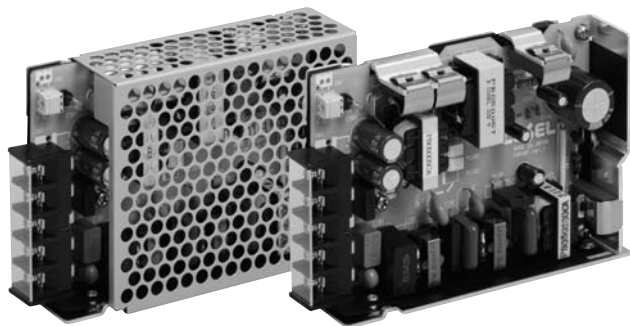


## PBA30/50 Series



- Universal Input
- Single Outputs from 3.3 V to 48 V
- Convection-cooled
- Level B Conducted Emissions
- EN61000-3-2, -3 Compliant
- Low Earth Leakage Current Option
- DIN Rail Mount Option

## Specification

## Input

|                       |                                                                                                                                                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Voltage         | • 85-264 VAC (110-370 VDC), (120-370 VDC 50 W unit). For operation below 90 VAC output derates linearly to 80% at 85 VAC (30 W unit). Operation down to 50 VAC possible, contact sales for details. (50 W model) |
| Input Frequency       | • 30 W unit: 47 - 440 Hz<br>50 W unit: 47 - 63 Hz                                                                                                                                                                |
| Input Current         | • 0.7 A at 100 VAC                                                                                                                                                                                               |
| Inrush Current        | • 15 A typical at 100 VAC,<br>30 A typical at 200 VAC                                                                                                                                                            |
| Power Factor          | • 30 W unit: 0.5 typical<br>50 W unit: 0.98 typical                                                                                                                                                              |
| Earth Leakage Current | • 0.75 mA max at 240 VAC 60Hz                                                                                                                                                                                    |
| Input Protection      | • 30 W unit: 3.15 A internal fuse<br>50 W unit: 2.00 A internal fuse                                                                                                                                             |

## Output

|                             |                                                                                                                                                                                               |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Voltage              | • See tables                                                                                                                                                                                  |
| Output Voltage Trim         | • See tables                                                                                                                                                                                  |
| Initial Set Accuracy        | • -0% to +4% max                                                                                                                                                                              |
| Minimum Load                | • No minimum load required                                                                                                                                                                    |
| Start Up Delay              | • 30 W unit: 200 ms typical<br>50 W unit: 350 ms typical                                                                                                                                      |
| Start Up Rise Time          | • 12 ms typical                                                                                                                                                                               |
| Hold Up Time                | • 20 ms typical                                                                                                                                                                               |
| Drift                       | • 0.4% max                                                                                                                                                                                    |
| Line Regulation             | • 0.4% max                                                                                                                                                                                    |
| Load Regulation             | • See tables                                                                                                                                                                                  |
| Transient Response          | • 3% max. deviation, recovery to within 0.5% in 2 ms for a 50% load change                                                                                                                    |
| Ripple & Noise              | • See tables                                                                                                                                                                                  |
| Overvoltage Protection      | • See tables, recycle mains to reset                                                                                                                                                          |
| Overttemperature Protection | • Not fitted                                                                                                                                                                                  |
| Overload Protection         | • 30 W unit: >105% trip and restart (Hiccup mode), automatic recovery.<br>50 W unit: >105% constant current until voltage drops to 50% then trip & restart (Hiccup mode), automatic recovery. |
| Short Circuit Protection    | • Trip and restart (Hiccup mode)                                                                                                                                                              |
| Temperature Coefficient     | • 0.5 %/°C                                                                                                                                                                                    |
| Remote On/Off               | • Option (50 W unit)                                                                                                                                                                          |

## General

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Efficiency          | • See tables                                                                       |
| Isolation           | • 3000 VAC Input to Output<br>2000 VAC Input to Ground<br>500 VAC Output to Ground |
| Switching Frequency | • 30 W unit: 100 kHz typical<br>50 W unit: 60-550 kHz PFC, 130 kHz PWM             |
| Power Density       | • 2.71 W/in <sup>3</sup>                                                           |
| Signals             | • None                                                                             |
| MTBF                | • 30 W: >611 kHrs per EIAJ RCR 9102<br>50 W: >436 kHrs per EIAJ RCR 9102           |

## Environmental

|                       |                                                             |
|-----------------------|-------------------------------------------------------------|
| Operating Temperature | • -10 °C to +71 °C, see derating curve                      |
| Cooling               | • Convection-cooled                                         |
| Operating Humidity    | • 20-90% RH, non-condensing                                 |
| Storage Temperature   | • -20 °C to +75 °C                                          |
| Operating Altitude    | • 3000 m max                                                |
| Shock                 | • 20 g once on each axis                                    |
| Vibration             | • 10-55 Hz, 2 g 3 minute period, 60 minutes along each axis |

## EMC &amp; Safety

|                      |                                                                                    |
|----------------------|------------------------------------------------------------------------------------|
| Emissions            | • EN55022 (CISPR22), level B conducted                                             |
| Harmonic Currents    | • EN61000-3-2, class A                                                             |
| Voltage Flicker      | • EN61000-3-3                                                                      |
| ESD Immunity         | • EN61000-4-2, level 4 Perf Criteria A                                             |
| Radiated Immunity    | • EN61000-4-3, level 3 Perf Criteria A                                             |
| EFT/Burst            | • EN61000-4-4, level 4 Perf Criteria A                                             |
| Surge                | • EN61000-4-5, level 4 Perf Criteria A                                             |
| Conducted Immunity   | • EN61000-4-6, level 3 Perf Criteria A                                             |
| Dips & Interruptions | • EN61000-4-11, 30 % 10 ms,<br>60 % 100 ms, 100 % 5000 ms<br>Perf Criteria A, B, B |
| Safety Approvals     | • UL60950-1, C-UL(CSA60950-1),<br>EN60950-1, EN50178                               |

## Models and Ratings

PBA30/50 **XP**

| Output Power | Output Voltage | Output Current | Output Voltage Trim | Overshoot Protection | Ripple & Noise <sup>(2)</sup><br>(pk-pk max) | Load Regulation (max) | Efficiency <sup>(1)</sup><br>(Typ) | Model Number |
|--------------|----------------|----------------|---------------------|----------------------|----------------------------------------------|-----------------------|------------------------------------|--------------|
| 19.8 W       | 3.3 VDC        | 6.00 A         | 2.85-3.60 VDC       | 4.00-5.25 VDC        | 160 mV                                       | 40 mV                 | 69%                                | PBA30F-3R3   |
| 30.0 W       | 5 VDC          | 6.00 A         | 4.50-5.50 VDC       | 5.75-7.00 VDC        | 160 mV                                       | 40 mV                 | 77%                                | PBA30F-5     |
| 30.6 W       | 9 VDC          | 3.40 A         | 7.50-10.0 VDC       | 11.5-14.0 VDC        | 180 mV                                       | 100 mV                | 77%                                | PBA30F-9     |
| 30.0 W       | 12 VDC         | 2.50 A         | 10.0-13.2 VDC       | 15.0-18.0 VDC        | 180 mV                                       | 100 mV                | 78%                                | PBA30F-12    |
| 30.0 W       | 15 VDC         | 2.00 A         | 13.2-18.0 VDC       | 20.0-25.0 VDC        | 180 mV                                       | 120 mV                | 81%                                | PBA30F-15    |
| 31.2 W       | 24 VDC         | 1.30 A         | 19.2-27.0 VDC       | 30.0-37.0 VDC        | 180 mV                                       | 150 mV                | 81%                                | PBA30F-24    |
| 31.2 W       | 48 VDC         | 0.65 A         | 39.0-53.0 VDC       | 58.0-65.0 VDC        | 300 mV                                       | 240 mV                | 81%                                | PBA30F-48    |
| 33.0 W       | 3.3 VDC        | 10.00 A        | 2.85-3.63 VDC       | 4.00-5.25 VDC        | 160 mV                                       | 40 mV                 | 76%                                | PBA50F-3R3   |
| 50.0 W       | 5 VDC          | 10.00 A        | 4.00-5.50 VDC       | 5.75-7.00 VDC        | 160 mV                                       | 40 mV                 | 82%                                | PBA50F-5     |
| 50.4 W       | 9 VDC          | 5.60 A         | 7.50-10.0 VDC       | 11.5-14.0 VDC        | 180 mV                                       | 100 mV                | 81%                                | PBA50F-9     |
| 51.6 W       | 12 VDC         | 4.30 A         | 10.0-13.2 VDC       | 15.0-18.0 VDC        | 180 mV                                       | 100 mV                | 82%                                | PBA50F-12    |
| 52.5 W       | 15 VDC         | 3.50 A         | 13.2-18.0 VDC       | 20.0-25.0 VDC        | 180 mV                                       | 120 mV                | 83%                                | PBA50F-15    |
| 52.8 W       | 24 VDC         | 2.20 A         | 19.2-27.0 VDC       | 30.0-37.0 VDC        | 180 mV                                       | 150 mV                | 84%                                | PBA50F-24    |
| 50.4 W       | 36 VDC         | 1.40 A         | 28.8-39.6 VDC       | 43.0-50.0 VDC        | 300 mV                                       | 240 mV                | 85%                                | PBA50F-36    |
| 52.8 W       | 48 VDC         | 1.10 A         | 39.0-53.0 VDC       | 58.0-65.0 VDC        | 300 mV                                       | 240 mV                | 85%                                | PBA50F-48    |

## Notes

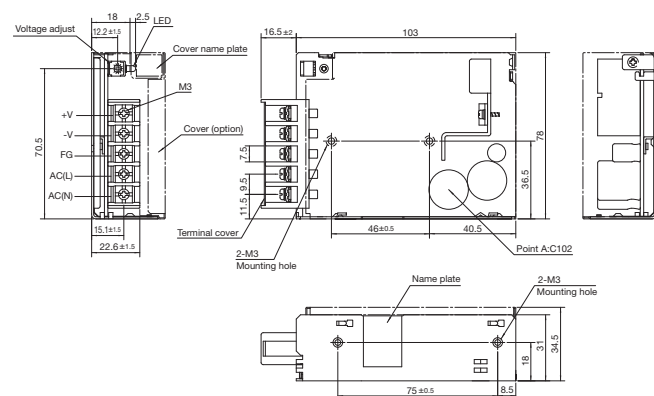
1. Efficiency measured at 200 VAC and full load.

2. Ripple &amp; noise measured at 20 MHz bandwidth.

## Mechanical Details

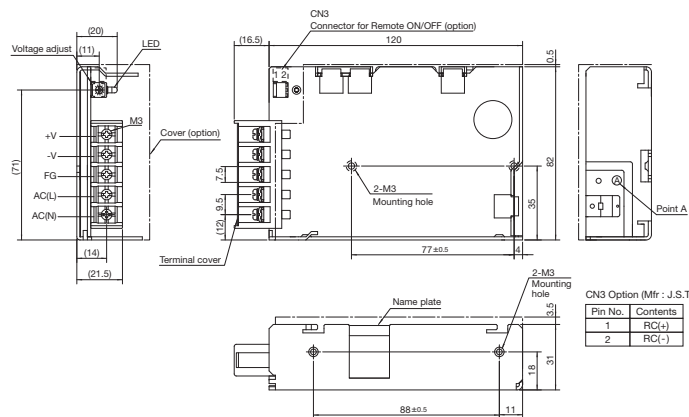
## PBA30

Weight: &lt;270g (without cover)



## PBA50

Weight: &lt;280g (without cover)



## Options

-C : Conformal Coating  
 -E : Low Leakage current and EMI class A  
 -G : Low Leakage current  
 -J : Molex Connectors\*  
 -N : Cover fitted\*  
 -N1 : Din Rail mountable\*

-R : Remote On/Off (50 W unit)  
 -T : Vertical terminal block\*  
 -V : Remote potentiometer\*

Contact sales for option details

\* These options will alter the dimensions shown.

## Notes

1. All measurements are in mm.  
 2. Tolerance:  $\pm 1$  mm

3. Mounting torque : 0.49 Nm  
 4. Dual output models available contact sales.

## Derating Curve

