           | 1.5W         |    |     |    |
|            | PP1R5-12-12 | 12V            | 0.12A          | 1.44W        |    |     |    |
|            | PP1R5-12-15 | 15V            | 0.1A           | 1.5W         |    |     |    |
|            | PP1R5-24-5  | 5V             | 0.3A           | 1.5W         |    |     |    |
|            | PP1R5-24-12 | 12V            | 0.12A          | 1.44W        |    |     |    |
|            | PP1R5-24-15 | 15V            | 0.1A           | 1.5W         |    |     |    |
|            | PP1R5-48-5  | 5V             | 0.3A           | 1.5W         |    |     |    |
| PP3        | PP3-5-5     | 5V             | 0.6A           | 3.0W         |    |     |    |
|            | PP3-5-12    | 12V            | 0.24A          | 2.88W        |    |     |    |
|            | PP3-5-15    | 15V            | 0.2A           | 3.0W         |    |     |    |
|            | PP3-12-5    | 5V             | 0.6A           | 3.0W         |    |     |    |
|            | PP3-12-12   | 12V            | 0.24A          | 2.88W        |    |     |    |
|            | PP3-12-15   | 15V            | 0.2A           | 3.0W         |    |     |    |
|            | PP3-24-5    | 5V             | 0.6A           | 3.0W         | ○  | ○   | ○  |
|            | PP3-24-12   | 12V            | 0.24A          | 2.88W        | ○  | ○   | ○  |
|            | PP3-24-15   | 15V            | 0.2A           | 3.0W         | ○  | ○   | ○  |
|            | PP3-48-5    | 5V             | 0.6A           | 3.0W         | ○  | ○   | ○  |
| PP6        | PP6-5-5     | 5V             | 1.2A           | 6.0W         |    |     |    |
|            | PP6-5-12    | 12V            | 0.5A           | 6.0W         |    |     |    |
|            | PP6-5-15    | 15V            | 0.4A           | 6.0W         |    |     |    |
|            | PP6-12-5    | 5V             | 1.2A           | 6.0W         |    |     |    |
|            | PP6-12-12   | 12V            | 0.5A           | 6.0W         |    |     |    |
|            | PP6-12-15   | 15V            | 0.4A           | 6.0W         |    |     |    |
|            | PP6-24-5    | 5V             | 1.2A           | 6.0W         |    |     |    |
|            | PP6-24-12   | 12V            | 0.5A           | 6.0W         |    |     |    |
|            | PP6-24-15   | 15V            | 0.4A           | 6.0W         |    |     |    |
|            | PP6-48-5    | 5V             | 1.2A           | 6.0W         |    |     |    |

| Model name |             | Output voltage | Output current | Output power | UL | CSA | EN |
|------------|-------------|----------------|----------------|--------------|----|-----|----|
| PP10       | PP10-5-5    | 5V             | 1.6A           | 8.0W         |    |     |    |
|            | PP10-5-12   | 12V            | 0.7A           | 8.4W         |    |     |    |
|            | PP10-5-15   | 15V            | 0.6A           | 9.0W         |    |     |    |
|            | PP10-12-5   | 5V             | 2.0A           | 10.0W        |    |     |    |
|            | PP10-12-12  | 12V            | 0.9A           | 10.8W        |    |     |    |
|            | PP10-12-15  | 15V            | 0.7A           | 10.5W        |    |     |    |
|            | PP10-24-5   | 5V             | 2.0A           | 10.0W        |    |     |    |
|            | PP10-24-12  | 12V            | 0.9A           | 10.8W        |    |     |    |
|            | PP10-24-15  | 15V            | 0.7A           | 10.5W        |    |     |    |
|            | PP10-48-3.3 | 3.3V           | 2.0V           | 6.6W         |    |     |    |
|            | PP10-48-5   | 5V             | 2.0A           | 10.0W        |    |     |    |
| PP15       | PP10-48-12  | 12V            | 0.9A           | 10.8W        |    |     |    |
|            | PP10-48-15  | 15V            | 0.7A           | 10.5W        |    |     |    |
|            | PP15-12-5   | 5V             | 2.4A           | 12W          |    |     |    |
|            | PP15-12-12  | 12V            | 1.3A           | 15.6W        |    |     |    |
|            | PP15-12-15  | 15V            | 1.0A           | 15W          |    |     |    |
|            | PP15-24-5   | 5V             | 2.4A           | 12W          |    |     |    |
|            | PP15-24-12  | 12V            | 1.3A           | 15.6W        |    |     |    |
|            | PP15-24-15  | 15V            | 1.0A           | 15W          |    |     |    |
|            | PP15-48-3.3 | 3.3V           | 2.4A           | 7.92W        |    |     |    |
|            | PP15-48-5   | 5V             | 2.4A           | 12W          | ○  | ○   | ○  |
|            | PP15-48-12  | 12V            | 1.3A           | 15.6W        |    |     |    |
| PP25       | PP15-48-15  | 15V            | 1.0A           | 15W          |    |     |    |
|            | PP25-5-3.3  | 3.3V           | 3.0A           | 9.9W         |    |     |    |
|            | PP25-5-5.2  | 5.2V           | 2.9A           | 15.08W       |    |     |    |
|            | PP25-12-5   | 5V             | 4.0A           | 20W          |    |     |    |
|            | PP25-12-12  | 12V            | 2.1A           | 25.2W        | ○  | ○   | ○  |
|            | PP25-12-15  | 15V            | 1.7A           | 25.5W        |    |     |    |
|            | PP25-24-5   | 5V             | 4.0A           | 20W          |    |     |    |
|            | PP25-24-12  | 12V            | 2.1A           | 25.2W        | ○  | ○   | ○  |
|            | PP25-24-15  | 15V            | 1.7A           | 25.5W        |    |     |    |
|            | PP25-48-3.3 | 3.3V           | 5.0A           | 16.5W        |    |     |    |
|            | PP25-48-5   | 5V             | 4.0A           | 20W          | ○  | ○   | ○  |
|            | PP25-48-12  | 12V            | 2.1A           | 25.2W        | ○  | ○   | ○  |
|            | PP25-48-15  | 15V            | 1.7A           | 25.5W        |    |     |    |

○ : Safety standard approved

- Request customer specification for further details of specifications, outline, characteristics, etc.
- Read the instruction manual before usage.
- Contact us about delivery before ordering.

■ **PP3**



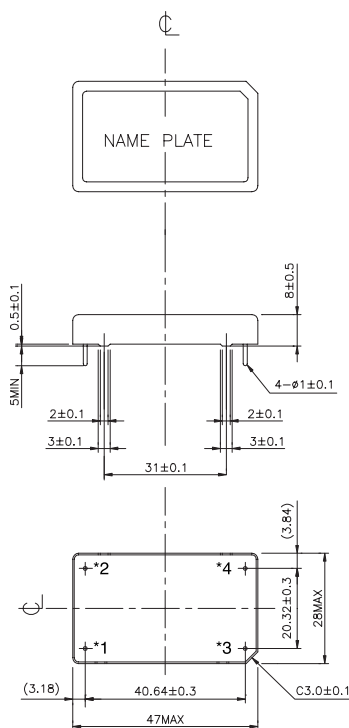
## Terminal assignments

Terminal assignments

|    |    |   |        |
|----|----|---|--------|
| *1 | +V | □ | INPUT  |
| *2 | -V |   |        |
| *3 | +V | □ | OUTPUT |
| *4 | V  |   |        |

Case: Copper (Thickness 0.4mm)  
Weight: 15g

■ **PP6**

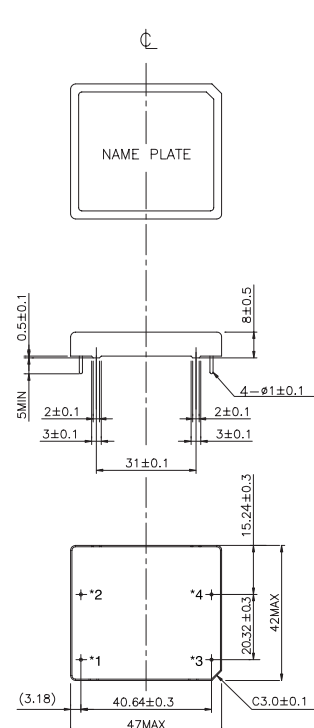


## Terminal assignments

Terminal assignments

|    |    |   |        |
|----|----|---|--------|
| *1 | +V | □ | INPUT  |
| *2 | -V |   |        |
| *3 | +V | □ | OUTPUT |
| *4 | -V |   |        |

Case: Copper (Thickness 0.4mm)  
Weight: 25g



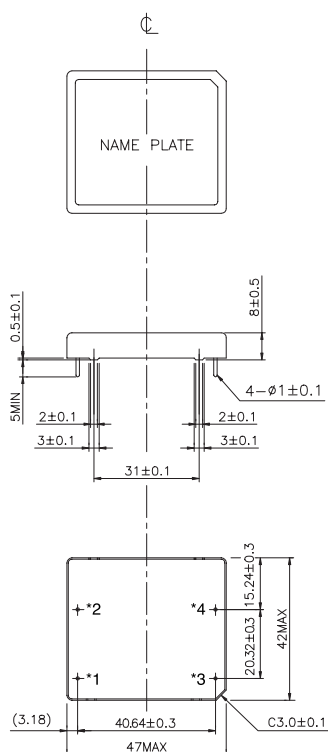
### Terminal assignments

Terminal assignments

|    |    |        |
|----|----|--------|
| *1 | +V | INPUT  |
| *2 | -V |        |
| *3 | +V | OUTPUT |
| *4 | -V |        |

Case: Copper (Thickness 0.4mm)  
Weight: 40g

■ PP10



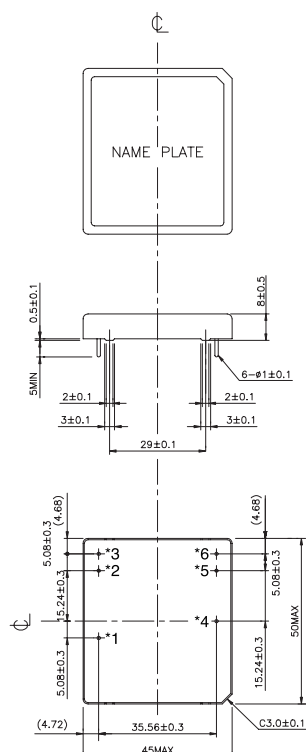
## Terminal assignments

Terminal assignments

|    |    |        |
|----|----|--------|
| *1 | +V | INPUT  |
| *2 | -V |        |
| *3 | +V | OUTPUT |
| *4 | -V |        |

Case: Copper (Thickness 0.4mm)  
Weight: 40g

■ PP15



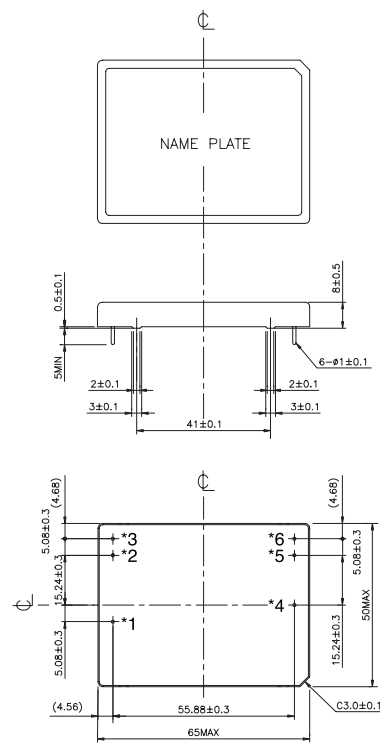
### Terminal assignments

Terminal assignments

|    |     |        |
|----|-----|--------|
| *1 | +V  | INPUT  |
| *2 | -V  |        |
| *3 | CNT |        |
| *4 | +V  | OUTPUT |
| *5 | -V  |        |

\*5 -V - OUTPUT  
\*6 TRM  
Case: Copper (Thickness 0.4mm)  
Weight: 55g

## PP25



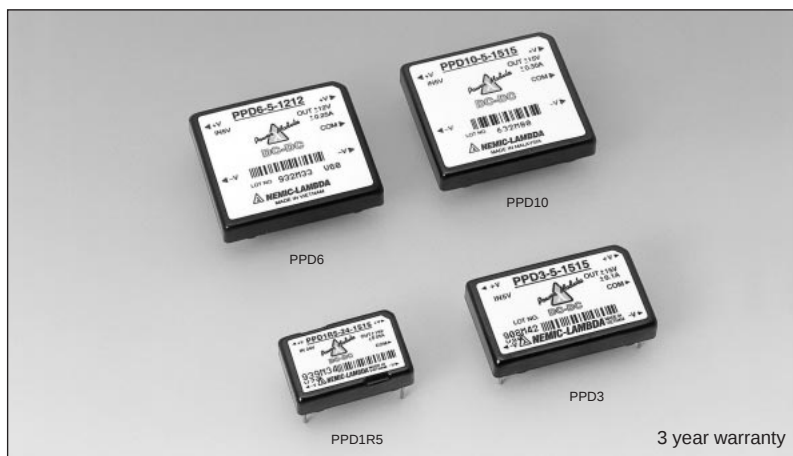
### Terminal assignments

Terminal assignments

|    |     |   |       |
|----|-----|---|-------|
| *1 | +V  | □ | INPUT |
| *2 | -V  |   |       |
| *3 | CNT |   |       |
| *4 | +V  |   |       |

\*4 +V  OUTPUT  
\*5 -V   
\*6 TRM

Case: Copper (Thickness 0.4mm)  
Weight: 65g



### Model name

## PPD 3-48-1212

Name of series      Output power      Nominal input voltage      Nominal output voltage

### Features

- Compact and dual output DC-DC converter  
Ultra-low profile: 8mm
- Wide input voltage range  
DC5V input: DC4.5 ~ 7.2V  
DC12V input: DC8 ~ 16.5V  
DC24V input: DC18 ~ 32V  
DC48V input: DC32 ~ 63V
- Operating temperature: -20 ~ +71°C
- Isolation between input and output
- 3 year warranty

### Specifications

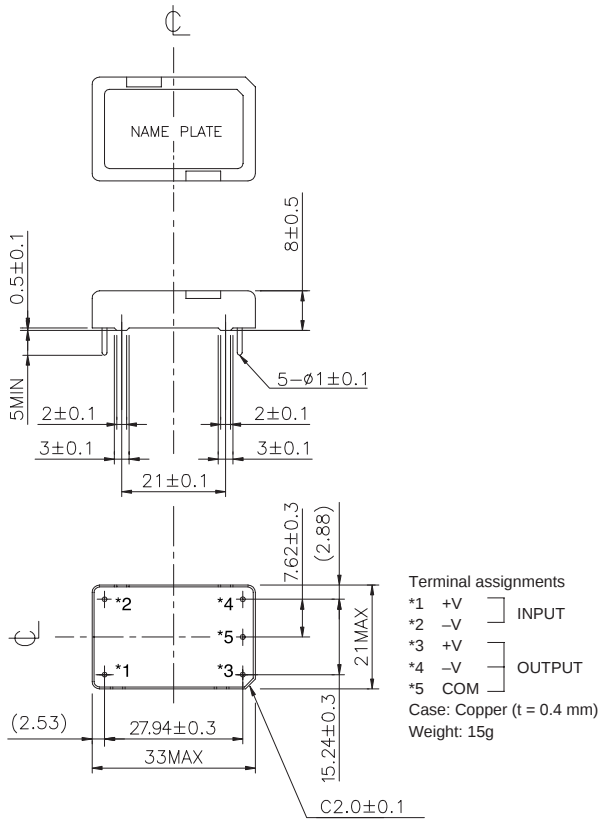
|                                                      |                                                                                                                                              |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Input voltage range                               | DC5V input: DC4.5 ~ 7.2V<br>DC12V input: DC8 ~ 16.5V<br>DC24V input: DC18 ~ 32V<br>DC48V input: DC32 ~ 63V                                   |
| 2. Output voltage range                              | Fixed                                                                                                                                        |
| 3. Cooling                                           | Convection cooling                                                                                                                           |
| 4. Operating ambient temperature (Standard mounting) | -20 ~ +71°C<br>PPD1R5, PPD3: Output derating -20°C ~ +50°C: 100%, +71°C: 20%<br>PPD6, PPD10: Output derating -20°C ~ +55°C: 100%, +71°C: 20% |
| 5. Withstand voltage                                 | Input-output, Input-case: 500VAC for 1 min.                                                                                                  |
| 6. Functions                                         | Over voltage protection                                                                                                                      |

### Product lineup

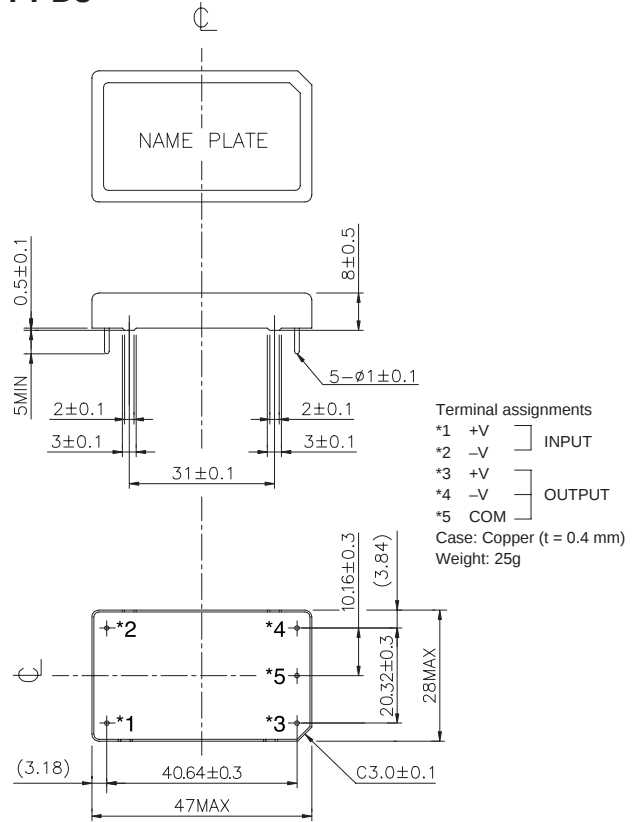
| Model name |                | Output voltage | Output current | Output power |
|------------|----------------|----------------|----------------|--------------|
| PPD1R5     | PPD1R5-5-1212  | ± 12V          | ± 60mA         | 1.44W        |
|            | PPD1R5-5-1515  | ± 15V          | ± 50mA         | 1.5W         |
|            | PPD1R5-12-1212 | ± 12V          | ± 60mA         | 1.44W        |
|            | PPD1R5-12-1515 | ± 15V          | ± 50mA         | 1.5W         |
|            | PPD1R5-24-1212 | ± 12V          | ± 60mA         | 1.44W        |
|            | PPD1R5-24-1515 | ± 15V          | ± 50mA         | 1.5W         |
|            | PPD1R5-48-1212 | ± 12V          | ± 60mA         | 1.44W        |
|            | PPD1R5-48-1515 | ± 15V          | ± 50mA         | 1.5W         |
| PPD3       | PPD3-5-1212    | ± 12V          | ± 120mA        | 2.88W        |
|            | PPD3-5-1515    | ± 15V          | ± 100mA        | 3.0W         |
|            | PPD3-12-1212   | ± 12V          | ± 120mA        | 2.88W        |
|            | PPD3-12-1515   | ± 15V          | ± 100mA        | 3.0W         |
|            | PPD3-24-1212   | ± 12V          | ± 120mA        | 2.88W        |
|            | PPD3-24-1515   | ± 15V          | ± 100mA        | 3.0W         |
|            | PPD3-48-1212   | ± 12V          | ± 120mA        | 2.88W        |
|            | PPD3-48-1515   | ± 15V          | ± 100mA        | 3.0W         |
| PPD6       | PPD6-5-1212    | ± 12V          | ± 250mA        | 6.0W         |
|            | PPD6-5-1515    | ± 15V          | ± 200mA        | 6.0W         |
|            | PPD6-12-1212   | ± 12V          | ± 250mA        | 6.0W         |
|            | PPD6-12-1515   | ± 15V          | ± 200mA        | 6.0W         |
|            | PPD6-24-1212   | ± 12V          | ± 250mA        | 6.0W         |
|            | PPD6-24-1515   | ± 15V          | ± 200mA        | 6.0W         |
|            | PPD6-48-1212   | ± 12V          | ± 250mA        | 6.0W         |
|            | PPD6-48-1515   | ± 15V          | ± 200mA        | 6.0W         |
| PPD10      | PPD10-5-1212   | ± 12V          | ± 350mA        | 8.4W         |
|            | PPD10-5-1515   | ± 15V          | ± 300mA        | 9.0W         |
|            | PPD10-12-1212  | ± 12V          | ± 450mA        | 10.8W        |
|            | PPD10-12-1515  | ± 15V          | ± 350mA        | 10.5W        |
|            | PPD10-24-1212  | ± 12V          | ± 450mA        | 10.8W        |
|            | PPD10-24-1515  | ± 15V          | ± 350mA        | 10.5W        |
|            | PPD10-48-1212  | ± 12V          | ± 450mA        | 10.8W        |
|            | PPD10-48-1515  | ± 15V          | ± 350mA        | 10.5W        |

- Request customer specification for further details of specifications, outline, characteristics, etc.  
Read the instruction manual before usage.
- Contact us about delivery before ordering.

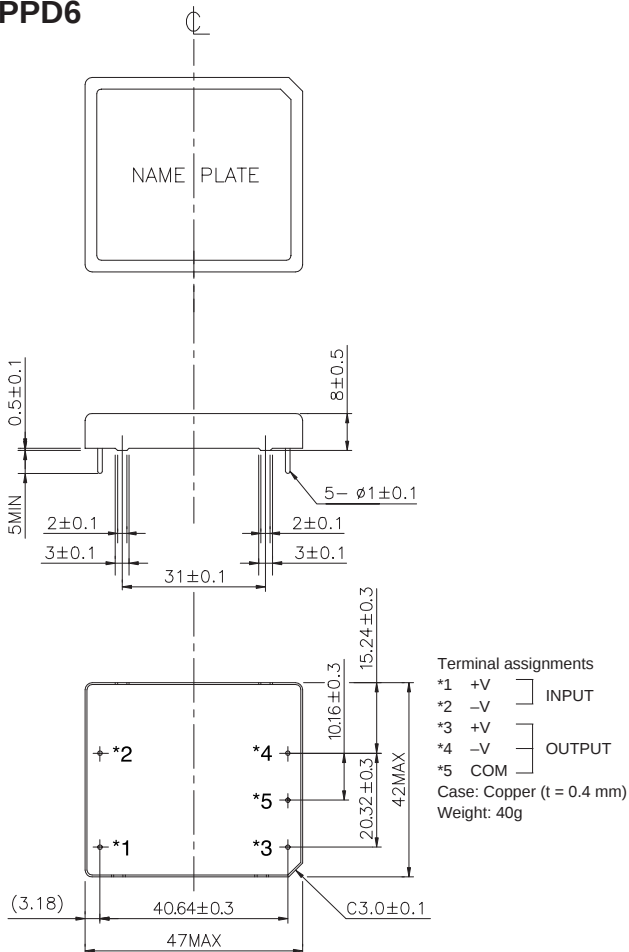
## PPD1R5



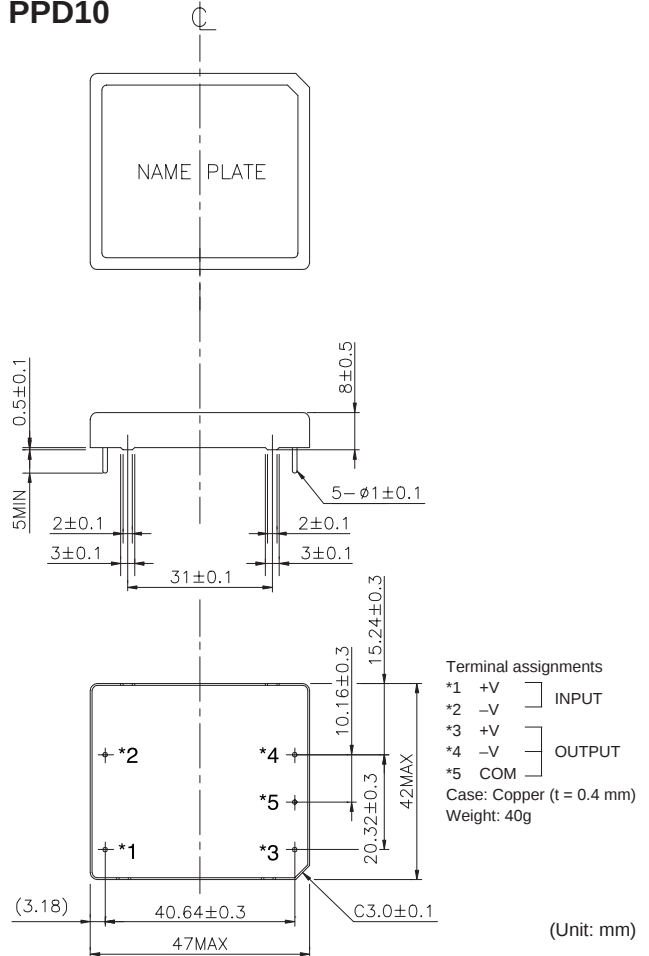
## PPD3



## PPD6



## PPD10



(Unit: mm)