

# PJA100F

PJ A 100 F -□ -□

① ② ③ ④ ⑤ ⑥



Example recommended EMI/EMC filter  
NAC-04-472



High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\* A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional \*7
- C : with Coating
- R : Remote on/off (Required external power source)
- J : Connector interface
- T : Vertical terminal block
- N2: with DIN rail

See 5.1 in Instruction Manual.

\*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

## SPECIFICATIONS

\* Please consider "PBA100F-5-N" about 5V output with case cover.

| MODEL                              |                                       | PJA100F-12   | PJA100F-15      | PJA100F-24      | PJA100F-36      | PJA100F-48      |
|------------------------------------|---------------------------------------|--|-----------------|-----------------|-----------------|-----------------|
| VOLTAGE[V]                         |                                       | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3 |                 |                 |                 |                 |
| CURRENT[A]                         | ACIN 100V                             | 1.2typ (Io=90%)  |                 |                 |                 |                 |
|                                    | ACIN 115V                             | 1.1typ (Io=100%)   |                 |                 |                 |                 |
|                                    | ACIN 230V                             | 0.6typ (Io=100%)   |                 |                 |                 |                 |
| FREQUENCY[Hz]                      |                                       | 50 / 60 (47 - 63)  |                 |                 |                 |                 |
| EFFICIENCY[%]                      | ACIN 100V                             | 82typ (Io=90%)   | 83typ (Io=90%)  | 85typ (Io=90%)  | 86typ (Io=90%)  | 86typ (Io=90%)  |
|                                    | ACIN 115V                             | 82typ (Io=100%)  | 83typ (Io=100%) | 85typ (Io=100%) | 86typ (Io=100%) | 86typ (Io=100%) |
|                                    | ACIN 230V                             | 85typ (Io=100%)  | 86typ (Io=100%) | 88typ (Io=100%) | 89typ (Io=100%) | 89typ (Io=100%) |
| POWER FACTOR                       | ACIN 100V                             | 0.98typ (Io=90%)   |                 |                 |                 |                 |
|                                    | ACIN 115V                             | 0.98typ (Io=100%)  |                 |                 |                 |                 |
|                                    | ACIN 230V                             | 0.90typ (Io=100%) * Power factor correction is stopped at AC250V or more.                              |                 |                 |                 |                 |
| INRUSH CURRENT[A]                  | ACIN 100V                             | 16typ (Io=90%) Ta=25°C at cold start   |                 |                 |                 |                 |
|                                    | ACIN 115V                             | 16typ (Io=100%) Ta=25°C at cold start  |                 |                 |                 |                 |
|                                    | ACIN 230V                             | 32typ (Io=100%) Ta=25°C at cold start  |                 |                 |                 |                 |
| LEAKAGE CURRENT[ma]                |                                       | 0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)                          |                 |                 |                 |                 |
| VOLTAGE[V]                         |                                       | 12   | 15              | 24              | 36              | 48              |
| CURRENT[A]                         | ACIN 85-115V                          | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)                     |                 |                 |                 |                 |
|                                    | ACIN 115V-264V                        | 8.4  | 6.7             | 4.3             | 2.8             | 2.1             |
| WATTAGE[W]                         | ACIN 85-115V                          | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)                     |                 |                 |                 |                 |
|                                    | ACIN 115V-264V                        | 100.8  | 100.5           | 103.2           | 100.8           | 100.8           |
| LINE REGULATION[mV] *4             |                                       | 48max  | 60max           | 96max           | 144max          | 192max          |
| LOAD REGULATION [mV] *4            | Io=30 to 100%                         | 100max   | 120max          | 150max          | 150max          | 300max          |
|                                    | Io=0 to 30%                           | Burst operation (Please contact us about detail)   |                 |                 |                 |                 |
| RIPPLE[mVp-p] *1                   | 0 to +40°C                            | 120max   | 120max          | 120max          | 150max          | 150max          |
|                                    | -10 to 0°C                            | 160max   | 160max          | 160max          | 200max          | 400max          |
|                                    | Io: load factor                       | 500max   | 500max          | 500max          | 500max          | 500max          |
| RIPPLE NOISE[mVp-p] *1             | 0 to +40°C                            | 150max   | 150max          | 150max          | 200max          | 200max          |
|                                    | -10 to 0°C                            | 180max   | 180max          | 180max          | 240max          | 500max          |
|                                    | Io: load factor                       | 600max   | 600max          | 600max          | 600max          | 600max          |
| TEMPERATURE REGULATION[mV]         | 0 to +40°C                            | 120max   | 150max          | 240max          | 360max          | 480max          |
|                                    | -10 to +40°C                          | 180max   | 180max          | 290max          | 440max          | 600max          |
| DRIFT[mV] *2                       |                                       | 48max  | 60max           | 96max           | 144max          | 192max          |
| START-UP TIME[ms]                  |                                       | 500typ (ACIN 115V, Io=100%) Ta=25°C  |                 |                 |                 |                 |
| HOLD-UP TIME[ms]                   |                                       | 20typ (ACIN 115V, Io=100%)   |                 |                 |                 |                 |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] |                                       | 10.80 to 13.20   | 13.50 to 16.50  | 21.60 to 26.40  | 32.40 to 39.60  | 43.20 to 52.80  |
| OUTPUT VOLTAGE SETTING[V]          |                                       | 12.00 to 12.48   | 15.00 to 15.60  | 24.00 to 24.96  | 36.00 to 37.44  | 48.00 to 49.92  |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION                | Works over 105% of rating and recovers automatically   |                 |                 |                 |                 |
|                                    | OVERVOLTAGE PROTECTION[V]             | 13.80 to 16.80   | 17.25 to 21.00  | 27.60 to 33.60  | 41.40 to 50.40  | 54.00 to 67.20  |
|                                    | OPERATING INDICATION                  | LED (Green)  |                 |                 |                 |                 |
|                                    | REMOTE SENSING                        | Not provided   |                 |                 |                 |                 |
| REMOTE ON/OFF                      |                                       | Optional (Required external power source. Option -R)   |                 |                 |                 |                 |
| ISOLATION                          | INPUT-OUTPUT • RC *9                  | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)                         |                 |                 |                 |                 |
|                                    | INPUT-FG                              | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)                         |                 |                 |                 |                 |
|                                    | OUTPUT • RC-FG *9                     | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)                          |                 |                 |                 |                 |
|                                    | OUTPUT-RC *9                          | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)                          |                 |                 |                 |                 |
| ENVIRONMENT                        | OPERATING TEMP.,HUMID.AND ALTITUDE *5 | -20 to +70°C (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max      |                 |                 |                 |                 |
|                                    | STORAGE TEMP.,HUMID.AND ALTITUDE      | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max                                    |                 |                 |                 |                 |
|                                    | VIBRATION                             | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes            |                 |                 |                 |                 |
|                                    | IMPACT                                | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes   |                 |                 |                 |                 |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS                      | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN508 (Except option -J) Complies with DEN-AN                 |                 |                 |                 |                 |
|                                    | CONDUCTED NOISE                       | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B   |                 |                 |                 |                 |
|                                    | HARMONIC ATTENUATOR *8                | Complies with IEC61000-3-2 class A   |                 |                 |                 |                 |

## SPECIFICATIONS

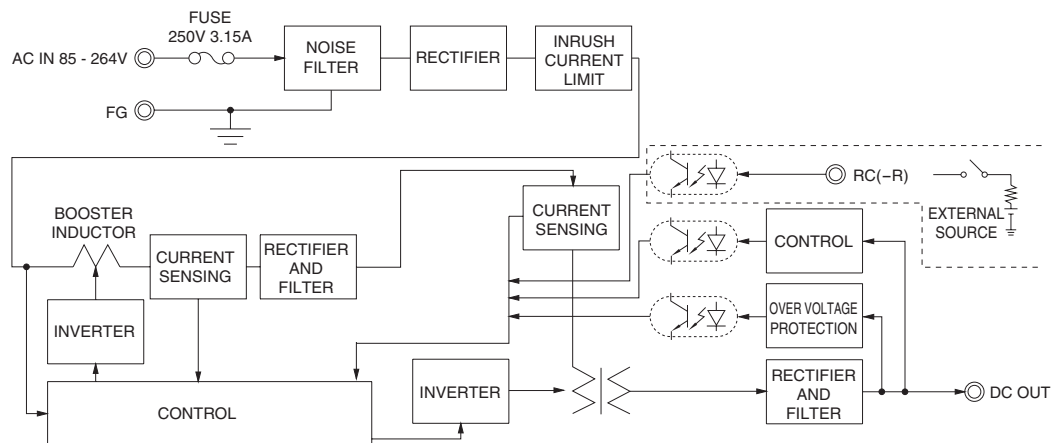
|          |                  |   |
|----------|------------------|---|
| OTHERS   | CASE SIZE/WEIGHT | 41 X 97 X 109mm [1.61 X 3.82 X 4.29 inches] (Excluding terminal block and screw) (W X H X D) / 500g max |
|          | COOLING METHOD   | Convection  |
| WARRANTY | WARRANTY         | *6 5 years (subject to the operating conditions)  |

- \*1 This is the result of measurement of the testing board with capacitors of 22  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103. See 1.6 of Instruction Manual for more details. When the load factor is 0 - 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.
- \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- \*3 Output power derating is required.
- \*4 Consult us about dynamic load and input response. Measure the output voltage by using the average mode of the tester to deal with the burst operation at 30% load or less.
- \*5 Output power derating is required. See 3.2 in Instruction Manual.
- \*6 See 3.3 in Instruction Manual for more details.
- \*7 Consult us about safety agency approvals for the models with optional functions.
- \*8 Consult us about other classes.
- \*9 The RC terminal is added to option -R models. The RC terminal is isolated from input, output, and FG.
- \* Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
- \* Parallel operation is not possible with this mode.
- \* Sound noise may be heard from the power supply when used for pulse load.

## Features

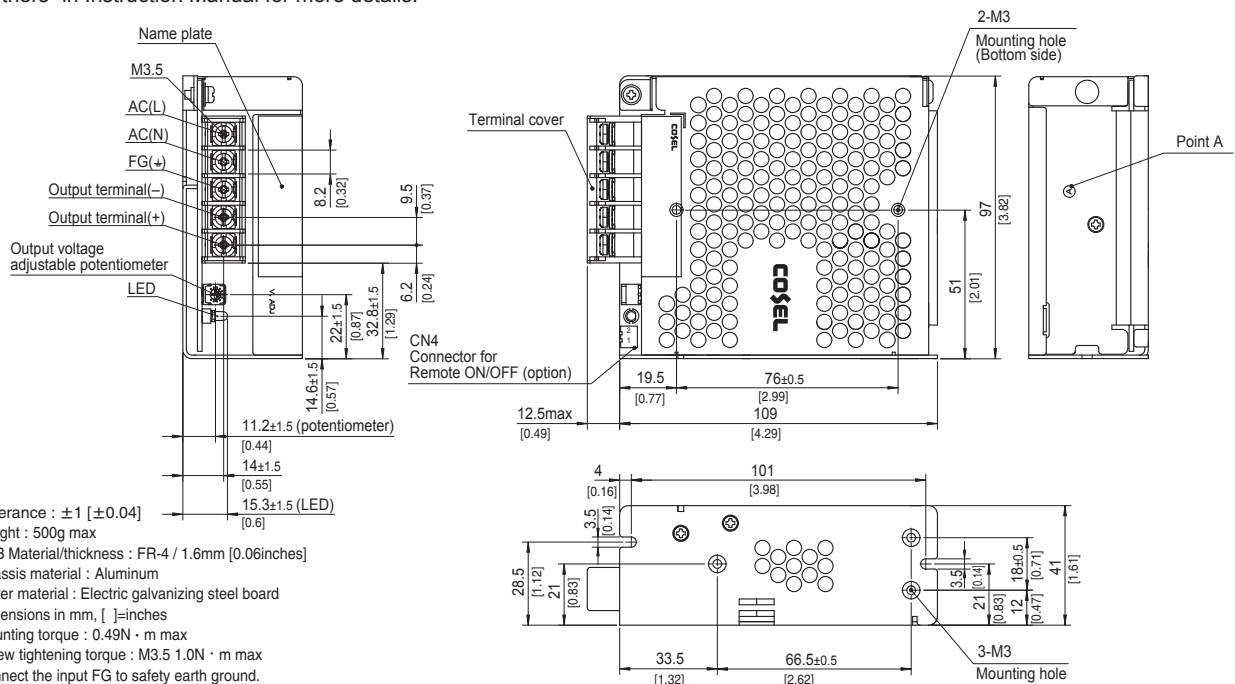
- Compact design (Depth: 109mm 4.29inches)
- High efficiency (88%typ PJA100F-24, AC230Vin, 100% load)
- Low power consumption (1.5W typ AC240Vin, no load at standard model)
- UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- Various connection interface options (vertical terminal [-T], AMP connector [-J])

## Block diagram



## External view

The external size of -R option, -J option, -N2 option and -T option models is different from the standard model. See "5. Options and Others" in Instruction Manual for more details.



- \* Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- \* Weight : 500g max
- \* PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
- \* Chassis material : Aluminum
- \* Cover material : Electric galvanizing steel board
- \* Dimensions in mm, [ ]=inches
- \* Mounting torque : 0.49N · m max
- \* Screw tightening torque : M3.5 1.0N · m max
- \* Connect the input FG to safety earth ground.