COSEL|科索 PBA30F-24 PDF



深圳创唯电子有限公司

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AC-DC Power Supplies Enclosed Type













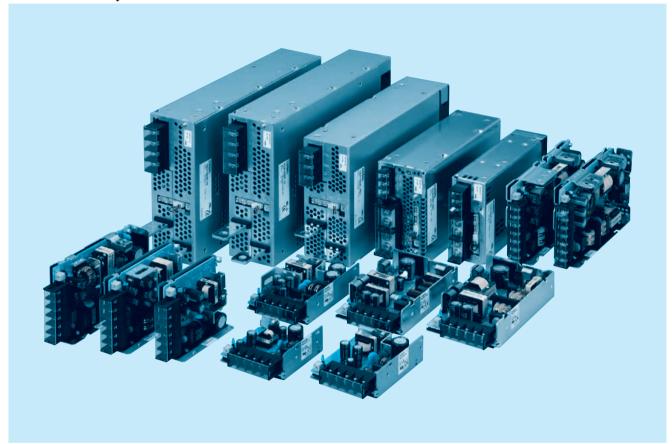








PBA, PBW-series



Feature

Small-size & light weight

Harmonic attenuator (Complies with IEC61000-3-2): except PBA1500T Universal input (AC85 - 264V) : PBA1500T(AC170 - 264V 3 φ) Efficiency increased with synchronous rectification technology (PBA50F - 150F)

Variety of option (PBA10F - 150F, PBW15F - 50F) Parallel operation and Parallel redandancy operation

(PBA300F - 1500F, PBA1500T)

Fan alarm, Remote ON/OFF and other functions (PBA300F - 1500F, PBA1500T)

Safety agency approvals

UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 UL508 (PBA10F - 150F, -24, with cover) Complies with DEN-AN

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

5-year warranty (refer to Instruction Manual)

CE marking

Low Voltage Directive **RoHS** Directive

EMS Compliance: EN61204-3, EN61000-6-2

EN61000-4-2

EN61000-4-3

EN61000-4-4

EN61000-4-5

EN61000-4-6

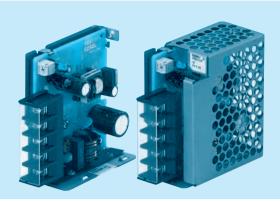
EN61000-4-8

EN61000-4-11

PBA10F

A 10 F -





Example recommended EMI/EMC filter NAC-06-472



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.

Cover is optional

- ①Series name ②Single output
- (3) Output wattage 4 Universal input
- ⑤Output voltage
- Optional *5
 C:with Coating

 - G:Low leakage current E:Low leakage current
 - and EMI class A
 - T:Vertical terminal block
 J1:VH (J.S.T.) connector type
 N:with Cover

 - (UL508 is acquired)

 - N1: with DIN rail and Cover
 - V:Output voltage setting potentiometer external-

*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.

| MODEL | PBA10F-5 | PBA10F-12 | PBA10F-24 | |
|-----------------------|----------|-----------|-----------|--|
| MAX OUTPUT WATTAGE[W] | 10 | 10.8 | 12 | |
| DC OUTPUT | 5V 2A | 12V 0.9A | 24V 0.5A | |

SPECIFICATIONS

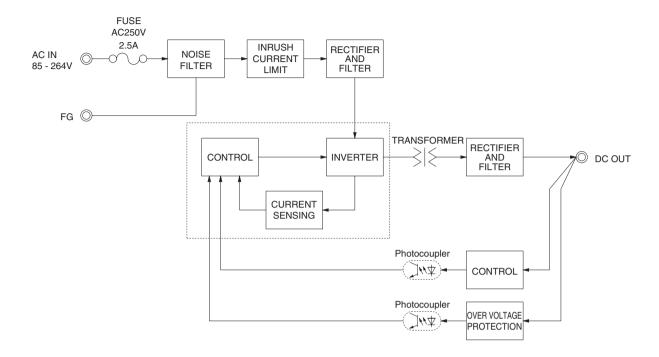
| | MODEL | | PBA10F-5 | PBA10F-12 | PBA10F-24 | | | | | |
|------------------------|----------------------------|---------------|--|--|---|--|--|--|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ or DC110 - 370 (AC5 | 0 or DC70 Please refer to the instruction | on manual 1.1 Input voltage *3) | | | | | |
| | OUDDENTIAL | ACIN 100V | 0.30typ (lo=100%) | | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.20typ (lo=100%) | | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 440) or DC | | | | | | | |
| INPUT | | ACIN 100V | 74typ | 76typ | 77typ | | | | | |
| | EFFICIENCY[%] | ACIN 200V | | 76typ | 77typ | | | | | |
| | | ACIN 100V | 15typ (lo=100%) | | 1 | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 30typ (lo=100%) | | | | | | | |
| | LEAKAGE CURREN | T[mA] | 0.15/0.30max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN) | | | | | | | |
| | VOLTAGE[V] | | 5 | 12 | 24 | | | | | |
| | CURRENT[A] | | 2 | 0.9 | 0.5 | | | | | |
| | LINE REGULATION[| mV] *6 | 20max | 48max | 96max | | | | | |
| | LOAD REGULATION | [mV] *6 | 40max | 100max | 150max | | | | | |
| | RIPPLE[mVp-p] | 0 to +50°C *1 | 80max | 120max | 120max | | | | | |
| | | -10 - 0℃ *1 | 140max | 160max | 160max | | | | | |
| | DIDDLE NOICEIV1 | 0 to +50°C *1 | 120max | 150max | 150max | | | | | |
| OUTPUT | RIPPLE NOISE[mVp-p] | -10 - 0℃ *1 | 160max | 180max | 180max | | | | | |
| | | 0 to +50℃ | 50max | 120max | 240max | | | | | |
| | TEMPERATURE REGULATION[mV] | -10 to +50℃ | 60max | 150max | 290max | | | | | |
| | DRIFT[mV] | *2 | 20max | 48max | 96max | | | | | |
| | START-UP TIME[ms] | | 200typ(ACIN 100V, Io=100%) *Start-up time | e is 700ms typ for less than 1minute of applying | g input again from turning off the input voltage. | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100V, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | T RANGE[V] | 4.50 - 5.50 | 10.0 - 13.2 | 19.2 - 27.0 | | | | | |
| | OUTPUT VOLTAGE SET | TING[V] | 5.00 - 5.15 | 12.00 - 12.48 | 24.00 - 24.96 | | | | | |
| | OVERCURRENT PROT | ECTION | Works over 105% of rated current and | d recovers automatically | | | | | | |
| PROTECTION CIRCUIT AND | | TION[V] | 5.75 - 7.00 | 15.0 - 18.0 | 30.0 - 37.0 | | | | | |
| OTHERS | OPERATING INDICA | TION | LED (Green) | | | | | | | |
| | REMOTE ON/OFF | | None | | | | | | | |
| | INPUT-OUTPUT | | AC3,000V 1minute, Cutoff current = 1 | 0mA, DC500V 50M Ω min (At Room Te | mperature) | | | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1minute, Cutoff current = 1 | 0mA, DC500V 50M Ω min (At Room Te | mperature) | | | | | |
| | OUTPUT-FG | | AC500V 1minute, Cutoff current = 25r | mA, DC500V 50M Ω min (At Room Tem | perature) | | | | | |
| | OPERATING TEMP.,HUMID.AND | ALTITUDE | -10 to +71 $^{\circ}$ (Refer to "Derating"), 20 | - 90%RH (Non condensing) 3,000m (10 | 0,000feet) max | | | | | |
| ENVIRONMENT | STORAGE TEMP., HUMID.AND | ALTITUDE | -20 to +75℃, 20 - 90%RH (Non cond | ensing) 9,000m (30,000feet) max | | | | | | |
| LIVINONWENT | VIBRATION | | 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | | 196.1m/s2 (20G), 11ms, once each X, | | | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN | | | | | | | |
| NOISE | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | |
| REGULATIONS | HARMONIC ATTENU | IATOR | Complies with IEC61000-3-2 (Not buil | t-in to active filter *4) *7 | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | 31 x 78 x 68mm [1.22 x 3.07 x 2.68 inches] (without terminal block) (W x H x D) / 150g max (with cover : 180g max) | | | | | | | |
| OTHERS | COOLING METHOD | | Convection | | | | | | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Derating is required.
- *4 When two or more units are used,they may not comply with the harmonic attenuator. Please contact us for details.
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about dynamic load and input response.
- Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover.

 A sound may occur from power supply at peak loading.

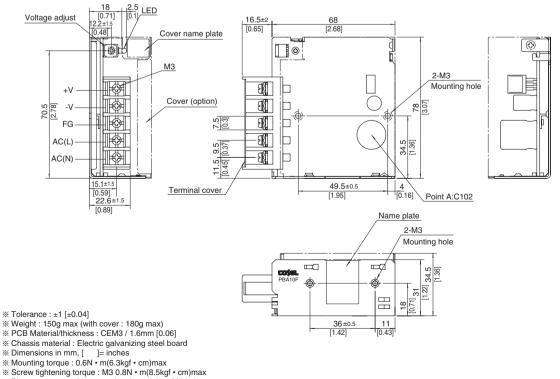
PBA/PBW-2





External view

※ External size of option T,J1,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



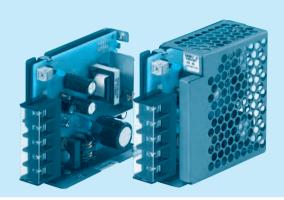
- % Chassis material : Electric galvanizing steel board

- * Please connect safety ground to the unit in 2-M3 holes.

PBA15F

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Example recommended EMI/EMC filter NAC-06-472



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.

Cover is optional

Series name
 Single output

(3) Output wattage 4 Universal input

⑤Output voltage

Optional *5
 C:with Coating

G:Low leakage current

E:Low leakage current and EMI class A

T : Vertical terminal block

J1 :VH (J.S.T.) connector type N :with Cover

(UL508 is acquired

[5V, 12V, 24V]) N1: with DIN rail and Cover

V:Output voltage setting potentiometer external-

*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.

| MODEL | PBA15F-3R3 | PBA15F-5 | PBA15F-9 | PBA15F-12 | PBA15F-15 | PBA15F-24 | PBA15F-48 |
|-----------------------|------------|----------|----------|-----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 9.9 | 15 | 15.3 | 15.6 | 15 | 16.8 | 16.8 |
| DC OUTPUT | 3.3V 3A | 5V 3A | 9V 1.7A | 12V 1.3A | 15V 1A | 24V 0.7A | 48V 0.35A |

SPECIFICATIONS

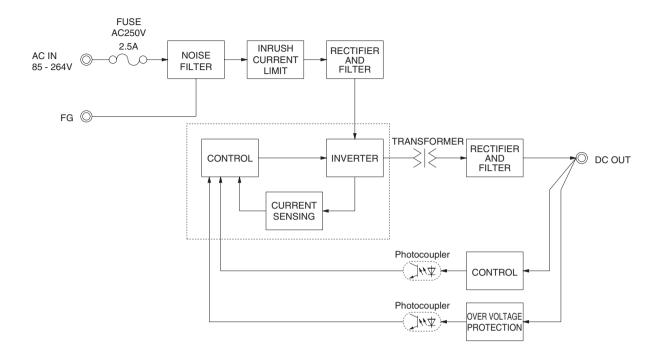
| | MODEL | | PBA15F-3R3 | PBA15F-5 | PBA15F-9 | PBA15F-12 | PBA15F-15 | PBA15F-24 | PBA15F-48 | | |
|---------------------|------------------------------------|----------------------------------|--|--|----------------------|------------------------|-----------------------|--------------------|---------------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC110 - 370 | (AC50 or DC70 | Please refer to the | he instruction ma | ınual 1.1 Input vo | ltage *3) | | |
| | CUDDENTIAL | ACIN 100V | 0.30typ (lo=100%) | 0.4typ (Io=100% | 6) | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.15typ (lo=100%) | 0.2typ (lo=100% | 6) | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 440) | or DC | | | | | | | |
| NPUT | EEEIOIENOVIO/ 1 | ACIN 100V | 68typ | 74typ | 75typ | 75typ | 77typ | 75typ | 75typ | | |
| | EFFICIENCY[%] | ACIN 200V | 68typ | 75typ | 77typ | 78typ | 80typ | 78typ | 78typ | | |
| | INDUCU OUDDENTIAL | ACIN 100V | 15typ (Io=100% |) (At cold start) | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 30typ (Io=100% |) (At cold start) | | | | | | | |
| | LEAKAGE CURREN | T[mA] | 0.15/0.30max (A | ACIN 100V/240V | 60Hz, lo=100%, | According to IE | C60950-1,DENAI | N) | | | |
| | VOLTAGE[V] | BE[V] 3.3 5 9 12 15 24 48 | | | | | | | | | |
| | CURRENT[A] | | 3 | 3 | 1.7 | 1.3 | 1 | 0.7 | 0.35 | | |
| | LINE REGULATION[| mV] *6 | 20max | 20max | 36max | 48max | 60max | 96max | 192max | | |
| | LOAD REGULATION | [mV] *6 | 40max | 40max | 100max | 100max | 120max | 150max | 240max | | |
| | DIDDI Elm\/n m² | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | | |
| | RIPPLE[mVp-p] | -10 - 0℃ *1 | 140max | 140max | 160max | 160max | 160max | 160max | 200max | | |
| | DIDDLE NOIGE | 0 to +50°C *1 | 120max | 120max | 150max | 150max | 150max | 150max | 250max | | |
| UTPUT | RIPPLE NOISE[mVp-p] | -10 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 300max | | |
| | TEMPERATURE REQUIRATIONS | 0 to +50℃ | 50max | 50max | 90max | 120max | 150max | 240max | 480max | | |
| | TEMPERATURE REGULATION[mV] | -10 to +50℃ | 60max | 60max | 120max | 150max | 180max | 290max | 600max | | |
| | DRIFT[mV] | *2 | 20max | 20max | 36max | 48max | 60max | 96max | 192max | | |
| | START-UP TIME[ms] | | 200typ(ACIN 100V | lo=100%) *Start-ı | up time is 700ms typ | for less than 1minu | ute of applying input | again from turning | off the input volta | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | 0V, Io=100%) | | | - | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 2.85 - 3.60 | 4.50 - 5.50 | 7.50 - 10.0 | 10.0 - 13.2 | 13.2 - 18.0 | 19.2 - 27.0 | 39.0 - 53.0 | | |
| | OUTPUT VOLTAGE SET | TING[V] | 3.30 - 3.40 | 5.00 - 5.15 | 9.00 - 9.36 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 48.00 - 49.92 | | |
| | OVERCURRENT PROT | ECTION | Works over 105 | % of rated curre | nt and recovers a | automatically | | | | | |
| ROTECTION | OVERVOLTAGE PROTEC | TION[V] | 4.00 - 5.25 | 5.75 - 7.00 | 11.5 - 14.0 | 15.0 - 18.0 | 20.0 - 25.0 | 30.0 - 37.0 | 58.0 - 65.0 | | |
| IRCUIT AND THERS | OPERATING INDICA | TION | LED (Green) | | | | | | | | |
| | REMOTE ON/OFF | | None | | | | | | | | |
| | INPUT-OUTPUT | | AC3,000V 1min | ute, Cutoff currer | nt = 10mA, DC50 | 00V 50MΩmin (<i>A</i> | At Room Tempera | ature) | | | |
| SOLATION | INPUT-FG | | AC2,000V 1min | ute, Cutoff currer | nt = 10mA, DC50 | 00V 50MΩmin (A | At Room Tempera | ature) | | | |
| | OUTPUT-FG | | AC500V 1minut | e, Cutoff current | = 25mA, DC500 | V 50MΩmin (At | Room Temperati | ıre) | | | |
| | OPERATING TEMP.,HUMID.AND | ALTITUDE | -10 to +71℃ (R | efer to "Derating" |), 20 - 90%RH (I | Non condensing) | 3,000m (10,000 | feet) max | | | |
| NVIRONMENT | STORAGE TEMP.,HUMID.AND | ALTITUDE | -20 to +75°C, 20 |) - 90%RH (Non | condensing) 9,0 | 00m (30,000feet) | max | | | | |
| NVIRONWENT | VIBRATION | | 10 - 55Hz, 19.6 | m/s² (2G), 3min | utes period, 60m | inutes each alon | g X, Y and Z axi | S | | | |
| | IMPACT | | 196.1m/s ² (20G | 196.1m/s² (20G), 11ms, once each X, Y and Z axis | | | | | | | |
| AFETY AND | AGENCY APPROVALS (At only | AC input) | UL60950-1, C-L | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN | | | | | | | |
| IOISE | CONDUCTED NOISE | : | | | | PR22-B, EN5501 | | | | | |
| EGULATIONS | HARMONIC ATTENU | IATOR | Complies with IEC61000-3-2 (Not built-in to active filter *4) *7 | | | | | | | | |
| THERE | CASE SIZE/WEIGHT | | 31×78×85mm | [1.22×3.07×3.0 | 35 inches] (witho | ut terminal block) | (W×H×D) / 20 | 00g max (with co | ver : 235g max | | |
| THERS | COOLING METHOD | | Convection | - | • | | | - | - | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Derating is required.
- *4 When two or more units are used,they may not comply with the harmonic attenuator. Please contact us for details.
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about dynamic load and input response.
- Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover.

 A sound may occur from power supply at peak loading.

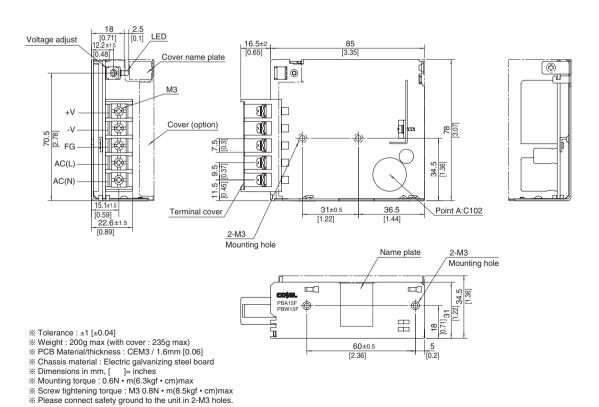
PBA/PBW-4





External view

** External size of option T,J1,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



PBA30F

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c Sus 🛕 (E **RoHS** eco

Example recommended EMI/EMC filter NAC-06-472

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.

Cover is optional

Series name
 Single output

- (3) Output wattage
- 4 Universal input
- ⑤Output voltage
- Optional *5
 C:with Coating

 - G:Low leakage current
 - E:Low leakage current and EMI class A
 - T : Vertical terminal block
 - J1 :VH (J.S.T.) connector type N :with Cover
 - (UL508 is acquired
 - [5V, 12V, 24V])
 - N1: with DIN rail and Cover V:Output voltage setting potentiometer external-

*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.

| MODEL | PBA30F-3R3 | PBA30F-5 | PBA30F-9 | PBA30F-12 | PBA30F-15 | PBA30F-24 | PBA30F-48 |
|-----------------------|------------|----------|----------|-----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 19.8 | 30 | 30.6 | 30 | 30 | 31.2 | 31.2 |
| DC OUTPUT | 3.3V 6A | 5V 6A | 9V 3.4A | 12V 2.5A | 15V 2A | 24V 1.3A | 48V 0.65A |

SPECIFICATIONS

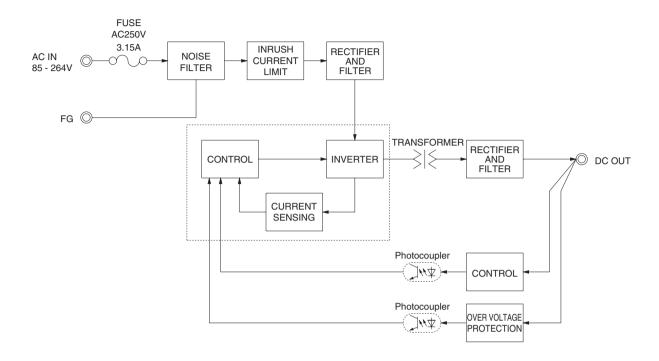
| | MODEL | | PBA30F-3R3 | PBA30F-5 | PBA30F-9 | PBA30F-12 | PBA30F-15 | PBA30F-24 | PBA30F-48 | | |
|------------------------|-----------------------------|---------------|---|--|----------------------|--------------------------|-----------------------|-----------------------|-----------------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC110 - 370 | (AC50 or DC70 | Please refer to the | ne instruction ma | nual 1.1 Input vo | ltage *3) | | |
| | CURRENT[A] | ACIN 100V | 0.50typ (lo=100%) | 0.70typ (lo=100 | %) | | | | | | |
| | CORNENT[A] | ACIN 200V | 0.30typ (lo=100%) | 0.40typ (lo=100 | %) | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 440) | or DC | | | | | | | |
| INPUT | EFFICIENCY[%] | ACIN 100V | 68typ | 74typ | 75typ | 76typ | 78typ | 78typ | 79typ | | |
| | EFFICIENCI[/6] | ACIN 200V | 69typ | 77typ | 77typ | 78typ | 81typ | 81typ | 81typ | | |
| | INRUSH CURRENT[A] | ACIN 100V | 15typ (Io=100% |) (At cold start) | | | | | | | |
| | INNUSH CUNNENT[A] | ACIN 200V | 30typ (Io=100% |) (At cold start) | | | | | | | |
| | LEAKAGE CURREN | T[mA] | 0.30/0.65max (A | ACIN 100V/240V | 60Hz, lo=100%, | According to IE | C60950-1,DENAN | 1) | | | |
| | VOLTAGE[V] | | 3.3 | 5 | 9 | 12 | 15 | 24 | 48 | | |
| | CURRENT[A] | | 6 | 6 | 3.4 | 2.5 | 2 | 1.3 | 0.65 | | |
| | LINE REGULATION[| mV] *6 | 20max | 20max | 36max | 48max | 60max | 96max | 192max | | |
| | LOAD REGULATION | [mV] *6 | 40max | 40max | 100max | 100max | 120max | 150max | 240max | | |
| | RIPPLE[mVp-p] | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | | |
| | MIPPLE[IIIVP-P] | -10 - 0℃ *1 | 140max | 140max | 160max | 160max | 160max | 160max | 200max | | |
| | RIPPLE NOISE[mVp-p] | 0 to +50°C *1 | 120max | 120max | 150max | 150max | 150max | 150max | 250max | | |
| OUTPUT | MIPPLE NOISE[IIIVP-P] | -10 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 300max | | |
| | TEMPERATURE REGULATION[mV] | 0 to +50℃ | 50max | 50max | 90max | 120max | 150max | 240max | 480max | | |
| L | TEMPERATURE REGULATION[IIV] | -10 to +50℃ | 60max | 60max | 120max | 150max | 180max | 290max | 600max | | |
| | DRIFT[mV] | *2 | 20max | 20max | 36max | 48max | 60max | 96max | 192max | | |
| | START-UP TIME[ms] | | 200typ(ACIN 100V | , Io=100%) * Start-ı | up time is 700ms typ | p for less than 1minu | ite of applying input | again from turning of | off the input voltage | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | 0V, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | range[v] | 2.85 - 3.60 | 4.50 - 5.50 | 7.50 - 10.0 | 10.0 - 13.2 | 13.2 - 18.0 | 19.2 - 27.0 | 39.0 - 53.0 | | |
| | OUTPUT VOLTAGE SET | | 3.30 - 3.40 | 5.00 - 5.15 | 9.00 - 9.36 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 48.00 - 49.92 | | |
| | OVERCURRENT PROT | ECTION | | % of rated curre | nt and recovers a | automatically | | | | | |
| PROTECTION CIRCUIT AND | OVERVOLTAGE PROTEC | TION[V] | 4.00 - 5.25 | 5.75 - 7.00 | 11.5 - 14.0 | 15.0 - 18.0 | 20.0 - 25.0 | 30.0 - 37.0 | 58.0 - 65.0 | | |
| OTHERS | OPERATING INDICA | TION | LED (Green) | | | | | | | | |
| | REMOTE ON/OFF | | None | | | | | | | | |
| | INPUT-OUTPUT | | | | | $00V$ $50M\Omega$ min (A | | | | | |
| ISOLATION | INPUT-FG | | · · | | | $00V$ $50M\Omega$ min (A | | , | | | |
| | OUTPUT-FG | | | | | V 50MΩmin (At | | | | | |
| | OPERATING TEMP.,HUMID.AND | | | | | Non condensing) | | eet) max | | | |
| ENVIRONMENT | STORAGE TEMP.;HUMID.AND | ALTITUDE | | | | 00m (30,000feet) | | | | | |
| | VIBRATION | | | 0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | | |), 11ms, once ea | | | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | | | | | I50178 Complies | | | | | |
| NOISE REGULATIONS | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | | |
| NEGULATIONS | HARMONIC ATTENU | | Complies with IEC61000-3-2 (Not built-in to active filter *4) *7 31 x 78 x 103mm [1.22 x 3.07 x 4.06 inches] (without terminal block) (W x H x D) / 270g max (with cover : 310g max) | | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | n [1.22×3.07×4 | .06 inches] (with | out terminal block | k) (W×H×D) / 2 | 70g max (with co | over : 310g max) | | |
| | COOLING METHOD | | Convection | | | | | | | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Derating is required.
- *4 When two or more units are used,they may not comply with the harmonic attenuator. Please contact us for details.
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about dynamic load and input response.
- Please contact us about class C.
- Parallel operation with other model is not possible
- Derating is required when operated with cover.

 A sound may occur from power supply at peak loading.

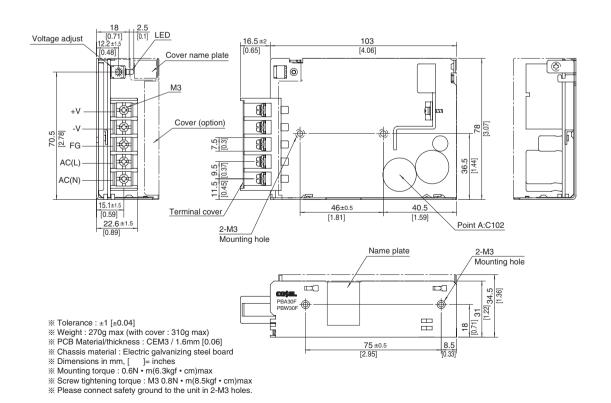
PBA/PBW-6





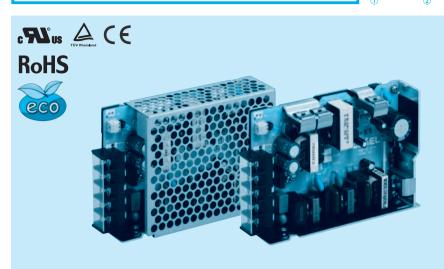
External view

** External size of option T,J1,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



PBA50F

50



Example recommended EMI/EMC filter NAC-06-472



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.

- ①Series name ②Single output
- (3) Output wattage
- 4 Universal input
- ⑤Output voltage
- Optional *5
 C:with Coating
 - G:Low leakage current (0.15mA max / ACIN 240V)
 - E:Low leakage current and EMI class A (0.5mA max / ACIN 240V) T:Vertical terminal block
- J1 :VH (J.S.T.) connector type R:with Remote ON/OFF
- N :with Cover (Only 24V UL508 is acquired) N1 :with DIN rail and Cover
- V:Output voltage setting potentiometer external-

Cover is optional

*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.

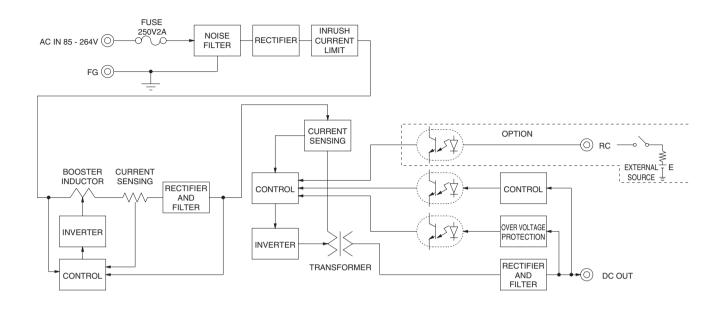
| MODEL | PBA50F-3R3 | PBA50F-5 | PBA50F-9 | PBA50F-12 | PBA50F-15 | PBA50F-24 | PBA50F-36 | PBA50F-48 |
|-----------------------|------------|----------|----------|-----------|-----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 33 | 50 | 50.4 | 51.6 | 52.5 | 52.8 | 50.4 | 52.8 |
| DC OUTPUT | 3.3V 10A | 5V 10A | 9V 5.6A | 12V 4.3A | 15V 3.5A | 24V 2.2A | 36V 1.4A | 48V 1.1A |

| | MODEL | | PBA50F-3R3 | PBA50F-5 | PBA50F-9 | PBA50F-12 | PBA50F-15 | PBA50F-24 | PBA50F-36 | PBA50F-48 | |
|------------------------|----------------------------|---------------------|---|--|-------------------|-------------------|-------------------|------------------|------------------|---------------|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 370 | (AC50 or DC70 | Please refer to | the instruction n | nanual 1.1 Input | voltage *4) | | |
| | CURRENT[A] | ACIN 100V | 0.5typ | 0.7typ | | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.3typ | 0.4typ | | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | | |
| | EFFICIENCY[0/1 | ACIN 100V | 75typ | 80typ | 79typ | 80typ | 81typ | 82typ | 83typ | 83typ | |
| INPUT | EFFICIENCY[%] | ACIN 200V | 76typ | 82typ | 81typ | 82typ | 83typ | 84typ | 85typ | 85typ | |
| | POWER FACTOR(Io=100%) | ACIN 100V | 0.98typ | 0.99typ | | | | | | | |
| | POWER FACTOR(IO=100%) | ACIN 200V | 0.87typ | 0.93typ | | | | | | | |
| | INDUCU CUDDENTIAL | ACIN 100V | 15typ (lo=100% | (At cold start) | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 30typ (lo=100%) (At cold start) | | | | | | | | |
| | LEAKAGE CURRENT[r | nA] | 0.4/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN) | | | | | | | | |
| | VOLTAGE[V] | | 3.3 | 5 | 9 | 12 | 15 | 24 | 36 | 48 | |
| | CURRENT[A] | | 10 | 10 | 5.6 | 4.3 | 3.5 | 2.2 | 1.4 | 1.1 | |
| | LINE REGULATION[m\ | /] | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | |
| | LOAD REGULATION[m | ıV] | 40max | 40max | 100max | 100max | 120max | 150max | 240max | 240max | |
| | RIPPLE[mVp-p] | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max | |
| | RIPPLE[IIIVP-P] | -10 - 0℃ *1 | 140max | 140max | 160max | 160max | 160max | 160max | 200max | 200max | |
| | RIPPLE NOISE[mVp-p] | 0 to +50°C *1 | 120max | 120max | 150max | 150max | 150max | 150max | 250max | 250max | |
| OUTPUT | | -10 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 300max | 300max | |
| | TEMPERATURE REGULATION[mV] | 0 to +50℃ | 50max | 50max | 90max | 120max | 150max | 240max | 360max | 480max | |
| | | -10 to +50℃ | 60max | 60max | 120max | 150max | 180max | 290max | 450max | 600max | |
| | DRIFT[mV] | *2 | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | |
| | START-UP TIME[ms] | | 350typ(ACIN 10 | 00V, lo=100%) | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100V, lo=100%) | | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | T RANGE[V] | 2.85 - 3.63 | 4.00 - 5.50 | 7.50 - 10.0 | 10.0 - 13.2 | 13.2 - 18.0 | 19.2 - 27.0 | 28.8 - 39.6 | 39.0 - 53.0 | |
| | OUTPUT VOLTAGE SET | TING[V] | 3.30 - 3.40 | 5.00 - 5.15 | 9.00 - 9.36 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 35.00 - 37.44 | 48.00 - 49.92 | |
| | OVERCURRENT PROT | ECTION | Works over 105 | % of rated curre | ent and recovers | automatically | | | | | |
| PROTECTION CIRCUIT AND | OVERVOLTAGE PROTEC | TION[V] | 4.00 - 5.25 | 5.75 - 7.00 | 11.5 - 14.0 | 15.0 - 18.0 | 20.0 - 25.0 | 30.0 - 37.0 | 43.0 - 50.0 | 58.0 - 65.0 | |
| OTHERS | OPERATING INDICATION | NC | LED (Green) | | | | | | | | |
| | REMOTE ON/OFF | | | ired external pov | | | | | | | |
| | INPUT-OUTPUT · RC | *3 | | | | 500V 50MΩmin | | | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1mir | ute, Cutoff curre | ent = 10mA, DC | 500V 50MΩmin | (At Room Tempe | erature) | | | |
| | OUTPUT · RC-FG | *3 | | | | 00V 50MΩmin (| | | | | |
| | OPERATING TEMP.,HUMID.AND | ALTITUDE | | | | (Non condensing | | 00feet) max | | | |
| ENVIRONMENT | STORAGE TEMP., HUMID. AND | ALTITUDE | | | | 000m (30,000fee | | | | | |
| LIVINOIVILIVI | VIBRATION | | | | | minutes each ald | ong X, Y and Z a | axis | | | |
| | IMPACT | | | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY AND | | AC input) | | | | | | | | | |
| NOISE | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | | |
| REGULATIONS | | HARMONIC ATTENUATOR | | Complies with IEC61000-3-2 *6 | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | m [1.22 × 3.23 × | 4.72 inches] (wit | hout terminal blo | ck) (W×H×D) / | 280g max (wit | n cover : 325g m | ax) | |
| OTHERS | COOLING METHOD Convection | | | | | | | | | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C. Applicable when Remote ON/OFF(optional) is added. RC is insulated with input, output and
- *4 Derating is required.

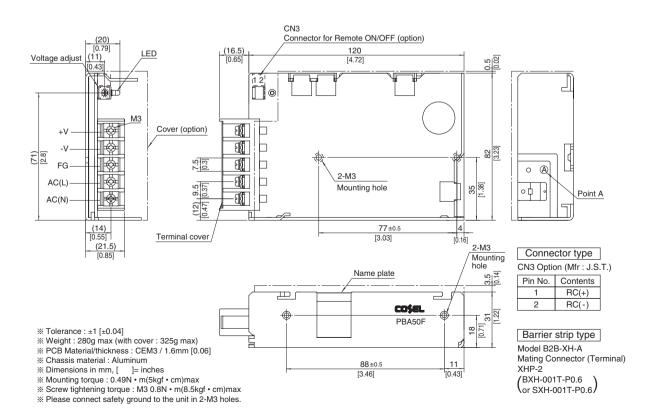
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover A sound may occur from power supply at peak loading.
- PBA/PBW-8 June 25, 2020





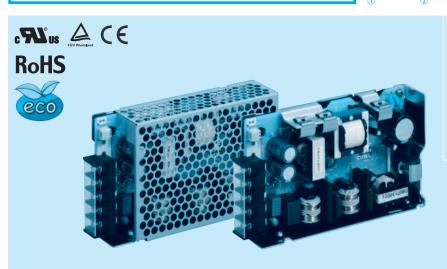
External view

* External size of option T,J1,R,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



PBA75F

75



Example recommended EMI/EMC filter NAC-06-472



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.

- ①Series name ②Single output
- (3) Output wattage 4 Universal input
- ⑤Output voltage
- Optional *5
 C:with Coating
 - G:Low leakage current (0.15mA max / ACIN 240V)
 - E:Low leakage current and EMI class A (0.5mA max / ACIN 240V) T:Vertical terminal block
- J1 :VH (J.S.T.) connector type
- R:with Remote ON/OFF
- N :with Cover (Only 24V UL508 is acquired) N1 :with DIN rail and Cover
- V:Output voltage setting potentiometer external-

Cover is optional

*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.

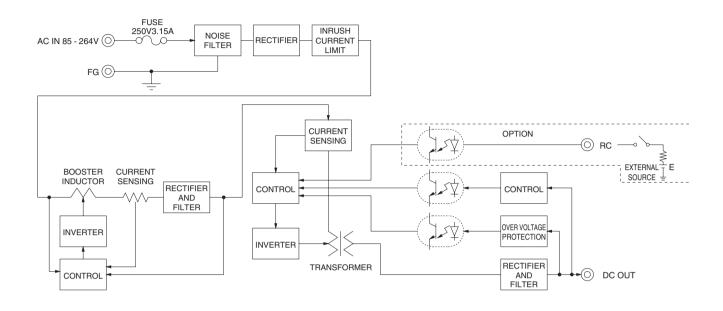
| MODEL | PBA75F-3R3 | PBA75F-5 | PBA75F-9 | PBA75F-12 | PBA75F-15 | PBA75F-24 | PBA75F-36 | PBA75F-48 |
|-----------------------|------------|----------|----------|-----------|-----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 49.5 | 75 | 75.6 | 75.6 | 75 | 76.8 | 75.6 | 76.8 |
| DC OUTPUT | 3.3V 15A | 5V 15A | 9V 8.4A | 12V 6.3A | 15V 5A | 24V 3.2A | 36V 2.1A | 48V 1.6A |

| | MODEL | | PBA75F-3R3 | PBA75F-5 | PBA75F-9 | PBA75F-12 | PBA75F-15 | PBA75F-24 | PBA75F-36 | PBA75F-48 | | |
|------------------------|---|-----------------------|--|---|--------------------|--------------------|-------------------|------------------|---------------------|---------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 370 | 0 (AC50 or DC70 | Please refer to | the instruction r | nanual 1.1 Input | voltage *4) | | | |
| | CURRENT[A] | ACIN 100V | 0.7typ | 1.0typ | | | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.4typ | 0.5typ | | | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 77typ | 81typ | 80typ | 81typ | 82typ | 83typ | 84typ | 84typ | | |
| INPUT | EFFICIENCY[%] | ACIN 200V | 78typ | 83typ | 82typ | 83typ | 84typ | 85typ | 86typ | 86typ | | |
| | POWER FACTOR(Io=100%) | ACIN 100V | 0.98typ | 0.99typ | | | | | | | | |
| | POWER PACTOR(IO=100 %) | ACIN 200V | | 0.93typ | | | | | | | | |
| | INRUSH CURRENT[A] | | 15typ (lo=100% | | | | | | | | | |
| | INNUSH CONNENT[A] | ACIN 200V | 30typ (Io=100%) (At cold start) 0.4/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN) | | | | | | | | | |
| | LEAKAGE CURRENT[1 | mA] | | CIN 100V/240V | | | | | | | | |
| | VOLTAGE[V] | | 3.3 | 5 | 9 | 12 | 15 | 24 | 36 | 48 | | |
| | CURRENT[A] | | 15 | 15 | 8.4 | 6.3 | 5 | 3.2 | 2.1 | 1.6 | | |
| | LINE REGULATION[m) | | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | | |
| | LOAD REGULATION[m | | 40max | 40max | 100max | 100max | 120max | 150max | 240max | 240max | | |
| | RIPPLE[mVp-p] | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max | | |
| | 1111 1 EE[1114 P-P] | -10 - 0℃ *1 | | 140max | 160max | 160max | 160max | 160max | 200max | 200max | | |
| | RIPPLE NOISE[mVp-p] | 0 to +50°C * 1 | 120max | 120max | 150max | 150max | 150max | 150max | 250max | 250max | | |
| OUTPUT | HIFFEE NOISE[IIIVP-P] | -10 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 300max | 300max | | |
| | TEMPERATURE REGULATION[mV] | 0 to +50°C | | 50max | 90max | 120max | 150max | 240max | 360max | 480max | | |
| | | -10 to +50℃ | 60max | 60max | 120max | 150max | 180max | 290max | 450max | 600max | | |
| | DRIFT[mV] | *2 | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | | |
| | | START-UP TIME[ms] 350 | | | | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100V, Io=100%) | | | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | | | 4.00 - 5.50 | 7.50 - 10.0 | 10.0 - 13.2 | 13.2 - 18.0 | 19.2 - 27.0 | 28.8 - 39.6 | 39.0 - 53.0 | | |
| | OUTPUT VOLTAGE SET | | 3.30 - 3.40 | 5.00 - 5.15 | 9.00 - 9.36 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 36.00 - 37.44 | 48.00 - 49.92 | | |
| DDOTECTION | OVERCURRENT PROT | | | | ent and recovers | | 1 | | T | | | |
| PROTECTION CIRCUIT AND | OVERVOLTAGE PROTEC | | 4.00 - 5.25 | 5.75 - 7.00 | 11.5 - 14.0 | 15.0 - 18.0 | 20.0 - 25.0 | 30.0 - 37.0 | 43.0 - 50.0 | 58.0 - 65.0 | | |
| OTHERS | OPERATING INDICATION | ON | LED (Green) | | | | | | | | | |
| | REMOTE ON/OFF | | | ired external pov | | | /A: D = | . \ | | | | |
| | INPUT-OUTPUT · RC | *3 | | | | 500V 50MΩmin | | | | | | |
| ISOLATION | INPUT-FG | | | | | 500V 50MΩmin | · | | | | | |
| | OUTPUT · RC-FG OPERATING TEMP., HUMID.AND | *3 | | | | 00V 50MΩmin (| | | | | | |
| | STORAGE TEMP.,HUMID.AND | | | | | (Non condensing | | Juleet) max | | | | |
| ENVIRONMENT | VIBRATION | ALIIIUDE | | 20 to +75°C, 20 - 90%RH (Non condensing) 9.000m (30.000feet) max 0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | | |
| | IMPACT | | | | each X, Y and Z | | nig Λ, τ alid ∠ a | SIAIS | | | | |
| | AGENCY APPROVALS (At only | ν ΔC innut) | | | | | e with DENLAN | | | | | |
| SAFETY AND NOISE | CONDUCTED NOISE | y AC IIIput/ | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | | | |
| REGULATIONS | HARMONIC ATTENUAT | TOR | Compiles with IEC61000-3-2 *6 | | | | | | | | | |
| | CASE SIZE/WEIGHT | | | | | hout terminal blo | rck) (MXHXD) | 350g max (wit | h cover · 400a m | ax) | | |
| OTHERS | COOLING METHOD | | Convection | 111 [1.20 \ 0.23 X | J.J. IIIGIES] (WIL | nout terrinial bio | ON (VVAIIAD) / | ooog max (wit | ii covei . 400g iii | un, | | |
| | SSSEING WETTIOD | | CONVECTION | | | | | | | | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C. Applicable when Remote ON/OFF(optional) is added. RC is insulated with input, output and
- *4 Derating is required.

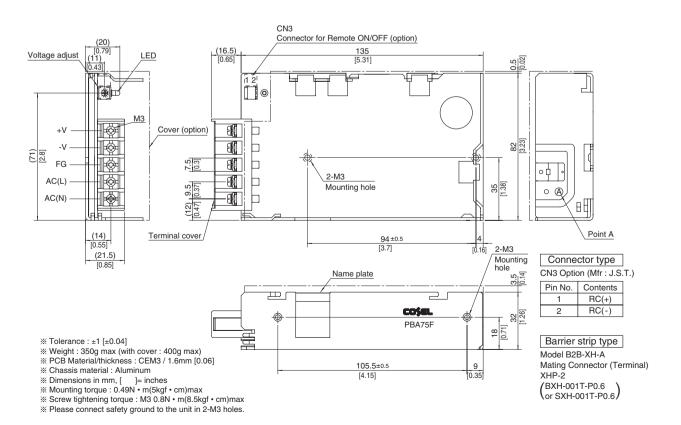
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover A sound may occur from power supply at peak loading.
- PBA/PBW-10





External view

* External size of option T,J1,R,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



PBA100F

100

c**¶**°us ≜ C€ **RoHS** eco

Example recommended EMI/EMC filter NAC-06-472



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.

- ①Series name ②Single output (3) Output wattage
- 4 Universal input
- ⑤Output voltage
- Optional *5
 C:with Coating
 - G:Low leakage current (0.15mA max / ACIN 240V)
 - E:Low leakage current and EMI class A (0.5mA max / ACIN 240V) T:Vertical terminal block

 - J1 :VH (J.S.T.) connector type (Only -12,-15,-24,-36,-48)
- R:with Remote ON/OFF N :with Cover
- (Only 24V UL508 is acquired) N1 :with DIN rail and Cover
- V:Output voltage setting potentiometer external-

Cover is optional

*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.

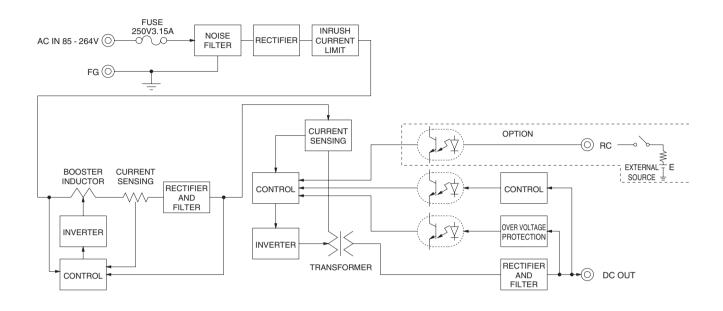
| MODEL | PBA100F-3R3 | PBA100F-5 | PBA100F-9 | PBA100F-12 | PBA100F-15 | PBA100F-24 | PBA100F-36 | PBA100F-48 |
|-----------------------|-------------|-----------|-----------|------------|------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 66 | 100 | 94.5 | 102 | 105 | 108 | 100.8 | 100.8 |
| DC OUTPUT | 3.3V 20A | 5V 20A | 9V 10.5A | 12V 8.5A | 15V 7A | 24V 4.5A | 36V 2.8A | 48V 2.1A |

| | MODEL | | PBA100F-3R3 | PBA100F-5 | PBA100F-9 | PBA100F-12 | PBA100F-15 | PBA100F-24 | PBA100F-36 | PBA100F-48 | |
|-------------|----------------------------|---------------|---|--------------------|-------------------|-------------------|-------------------|------------------|------------------|---------------|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 370 | (AC50 or DC70 | Please refer to | the instruction r | nanual 1.1 Input | voltage *4) | | |
| | OUDDENTIAL | ACIN 100V | 0.9typ | 1.3typ | | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.5typ | 0.7typ | | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | | |
| | EEEIOJENOVIO/1 | ACIN 100V | 77typ | 82typ | 80typ | 81typ | 83typ | 84typ | 84typ | 84typ | |
| INPUT | EFFICIENCY[%] | ACIN 200V | 79typ | 84typ | 82typ | 83typ | 86typ | 86typ | 86typ | 86typ | |
| | | ACIN 100V | 0.98typ | 0.99typ | | | | | | | |
| | POWER FACTOR(Io=100%) | ACIN 200V | 0.87typ | 0.93typ | | | | | | | |
| | | ACIN 100V | 20typ (lo=100% | (At cold start) | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 40typ (lo=100%) (At cold start) | | | | | | | | |
| | LEAKAGE CURRENT[i | nA] | 0.4/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN) | | | | | | | | |
| | VOLTAGE[V] | | 3.3 | 5 | 9 | 12 | 15 | 24 | 36 | 48 | |
| | CURRENT[A] | | 20 | 20 | 10.5 | 8.5 | 7 | 4.5 | 2.8 | 2.1 | |
| | LINE REGULATION[m\ | /1 | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | |
| | LOAD REGULATION[m | ıV] | 40max | 40max | 100max | 100max | 120max | 150max | 240max | 240max | |
| | DIDDLE COVERNIA | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max | |
| | RIPPLE[mVp-p] | -10 - 0℃ *1 | 140max | 140max | 160max | 160max | 160max | 160max | 200max | 200max | |
| | DIDDLE MOIOEL-M1 | 0 to +50°C *1 | 120max | 120max | 150max | 150max | 150max | 150max | 250max | 250max | |
| OUTPUT | RIPPLE NOISE[mVp-p] | -10 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 300max | 300max | |
| | TEMPERATURE REQUIRATIONS | 0 to +50℃ | 50max | 50max | 90max | 120max | 150max | 240max | 360max | 480max | |
| | TEMPERATURE REGULATION[mV] | -10 to +50℃ | 60max | 60max | 120max | 150max | 180max | 290max | 450max | 600max | |
| | DRIFT[mV] | *2 | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | |
| | START-UP TIME[ms] | | 350typ(ACIN 10 | 00V, lo=100%) | | | | | • | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | 0V, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | T RANGE[V] | 2.85 - 3.63 | 4.00 - 5.50 | 7.50 - 10.0 | 10.0 - 13.2 | 13.2 - 18.0 | 19.2 - 27.0 | 28.8 - 39.6 | 39.0 - 53.0 | |
| | OUTPUT VOLTAGE SET | TING[V] | 3.20 - 3.40 | 5.00 - 5.15 | 9.00 - 9.36 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 36.00 - 37.44 | 48.00 - 49.92 | |
| | OVERCURRENT PROT | ECTION | Works over 105 | % of rated curre | ent and recovers | automatically | | | | | |
| PROTECTION | OVERVOLTAGE PROTEC | TION[V] | 4.00 - 5.25 | 5.75 - 7.00 | 11.5 - 14.0 | 15.0 - 18.0 | 20.0 - 25.0 | 30.0 - 37.0 | 43.0 - 50.0 | 58.0 - 65.0 | |
| CIRCUIT AND | OPERATING INDICATION | ON | LED (Green) | | | | | | | | |
| OTHERS | REMOTE SENSING | | Optional (Only | -3R3, -5 Option | -K) | | | | | | |
| | REMOTE ON/OFF | | Optional (Requ | ired external pov | ver source) | | | | | | |
| | INPUT-OUTPUT · RC | *3 | AC3,000V 1mir | ute, Cutoff curre | ent = 10mA, DC | 500V 50MΩmin | (At Room Tempe | erature) | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1mir | ute, Cutoff curre | ent = 10mA, DC | 500V 50MΩmin | (At Room Tempe | erature) | | | |
| | OUTPUT · RC-FG | *3 | AC500V 1minu | te, Cutoff curren | t = 100mA, DC5 | 00V 50MΩmin (| At Room Tempe | rature) | | | |
| | OPERATING TEMP.,HUMID.AND | ALTITUDE | -10 to +71°C (F | lefer to "Derating | ı"), 20 - 90%RH | (Non condensing | g) 3,000m (10,00 | Ofeet) max | | | |
| ENVIRONMENT | STORAGE TEMP., HUMID. AND | ALTITUDE | -20 to +75°C, 2 | 0 - 90%RH (Nor | condensing) 9, | 000m (30,000fee | et) max | | | | |
| ENVIRONMENT | VIBRATION | | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | | |
| | IMPACT | | 196.1m/s ² (200 | i), 11ms, once e | ach X, Y and Z | axis | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | AC input) | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN | | | | | | | | |
| NOISE | CONDUCTED NOISE | | Complies with I | FCC Part15 clas | sB, VCCI-B, CIS | PR22-B, EN550 | 11-B, EN55022- | В | | | |
| REGULATIONS | HARMONIC ATTENUAT | ΓOR | Complies with IEC61000-3-2 *6 | | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | 32×93×147m | m [1.26 × 3.66 × | 5.79 inches] (wit | nout terminal blo | ck) (W×H×D) | / 440g max (wit | h cover : 500g m | ax) | |
| OTHERS | COOLING METHOD | | Convection | | | | | | | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C. Applicable when Remote ON/OFF(optional) is added. RC is insulated with input, output and
- *4 Derating is required.

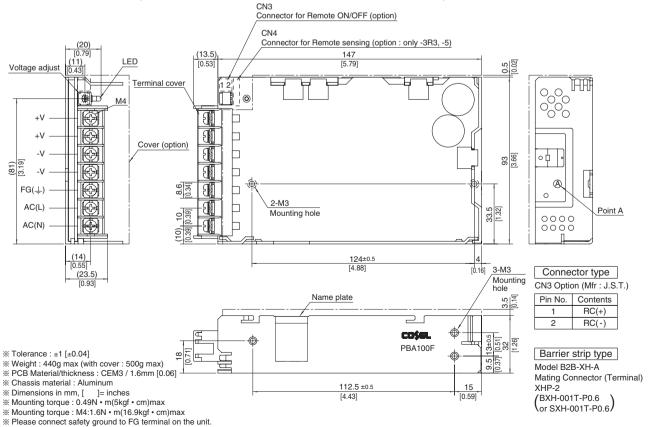
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover A sound may occur from power supply at peak loading.





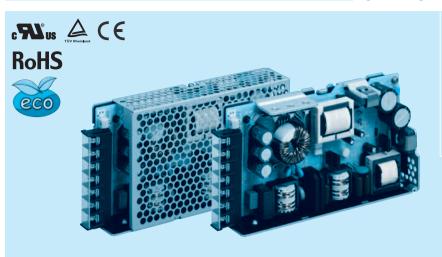
External view

* External size of option T,J1,R,N1,V and K is different from standard model and refer to 7 Option of instruction manual for details.



PBA150F

150



Example recommended EMI/EMC filter NAC-06-472



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.

- ①Series name ②Single output
- (3) Output wattage
- 4 Universal input
- ⑤Output voltage
- Optional *5
 C:with Coating
 - G:Low leakage current (0.15mA max / ACIN 240V)
 - E:Low leakage current and EMI class A (0.5mA max / ACIN 240V) T:Vertical terminal block

 - J1 :VH (J.S.T.) connector type (Only -12,-15,-24,-36,-48)
 - R:with Remote ON/OFF
- N :with Cover
- (Only 24V UL508 is acquired) N1 :with DIN rail and Cover
- V:Output voltage setting potentiometer external-

Cover is optional

*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.

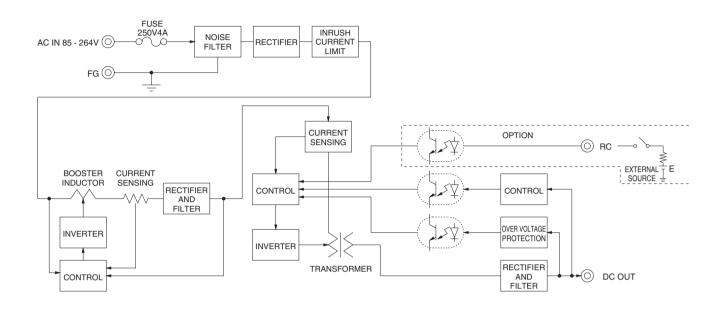
| MODEL | PBA150F-3R3 | PBA150F-5 | PBA150F-9 | PBA150F-12 | PBA150F-15 | PBA150F-24 | PBA150F-36 | PBA150F-48 |
|-----------------------|-------------|-----------|-----------|------------|------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 99 | 150 | 150.3 | 156 | 150 | 156 | 154.8 | 158.4 |
| DC OUTPUT | 3.3V 30A | 5V 30A | 9V 16.7A | 12V 13A | 15V 10A | 24V 6.5A | 36V 4.3A | 48V 3.3A |

| | MODEL | | PBA150F-3R3 | PBA150F-5 | PBA150F-9 | PBA150F-12 | PBA150F-15 | PBA150F-24 | PBA150F-36 | PBA150F-48 | |
|-------------|------------------------------|-----------------------|---|-------------------|-------------------|-------------------|-------------------|------------------|------------------|---------------|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 370 | 0 (AC50 or DC7 | Please refer to | the instruction r | nanual 1.1 Input | voltage *4) | | |
| | CURRENT[A] | ACIN 100V | 1.3typ | 2.0typ | | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.7typ | 1.0typ | | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | | |
| | EEEICIENCVI9/1 | ACIN 100V | 80typ | 83typ | 82typ | 83typ | 84typ | 85typ | 85typ | 85typ | |
| INPUT | EFFICIENCY[%] | ACIN 200V | 82typ | 86typ | 85typ | 86typ | 87typ | 88typ | 88typ | 88typ | |
| | POWER FACTOR(Io=100%) | ACIN 100V | 0.98typ | 0.99typ | | | | | | | |
| | POWER FACTOR(IO=100%) | ACIN 200V | 0.87typ | 0.93typ | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 100V | 20typ (lo=100% | (At cold start) | | | | | | | |
| | INNUSTI CURRENT[A] | ACIN 200V | 40typ (lo=100% | (At cold start) | | | | | | | |
| | LEAKAGE CURRENT[r | nA] | 0.4/0.75max (A | CIN 100V/240V | 60Hz, lo=100%, | According to IE | C60950-1,DENA | N) | | | |
| | VOLTAGE[V] | | 3.3 | 5 | 9 | 12 | 15 | 24 | 36 | 48 | |
| | CURRENT[A] | | 30 | 30 | 16.7 | 13 | 10 | 6.5 | 4.3 | 3.3 | |
| | LINE REGULATION[m\ | /] | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | |
| | LOAD REGULATION[m | ıV] | 40max | 40max | 100max | 100max | 120max | 150max | 240max | 240max | |
| | RIPPLE[mVp-p] | 0 to +50°C * 1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max | |
| | nirrectinivp-bl | -10 - 0℃ *1 | 140max | 140max | 160max | 160max | 160max | 160max | 200max | 200max | |
| | RIPPLE NOISE[mVp-p] | 0 to +50°C * 1 | 120max | 120max | 150max | 150max | 150max | 150max | 250max | 250max | |
| OUTPUT | HIPPLE NOISE[IIIVP-P] | -10 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 300max | 300max | |
| | TEMPERATURE REGULATION[mV] | 0 to +50℃ | 50max | 50max | 90max | 120max | 150max | 240max | 360max | 480max | |
| | TEMPERATURE REGULATION[IIIV] | -10 to +50℃ | 60max | 60max | 120max | 150max | 180max | 290max | 450max | 600max | |
| | DRIFT[mV] | *2 | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | |
| | START-UP TIME[ms] | | 350typ(ACIN 10 | | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | | 2.85 - 3.63 | 4.00 - 5.50 | 7.50 - 10.0 | 10.0 - 13.2 | 13.2 - 18.0 | 19.2 - 27.0 | 28.8 - 39.6 | 39.0 - 53.0 | |
| | OUTPUT VOLTAGE SET | | 3.30 - 3.40 | 5.00 - 5.15 | 9.00 - 9.36 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 36.00 - 37.44 | 48.00 - 49.92 | |
| | OVERCURRENT PROT | | | | | | | | | | |
| PROTECTION | OVERVOLTAGE PROTEC | | 4.00 - 5.25 | 5.75 - 7.00 | 11.5 - 14.0 | 15.0 - 18.0 | 20.0 - 25.0 | 30.0 - 37.0 | 43.0 - 50.0 | 58.0 - 65.0 | |
| | OPERATING INDICATION | NC | LED (Green) | | | | | | | | |
| OTHERS | REMOTE SENSING | | | -3R3, -5 Option | | | | | | | |
| | REMOTE ON/OFF | | | ired external pov | | | | | | | |
| | INPUT-OUTPUT · RC | *3 | | | | 500V 50MΩmin | · | | | | |
| ISOLATION | INPUT-FG | | | | | 500V 50MΩmin | | | | | |
| | OUTPUT · RC-FG | *3 | | | | 00V 50MΩmin (| | | | | |
| | OPERATING TEMP.,HUMID.AND | | | | | (Non condensing | | 00feet) max | | | |
| ENVIRONMENT | STORAGE TEMP., HUMID. AND | ALTITUDE | | | | 000m (30,000fee | | | | | |
| | VIBRATION | | 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | | |
| | IMPACT | | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | | | | |
| SALLITAND | AGENCY APPROVALS (At only | / AC input) | | | | | | | | | |
| NOISE | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | | |
| REGULATIONS | HARMONIC ATTENUAT | , | | | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | m [1.34 × 3.66 × | 6.61 inches] (wit | hout terminal blo | ock) (W×H×D) | / 560g max (wit | h cover : 630g m | ax) | |
| | COOLING METHOD | | Convection | | | | | | | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C. Applicable when Remote ON/OFF(optional) is added. RC is insulated with input, output and
- *4 Derating is required.

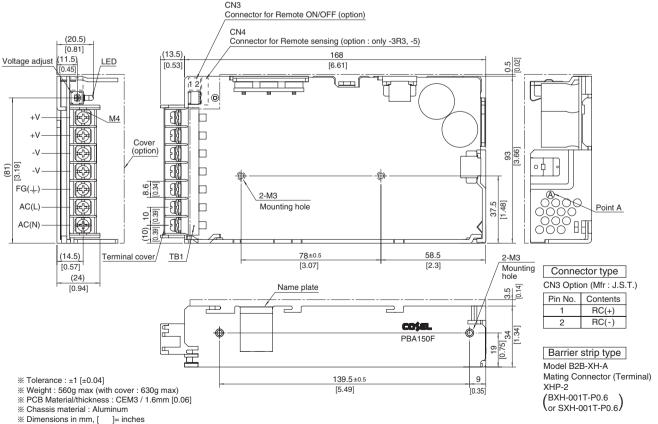
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover A sound may occur from power supply at peak loading.





External view

External size of option T,J1,R,N1,V and K is different from standard model and refer to 7 Option of instruction manual for details.



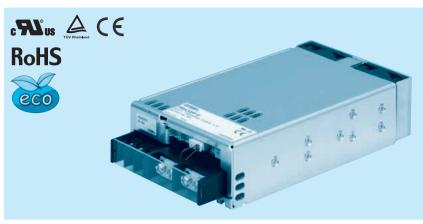
June 25, 2020

PBA/PBW-15

Mounting torque: M4:1.6N • m(16.9kgf • cm)max
 Keep drawing current per pin below 20A for TB1.
 Please connect safety ground to FG terminal on the unit.

PBA300F

300



Example recommended EMI/EMC filter NAC-06-472

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.

①Series name ②Single output

(3) Output wattage 4 Universal input

⑤Output voltage

Optional *5
 C:with Coating

G:Low leakage current
U:Operation stop voltage

is set at a lower value F3:Reverse air exhaust

type F4:Low speed fan

N1 :with DIN rail

Refer to instruction manual

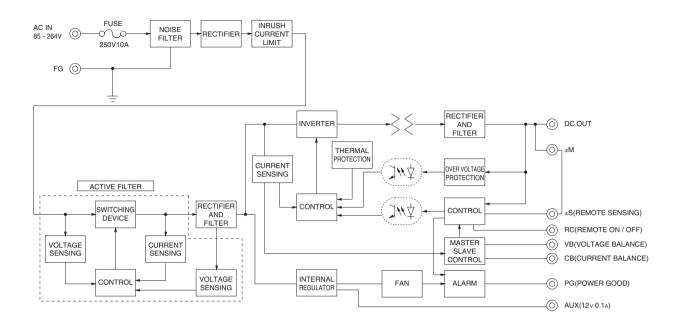
*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

| MODEL | | PBA300F-3R3 | PBA300F-5 | PBA300F-7R5 | PBA300F-12 | PBA300F-15 | PBA300F-24 | PBA300F-36 | PBA300F-48 |
|-----------------------|--------------|-------------|-----------|-------------|------------|------------|---------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | | 198 | 300 | 300 | 324 | 330 | 336 | 324 | 336 |
| ACIN 100V | | 3.3V 60A | 5V 60A | 7.5V 40A | 12V 27A | 15V 22A | 24V 14A | 36V 9A | 48V 7A |
| DC OUTPUT | ACIN 200V *3 | 3.3V 60A | 5V 60A | 7.5V 40A | 12V 27A | 15V 22A | 24V 14(16.5)A | 36V 9A | 48V 7A |

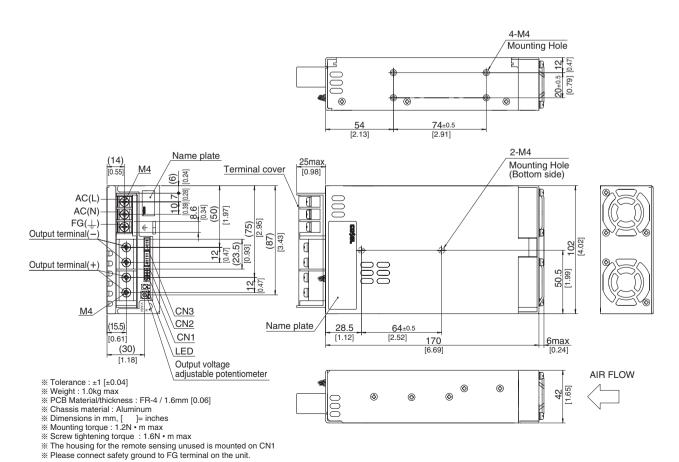
| | MODEL | | PBA300F-3R3 | PBA300F-5 | PBA300F-7R5 | PBA300F-12 | PBA300F-15 | PBA300F-24 | PBA300F-36 | PBA300F-48 |
|----------------------|---|---------------|--|------------------|-------------------|--------------------|-------------------|--------------------|---------------------|--------------------|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 35 | 0 (AC50 or DC70 | Please refer to | the instruction r | nanual 7. option | *4) | |
| | CURRENT[A] | ACIN 100V | 3typ | 4.1typ | | | | | | |
| | CONNENT[A] | ACIN 200V | 1.6typ | 2typ | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 68typ | 74typ | 76typ | 78typ | 78typ | 79typ | 81typ | 79typ |
| INPUT | EFFICIENCY[%] | ACIN 200V | 71typ | 77typ | 79typ | 81typ | 81typ | 82typ | 84typ | 82typ |
| | POWER FACTOR | ACIN 100V | 0.98typ (lo=100 |)%) | | | | | | |
| | POWER FACTOR | ACIN 200V | 0.95typ (lo=100 |)%) | | | | | | |
| | INRUSH CURRENT[A] | ACIN 100V | | | rush current /Se | | | | | |
| | INNUSH CONNENT[A] | ACIN 200V | | | rush current /Se | | | | start) | |
| | LEAKAGE CURRENT[1 | nA] | 0.45/0.75max (| ACIN 100V/240 | √ 60Hz, lo=100% | According to I | EC60950-1,DEN | AN) | | |
| | VOLTAGE[V] | | 3.3 | 5 | 7.5 | 12 | 15 | 24 | 36 | 48 |
| | CURRENT[A] | ACIN 100V | 60 | 60 | 40 | 27 | 22 | 14 | 9 | 7 |
| | CURRENT[A] | ACIN 200V *3 | 60 | 60 | 40 | 27 | 22 | 14(16.5) | 9 | 7 |
| | LINE REGULATION[m\ | /] | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max |
| | LOAD REGULATION[m | ıV] | 40max | 40max | 60max | 100max | 120max | 150max | 150max | 300max |
| | DIDDI Elm\/m m1 | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max |
| | RIPPLE[mVp-p] | -20 - 0°C *1 | 140max | 140max | 160max | 160max | 160max | 160max | 160max | 400max |
| OUTPUT | RIPPLE NOISE[mVp-p] | 0 to +50°C *1 | 120max | 120max | 150max | 150max | 150max | 150max | 200max | 200max |
| OUTPUT | RIPPLE NOISE[IIIVP-P] | -20 - 0°C *1 | 160max | 160max | 180max | 180max | 180max | 180max | 240max | 500max |
| | TEMPERATURE REGULATION[mV] | 0 to +50℃ | 40max | 50max | 75max | 120max | 150max | 240max | 360max | 480max |
| | TEMPERATURE REGULATION[IIIV] | -20 to +50℃ | 60max | 75max | 120max | 180max | 180max | 290max | 440max | 600max |
| | DRIFT[mV] | *2 | 12max | 20max | 30max | 48max | 60max | 96max | 144max | 192max |
| | START-UP TIME[ms] | | 300typ(ACIN 100 | //200V, lo=100%) | *Start-up time is | 500ms typ for less | than 1minute of | applying input aga | in from turning off | the input voltage. |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | | 2.64 - 3.96 | 3.96 - 6.00 | 5.25 - 8.25 | 8.25 - 13.20 | 10.50 - 16.50 | 16.50 - 26.40 | 25.20 - 39.60 | 38.40 - 56.00 |
| | OUTPUT VOLTAGE SET | TING[V] | 3.30 - 3.40 | 5.00 - 5.15 | 7.50 - 7.80 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 36.00 - 37.44 | 48.00 - 49.92 |
| | OVERCURRENT PROT | | | | ent or 101% of p | | | | | |
| PROTECTION | OVERVOLTAGE PROTEC | | 4.3 - 6.3 | 6.5 - 8.0 | 9.0 - 11.6 | 14.4 - 18.6 | 18.0 - 23.3 | 28.8 - 37.2 | 43.2 - 54.0 | 57.6 - 80.0 |
| CIRCUIT AND | OPERATING INDICATION | ON | LED (Green) | | | | | | | |
| OTHERS | REMOTE SENSING | | Provided | | | | | | | |
| | REMOTE ON/OFF | | Provided | | | | | | | |
| | INPUT-OUTPUT · RC | | | | ent = 10mA, DC | | | | | |
| ISOLATION | INPUT-FG | | | | ent = 10mA, DC | | | | | |
| | OUTPUT · RC · AUX-F | G | | | t = 100mA, DC5 | | | | | |
| | OUTPUT-RC · AUX | | | | t = 100mA, DC5 | | | | | |
| | OPERATING TEMP.,HUMID.AND | | | | g"), 20 - 90%RH | | | Ofeet) max | | |
| ENVIRONMENT | STORAGE TEMP., HUMID. AND | ALTITUDE | -20 to +75℃, 20 - 90%RH (Non condensing) 9,000m (30,000feet) max | | | | | | | |
| | VIBRATION | | 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis 196.1m/s² (20G), 11ms, once each X, Y and Z axis | | | | | | | |
| | IMPACT | | | | | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | AC input) | | | | | | | | |
| NOISE REGULATIONS | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B Complies with IEC61000-3-2 *6 | | | | | | | |
| NEGULATIONS | HARMONIC ATTENUAT | TOR | | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | | x 6.69 inches] (w | ithout terminal b | lock and screw) | (W×H×D) /1.0 | kg max | |
| | OOLING METHOD Forced cooling (internal fan) | | | | | | | | | |

- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at $25\,^{\circ}\!\text{C}$. *3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual
- $\divideontimes 4$ Derating is required.Consult us for details.
- *5 Please contact us about safety approvals for the model with option.
- *6 Please contact us about class C.
- A sound may occur from power supply at pulse loading.



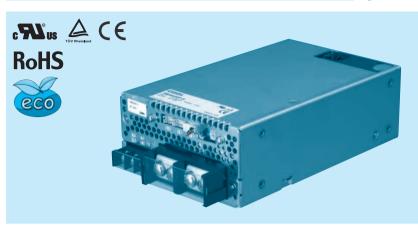


External view



PBA600F

600



Example recommended EMI/EMC filter NAC-16-472



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.

- ①Series name ②Single output
- (3) Output wattage
- 4 Universal input
- ⑤Output voltage
- Optional *6
 C:with Coating
- G:Low leakage current
 U:Operation stop voltage is set at a lower value
- F1:With Long-Life fan
- F3:Reverse air exhaust
- type F4:Low speed fan

Refer to 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.

| MODEL | | PBA600F-3R3 | PBA600F-5 | PBA600F-7R5 | PBA600F-12 | PBA600F-15 | PBA600F-24 | PBA600F-36 | PBA600F-48 |
|----------------------------------|--|-------------|-----------|-------------|------------|------------|-------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | | 396 | 600 | 600 | 636 | 645 | 648 | 648 | 624 |
| DC OUTPUT ACIN 100V ACIN 200V *3 | | 3.3V 120A | 5V 120A | 7.5V 80A | 12V 53A | 15V 43A | 24V 27A | 36V 18A | 48V 13A |
| | | 3.3V 120A | 5V 120A | 7.5V 80A | 12V 53A | 15V 43A | 24V 27(31)A | 36V 18A | 48V 13A |

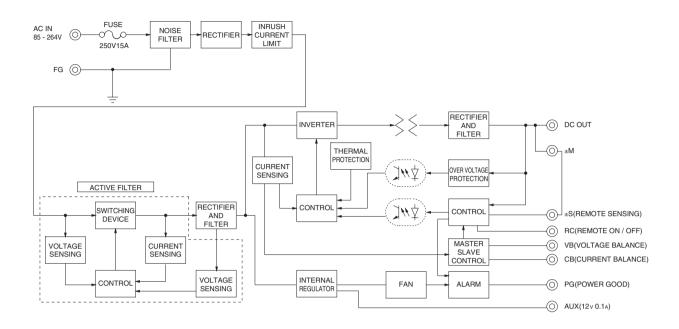
SPECIFICATIONS

| | MODEL | | PBA600F-3R3 | | | | | PBA600F-24 | PBA600F-36 | PBA600F-48 |
|----------------------|----------------------------------|---------------|---|----------------|--------------------|---------------------------------------|-------------------|--------------------------------|---------------------|--------------------|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 35 | 0 (AC50 or DC70 | Please refer to | the instruction n | nanual 7. option | * 5) | |
| | CURRENT[A] | ACIN 100V | 5.8typ | 8.2typ | | | | | | |
| | CORNENT[A] | ACIN 200V | | 4.1typ | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 70typ | 75typ | 76typ | 79typ | 79typ | 81typ | 82typ | 81typ |
| INPUT | EFFICIENCT[/6] | ACIN 200V | | 77typ | 79typ | 82typ | 82typ | 84typ | 84typ | 83typ |
| | POWER FACTOR | | 0.98typ (lo=100 | | | | | | | |
| | POWER FACTOR | | 0.95typ (lo=100 | | | | | | | |
| | INRUSH CURRENT[A] | | | | rush current /Se | | | | | |
| | INNOSTI CONNENT[A] | ACIN 200V | | | rush current /Se | | | | start) | |
| | LEAKAGE CURRENT[r | nA] | 0.45/0.75max (| ACIN 100V/240V | √ 60Hz, lo=100% | According to II | EC60950-1, DEN | NAN) | | |
| | VOLTAGE[V] | | 3.3 | 5 | 7.5 | 12 | 15 | 24 | 36 | 48 |
| | CURRENT[A] | ACIN 100V | 120 | 120 | 80 | 53 | 43 | 27 | 18 | 13 |
| | CONNENT[A] | ACIN 200V *3 | 120 | 120 | 80 | 53 | 43 | 27(31) | 18 | 13 |
| | LINE REGULATION[m\ | /] | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max |
| | LOAD REGULATION[m | V] | 40max | 40max | 60max | 100max | 120max | 150max | 150max | 300max |
| | RIPPLE[mVp-p] | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max |
| | nirrectimyp-bl | -20 - 0℃ *1 | 140max | 140max | 160max | 160max | 160max | 160max | 160max | 400max |
| ОИТРИТ | RIPPLE NOISE[mVp-p] | 0 to +50°C *1 | 120max | 120max | 150max | 150max | 150max | 150max | 200max | 200max |
| 0011-01 | MIFFEE NOISE[IIIVP-P] | -20 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 240max | 500max |
| | I TEMPERATURE REGILI ATTONIMVI E | 0 to +50℃ | 40max | 50max | 75max | 120max | 150max | 240max | 360max | 480max |
| | TEMPERATURE REGULATION[IIIV] | -20 to +50℃ | 60max | 75max | 120max | 180max | 180max | 290max | 440max | 600max |
| | DRIFT[mV] | *2 | 12max | 20max | 30max | 48max | 60max | 96max | 144max | 192max |
| | START-UP TIME[ms] | | | | *Start-up time is | 500ms typ for less | than 1minute of | applying input aga | in from turning off | the input voltage. |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | | 2.64 - 3.96 | 3.96 - 6.00 | 5.25 - 8.25 | 8.25 - 13.20 | 10.50 - 16.50 | 16.50 - 26.40 | 25.20 - 39.60 | 38.40 - 56.00 |
| | OUTPUT VOLTAGE SET | | 3.30 - 3.40 | 5.00 - 5.15 | 7.50 - 7.80 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 36.00 - 37.44 | 48.00 - 49.92 |
| | OVERCURRENT PROT | | | | ent or 101% of p | | | | | |
| PROTECTION | OVERVOLTAGE PROTECT | | Vo+0.66 - 1.32 | Vo+1.0 - 2.0 | Vo+1.5 - 3.0 | Vo+2.4 - 4.8 | Vo+3.0 - 6.0 | Vo+4.8 - 9.6 | Vo+7.2 - 14.4 | Vo+4.8 - 12.0 |
| CIRCUIT AND OTHERS | | ON | LED (Green) | | | | | | | |
| OTHERS | REMOTE SENSING | | Provided | | | | | | | |
| | REMOTE ON/OFF | | Provided | | | | , | | | |
| | INPUT-OUTPUT · RC | | | | ent = 10mA, DC5 | | | | | |
| ISOLATION | INPUT-FG | _ | | | ent = 10mA, DC5 | · · · · · · · · · · · · · · · · · · · | | | | |
| | OUTPUT · RC · AUX-F | G | | | t = 100mA, DC5 | | | | | |
| | OUTPUT-RC · AUX | | | | t = 100mA, DC5 | | | | | |
| | OPERATING TEMP.,HUMID.AND | | | | g"), 20 - 90%RH | | | 00feet) max | | |
| ENVIRONMENT | STORAGE TEMP.,HUMID.AND | ALTITUDE | | | n condensing) 9, | | | | | |
| | VIBRATION | | 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | |
| | IMPACT | | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | AC input) | | | | | | | | |
| NOISE REGULATIONS | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B Complies with IEC61000-3-2 *7 | | | | | | | |
| | HARMONIC ATTENUAT | UR | | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | | 7.48 inches] (with | nout terminal blo | ck and screw) (\ | $N \times H \times D$) /1.6kg | g max | |
| | COOLING METHOD | | Forced cooling | (internal fan) | | | | | | |

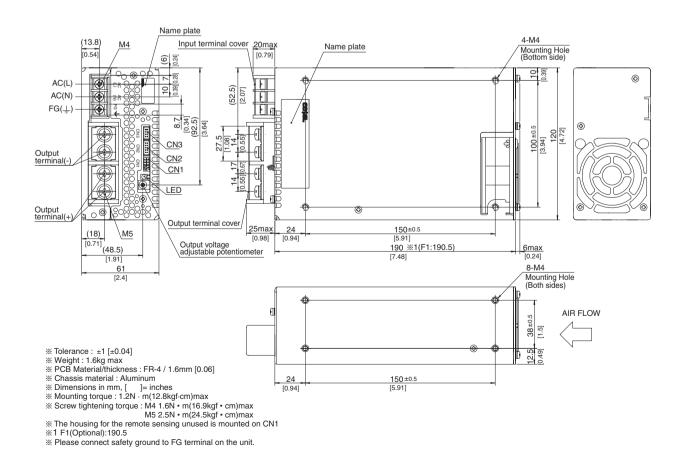
- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C. *3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual
- Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.
- *5 Derating is required. Consult us for details.
- *6 Please contact us about safety approvals for the model with option.
- *7 Please contact us about class C.
- A sound may occur from power supply at pulse loading.

PBA/PBW-18





External view



PBA1000F

1000



Example recommended EMI/EMC filter NAC-20-472

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.

- ①Series name ②Single output (3) Output wattage
- 4 Universal input
- ⑤Output voltage
- Optional *6
 C:with Coating

 - G:Low leakage current
 U:Operation stop voltage
- is set at a lower value
- F1:With Long-Life fan
- F3:Reverse air exhaust type
- F4:Low speed fan

Refer to 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.

| MODEL | | PBA1000F-3R3 | PBA1000F-5 | PBA1000F-7R5 | PBA1000F-12 | PBA1000F-15 | PBA1000F-24 | PBA1000F-36 | PBA1000F-48 |
|-----------------------|--------------|--------------|------------|--------------|-------------|-------------|-------------|-------------|-------------|
| MAX OUTPUT WATTAGE[W] | | 660 | 1000 | 1005 | 1056 | 1050 | 1056 | 1044 | 1056 |
| ACIN 100V | | 3.3V 200A | 5V 200A | 7.5V 134A | 12V 88A | 15V 70A | 24V 44A | 36V 29A | 48V 22A |
| DC OUTPUT | ACIN 200V *3 | 3.3V 200A | 5V 200A | 7.5V 134A | 12V 88A | 15V 70A | 24V 44(51)A | 36V 29A | 48V 22A |

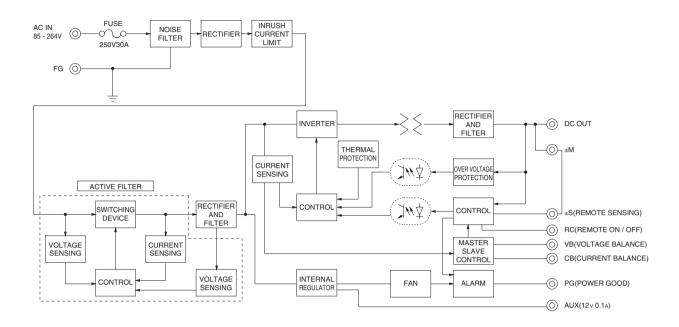
SPECIFICATIONS

| | MODEL | | PBA1000F-3R3 | PBA1000F-5 | PBA1000F-7R5 | PBA1000F-12 | PBA1000F-15 | PBA1000F-24 | PBA1000F-36 | PBA1000F-48 |
|-------------|-----------------------------|---------------|--|---------------------------|--------------------|--------------------|---|--------------------------------|---------------------|--------------------|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 35 | 0 (AC50 or DC70 | Please refer to | the instruction n | nanual 7. option | *5) | |
| | CUDDENTIAL | ACIN 100V | 9typ | 13typ | | | | | | |
| | CURRENT[A] | ACIN 200V | 5typ | 7typ | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | |
| | EEEIOIENOVIO/1 | ACIN 100V | 74typ | 79typ | 80typ | 82typ | 82typ | 84typ | 84typ | 84typ |
| INPUT | EFFICIENCY[%] | ACIN 200V | 76typ | 81typ | 83typ | 84typ | 84typ | 86typ | 86typ | 86typ |
| | | ACIN 100V | 0.98typ (lo=100 |)%) | | | , | , , , | , , , | 71 |
| | POWER FACTOR | ACIN 200V | 0.95typ (lo=100 |)%) | | | | | | |
| | | ACIN 100V | 20/40typ (lo=10 | 00%) (Primary ir | rush current /Se | condary inrush o | urrent) (More tha | an 10 sec. to re- | start) | |
| | INRUSH CURRENT[A] | ACIN 200V | 40/40typ (lo=10 | 00%) (Primary ir | rush current /Se | condary inrush o | current) (More that | an 10 sec. to re- | start) | |
| | LEAKAGE CURRENT[r | nA] | 0.5/1.0max (AC | IN 100V/240V (| 60Hz, lo=100%, / | According to IEC | 60950-1, DENAI | N) | | |
| | VOLTAGE[V] | | 3.3 | 5 | 7.5 | 12 | 15 | 24 | 36 | 48 |
| | | ACIN 100V | 200 | 200 | 134 | 88 | 70 | 44 | 29 | 22 |
| | CURRENT[A] | ACIN 200V *3 | 200 | 200 | 134 | 88 | 70 | 44(51) | 29 | 22 |
| | LINE REGULATION[m\ | /1 | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max |
| | LOAD REGULATION[m | | 40max | 40max | 60max | 100max | 120max | 150max | 150max | 300max |
| | - | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max |
| | RIPPLE[mVp-p] | -20 - 0°C *1 | 140max | 140max | 160max | 160max | 160max | 160max | 160max | 400max |
| | | 0 to +50℃ *1 | 120max | 120max | 150max | 150max | 150max | 150max | 200max | 200max |
| OUTPUT | RIPPLE NOISE[mVp-p] | -20 - 0℃ *1 | 160max | 160max | 180max | 180max | 180max | 180max | 240max | 500max |
| | TEMPEDATURE RECUI ATIONSVI | 0 to +50℃ | 40max | 50max | 75max | 120max | 150max | 240max | 360max | 480max |
| | TEMPERATURE REGULATION[mV] | -20 to +50℃ | 60max | 75max | 120max | 180max | 180max | 290max | 440max | 600max |
| | DRIFT[mV] | *2 | 12max | 20max | 30max | 48max | 60max | 96max | 144max | 192max |
| | START-UP TIME[ms] | | 400typ(ACIN 100 | /200V, lo=100%) | *Start-up time is | 500ms typ for less | than 1minute of a | applying input aga | in from turning off | the input voltage. |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | 0/200V, lo=100 | %) | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | T RANGE[V] | 2.64 - 3.96 | 3.96 - 6.00 | 5.25 - 8.25 | 8.25 - 13.20 | 10.50 - 16.50 | 16.50 - 26.40 | 25.20 - 39.60 | 38.40 - 56.00 |
| | OUTPUT VOLTAGE SET | TING[V] | 3.30 - 3.40 | 5.00 - 5.15 | 7.50 - 7.80 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 36.00 - 37.44 | 48.00 - 49.92 |
| | OVERCURRENT PROT | ECTION | Works over 105 | 5% of rated curr | ent or 101% of p | eak current and | recovers automa | atically | | |
| PROTECTION | OVERVOLTAGE PROTECT | ION[V] *4 | Vo+0.66 - 1.32 | Vo+1.0 - 2.0 | Vo+1.5 - 3.0 | Vo+2.4 - 4.8 | Vo+3.0 - 6.0 | Vo+4.8 - 9.6 | Vo+7.2 - 14.4 | Vo+4.8 - 12.0 |
| CIRCUIT AND | OPERATING INDICATION | NC | LED (Green) | | | | | | | |
| OTHERS | REMOTE SENSING | | Provided | | | | | | | |
| | REMOTE ON/OFF | | Provided | | | | | | | |
| | INPUT-OUTPUT · RC | | AC3,000V 1mir | ute, Cutoff curr | ent = 25mA, DC5 | 500V 50MΩmin | (At Room Tempe | erature) | | |
| ISOLATION | INPUT-FG | | AC2,000V 1mir | ute, Cutoff curr | ent = 25mA, DC5 | 500V 50MΩmin | (At Room Tempe | erature) | | |
| ISOLATION | OUTPUT · RC · AUX-F0 | G | AC500V 1minu | te, Cutoff currer | t = 100mA, DC5 | 00V 50MΩmin (| At Room Tempe | rature) | | |
| | OUTPUT-RC · AUX | | AC500V 1minu | te, Cutoff currer | t = 100mA, DC5 | 00V 50MΩmin (| At Room Tempe | rature) | | |
| | OPERATING TEMP., HUMID. AND | ALTITUDE | -20 to +71℃ (F | Refer to "Derating | g"), 20 - 90%RH | (Non condensing | g) 3,000m (10,00 | 00feet) max | | |
| ENVIRONMENT | STORAGE TEMP., HUMID. AND | ALTITUDE | -20 to +75°C, 2 | 0 - 90%RH (No | n condensing) 9, | 000m (30,000fee | et) max | | | |
| ENVIRONMENT | VIBRATION | | 10 - 55Hz, 19.6 | m/s ² (2G), 3m | nutes period, 60 | minutes each ald | ong X, Y and Z a | ixis | | |
| | IMPACT | | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | AC input) | | | | | | | | |
| NOISE | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | |
| REGULATIONS | HARMONIC ATTENUAT | | | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | | 9.45 inches] (with | nout terminal blo | ck and screw) (V | $V \times H \times D$) /2.2kg | g max | |
| UTILITO | COOLING METHOD | | Forced cooling | (internal fan) | | | | | | |

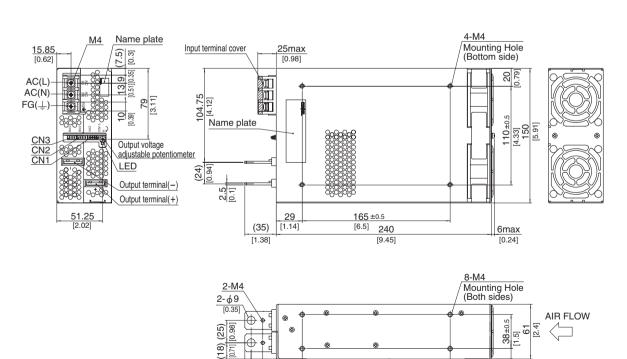
- *1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
 - Ripple and ripple noise is measured on measuring board with capacitor of 22 $\mu\,\text{F}$ within 150mm from the output terminal.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C. *3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.
- *4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.
- **★**5 Derating is required.Consult us for details. *6 Please contact us about safety approvals for the model with option.
- Please contact us about class C.
- A sound may occur from power supply at pulse loading.

PBA/PBW-20





External view



- X Tolerance : ±1 [±0.04]
- Weight: 2.2kg max

 PCB Material/thickness: FR-4 / 1.6mm [0.06]

 Chassis material: Aluminum

- Dimensions in mm, []= inches
 Mounting torque: 1.2N m(12.8kgf cm)max
- Screw tightening torque : 1.6N m(16.9kgf cm)max
 The housing for the remote sensing unused is mounted on CN1
 Please connect safety ground to FG terminal on the unit.

(25)8

7

[0.28] [0.51]

29

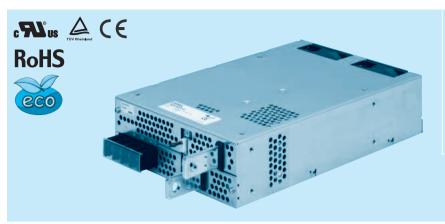
[1.14]

165±0.5

[6.5]

PBA1500F

A 1500 F -5



Example recommended EMI/EMC filter NAC-20-472

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.

- ①Series name ②Single output (3) Output wattage 4 Universal input
- ⑤Output voltage
- Optional *6
 C:with Coating
- G:Low leakage current
 U:Operation stop voltage
- is set at a lower value
- F1:With Long-Life fan
- F3:Reverse air exhaust type
- F4:Low speed fan

Refer to 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.

| MODEL | | PBA1500F-3R3 | PBA1500F-5 | PBA1500F-7R5 | PBA1500F-12 | PBA1500F-15 | PBA1500F-24 | PBA1500F-36 | PBA1500F-48 |
|-----------------------|--------------|--------------|------------|--------------|-------------|-------------|--------------|-------------|-------------|
| MAX OUTPUT WATTAGE[W] | | 990 | 1500 | 1500 | 1500 | 1500 | 1680 | 1692 | 1680 |
| DC OUTPUT | ACIN 100V | 3.3V 300A | 5V 300A | 7.5V 200A | 12V 125A | 15V 100A | 24V 65A | 36V 42A | 48V 32A |
| DC OUTPUT | ACIN 200V *3 | 3.3V 300A | 5V 300A | 7.5V 200A | 12V 125A | 15V 100A | 24V 70(105)A | 36V 47(70)A | 48V 35A |

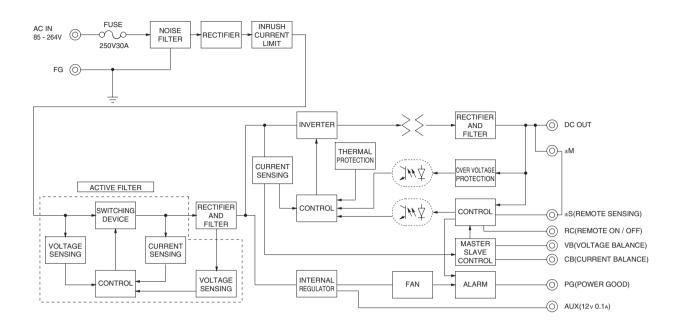
SPECIFICATIONS

| | MODEL | | PBA1500F-3R3 | PBA1500F-5 | PBA1500F-7R5 | PBA1500F-12 | PBA1500F-15 | PBA1500F-24 | PBA1500F-36 | PBA1500F-48 | | |
|-------------|-----------------------------|---------------|---|-----------------------------|------------------|-----------------------|---------------------|--------------------------------|---------------|---------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ | or DC120 - 37 | 0 (AC50 or DC70 | Please refer to | the instruction n | nanual 7. option | * 5) | | | |
| | CURRENT[A] | ACIN 100V | 15typ | 19typ | | | | | | | | |
| | CORRENT[A] | ACIN 200V | 8typ | 10typ | | | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | | | |
| | EEEIOIENOVIO/1 | ACIN 100V | 72typ | 77typ | 81typ | 81typ | 83typ | 84typ | 84typ | 84typ | | |
| INPUT | EFFICIENCY[%] | ACIN 200V | 75typ | 81typ | 83typ | 84typ | 86typ | 87typ | 87typ | 87typ | | |
| | | ACIN 100V | 0.98typ (Io=100 |)%) | | | | | | | | |
| | POWER FACTOR | ACIN 200V | 0.95typ (Io=100 |)%) | | | | | | | | |
| | INDUCUI QUIDDENITIAL | ACIN 100V | 20/40typ (lo=10 | 00%) (Primary in | rush current /Se | condary inrush c | current) (More that | an 10 sec. to re- | start) | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 40/40typ (lo=10 | 00%) (Primary in | rush current /Se | condary inrush c | urrent) (More that | an 10 sec. to re- | start) | | | |
| | LEAKAGE CURRENT[r | nA] | 0.9/1.5max (AC | IN 100V/240V 6 | 60Hz, lo=100%, / | According to IEC | 60950-1, DENA | N) | | | | |
| | VOLTAGE[V] | | 3.3 | 5 | 7.5 | 12 | 15 | 24 | 36 | 48 | | |
| | | ACIN 100V | 300 | 300 | 200 | 125 | 100 | 65 | 42 | 32 | | |
| | CURRENT[A] | ACIN 200V *3 | 300 | 300 | 200 | 125 | 100 | 70(105) | 47(70) | 35 | | |
| | LINE REGULATION[m\ | /1 | 20max | 20max | 36max | 48max | 60max | 96max | 144max | 192max | | |
| İ | LOAD REGULATION[m | - | 40max | 40max | 60max | 100max | 120max | 150max | 150max | 300max | | |
| | _ | 0 to +50°C *1 | 80max | 80max | 120max | 120max | 120max | 120max | 150max | 150max | | |
| | RIPPLE[mVp-p] | -20 - 0℃ *1 | 140max | 140max | 160max | 160max | 160max | 160max | 160max | 400max | | |
| | | 0 to +50°C *1 | 120max | 120max | 150max | 150max | 150max | 150max | 200max | 200max | | |
| OUTPUT | RIPPLE NOISE[mVp-p] | -20 - 0°C *1 | 160max | 160max | 180max | 180max | 180max | 180max | 240max | 500max | | |
| | TEMPERATURE REGULATION(mV) | 0 to +50℃ | 40max | 50max | 75max | 120max | 150max | 240max | 360max | 480max | | |
| | | -20 to +50℃ | 60max | 75max | 120max | 180max | 180max | 290max | 440max | 600max | | |
| | DRIFT[mV] | *2 | 12max | 20max | 30max | 48max | 60max | 96max | 144max | 192max | | |
| | START-UP TIME[ms] | | | 00/200V, lo=100 | %) | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 10 | yp (ACIN 100/200V, Io=100%) | | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | T RANGE[V] | 2.64 - 3.96 | 3.96 - 6.00 | 5.25 - 8.25 | 8.25 - 13.20 | 10.50 - 16.50 | 16.50 - 26.40 | 25.20 - 39.60 | 38.40 - 56.00 | | |
| | OUTPUT VOLTAGE SET | TING[V] | 3.30 - 3.40 | 5.00 - 5.15 | 7.50 - 7.80 | 12.00 - 12.48 | 15.00 - 15.60 | 24.00 - 24.96 | 36.00 - 37.44 | 48.00 - 49.92 | | |
| | OVERCURRENT PROT | ECTION | Works over 105 | % of rated curre | ent or 101% of p | eak current and | recovers automa | atically | | | | |
| PROTECTION | OVERVOLTAGE PROTECT | ION[V] *4 | Vo+0.66 - 1.32 | Vo+1.0 - 2.0 | Vo+1.5 - 3.0 | Vo+2.4 - 4.8 | Vo+3.0 - 6.0 | Vo+4.8 - 9.6 | Vo+7.2 - 14.4 | Vo+4.8 - 12.0 | | |
| CIRCUIT AND | OPERATING INDICATION | ON | LED (Green) | | | • | • | | | | | |
| OTHERS | REMOTE SENSING | | Provided | | | | | | | | | |
| | REMOTE ON/OFF | | Provided | | | | | | | | | |
| | INPUT-OUTPUT · RC | | AC3,000V 1mir | ute, Cutoff curre | ent = 25mA, DC5 | 500V 50MΩmin | (At Room Tempe | erature) | | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1mir | ute, Cutoff curre | ent = 25mA, DC5 | 500V 50MΩmin | (At Room Tempe | erature) | | | | |
| ISOLATION | OUTPUT · RC · AUX-F | G | AC500V 1minu | te, Cutoff curren | t = 100mA, DC5 | $00V~50M\Omega$ min (| At Room Tempe | rature) | | | | |
| | OUTPUT-RC · AUX | | AC500V 1minu | te, Cutoff curren | t = 100mA, DC5 | $00V~50M\Omega$ min (| At Room Tempe | rature) | | | | |
| | OPERATING TEMP., HUMID. AND | ALTITUDE | -20 to +71°C (F | Refer to "Derating | g"), 20 - 90%RH | (Non condensing | g) 3,000m (10,00 | Ofeet) max | | | | |
| ENVIRONMENT | STORAGE TEMP., HUMID. AND | ALTITUDE | -20 to +75°C, 2 | 0 - 90%RH (Noi | n condensing) 9, | 000m (30,000fee | et) max | | | | | |
| ENVIRONMENT | VIBRATION | | 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | | | |
| | IMPACT | | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | | | | | | | | | | | |
| NOISE | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B, additional EMI/EMC Filter required for meeting class B | | | | | | | | | |
| REGULATIONS | HARMONIC ATTENUAT | TOR | Complies with IEC61000-3-2 *7 178 x 61 x 268mm [7.01 x 2.4 x 10.55 inches] (without terminal block and screw) (W x H x D) /3.4kg max | | | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | | 10.55 inches] (w | thout terminal bl | ock and screw) | $(W \times H \times D) / 3.4k$ | g max | | | |
| O.I.E.IIO | COOLING METHOD | | Forced cooling | (internal fan) | | | | | | | | |

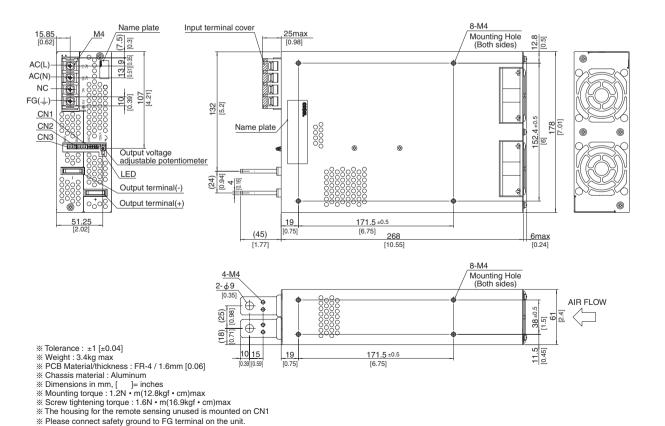
- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
 - Ripple and ripple noise is measured on measuring board with capacitor of 22 $\mu\,\text{F}$ within 150mm from the output terminal.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C. *3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.
- *4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.
- *5 Derating is required.Consult us for details.
- *6 Please contact us about safety approvals for the model with option.
- Please contact us about class C.
- A sound may occur from power supply at pulse loading.

PBA/PBW-22 June 25, 2020



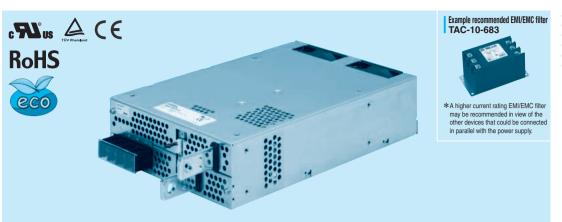


External view



A 1500





①Series name ②Single output

(3) Output wattage Triple input phase

⑤Output voltage

Optional *6
 C:with Coating

G:Low leakage current
U:Operation stop voltage

is set at a lower value

F1:With Long-Life fan

F3:Reverse air exhaust type

F4:Low speed fan

Refer to 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.

| MODEL | | PBA1500T-5 | PBA1500T-12 | PBA1500T-24 | PBA1500T-48 |
|-----------------------|--------------|------------|-------------|--------------|-------------|
| MAX OUTPUT WATTAGE[W] | | 1500 | 1500 | 1680 | 1680 |
| DC OUTPUT | ACIN 200V *3 | 5V 300A | 12V 125A | 24V 70(105)A | 48V 35A |

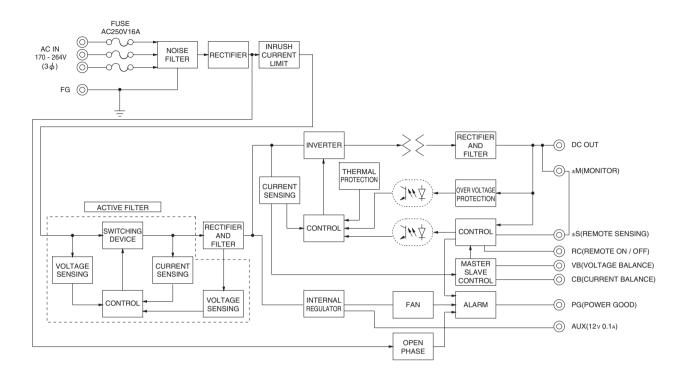
SPECIFICATIONS

| | MODEL | | PBA1500T-5 | PBA1500T-12 | PBA1500T-24 | PBA1500T-48 | | | | |
|---------------------|------------------------------|---------------|--|--|---------------------------------------|---|--|--|--|--|
| | VOLTAGE[V] | | AC170 - 264 3φ (AC100 Pleas | se refer to the instruction manua | Il 7. option 🖈5) | | | | | |
| | CURRENT[A] | ACIN 200V | 6typ | | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | |
| INPUT | EFFICIENCY[%] | ACIN 200V | 81typ | 84typ | 87typ | 87typ | | | | |
| | POWER FACTOR | ACIN 200V | 0.95typ (Io=100%) | | | | | | | |
| | INRUSH CURRENT[A] | ACIN 200V | 40/40typ (Io=100%) (Primary in | nrush current /Secondary inrush | current) (More than 10 sec. to re | e-start) | | | | |
| | LEAKAGE CURRENT[I | nA] | 1.5max (ACIN 240V 60Hz, Io= | 100%, According to IEC60950-1 | , DENAN) | | | | | |
| | VOLTAGE[V] | | 5 | 12 | 24 | 48 | | | | |
| | CURRENT[A] | ACIN 200V *3 | 300 | 125 | 70(105) | 35 | | | | |
| | LINE REGULATION[m\ | /] | 20max | 48max | 96max | 192max | | | | |
| | LOAD REGULATION[m | ıV] | 40max | 100max | 150max | 300max | | | | |
| | DIDDI E[m\/n n] | 0 to +50°C *1 | 80max | 120max | 120max | 150max | | | | |
| | RIPPLE[mVp-p] | -20 - 0°C *1 | 140max | 160max | 160max | 400max | | | | |
| | DIDDLE NOICEIMVa al | 0 to +50°C *1 | 120max | 150max | 150max | 200max | | | | |
| OUTPUT | RIPPLE NOISE[mVp-p] | -20 - 0℃ *1 | 160max | 180max | 180max | 500max | | | | |
| | TEMPERATURE REGULATION[mV] | 0 to +50℃ | 50max | 120max | 240max | 480max | | | | |
| | TEMPERATURE REGULATION[IIIV] | -20 to +50℃ | 75max | 180max | 290max | 600max | | | | |
| | DRIFT[mV] | *2 | 20max | 48max | 96max | 192max | | | | |
| | START-UP TIME[ms] | | 300typ(ACIN 200V, Io=100%) > | * Start-up time is 500ms typ for les | s than 1 minute of applying input aga | ain from turning off the input voltage. | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 200V, Io=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | T RANGE[V] | 3.96 - 6.00 | 8.25 - 13.20 | 16.50 - 26.40 | 38.40 - 56.00 | | | | |
| | OUTPUT VOLTAGE SET | TING[V] | 5.00 - 5.15 | 12.00 - 12.48 | 24.00 - 24.96 | 48.00 - 49.92 | | | | |
| | OVERCURRENT PROT | ECTION | Works over 105% of rated curr | ent or 101% of peak current an | d recovers automatically | | | | | |
| PROTECTION | OVERVOLTAGE PROTECT | ION[V] *4 | Vo+1.0 - 2.0 | Vo+2.4 - 4.8 | Vo+4.8 - 9.6 | Vo+2.0 - 12.0 | | | | |
| CIRCUIT AND | OPERATING INDICATION | ON | LED (Green) | | | | | | | |
| OTHERS | REMOTE SENSING | | Provided | | | | | | | |
| | REMOTE ON/OFF | | Provided | | | | | | | |
| | INPUT-OUTPUT · RC | | AC3,000V 1minute, Cutoff curr | ent = 25mA, DC500V 50M Ω mi | n (At Room Temperature) | | | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1minute, Cutoff curr | ent = 25mA , DC500V $50\text{M}\Omega\text{mi}$ | n (At Room Temperature) | | | | | |
| ISOLATION | OUTPUT · RC · AUX-F | G | AC500V 1minute, Cutoff currer | nt = 100mA, DC500V 50M Ω mir | (At Room Temperature) | | | | | |
| | OUTPUT-RC · AUX | | AC500V 1minute, Cutoff currer | nt = 100mA, DC500V 50M Ω mir | (At Room Temperature) | | | | | |
| | OPERATING TEMP., HUMID. AND | ALTITUDE | -20 to +71°C (Refer to "Derating | g"), 20 - 90%RH (Non condensi | ng) 3,000m (10,000feet) max | | | | | |
| ENVIRONMENT | STORAGE TEMP., HUMID. AND | ALTITUDE | -20 to +75℃, 20 - 90%RH (No | n condensing) 9,000m (30,000f | eet) max | | | | | |
| LIVINONWLIVI | VIBRATION | | 10 - 55Hz, 19.6m/s ² (2G), 3m | inutes period, 60minutes each a | along X, Y and Z axis | | | | | |
| | IMPACT | | 196.1m/s ² (20G), 11ms, once | each X, Y and Z axis | | | | | | |
| SAFETY AND NOISE | AGENCY APPROVALS (At only | AC input) | · | | | | | | | |
| REGULATIONS | CONDUCTED NOISE | | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B, additional EMI/EMC Filter required for meeting class B | | | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | 178×61×268mm [7.01×2.4×10.55 inches] (without terminal block and screw) (W×H×D) /3.4kg max | | | | | | | |
| UTILLIO | COOLING METHOD | · | | | | | | | | |

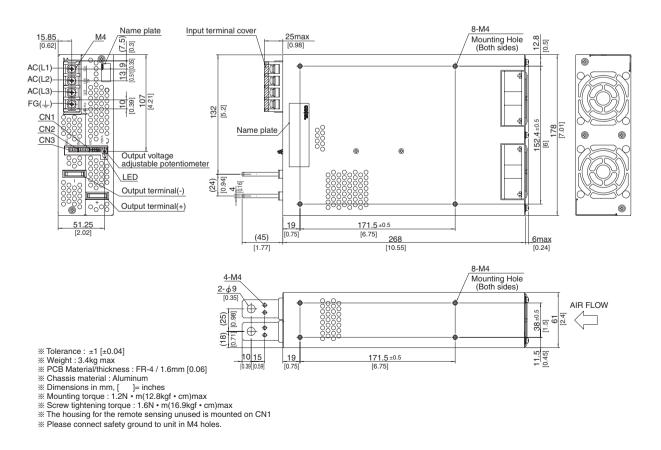
- Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).
 - Ripple and ripple noise is measured on measuring board with capacitor of 22 µ F within 150mm from the output terminal.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
 *3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.
- *4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.
- *5 Derating is required.Consult us for details.
- Please contact us about safety approvals for the model with option.
 - A sound may occur from power supply at pulse loading.

PBA/PBW-24





External view



PBW15F

15





Example recommended EMI/EMC filter NAC-06-472



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.

- ①Series name ②Dual output
- (3) Output wattage 4 Universal input
- ⑤Output voltage
- Optional *10
 C :with Coating
 - G:Low leakage current
 - E:Low leakage current and EMI class A
 - T: Vertical terminal block
 - J1 :VH (J.S.T.) connector type
- N :with Cover N1:with DIN rail
- V:Output voltage setting potentiometer external-

Cover is optional

*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.

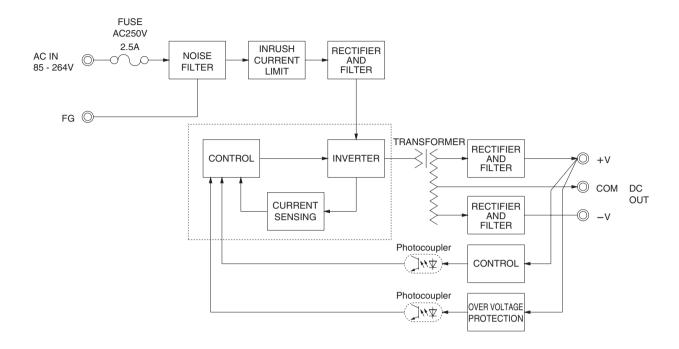
| MODEL | | PBW15F-12 | PBW15F-15 |
|--------------------------|----------------|-------------|-----------|
| MAX OUTPUT WATTAGE[W] *5 | | 16.8 | 15.0 |
| | VOLTAGE[V] *6 | ±12 (+24) | ±15 (+30) |
| - | CURRENT1[A] | 0.7 | 0.5 |
| | CURRENT2[A] *5 | 1.4 | 1.0 |

| | MODEL | | PBW15F-12 | | PBW15F-15 | | | |
|------------------------|------------------------------|-----------------------|--|--------------------------------------|--|-----------------------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ or DC110 - 37 | 0 (AC50 or DC70 Please refer to | the instruction manual 1.1 Input | voltage *8) | | |
| | | ACIN 100V | 0.40typ (CURRENT1) | | | | | |
| | CURRENT[A] | ACIN 200V | 0.20typ (CURRENT1) | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 440) or DC | | | | | |
| INPUT | ACIN 100V | | 74typ (CURRENT1) | | 78typ (CURRENT1) | | | |
| | EFFICIENCY[%] | ACIN 200V | 77typ (CURRENT1) | | 80typ (CURRENT1) | | | |
| | INDUCUI CURRENTIAL | | 15typ (CURRENT1) (At cold sta | | | | | |
| | INRUSH CURRENT[A] | | 30typ (CURRENT1) (At cold start) | | | | | |
| | LEAKAGE CURRENT[r | | | / 60Hz, lo=100%, According to | IEC60950-1,DENAN) | | | |
| | VOLTAGE[V] | | ±12 | / (+24V reference number) | ±15 | / (+30V reference number) | | |
| | CURRENT1[A] | | 0.7 | / 0.7 | 0.5 | / 0.5 | | |
| | CURRENT2[A] | *5 | 1.4 | / - | 1.0 | / - | | |
| | LINE REGULATION[m\ | /] * ^{*9} | 60max | / 96max | 60max | / 96max | | |
| | LOAD REGULATION 1 | [mV] *11 | 600max | / 150max | 600max | / 150max | | |
| | LOAD REGULATION 2 | [mV] *11 | 750max | / - | 750max | / - | | |
| | DIDDI E[m\/m m] | 0 to +50°C * 1 | 120max | / 240max | 120max | / 240max | | |
| | RIPPLE[mVp-p] | -10 - 0℃ *1 | 160max | / 320max | 160max | / 320max | | |
| OUTPUT | RIPPLE NOISE[mVp-p] | 0 to +50°C *1 | 150max | / 300max | 150max | / 300max | | |
| | RIPPLE NOISE[mvp-p] | -10 - 0℃ *1 | 180max | / 360max | 180max | / 360max | | |
| | TEMPERATURE REGULATION[mV] | 0 to +50℃ | 120max | | 150max | | | |
| | TEMPERATURE REGULATION[IIIV] | -10 to +50℃ | 150max | | 180max | | | |
| | DRIFT[mV] | *2 | 2 48max | | 60max | | | |
| | START-UP TIME[ms] | | 200typ(ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage. | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100V, Io=100%) | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | FRANGE[V] | 9.60 - 13.2 (+V and -V are simultaneously adjusted) | | 13.2 - 16.5 (+V and -V are sim | ultaneously adjusted) | | |
| | OUTPUT VOLTAGE SET | TING[V] | 11.5 - 12.5 (+V and -V CURRE | NT1) | 14.4 - 15.6 (+V and -V CURRE | ENT1) | | |
| | OVERCURRENT PROT | ECTION | Works over 105% of rated curre | ent and recovers automatically | | | | |
| PROTECTION CIRCUIT AND | OVERVOEIAGE I HOTEC | | 16.8 - 24.0 | | 20.0 - 29.0 | | | |
| OTHERS | OPERATING INDICATION | NC | LED (Green) | | | | | |
| | REMOTE ON/OFF | | None | | | | | |
| | INPUT-OUTPUT | | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) | | | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) | | | | | |
| | OUTPUT-FG | | AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature) | | | | | |
| | OPERATING TEMP.,HUMID.AND | ALTITUDE | -10 to +71°C (Refer to "Derating"), 20 - 90%RH (Non condensing) 3.000m (10.000feet) max | | | | | |
| ENVIRONMENT | STORAGE TEMP.,HUMID.AND | ALTITUDE | | | | | | |
| LINVINONIVILINI | VIBRATION | | 10 - 55Hz, 19.6m/s² (2G). 3minutes period, 60minutes each along X, Y and Z axis | | | | | |
| | IMPACT | | 196.1m/s ² (20G), 11ms, once e | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | / AC input) | UL60950-1, C-UL(CSA60950-1 | | | | | |
| NOISE | CONDUCTED NOISE | | | sB, VCCI-B, CISPR22-B, EN550 | | | | |
| REGULATIONS | HARMONIC ATTENUAT | OR | | Not built-in to active filter *7) *1 | | | | |
| OTHERS | CASE SIZE/WEIGHT | | | .35 inches] (without terminal blo | ck) $(W \times H \times D)$ / 200g max (with | cover : 235g max) | | |
| UTITENS | COOLING METHOD | | Convection | | | | | |

- *1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN: RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- Figures for 0 to rated current 1.The current not measured side is fixed.
- *4 Figures for 0 to rated current 2.The current not measured
- side is fixed.
 - The sum of +power -power must be less than output power.
- *6 ±12,±15 can be used as +24 and +30. *7 When two or more units are used,they may not comply with the harmonic attenuator. Please contact us for details.
- *8 Derating is required.
- *9 Figures to rated current 1.

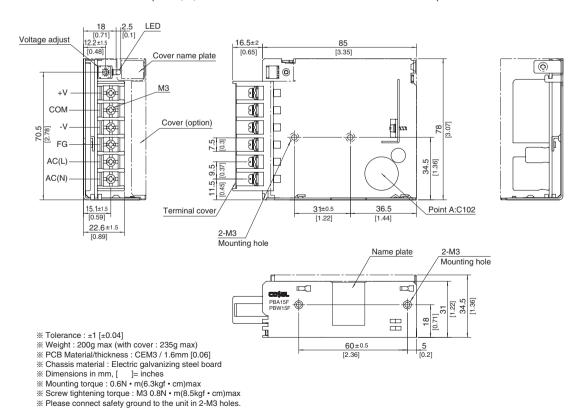
- *10 Please contact us about safety approvals for the model with option.
- *11 Please contact us about dynamic load and input response.
- *12 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover.
- A sound may occur from power supply at peak loading.





External view

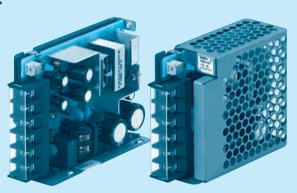
※ External size of option T,J1,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



PBW30F

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Example recommended EMI/EMC filter NAC-06-472



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.

- ①Series name ②Dual output
- (3) Output wattage 4 Universal input
- ⑤Output voltage
- Optional *10
 C :with Coating
 - G:Low leakage current
 - E:Low leakage current and EMI class A
 - T: Vertical terminal block
 - J1 :VH (J.S.T.) connector type
- N :with Cover
- N1:with DIN rail
- V:Output voltage setting potentiometer external-

Cover is optional

*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.

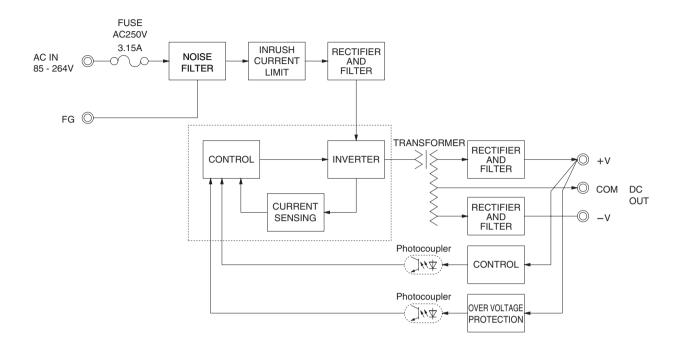
| MODEL | | PBW30F-5 | PBW30F-12 | PBW30F-15 |
|--------------------------|-----------------|------------|-------------|-----------|
| MAX OUTPUT WATTAGE[W] *5 | | 15 | 31.2 | 30.0 |
| DC OUTPUT | VOLTAGE[V] *6 | ±5 (+10) | ±12 (+24) | ±15 (+30) |
| | CURRENT1[A] | 1.5 | 1.3 | 1.0 |
| | CURRENT2[A] * 5 | 2.0 | 1.7 | 1.4 |

| | MODEL | | PBW30F-5 | | PBW30F-12 | | PBW30F-15 | | | |
|---------------------------|-----------------------------|-----------------|--|-----------------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 φ c | r DC110 - 370 (AC50 or | DC70 Please refe | r to the instruction manua | 1.1 Input voltage * | 8) | | |
| | | ACIN 100V | 0.4tvp (CURREN | Γ1) | 0.7typ (CURREN | IT1) | | | | |
| | CURRENT[A] | ACIN 200V | 0.25typ (CURREN | JT1) | 0.4typ (CURREN | IT1) | | | | |
| | FREQUENCY[Hz] | 1 | 50/60 (47 - 440) or DC | | | | | | | |
| INPUT | ACIN 100V | | 75typ (CURRENT | | 77typ (CURREN | T1) | 78typ (CURRENT1) | | | |
| | EFFICIENCY[%] | ACIN 200V | 75typ (CURRENT1) | | 81typ (CURREN | T1) | 79typ (CURRENT1) | | | |
| | | | 15typ (CURRENT | | 71 (12 | , | 1 - 71 | | | |
| | | | 30typ (CURRENT | | | | | | | |
| | LEAKAGE CURRENT[| | | IN 100V/240V 60Hz, lo= | 100%, According | to IEC60950-1,DENAN) | | | | |
| | VOLTAGE[V] | | ±5 | / (+10V reference number) | ±12 | / (+24V reference number) | ±15 | / (+30V reference number) | | |
| | CURRENT1[A] | | 1.5 | / 1.5 | 1.3 | / 1.3 | 1.0 | / 1.0 | | |
| | CURRENT2[A] | *5 | 2.0 | / - | 1.7 | / - | 1.4 | / - | | |
| | LINE REGULATION[m\ | /] **19 | 20max | / 36max | 60max | / 96max | 60max | / 96max | | |
| | LOAD REGULATION 1 | [mV] *** | 250max | / 100max | 600max | / 150max | 600max | / 150max | | |
| | LOAD REGULATION 2 | [mV] *** | 500max | / - | 750max | / - | 750max | / - | | |
| | | 0 to +50°C *1 | 80max | / 240max | 120max | / 240max | 120max | / 240max | | |
| | RIPPLE[mVp-p] | -10 - 0℃ *1 | 140max | / 320max | 160max | / 320max | 160max | / 320max | | |
| OUTPUT | | 0 to +50°C *1 | 120max | / 300max | 150max | / 300max | 150max | / 300max | | |
| | RIPPLE NOISE[mVp-p] | -10 - 0℃ *1 | 160max | / 360max | 180max | / 360max | 180max | / 360max | | |
| | | 0 to +50℃ | 50max | | 120max | | 150max | | | |
| | TEMPERATURE REGULATION[mV] | -10 to +50℃ | 60max | | 150max | | 180max | | | |
| | DRIFT[mV] | *2 | 2 20max | | 48max | | 60max | | | |
| | START-UP TIME[ms] | | 200typ(ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage. | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100V, lo=100%) | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | T RANGE[V] | 4.99 - 6.00 (+V and -V are simultaneously adjusted) 9.60 - 13.2 (+V and -V are s | | V are simultaneously adjusted) | 13.2 - 16.5 (+V and -V ar | e simultaneously adjusted) | | | |
| | OUTPUT VOLTAGE SET | TING[V] | 4.99 - 5.30 (+V a | nd -V CURRENT1) | 11.5 - 12.5 (+V and -V CURRENT1) | | 14.4 - 15.6 (+V and -V CURRENT1) | | | |
| | OVERCURRENT PROT | ECTION | Works over 105% of rated current and recovers automatically | | | | | | | |
| PROTECTION CIRCUIT AND | OVERVOLTAGE PROTEC | TION[V] | 6.90 - 10.0 | | 16.8 - 24.0 | | 20.0 - 29.0 | | | |
| OTHERS | OPERATING INDICATION | NC | LED (Green) | | | | | | | |
| | REMOTE ON/OFF | | None | | | | | | | |
| | INPUT-OUTPUT | | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) | | | | | | | |
| | OUTPUT-FG | | AC500V 1minute, | Cutoff current = 25mA, | DC500V 50M Ω m | in (At Room Temperature) |) | | | |
| | OPERATING TEMP., HUMID. AND | | | | | sing) 3,000m (10,000feet) |) max | | | |
| ENVIRONMENT | STORAGE TEMP.,HUMID.AND | ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing) 9,000m (30,000feet) max | | | | | | | |
| ENVIRONMENT | VIBRATION | | 10 - 55Hz, 19.6m | /s² (2G), 3minutes period | d, 60minutes each | along X, Y and Z axis | | | | |
| | IMPACT | | 196.1m/s ² (20G), | 11ms, once each X, Y a | nd Z axis | | | | | |
| SAFETY AND | AGENCY APPROVALS (At only | AC input) | | (CSA60950-1), EN60950 | | | | | | |
| NOISE | CONDUCTED NOISE | | | C Part15 classB, VCCI-E | | | | | | |
| REGULATIONS | HARMONIC ATTENUAT | ГOR | | C61000-3-2 (Not built-in t | , | | | | | |
| OTHERS | CASE SIZE/WEIGHT | | 31 × 78 × 103mm | [1.22 × 3.07 × 4.06 inches |] (without terminal | block) (W x H x D) / 270 | g max (with cover : 31 | 0g max) | | |
| OTHERS | COOLING METHOD | | Convection | | | | | | | |

- *1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN: RM101).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- Figures for 0 to rated current 1.The current not measured side is fixed.
- *4 Figures for 0 to rated current 2.The current not measured
- side is fixed.
- The sum of +power -power must be less than output power.
- *6 ±5,±12,±15 can be used as +10,+24 and +30. *7 When two or more units are used,they may not comply with
- the harmonic attenuator. Please contact us for details
- *8 Derating is required.
- *9 Figures to rated current 1.

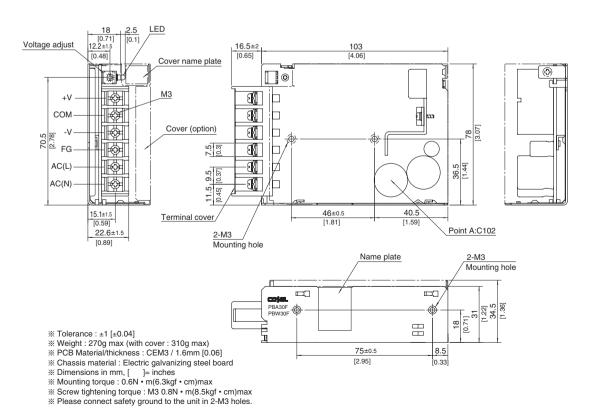
- *10 Please contact us about safety approvals for the model with option.
- *11 Please contact us about dynamic load and input response.
- *12 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover.
- A sound may occur from power supply at peak loading.





External view

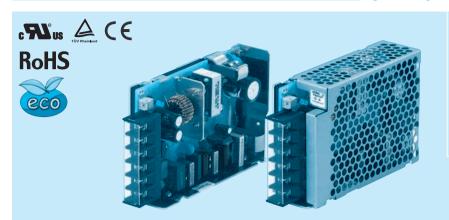
** External size of option T,J1,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



PBW50F

Ordering information

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Example recommended EMI/EMC filter NAC-06-472



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.

Cover is optional

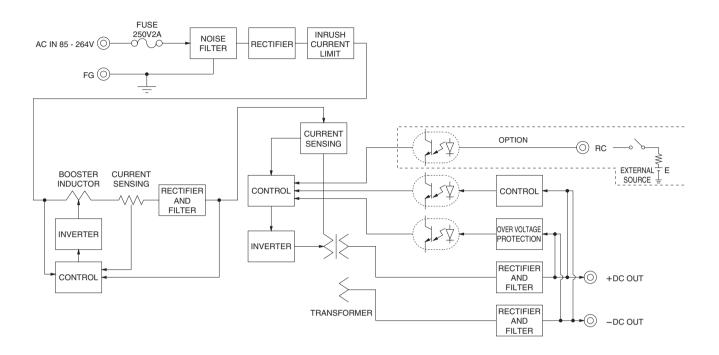
- 1) Series name 2) Dual output
- (3) Output wattage
- 4 Universal input
- ⑤Output voltage
- Optional *9
 C:with Coating
 - G:Low leakage current (0.15mA max / ACIN 240V)
 - E:Low leakage current and EMI class A (0.5mA max / ACIN 240V) T:Vertical terminal block
- J1 :VH (J.S.T.) connector type R:with Remote ON/OFF
- N :with Cover N1 :with DIN rail
- V :Output voltage setting potentiometer external-
- *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.

| MODEL | | PBW50F-5 | PBW50F-12 | PBW50F-15 |
|--------------------------|------------------------|----------|-------------|-----------|
| MAX OUTPUT WATTAGE[W] *6 | | 30 | 50.4 | 51 |
| | VOLTAGE[V] *8 | ±5 (+10) | ±12 (+24) | ±15 (+30) |
| DC OUTPUT | CURRENT1[A] | 3.0 | 2.1 | 1.7 |
| | CURRENT2[A] * € | 4.0 | 2.7 | 2.4 |

| | MODEL | | PBW50F-5 | | PBW50F-12 | | PBW50F-15 | | | | |
|---------------------|---|------------------------|--|---|----------------------------|-----------------------------|---|-----------------------------|--|--|--|
| | VOLTAGE[V] | | AC85 - 264 1 ϕ or DC120 - 370 (AC50 or DC70 Please refer to the instruction manual 1.1 Input voltage $*3$) | | | | | | | | |
| | OUDDENTIAL | ACIN 100V | 0.45typ (CURRE | 0.45typ (CURRENT1) 0.70typ (CURRENT1) | | | | | | | |
| | CURRENT[A] | ACIN 200V | 0.30typ (CURRE | NT1) | 0.40typ (CURRENT1) | | | | | | |
| | FREQUENCY[Hz] | | 50/60 (47 - 63) | | | | | | | | |
| INPUT | EFFICIENCY[%] ACIN 100V ACIN 200V | | 76typ (CURRENT1) | | 81typ (CURRENT1) | | 81typ (CURRENT1) | | | | |
| | | | 77typ (CURREN | T1) | 83typ (CURRENT1) | | 83typ (CURRENT1) | | | | |
| | | | 0.98typ | | 0.99typ | | | | | | |
| | POWER FACTOR(IO=100%) | ACIN 200V | | | 0.93typ | | | | | | |
| | INRUSH CURRENT[A] | ACIN 100V | 15typ (CURREN | T1) (At cold start) | | | | | | | |
| | INNUSTI CUNNENT[A] | ACIN 200V | 30typ (CURREN | 0typ (CURRENT1) (At cold start) | | | | | | | |
| | LEAKAGE CURRENT[r | nA] | 0.40/0.75max (A | CIN 100V/240V 60Hz, lo= | :100%, According to IE | C60950-1,DENAN) | | | | | |
| | VOLTAGE[V] | | ±5 | / (+10V reference number) | ±12 | / (+24V reference number) | ±15 | / (+30V reference number) | | | |
| | CURRENT1[A] | | 3.0 | / 3.0 | 2.1 | / 2.1 | 1.7 | / 1.7 | | | |
| | CURRENT2[A] | *6 | 4.0 | / - | 2.7 | / - | 2.4 | / - | | | |
| | LINE REGULATION[m\ | | 20max 250max | / 36max | 48max | / 96max | 60max | / 96max | | | |
| | LOAD REGULATION 1 | AD REGULATION 1[mV] *4 | | / 100max | 600max | / 150max | 600max | / 150max | | | |
| | LOAD REGULATION 2 | [mV] *5 | 500max | / - | 750max | / - | 750max | / - | | | |
| | RIPPLE[mVp-p] | 0 to +50°C *1 | 80max | / 240max | 120max | / 240max | 120max | / 240max | | | |
| | MIFFEE[IIIVP-P] | -10 - 0℃ *1 | 140max | / 320max | 160max | / 320max | 160max | / 320max | | | |
| OUTPUT | RIPPLE NOISE[mVp-p] | 0 to +50°C *1 | 120max | / 300max | 150max | / 300max | 150max | / 300max | | | |
| | | -10 - 0℃ *1 | 160max | / 360max | 180max | / 360max | 180max | / 360max | | | |
| | TEMPERATURE REGULATION[mV] | 0 to +50℃ | | | 120max | | 150max | | | | |
| | | -10 to +50℃ | | | 150max | | 180max | | | | |
| | DRIFT[mV] | *2 | 20max 48max 60max | | | | | | | | |
| | START-UP TIME[ms] | | 350typ(ACIN 100V, Io=100%) | | | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 100 | | | | | | | | |
| | OUTPUT VOLTAGE ADJUSTMENT | | , | V are simultaneously adjusted) | 9.60 - 13.2 (+V and -V are | | 13.2 - 16.5 (+V and -V are simultaneously adjusted) | | | | |
| | OUTPUT VOLTAGE SET | | | and -V CURRENT1) | 11.5 - 12.5 (+V and - | V CURRENT1) | 14.4 - 15.6 (+V and - | V CURRENT1) | | | |
| PROTECTION | OVERCURRENT PROT | | | Works over 105% of rated current and recovers automatically | | | | | | | |
| CIRCUIT AND | OVERVOLTAGE PROTEC | | 6.90 - 10.0 16.8 - 24.0 20.0 - 29.0 | | | | | | | | |
| OTHERS | OPERATING INDICATION | ON | LED (Green) | | | | | | | | |
| | REMOTE ON/OFF | | Optional (Required external power source) | | | | | | | | |
| | INPUT-OUTPUT · RC | *7 | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) | | | | | | | | |
| ISOLATION | INPUT-FG | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | | |
| | OUTPUT · RC-FG | */ | AC500V 1minute, Cutoff current = 100mA, DC500V 50M Ω min (At Room Temperature) | | | | | | | | |
| | OPERATING TEMP.,HUMID.AND | | | | | | | | | | |
| ENVIRONMENT | STORAGE TEMP.,HUMID.AND | ALIIIUDE | -20 to +75°C, 20 - 90%RH (Non condensing) 9,000m (30,000feet) max 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | | | | |
| | VIBRATION IMPACT | | | 1/52 (2G), 3minutes perio , 11ms, once each X, Y a | | ng ∧, Y and ∠ axis | | | | | |
| | | . AC innut) | | , 11ms, once each X, Y a L(CSA60950-1), EN60950 | | with DEN AN | | | | | |
| SAFETY AND NOISE | AGENCY APPROVALS (At only CONDUCTED NOISE | AC IIIput) | | CC Part15 classB, VCCI-E | | | | | | | |
| | HARMONIC ATTENUAT | TOP. | Complies with FC | | o, CIOPHZZ-B, EN550 | 11-D, EN55022-B | | | | | |
| | CASE SIZE/WEIGHT | UK | | 1.22 × 3.23 × 4.72 inches | 1 (without terminal black | W (M < U < D) / 000 | a may (with agree: 20 | Ea may) | | | |
| OTHERS | | | | [1.22 X 3.23 X 4.72 Inches | ij (without terminal bloc | ж) (vv х н х D) / 280 | y max (with cover: 32 | by max) | | | |
| | COOLING METHOD | | Convection | | | | | | | | |

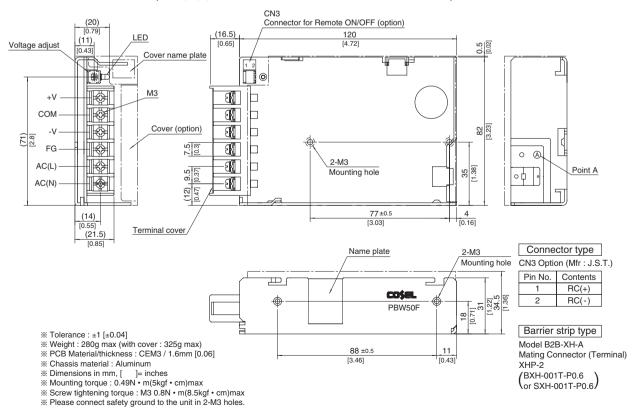
- *1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN : RM101).
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Derating is required.
- Figures for 0 to rated current 1.The current not measured side is fixed.
- *5 Figures for 0 to rated current 2. The current not measured
- The sum of +power -power must be less than output power. RC is applied to remote ON/OFF option. RC is isolated with input/output and FG.
- *8 $\pm 5, \pm 12, \pm 15$ can be used as +10,+24 and +30.
- *9 Please contact us about safety approvals for the model with option.
- *10 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover.
- A sound may occur from power supply at peak loading.





External view

** External size of option T,J1,R,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.

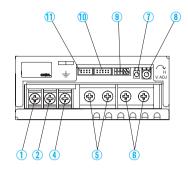


COSEL | PBA·PBW-series

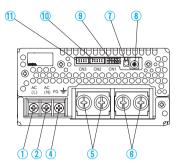
Terminal Blocks

*The following information covers PBA300F - 1500F. Please see External View for PBA10F - 150F and PBW15F - 50F.

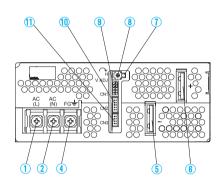
PBA300F



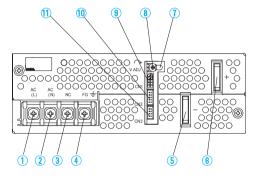
PBA600F



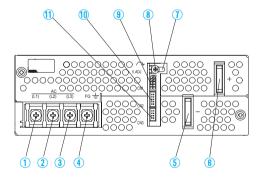
PBA1000F



PBA1500F



PBA1500T



*PBA300F - 1500F

①AC (L)] Input Terminals AC85 - 264V ϕ 47 - 63Hz

②AC (N) ∫ (M4)

3NC

④Frame ground (M4 ±)

⑤-Output

®+Output

7LED

Output voltage adjustable potentiometer

9CN1

10CN2 Connectors

①CN3

*Please see Optional Parts for dedicated harnesses.

*PBA1500T

1)AC (L1)

2AC (L2)

(3)AC (L3)

④Frame ground (M4 ±)

⑤-Output

(6)+Output

(7)LED

Output voltage adjustable potentiometer

9CN1

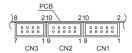
10CN2 Connectors

①CN3

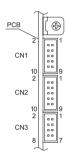


Terminal Blocks

PBA300F, 600F Pin Configuration



▶ PBA1000F, 1500F Pin Configuration



Pin Configuration and Functions of CN1 and CN2

| Pin No. | | Function |
|---------|-----|---|
| 1 | +M | : Self sensing terminal. (Do not wire for external connection.) |
| 2 | +S | : +Sensing |
| 3 | -M | : Self sensing terminal. (Do not wire for external connection.) |
| 4 | -S | : -Sensing |
| 5 | VB | : Voltage balance |
| 6 | CB | : Current balance |
| 7 | TRM | : Adjustment of output voltage |
| 8 | -S | : -Sensing |
| 9 | RC2 | : Remote ON/OFF |
| 10 | RCG | : Remote ON/OFF (GND) |

Pin Configuration and Functions of CN3

| | | 0 | | | | | |
|---------|------|--------------------------|------------|--|--|--|--|
| Pin No. | | Function | | | | | |
| 1 | -S | : -Sensing | | | | | |
| 2 | -S | : -Sensing | | | | | |
| 3 | AUX | : Auxiliary output | (12V 0.1A) | | | | |
| 4 | RC1 | : Remote ON/OFF | | | | | |
| 5 | AUXG | : Auxiliary output (GND) | | | | | |
| 6 | N.C. | : No connection | | | | | |
| 7 | PG | : Alarm | | | | | |
| 8 | PGG | : Alarm (GND) | | | | | |

^{*}Common signs among CN1, CN2 and CN3 such as -S represent the same potential.

Matching connecters and terminals on CN1, CN2 and CN3

| Connector | | Housing | | Terminal | |
|-----------|------------|-----------|-------|--------------------------------------|--|
| CN CN | S10B_PHDSS | PHDR-10VS | Reel | : SPHD-002T-P0.5 : BPHD-001T-P0.5 | |
| CN | S8B-PHDSS | PHDR-08VS | Loose | . 6600-0011-60.3 | |

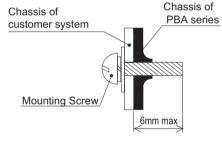
Assembling and Installation Method

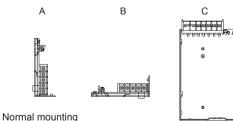
Installation Method

■Do not insert a screw more than 6mm from the outside of a power supply to keep enough insulation distance between the screw and internal components.

PBA10F, PBA15F, PBW15F, PBA30F, PBW30F, PBA50F, PBW50F, PBA75F, PBA100F and PBA150F

- ■If you use two or more power supplies side by side, please keep a sufficient distance between them to allow enough air ventilation.
- ■Ambient temperature around each power supply should not exceed the temperature range shown in "derating".



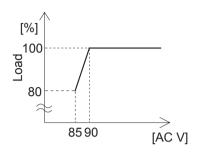


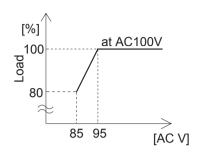
PBA300F, PBA600F, PBA1000F, PBA1500F and PBA1500T

- ■The power supplies have a built-in forced cooling fan. Do not block ventilation at the suction side (terminal block side) and its opposite side (fan installation side). If you need to secure a power supply by screws, securely fix it, taking into consideration of its weight. You can install it in any direction.
- ■If you use a power supply in a dusty environment, it can give a cause for a failure. Please consider taking such countermeasures as installing an air filter near the suction area of the system to prevent a failure.
- ■In PBA300F, PBA1500F and PBA1500T, ventilation holes are located on the mounting side. If you would like to install the unit by using that side, please contact us for details.

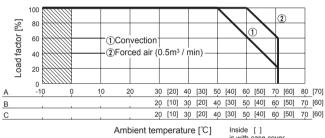
Derating

▶PBA10F, PBA15F, PBW15F, PBA30F, PBW30F ▶PBA1500F Input voltage Derating Curve Input voltage Derating Curve

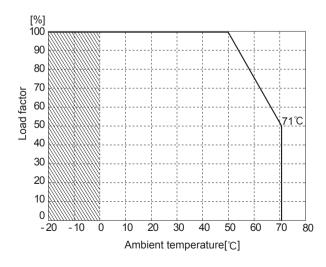




●PBA10F, PBA15F, PBW15F, PBA30F, PBW30F, PBA50F, PBW50F, PBA75F, PBA100F, PBA150F Ambient temperature derating curve



- ■In the hatched area, the specification of Ripple, Ripple Noise is different from other area.
- ■The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.
- ■Make sure the temperature at point A is less than the temperatures shown in Instruction Manual 4.
- ●PBA300F, PBA600F, PBA1000F, PBA1500F, PBA1500T Ambient temperature derating curve



- ■In the hatched area, the specification of Ripple, Ripple Noise is different from other area.
- ■Derating curve depending on an ambient temperature (temperature of air sucked in for a cooling purpose) is shown above.

PBA·PBW-series



Instruction Manual

◆ It is neccessary to read the "Instruction Manual" and "Before using our product" before you use our product.

Instruction Manual https://en.cosel.co.jp/product/powersupply/PBA/ Instruction Manual https://en.cosel.co.jp/product/powersupply/PBW/ Before using our product https://en.cosel.co.jp/technical/caution/index.html







Basic Characteristics Data

| Madal | Oliver it we allow it | Switching | Input current | Rated | Inrush current | PCB/Pattern | | | Series/Parallel operation availability | |
|-----------|-----------------------|--------------------|------------------|-------------|-----------------------|-------------|-----------------|--------------|--|--------------------|
| Model | Circuit method | frequency [kHz] | [A] | input fuse | protection circuit | Material | Single sided | Double sided | Series operation | Parallel operation |
| PBA10F | Flyback converter | 100 | 0.3 | 250V 2.5A | LF | CEM-3 | Yes | | Yes | *1 |
| PBA15F | Flyback converter | 100 | 0.4 | | Thermistor | CEM-3 | Yes | | Yes | *1 |
| PBA30F | Flyback converter | 100 | 0.7 | 250V 3.15A | Thermistor | CEM-3 | Yes | | Yes | *1 |
| DDAEOE | Active filter | 60 - 550 | 0.7 | 050)/ 04 | Theymieter | CEMA | Vaa | | Vaa | .0.4 |
| PBA50F | Forward converter | 130 | 0.7 | 250V 2A | Thermistor | CEM-3 | Yes | | Yes | *1 |
| DDAZEE | Active filter | 60 - 550 | | Th | OFMO | V | | V | .0.4 | |
| PBA75F | Forward converter | 120 | | 0501/ 0.454 | Thermistor | CEM-3 | Yes | | Yes | *1 |
| DDA400E | Active filter | 60 - 550 | 4.0 | 250V 3.15A | Theoremiates | OEMO | ., | | V | |
| PBA100F | Forward converter | 120 | 1.3 | Thermistor | CEM-3 | Yes | | Yes | *1 | |
| DDA4505 | Active filter | 60 - 550 | 2.0 | 250V 4A | Thermistor | CEM-3 | Yes | | Yes | ate 4 |
| PBA150F | Forward converter | 120 | | | | | | | | *1 |
| DD 4 000E | Active filter | 230 | | 250V 10A | SCR | FR-4 | | \/ | | V |
| PBA300F | Forward converter | 330 | 4.1 | | | | | Yes | Yes | Yes |
| DDAGGGE | Active filter | 130 | 0.0 | 050)/ 454 | SCR | FR-4 | | V | Voo | Voc |
| PBA600F | Forward converter | 330 | 8.2 | 250V 15A | | | | Yes | Yes | Yes |
| DDA4000E | Active filter | 130 | 40 | | 000 | FD 4 | | V | ., | |
| PBA1000F | Forward converter | 280 | 13 | 0501/ 004 | SCR | FR-4 | | Yes | Yes | Yes |
| DD 445005 | Active filter | 130 | 40 | 250V 30A | 000 | ED 4 | | V | V | V |
| PBA1500F | Forward converter | 200 | 19 | | SCR | FR-4 | | Yes | Yes | Yes |
| DDA4500T | Active filter | 130 | | 0501/ 404 | 000 | ED 4 | | V | V | V |
| PBA1500T | Forward converter | 200 | 6 | 250V 16A | SCR | FR-4 | | Yes | Yes | Yes |
| PBW15F | Flyback converter | 100 | 0.4 | 250V 2.5A | Thermistor | CEM-3 | Yes | | Yes | *1 |
| PBW30F | Flyback converter | 100 | 0.7 | 250V 3.15A | Thermistor | CEM-3 | Yes | | Yes | *1 |
| DDWEOT | Active filter | 60 - 550 | 0.7 | 050)/ 04 | They was interest | OEM 0 | ., | | Vaa | .0.4 |
| PBW50F | Forward converter | 130 | 0.7 | 250V 2A | Thermistor | CEM-3 | Yes | | Yes | *1 |

^{*1} Refer to Series/Parallel Operation of Instruction Manual.

^{*} The value of input current is at ACIN 100V and rated load, ACIN 200V 3 ϕ and rated load in PBA1500T.