

Datasheet

PLA-Series

Cosel

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PLA15F

① **PL** ② **A** ③ **15** ④ **F** ⑤ **-□** ⑥ **-□**



Recommended EMI/EMC Filter
NAC-04-472



High voltage pulse noise type : NAP series
Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *7
- C : with Coating
- J : Connector interface
- T : Vertical terminal block
- N1 : with DIN rail

See 5.1 in Instruction Manual.

Information the Home page is the latest.

SPECIFICATIONS

| | MODEL | PLA15F-5 | PLA15F-12 | PLA15F-15 | PLA15F-24 | |
|------------------------------------|---|--|--|-------------------|-------------------|-------------------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3 | | | | |
| | CURRENT[A] | ACIN 100V | 0.4typ (Io=90%) | | | |
| | | ACIN 115V | 0.4typ (Io=100%) | | | |
| | | ACIN 230V | 0.25typ (Io=100%) | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) | | | | |
| | EFFICIENCY[%] | ACIN 100V | 72.5typ (Io=90%) | 75.5typ (Io=90%) | 77.0typ (Io=90%) | 78.0typ (Io=90%) |
| | | ACIN 115V | 73.5typ (Io=100%) | 77.0typ (Io=100%) | 78.5typ (Io=100%) | 79.0typ (Io=100%) |
| | | ACIN 230V | 75.5typ (Io=100%) | 78.5typ (Io=100%) | 79.5typ (Io=100%) | 80.0typ (Io=100%) |
| | INRUSH CURRENT[A] | ACIN 100V | 16typ (Io=90%) Ta=25°C at cold start | | | |
| | | ACIN 115V | 16typ (Io=100%) Ta=25°C at cold start | | | |
| ACIN 230V | | 32typ (Io=100%) Ta=25°C at cold start | | | | |
| LEAKAGE CURRENT[ma] | 0.30max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 24 | |
| | CURRENT[A] | 3 | 1.3 | 1 | 0.7 | |
| | WATTAGE[W] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | |
| | | ACIN 115V-264V | 15.0 | 15.6 | 15.0 | 16.8 |
| | LINE REGULATION[mV] *4 | 20max | 48max | 60max | 96max | |
| | LOAD REGULATION[mV] *4 | 40max | 100max | 120max | 150max | |
| | RIPPLE[mVp-p] *1 | 0 to +50°C | 80max | 120max | 120max | 120max |
| | | -10 to 0°C | 140max | 160max | 160max | 160max |
| | | Io=0 to 35% | 160max | 240max | 240max | 280max |
| | RIPPLE NOISE[mVp-p] *1 | 0 to +50°C | 120max | 150max | 150max | 150max |
| | | -10 to 0°C | 160max | 180max | 180max | 180max |
| | | Io=0 to 35% | 240max | 300max | 300max | 320max |
| | TEMPERATURE REGULATION[mV] | 0 to +50°C | 50max | 120max | 150max | 240max |
| | | -10 to +50°C | 60max | 150max | 180max | 290max |
| | DRIFT[mV] *2 | 20max | 48max | 60max | 96max | |
| START-UP TIME[ms] | 200typ (ACIN 115V, Io=100%) *Start-up time is 700 ms typ for less than 1 minute of applying input again from turning off the input voltage. | | | | | |
| HOLD-UP TIME[ms] | 20typ (ACIN 115V, Io=100%) | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 4.50 to 5.50 | 10.80 to 13.20 | 13.50 to 16.50 | 21.60 to 26.40 | | |
| OUTPUT VOLTAGE SETTING[V] | 5.00 to 5.15 | 12.00 to 12.48 | 15.00 to 15.60 | 24.00 to 24.96 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | |
| | OVERVOLTAGE PROTECTION[V] | 5.75 to 7.00 | 13.80 to 16.80 | 17.25 to 21.00 | 27.60 to 33.60 | |
| | OPERATING INDICATION | LED (Green) | | | | |
| | REMOTE SENSING | Not provided | | | | |
| | REMOTE ON/OFF | Not provided | | | | |
| ISOLATION | INPUT-OUTPUT | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | INPUT-FG | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | OUTPUT-FG | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature) | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE *5 | -20 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axes | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axes | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508 (Except option -J) Complies with DEN-AN | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | |
| | HARMONIC ATTENUATOR *8 | Complies with IEC61000-3-2 class A | | | | |

SPECIFICATIONS

| | | |
|----------|------------------|--|
| OTHERS | CASE SIZE/WEIGHT | 38×80×73mm [1.50×3.15×2.87 inches] (Excluding terminal block and screw) (W×H×D) / 250g max |
| | COOLING METHOD | Convection |
| WARRANTY | WARRANTY | *6 5 years (subject to the operating conditions) |

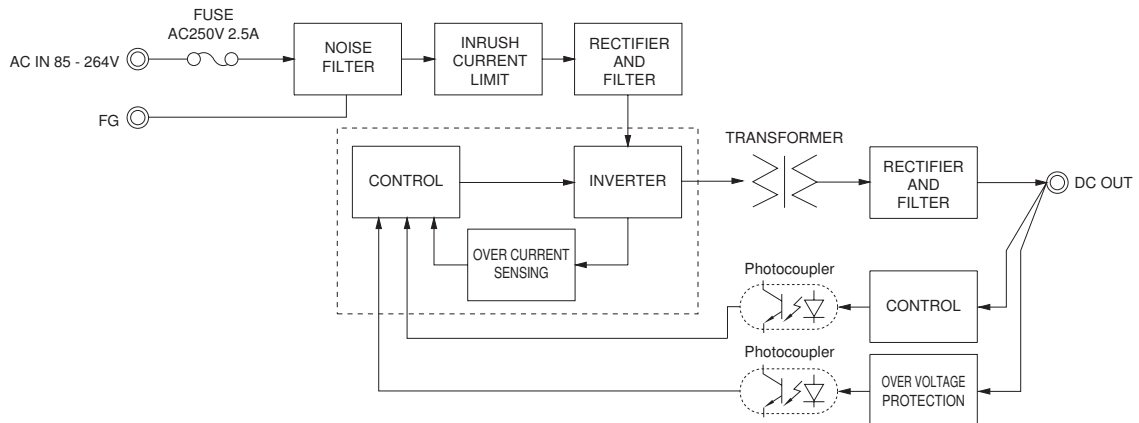
- *1 This is the result of measurement of the testing board with capacitors of 22 μF and 0.1 μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103. See 1.6 of Instruction Manual for more details. When the load factor is 0 - 35%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Output power derating is required. As for DC input, consult us for advice.
- *4 Consult us about dynamic load and input response. Measure the output voltage by using the average mode of the tester to deal with the burst operation at 35% load or less.

- *5 Output power derating is required. See 3.2 in Instruction Manual.
- *6 See 3.3 in Instruction Manual for more details.
- *7 Consult us about safety agency approvals for the models with optional functions.
- *8 Consult us about other classes.
- * Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
- * Parallel operation is not possible with this mode.
- * Sound noise may be heard from the power supply when used for pulse load.

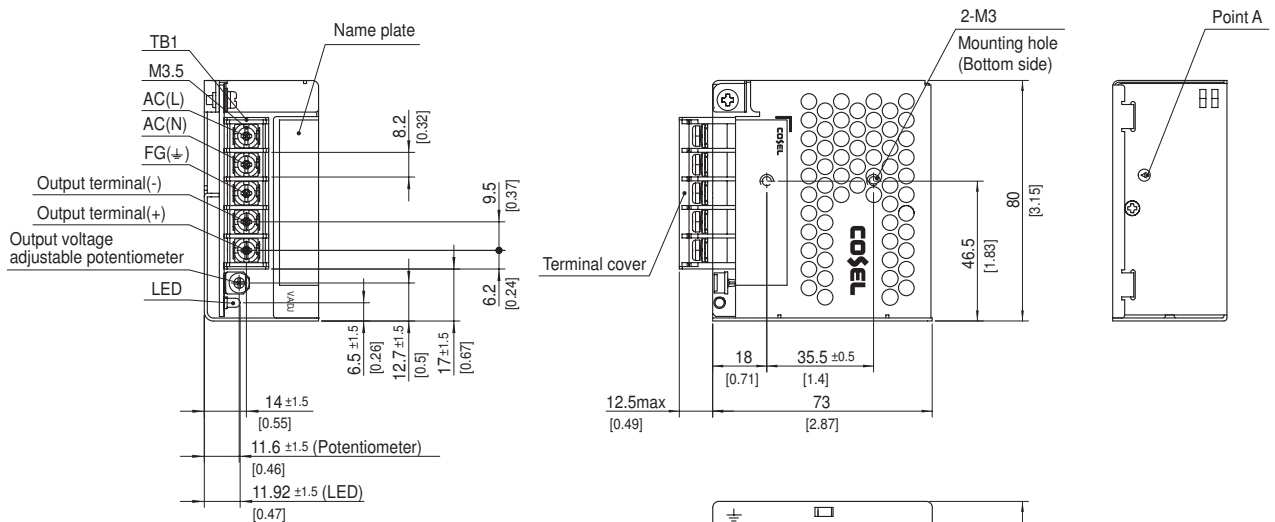
Features

- Compact design (Depth: 73mm 2.87inches)
- Low power consumption (1.0W typ AC240Vin, no load at standard model)
- UL508 approved (Except option -J), and complies with SEMI F47
- Various connection interface options (vertical terminal [-T], AMP connector [-J])

Block diagram



External view



- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 250g max
- ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
- ※ Chassis material : Electric galvaning steel board
- ※ Case material : Electric galvaning steel board
- ※ Dimensions in mm, []=inches
- ※ Mounting torque : 0.6N · m max
- ※ Screw tightening torque : 1.0N · m max

PLA30F

① **PL** ② **A** ③ **30** ④ **F** ⑤ **-□** ⑥ **-□**



Recommended EMI/EMC Filter
NAC-04-472



High voltage pulse noise type : NAP series
Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *7
- C : with Coating
- J : Connector interface
- T : Vertical terminal block
- N1 : with DIN rail

See 5.1 in Instruction Manual.

Information the Home page is the latest.

SPECIFICATIONS

| MODEL | | PLA30F-5 | PLA30F-12 | PLA30F-15 | PLA30F-24 | |
|------------------------------------|---|--|--|-------------------|-------------------|-------------------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3 | | | | |
| | CURRENT[A] | ACIN 100V | 0.7typ (Io=90%) | | | |
| | | ACIN 115V | 0.7typ (Io=100%) | | | |
| | | ACIN 230V | 0.4typ (Io=100%) | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) | | | | |
| | EFFICIENCY[%] | ACIN 100V | 73.0typ (Io=90%) | 80.0typ (Io=90%) | 81.0typ (Io=90%) | 82.5typ (Io=90%) |
| | | ACIN 115V | 74.0typ (Io=100%) | 80.5typ (Io=100%) | 81.5typ (Io=100%) | 83.0typ (Io=100%) |
| ACIN 230V | | 77.0typ (Io=100%) | 81.0typ (Io=100%) | 82.0typ (Io=100%) | 83.5typ (Io=100%) | |
| INRUSH CURRENT[A] | ACIN 100V | 16typ (Io=90%) Ta=25°C at cold start | | | | |
| | ACIN 115V | 16typ (Io=100%) Ta=25°C at cold start | | | | |
| | ACIN 230V | 32typ (Io=100%) Ta=25°C at cold start | | | | |
| LEAKAGE CURRENT[ma] | 0.65max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 24 | |
| | CURRENT[A] | 6 | 2.5 | 2 | 1.3 | |
| | WATTAGE[W] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | |
| | | ACIN 115V-264V | 30.0 | 30.0 | 30.0 | 31.2 |
| | LINE REGULATION[mV] *4 | 20max | 48max | 60max | 96max | |
| | LOAD REGULATION[mV] *4 | 40max | 100max | 120max | 150max | |
| | RIPPLE[mVp-p] *1 | 0 to +50°C | 80max | 120max | 120max | 120max |
| | | -10 to 0°C | 140max | 160max | 160max | 160max |
| | RIPPLE NOISE[mVp-p] *1 | 0 to +50°C | 120max | 150max | 150max | 150max |
| | | -10 to 0°C | 160max | 180max | 180max | 180max |
| | TEMPERATURE REGULATION[mV] | 0 to +50°C | 50max | 120max | 150max | 240max |
| | | -10 to +50°C | 60max | 150max | 180max | 290max |
| | DRIFT[mV] *2 | 20max | 48max | 60max | 96max | |
| | START-UP TIME[ms] | 150typ (ACIN 115V, Io=100%) | | | | |
| HOLD-UP TIME[ms] | 20typ (ACIN 115V, Io=100%) | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 4.50 to 5.50 | 10.80 to 13.20 | 13.50 to 16.50 | 21.60 to 26.40 | | |
| OUTPUT VOLTAGE SETTING[V] | 5.00 to 5.15 | 12.00 to 12.48 | 15.00 to 15.60 | 24.00 to 24.96 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | |
| | OVERVOLTAGE PROTECTION[V] | 5.75 to 7.00 | 13.80 to 16.80 | 17.25 to 21.00 | 27.60 to 33.60 | |
| | OPERATING INDICATION | LED (Green) | | | | |
| | REMOTE SENSING | Not provided | | | | |
| | REMOTE ON/OFF | Not provided | | | | |
| ISOLATION | INPUT-OUTPUT | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | INPUT-FG | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | OUTPUT-FG | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature) | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE *5 | -20 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axes | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axes | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508 (Except option -J) Complies with DEN-AN | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | |
| | HARMONIC ATTENUATOR *8 | Complies with IEC61000-3-2 class A | | | | |

SPECIFICATIONS

| | | |
|----------|------------------|--|
| OTHERS | CASE SIZE/WEIGHT | 38×80×88mm [1.50×3.15×3.46 inches] (Excluding terminal block and screw) (W×H×D) / 330g max |
| | COOLING METHOD | Convection |
| WARRANTY | WARRANTY | *6 5 years (subject to the operating conditions) |

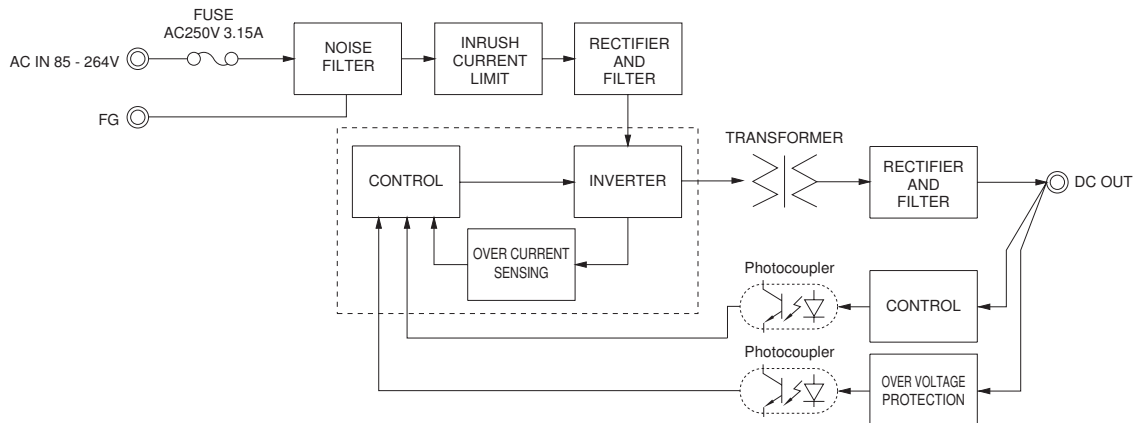
- *1 This is the result of measurement of the testing board with capacitors of 22 μF and 0.1 μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Output power derating is required. As for DC input, consult us for advice.
- *4 Consult us about dynamic load and input response.
- *5 Output power derating is required. See 3.2 in Instruction Manual.
- *6 See 3.3 in Instruction Manual for more details.

- *7 Consult us about safety agency approvals for the models with optional functions.
- *8 Consult us about other classes.
- * Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
- * Parallel operation is not possible with this mode.
- * Sound noise may be heard from the power supply when used for pulse load.

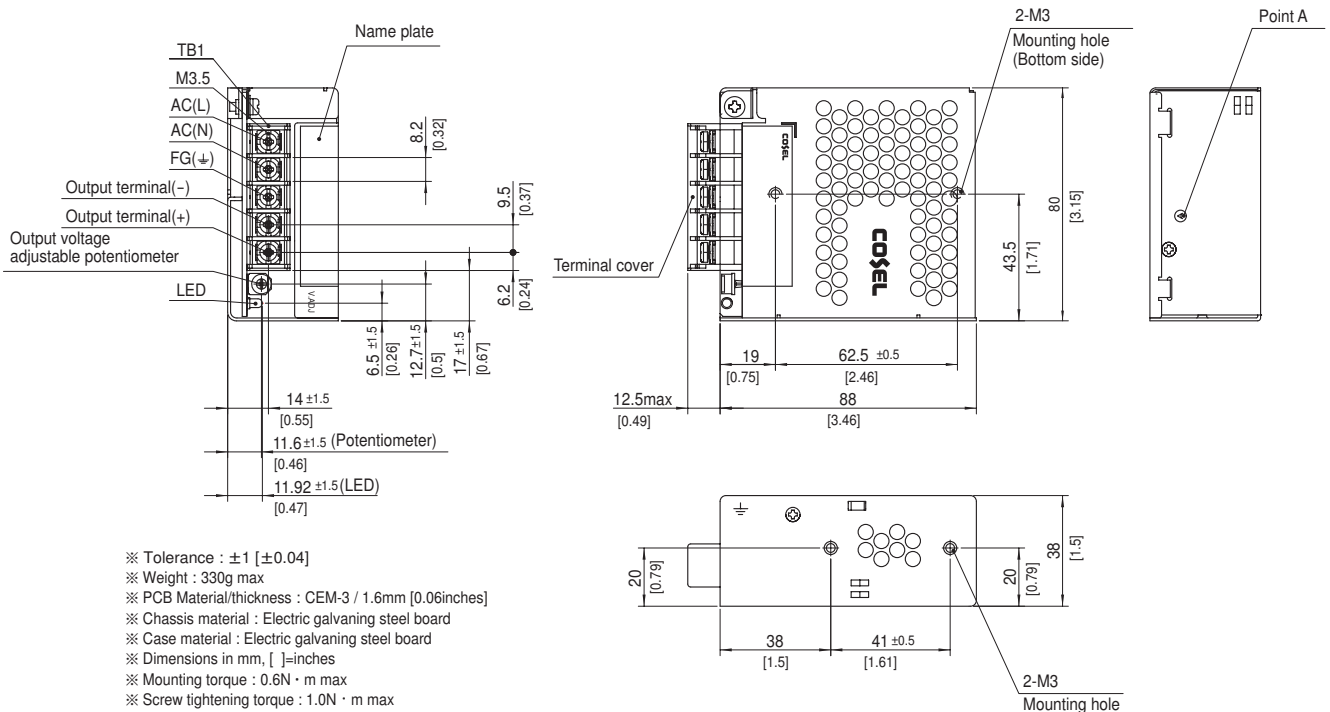
Features

- Compact design (Depth: 88mm 3.46inches)
- UL508 approved (Except option -J), and complies with SEMI F47
- Various connection interface options (vertical terminal [-T], AMP connector [-J])

Block diagram

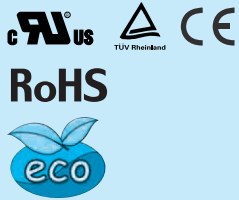


External view



PLA50F

① PL ② A ③ 50 ④ F ⑤ -□ ⑥ -□



Recommended EMI/EMC Filter
NAC-04-472



High voltage pulse noise type : NAP series
Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *7
C : with Coating
J : Connector interface
T : Vertical terminal block
N1 : with DIN rail

See 5.1 in Instruction Manual.

Information the Home page is the latest.

SPECIFICATIONS

| | MODEL | PLA50F-5 | PLA50F-12 | PLA50F-15 | PLA50F-24 | |
|------------------------------------|---|--|--|-------------------|-------------------|-------------------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3 | | | | |
| | CURRENT[A] | ACIN 100V | 0.6typ (Io=90%) | 0.7typ (Io=90%) | | |
| | | ACIN 115V | 0.6typ (Io=100%) | 0.7typ (Io=100%) | | |
| | | ACIN 230V | 0.3typ (Io=100%) | 0.4typ (Io=100%) | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) | | | | |
| | EFFICIENCY[%] | ACIN 100V | 74.5typ (Io=90%) | 80.0typ (Io=90%) | 80.0typ (Io=90%) | 81.5typ (Io=90%) |
| | | ACIN 115V | 75.0typ (Io=100%) | 80.5typ (Io=100%) | 80.5typ (Io=100%) | 82.0typ (Io=100%) |
| | | ACIN 230V | 76.5typ (Io=100%) | 82.0typ (Io=100%) | 82.0typ (Io=100%) | 84.0typ (Io=100%) |
| | POWER FACTOR | ACIN 100V | 0.97typ (Io=90%) | 0.98typ (Io=90%) | | |
| | | ACIN 115V | 0.97typ (Io=100%) | 0.98typ (Io=100%) | | |
| ACIN 230V | | 0.85typ (Io=100%) | 0.87typ (Io=100%) | | | |
| INRUSH CURRENT[A] | ACIN 100V | 16typ (Io=90%) Ta=25°C at cold start | | | | |
| | ACIN 115V | 16typ (Io=100%) Ta=25°C at cold start | | | | |
| | ACIN 230V | 32typ (Io=100%) Ta=25°C at cold start | | | | |
| LEAKAGE CURRENT[ma] | 0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 24 | |
| | CURRENT[A] | 8 | 4.3 | 3.5 | 2.2 | |
| | WATTAGE[W] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | |
| | | ACIN 115V-264V | 40.0 | 51.6 | 52.5 | 52.8 |
| | LINE REGULATION[mV] *4 | 20max | 48max | 60max | 96max | |
| | LOAD REGULATION[mV] *4 | 40max | 100max | 120max | 150max | |
| | RIPPLE[mVp-p] *1 | 0 to +45°C | 80max | 120max | 120max | 120max |
| | | -10 to 0°C | 140max | 160max | 160max | 160max |
| | RIPPLE NOISE[mVp-p] *1 | 0 to +45°C | 120max | 150max | 150max | 150max |
| | | -10 to 0°C | 160max | 180max | 180max | 180max |
| | TEMPERATURE REGULATION[mV] | 0 to +45°C | 50max | 120max | 150max | 240max |
| | | -10 to +45°C | 60max | 150max | 180max | 290max |
| | DRIFT[mV] *2 | 20max | 48max | 60max | 96max | |
| | START-UP TIME[ms] | 350typ (ACIN 115V, Io=100%) | | | | |
| | HOLD-UP TIME[ms] | 20typ (ACIN 115V, Io=100%) | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 4.50 to 5.50 | 10.80 to 13.20 | 13.50 to 16.50 | 21.60 to 26.40 | | |
| OUTPUT VOLTAGE SETTING[V] | 5.00 to 5.15 | 12.00 to 12.48 | 15.00 to 15.60 | 24.00 to 24.96 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | |
| | OVERVOLTAGE PROTECTION[V] | 5.75 to 7.00 | 13.80 to 16.80 | 17.25 to 21.00 | 27.60 to 33.60 | |
| | OPERATING INDICATION | LED (Green) | | | | |
| | REMOTE SENSING | Not provided | | | | |
| REMOTE ON/OFF | Not provided | | | | | |
| ISOLATION | INPUT-OUTPUT | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | INPUT-FG | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | OUTPUT-FG | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature) | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE *5 | -20 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axes | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axes | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508 (Except option -J) Complies with DEN-AN | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | |
| | HARMONIC ATTENUATOR *8 | Complies with IEC61000-3-2 class A | | | | |

SPECIFICATIONS

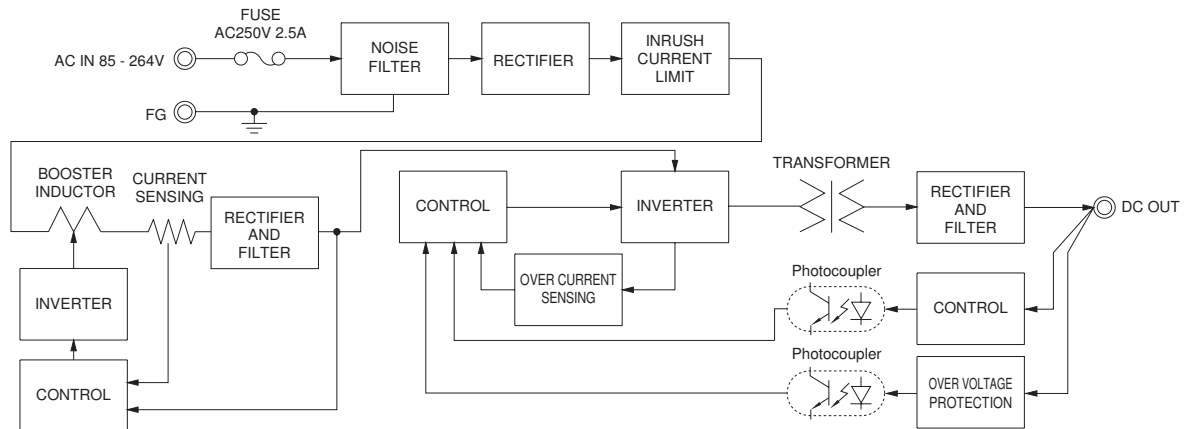
| | | |
|----------|------------------|--|
| OTHERS | CASE SIZE/WEIGHT | 38×80×99mm [1.50×3.15×3.90 inches] (Excluding terminal block and screw) (W×H×D) / 400g max |
| | COOLING METHOD | Convection |
| WARRANTY | WARRANTY | *6 5 years (subject to the operating conditions) |

- *1 This is the result of measurement of the testing board with capacitors of 22 μF and 0.1 μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Output power derating is required. As for DC input, consult us for advice.
- *4 Consult us about dynamic load and input response.
- *5 Output power derating is required. See 3.2 in Instruction Manual.
- *6 See 3.3 in Instruction Manual for more details.
- *7 Consult us about safety agency approvals for the models with optional functions.
- *8 Consult us about other classes.
- * Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
- * Parallel operation is not possible with this mode.
- * Sound noise may be heard from the power supply when used for pulse load.

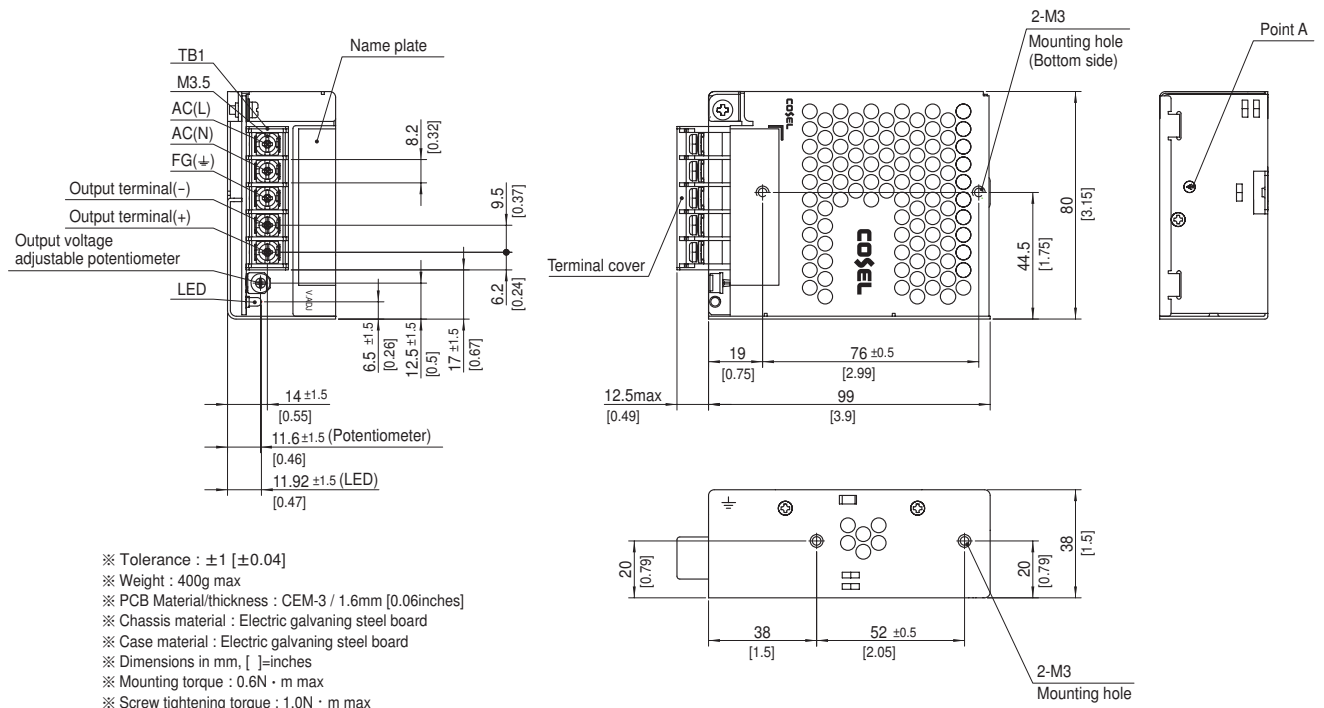
Features

- Compact design (Depth: 99mm 3.90inches)
- UL508 approved (Except option -J), and complies with SEMI F47
- Various connection interface options (vertical terminal [-T], AMP connector [-J])

Block diagram

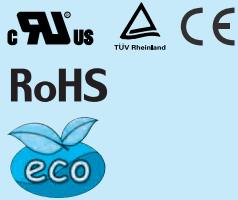


External view



PLA100F

PL A 100 F -□ -□
 ① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter
NAC-04-472



High voltage pulse noise type : NAP series
 Low leakage current type : NAM series
 *The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *7
- C : with Coating
- R : Remote on/off (Required external power source)
- J : Connector interface
- T : Vertical terminal block
- L : Lower power consumption (0.5W max at AC240Vin, no load, ErP-compliant)
- NI : with DIN rail

See 5.1 in Instruction Manual.

SPECIFICATIONS

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

| MODEL | | PLA100F-12 | PLA100F-15 | PLA100F-24 | PLA100F-36 | PLA100F-48 | |
|------------------------------------|---|---|--|-----------------|-----------------|-----------------|-----------------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3 (DC input *3) | | | | | |
| | CURRENT[A] | ACIN 100V | 1.2typ (Io=90%) | | | | |
| | | ACIN 115V | 1.1typ (Io=100%) | | | | |
| | | ACIN 230V | 0.6typ (Io=100%) | | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) (DC input and 440Hz *3) | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 82typ (Io=90%) | 83typ (Io=90%) | 85typ (Io=90%) | 86typ (Io=90%) | 86typ (Io=90%) |
| | | ACIN 115V | 82typ (Io=100%) | 83typ (Io=100%) | 85typ (Io=100%) | 86typ (Io=100%) | 86typ (Io=100%) |
| | | ACIN 230V | 85typ (Io=100%) | 86typ (Io=100%) | 88typ (Io=100%) | 89typ (Io=100%) | 89typ (Io=100%) |
| | POWER FACTOR | ACIN 100V | 0.98typ (Io=90%) | | | | |
| | | ACIN 115V | 0.98typ (Io=100%) | | | | |
| ACIN 230V | | 0.95typ (Io=100%) * Power factor correction is stopped at AC250V or more. | | | | | |
| INRUSH CURRENT[A] | ACIN 100V | 16typ (Io=90%) Ta=25°C at cold start | | | | | |
| | ACIN 115V | 16typ (Io=100%) Ta=25°C at cold start | | | | | |
| | ACIN 230V | 32typ (Io=100%) Ta=25°C at cold start | | | | | |
| LEAKAGE CURRENT[mA] | 0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | | | | |
| OUTPUT | VOLTAGE[V] | 12 | 15 | 24 | 36 | 48 | |
| | CURRENT[A] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | |
| | | ACIN 115V-264V | 8.4 | 6.7 | 4.3 | 2.8 | 2.1 |
| | WATTAGE[W] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | |
| | | ACIN 115V-264V | 100.8 | 100.5 | 103.2 | 100.8 | 100.8 |
| | LINE REGULATION[mV] | *4 | 48max | 60max | 96max | 144max | 192max |
| | LOAD REGULATION [mV] | Io=30 to 100% | 100max | 120max | 150max | 150max | 300max |
| | | Io=0 to 30% | Burst operation (Please contact us about detail) | | | | |
| | RIPPLE[mVp-p] | 0 to +40°C | 120max | 120max | 120max | 150max | 150max |
| | | -10 to 0°C | 160max | 160max | 160max | 200max | 400max |
| | | Io: load factor | Io=0 to 30% | 500max | 500max | 500max | 500max |
| | RIPPLE NOISE[mVp-p] | 0 to +40°C | 150max | 150max | 150max | 200max | 200max |
| | | -10 to 0°C | 180max | 180max | 180max | 240max | 500max |
| | | Io: load factor | Io=0 to 30% | 600max | 600max | 600max | 600max |
| | TEMPERATURE REGULATION[mV] | 0 to +40°C | 120max | 150max | 240max | 360max | 480max |
| | | -10 to +40°C | 180max | 180max | 290max | 440max | 600max |
| | DRIFT[mV] | *2 | 48max | 60max | 96max | 144max | 192max |
| START-UP TIME[ms] | 500typ (ACIN 115V, Io=100%) Ta=25°C | | | | | | |
| HOLD-UP TIME[ms] | 20typ (ACIN 115V, Io=100%) | | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 10.80 to 13.20 | | 13.50 to 16.50 | | 21.60 to 26.40 | | |
| OUTPUT VOLTAGE SETTING[V] | 12.00 to 12.48 | | 15.00 to 15.60 | | 24.00 to 24.96 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | |
| | OVERVOLTAGE PROTECTION[V] | 13.80 to 16.80 | 17.25 to 21.00 | 27.60 to 33.60 | 41.40 to 50.40 | 54.00 to 67.20 | |
| | OPERATING INDICATION | LED (Green) | | | | | |
| | REMOTE SENSING | Not provided | | | | | |
| REMOTE ON/OFF | Optional (Required external power source. Option -R) | | | | | | |
| ISOLATION | INPUT-OUTPUT • RC | *9 AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | | |
| | INPUT-FG | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | | |
| | OUTPUT • RC-FG | *9 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | | |
| | OUTPUT-RC | *9 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE *5 | -20 to +70°C (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axes | | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axes | | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508 (Except option -J) Complies with DEN-AN | | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | |
| | HARMONIC ATTENUATOR *8 | Complies with IEC61000-3-2 class A | | | | | |

SPECIFICATIONS

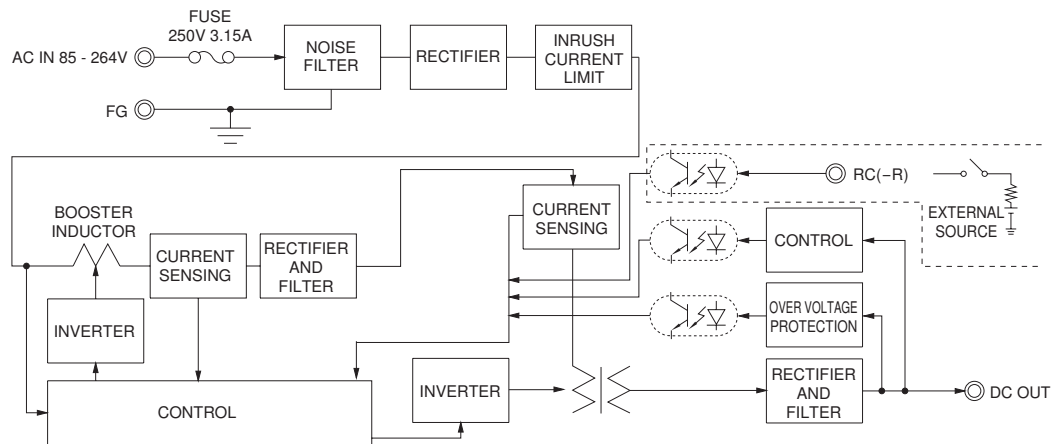
| | | |
|----------|------------------|---|
| OTHERS | CASE SIZE/WEIGHT | 41 X 97 X 109mm [1.61 X 3.82 X 4.29 inches] (Excluding terminal block and screw) (W X H X D) / 500g max |
| | COOLING METHOD | Convection |
| WARRANTY | WARRANTY | *6 5 years (subject to the operating conditions) |

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

Features

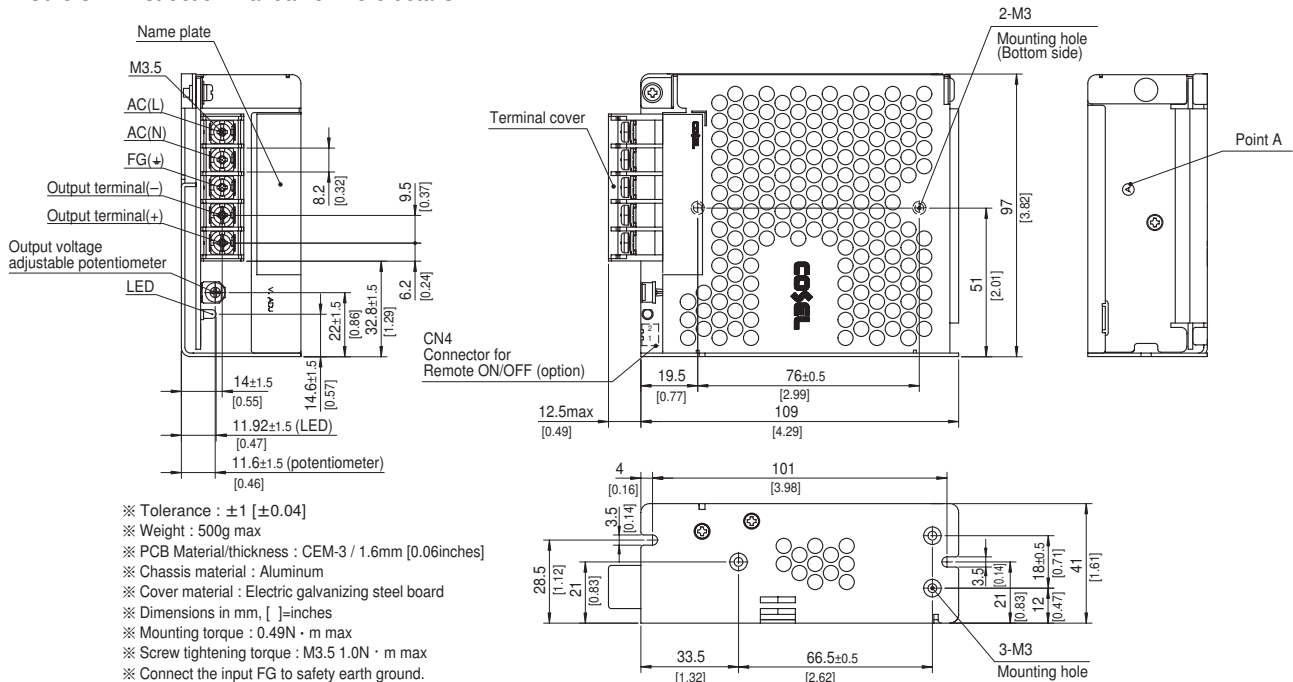
- Compact design (Depth: 109mm 4.29inches)
- High efficiency (88%typ PLA100F-24, AC230Vin, 100% load)
- Low power consumption (1.5W typ AC240Vin, no load at standard model)
- Lower power consumption (0.5Wmax AC240Vin, no load at option -L: see instruction manual)
- UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- Various connection interface options (vertical terminal [-T], AMP connector [-J])

Block diagram



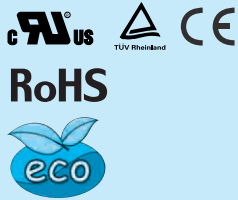
External view

The external size of -R option, -J option, -N1 option and -T option models is different from the standard model. See "5. Options and Others" in Instruction Manual for more details.



PLA150F

PL A 150 F -□ -□
 ① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter
NAC-04-472



High voltage pulse noise type : NAP series
 Low leakage current type : NAM series
 *The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *7
- C : with Coating
- R : Remote on/off (Required external power source)
- J : Connector interface
- T : Vertical terminal block
- L : Lower power consumption (0.5W max at AC240Vin, no load, ErP-compliant)
- NI : with DIN rail

See 5.1 in Instruction Manual.

SPECIFICATIONS

* Please consider "PBA150F-5-N" about 5V output with case cover.

| MODEL | | PLA150F-12 | PLA150F-15 | PLA150F-24 | PLA150F-36 | PLA150F-48 |
|---|--|---|-----------------|-----------------|-----------------|-----------------|
| VOLTAGE[V] | | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3 (DC input *3) | | | | |
| CURRENT[A] | ACIN 100V | 1.7typ (Io=90%) | | | | |
| | ACIN 115V | 1.6typ (Io=100%) | | | | |
| | ACIN 230V | 0.8typ (Io=100%) | | | | |
| FREQUENCY[Hz] | | 50 / 60 (47 - 63) (DC input and 440Hz *3) | | | | |
| EFFICIENCY[%] | ACIN 100V | 84typ (Io=90%) | 84typ (Io=90%) | 87typ (Io=90%) | 87typ (Io=90%) | 87typ (Io=90%) |
| | ACIN 115V | 84typ (Io=100%) | 84typ (Io=100%) | 87typ (Io=100%) | 87typ (Io=100%) | 87typ (Io=100%) |
| | ACIN 230V | 87typ (Io=100%) | 87typ (Io=100%) | 90typ (Io=100%) | 90typ (Io=100%) | 90typ (Io=100%) |
| POWER FACTOR | ACIN 100V | 0.98typ (Io=90%) | | | | |
| | ACIN 115V | 0.98typ (Io=100%) | | | | |
| | ACIN 230V | 0.95typ (Io=100%) * Power factor correction is stopped at AC250V or more. | | | | |
| INRUSH CURRENT[A] | ACIN 100V | 16typ (Io=90%) Ta=25°C at cold start | | | | |
| | ACIN 115V | 16typ (Io=100%) Ta=25°C at cold start | | | | |
| | ACIN 230V | 32typ (Io=100%) Ta=25°C at cold start | | | | |
| LEAKAGE CURRENT[mA] | | 0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | | |
| VOLTAGE[V] | | 12 | 15 | 24 | 36 | 48 |
| CURRENT[A] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | |
| | ACIN 115V-264V | 12.5 | 10 | 6.4 | 4.2 | 3.2 |
| WATTAGE[W] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | |
| | ACIN 115V-264V | 150.0 | 150.0 | 153.6 | 151.2 | 153.6 |
| LINE REGULATION[mV] *4 | | 48max | 60max | 96max | 144max | 192max |
| LOAD REGULATION [mV] *4 | Io=30 to 100% | 100max | 120max | 150max | 150max | 300max |
| | Io=0 to 30% | Burst operation (Please contact us about detail) | | | | |
| RIPPLE[mVp-p] | 0 to +40°C | 120max | 120max | 120max | 150max | 150max |
| | -10 to 0°C | 160max | 160max | 160max | 200max | 400max |
| | Io: load factor | Io=0 to 30% | 500max | 500max | 500max | 500max |
| RIPPLE NOISE[mVp-p] *1 | 0 to +40°C | 150max | 150max | 150max | 200max | 200max |
| | -10 to 0°C | 180max | 180max | 180max | 240max | 500max |
| | Io: load factor | Io=0 to 30% | 600max | 600max | 600max | 600max |
| TEMPERATURE REGULATION[mV] | 0 to +40°C | 120max | 150max | 240max | 360max | 480max |
| | -10 to +40°C | 180max | 180max | 290max | 440max | 600max |
| DRIFT[mV] *2 | | 48max | 60max | 96max | 144max | 192max |
| START-UP TIME[ms] | | 500typ (ACIN 115V, Io=100%) Ta=25°C | | | | |
| HOLD-UP TIME[ms] | | 20typ (ACIN 115V, Io=100%) | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 10.80 to 13.20 | 13.50 to 16.50 | 21.60 to 26.40 | 32.40 to 39.60 | 43.20 to 52.80 |
| OUTPUT VOLTAGE SETTING[V] | | 12.00 to 12.48 | 15.00 to 15.60 | 24.00 to 24.96 | 36.00 to 37.44 | 48.00 to 49.92 |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | |
| | OVERVOLTAGE PROTECTION[V] | 13.80 to 16.80 | 17.25 to 21.00 | 27.60 to 33.60 | 41.40 to 50.40 | 54.00 to 67.20 |
| | OPERATING INDICATION | LED (Green) | | | | |
| | REMOTE SENSING | Not provided | | | | |
| REMOTE ON/OFF | | Optional (Required external power source. Option -R) | | | | |
| ISOLATION | INPUT-OUTPUT · C *9 | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | INPUT-FG | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | |
| | OUTPUT · RC-FG *9 | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | |
| | OUTPUT-RC *9 | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE *5 | -20 to +70°C (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axes | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axes | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178, UL508 (Except option -J) Complies with DEN-AN | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | |
| | HARMONIC ATTENUATOR *8 | Complies with IEC61000-3-2 class A | | | | |

SPECIFICATIONS

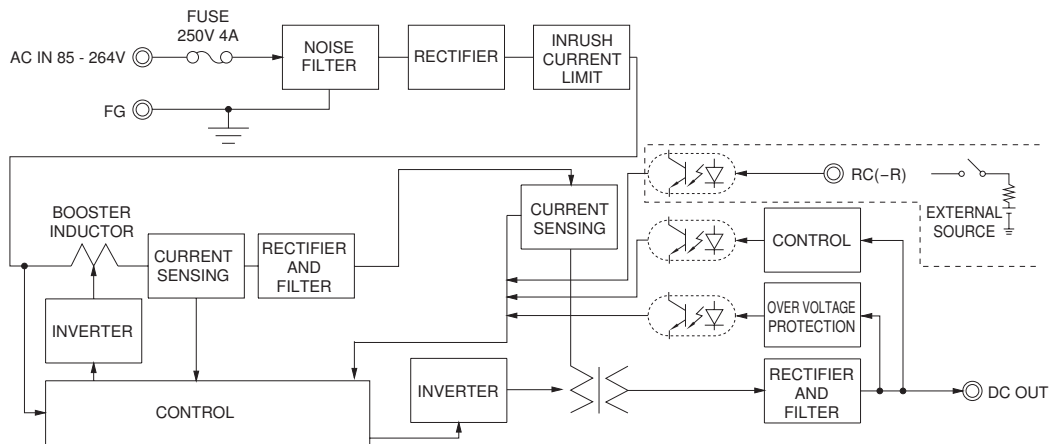
| | | |
|----------|------------------|---|
| OTHERS | CASE SIZE/WEIGHT | 41 X 97 X 129mm [1.61 X 3.82 X 5.08 inches] (Excluding terminal block and screw) (W X H X D) / 600g max |
| | COOLING METHOD | Convection |
| WARRANTY | WARRANTY | *6 5 years (subject to the operating conditions) |

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

Features

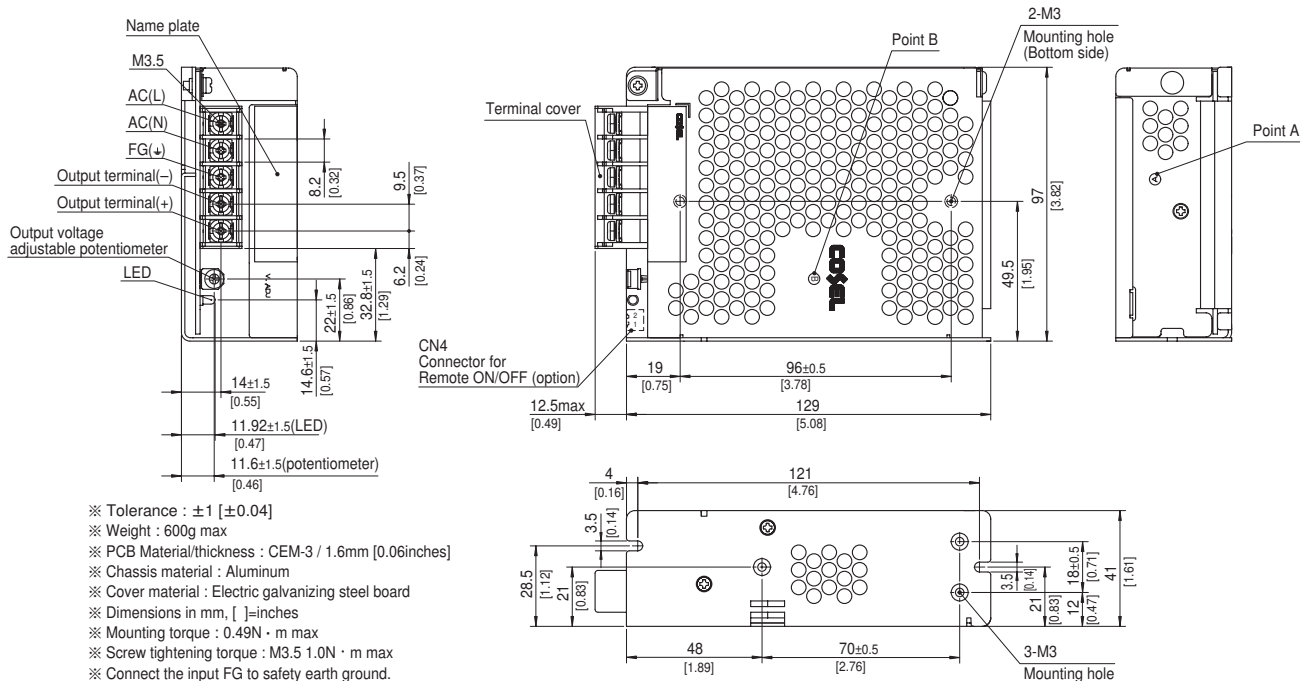
- Compact design (Depth: 129mm 5.08inches)
- High efficiency (90%typ PLA150F-24, AC230Vin, 100% load)
- Low power consumption (1.5W typ AC240Vin, no load at standard model)
- Lower power consumption (0.5Wmax AC240Vin, no load at option -L: see instruction manual)
- UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- Various connection interface options (vertical terminal [-T], AMP connector [-J])

Block diagram



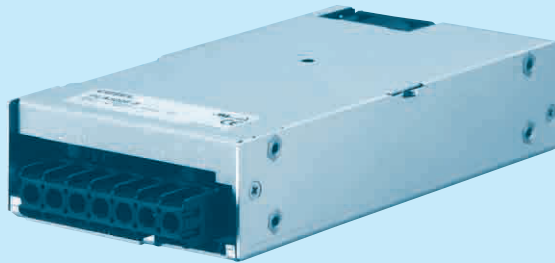
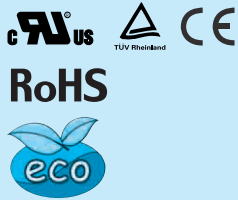
External view

The external size of -R option, -J option, -N1 option and -T option models is different from the standard model. See "5. Options and Others" in Instruction Manual for more details.



PLA300F

PL A 300 F -□ -□
 ① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter
NAC-06-472



High voltage pulse noise type : NAP series
 Low leakage current type : NAM series
 *The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *7
- C : with Coating
- G : Low leakage current
- V : External potentiometer for output voltage adjustment
- U : Low input voltage stop (Complies with SEMI F-47)
- R : Remote on/off (Required external power source)
- F4: Low speed fan
- T2: Horizontal terminal block (non-screw-hold type)

See 5.1 in Instruction Manual.

SPECIFICATIONS

| MODEL | | PLA300F-5 | PLA300F-12 | PLA300F-15 | PLA300F-24 | PLA300F-36 | PLA300F-48 | | |
|------------------------------------|---|--|--|------------------|-----------------|-----------------|-----------------|-----------------|--------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3 (DC input and AC265 - 277V input *3) | | | | | | | |
| | CURRENT[A] | ACIN 100V | 3.1typ (Io=90%) | 3.4typ (Io=90%) | | | | | |
| | | ACIN 115V | 3.0typ (Io=100%) | 3.3typ (Io=100%) | | | | | |
| | | ACIN 230V | 1.5typ (Io=100%) | 1.7typ (Io=100%) | | | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) (DC input and 440Hz *3) | | | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 73typ (Io=90%) | 78typ (Io=90%) | 80typ (Io=90%) | 84typ (Io=90%) | 84typ (Io=90%) | 84typ (Io=90%) | |
| | | ACIN 115V | 74typ (Io=100%) | 78typ (Io=100%) | 80typ (Io=100%) | 84typ (Io=100%) | 84typ (Io=100%) | 84typ (Io=100%) | |
| | | ACIN 230V | 77typ (Io=100%) | 81typ (Io=100%) | 83typ (Io=100%) | 87typ (Io=100%) | 87typ (Io=100%) | 87typ (Io=100%) | |
| | POWER FACTOR | ACIN 100V | 0.98typ (Io=90%) | | | | | | |
| | | ACIN 115V | 0.98typ (Io=100%) | | | | | | |
| ACIN 230V | | 0.95typ (Io=100%) | | | | | | | |
| INRUSH CURRENT[A] | ACIN 100V | 20typ (Io=90%) Ta=25°C at cold start | | | | | | | |
| | ACIN 115V | 20typ (Io=100%) Ta=25°C at cold start | | | | | | | |
| | ACIN 230V | 40typ (Io=100%) Ta=25°C at cold start | | | | | | | |
| LEAKAGE CURRENT[ma] | 0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 24 | 36 | 48 | | |
| | CURRENT[A] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | | | |
| | | ACIN 115V-264V | 50 | 25 | 20 | 12.5 | 8.4 | 6.3 | |
| | WATTAGE[W] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | | | |
| | | ACIN 115V-264V | 250 | 300 | 300 | 300 | 302.4 | 302.4 | |
| | LINE REGULATION[mV] | *4 | 20max | 48max | 60max | 96max | 144max | 192max | |
| | LOAD REGULATION[mV] | *4 | 40max | 100max | 120max | 150max | 150max | 300max | |
| | RIPPLE[mVp-p] | *1 | 0 to +50°C | 80max | 120max | 120max | 120max | 150max | 150max |
| | | | -10 to 0°C | 140max | 160max | 160max | 160max | 160max | 400max |
| | RIPPLE NOISE[mVp-p] | *1 | 0 to +50°C | 120max | 150max | 150max | 150max | 200max | 200max |
| | | | -10 to 0°C | 160max | 180max | 180max | 180max | 240max | 500max |
| | TEMPERATURE REGULATION[mV] | | 0 to +50°C | 50max | 120max | 150max | 240max | 360max | 480max |
| | | | -10 to +50°C | 75max | 180max | 180max | 290max | 440max | 600max |
| | DRIFT[mV] | *2 | 20max | 48max | 60max | 96max | 144max | 192max | |
| | START-UP TIME[ms] | | 300typ (ACIN 115V, Io=100%) | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 115V, Io=100%) | | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 4.50 to 5.50 | 10.80 to 13.20 | 13.50 to 16.50 | 21.60 to 26.40 | 32.40 to 39.60 | 43.20 to 52.80 | | |
| OUTPUT VOLTAGE SETTING[V] | | 5.00 to 5.15 | 12.00 to 12.48 | 15.00 to 15.60 | 24.00 to 24.96 | 36.00 to 37.44 | 48.00 to 49.92 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| | OVERVOLTAGE PROTECTION[V] | 5.75 to 7.00 | 13.80 to 16.80 | 17.25 to 21.00 | 27.60 to 33.60 | 41.40 to 50.40 | 55.20 to 67.20 | | |
| | OPERATING INDICATION | LED (Green) | | | | | | | |
| | REMOTE SENSING | Not provided | | | | | | | |
| REMOTE ON/OFF | Optional (Required external power source. Option -R) | | | | | | | | |
| ISOLATION | INPUT-OUTPUT • RC | *10 | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| | INPUT-FG | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| | OUTPUT • RC-FG | *10 | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| | OUTPUT-RC | *10 | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE *5 | -20 to +70°C (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max | | | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axes | | | | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axes | | | | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN | | | | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | |
| | HARMONIC ATTENUATOR *9 | Complies with IEC61000-3-2 class A | | | | | | | |

SPECIFICATIONS

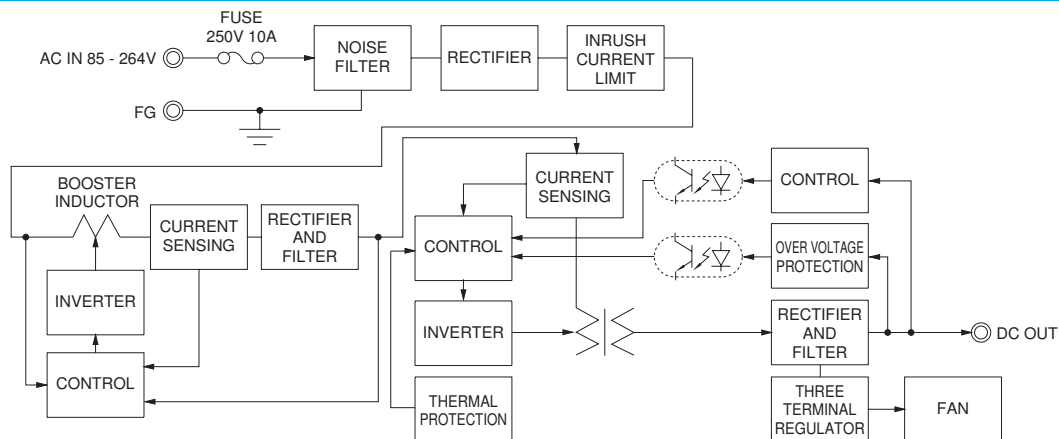
| | | |
|----------|------------------|---|
| OTHERS | CASE SIZE/WEIGHT | 102 X 41 X 190mm [4.02 X 1.61 X 7.48 inches] (Excluding terminal block and screw) (W X H X D) / 1.0kg max |
| | COOLING METHOD | *8 Forced cooling (internal fan) |
| WARRANTY | WARRANTY | *6 5 years (subject to the operating conditions) |

- *1 This is the result of measurement of the testing board with capacitors of 22 μF and 0.1 μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25 °C.
- *3 Output power derating is required. Consult us if the power supply needs to be used for DC input, 440Hz input or AC265-277V input.
- *4 Consult us about dynamic load and input response.
- *5 Output power derating is required. See 3.2 in Instruction Manual.
- *6 See 3.3 in Instruction Manual for more details.
- *7 Consult us about safety agency approvals for the models with optional functions.
- *8 The fan speed slows down at no load.
- *9 Consult us about other classes.
- *10 The RC terminal is added to option -R models. The RC terminal is isolated from input, output, and FG.
- * Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
- * Parallel operation is not possible with this mode.
- * Sound noise may be heard from the power supply when used for pulse load.

Features

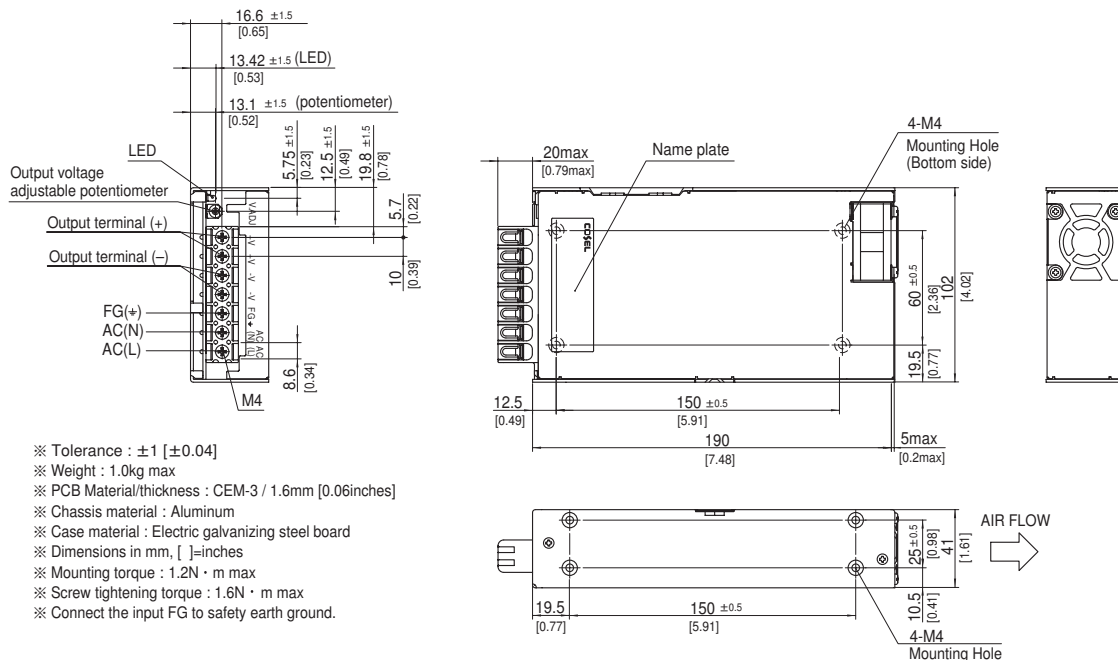
- Cost-effective
- Longer life (see Instruction Manual)
- Low profile (meets 1U height = 41 mm or 1.61 inches)
- Wide operating temperature range (-20°C to +70°C see instruction manual)
- Screw hold type terminal block
- Slow fan speed at no load
- Many optional functions
- Complies with SEMI F-47 (-U option, see Instruction Manual for details)

Block diagram



External view

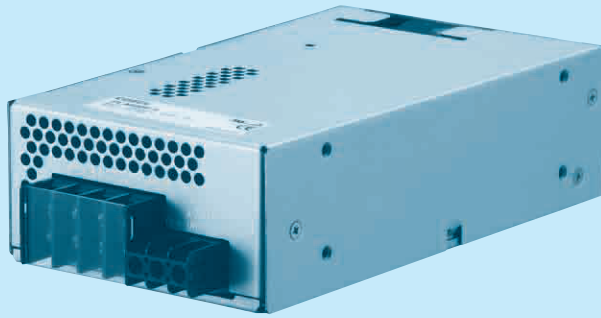
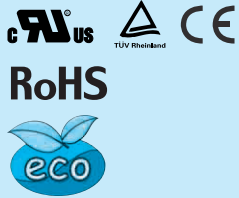
The external size of -V option, -R option, and -T2 option models is different from the standard model. See "5. Options and Others" in Instruction Manual for more details.



PLA600F

PL A 600 F -□ -□

① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter
NAC-16-472



High voltage pulse noise type : NAP series
Low leakage current type : NAM series

*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *7
- C : with Coating
- G : Low leakage current
- V : External potentiometer for output voltage adjustment
- U : Low input voltage stop (Complies with SEMI F-47)
- W: Parallel operation, LV alarm Remote sensing
- R : Remote on/off (Required external power source)
- F4: Low speed fan
- T2: Horizontal terminal block (non-screw-hold type)

See 5.1 in Instruction Manual.

SPECIFICATIONS

| MODEL | | PLA600F-5 | PLA600F-12 | PLA600F-15 | PLA600F-24 | PLA600F-36 | PLA600F-48 | | |
|------------------------------------|--|--|--|------------------|-----------------|-----------------|-----------------|-----------------|--------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *4 (DC input and AC265 - 277V input *4) | | | | | | | |
| | CURRENT[A] | ACIN 100V | 6.2typ (Io=90%) | 6.7typ (Io=90%) | | | | | |
| | | ACIN 115V | 6.0typ (Io=100%) | 6.5typ (Io=100%) | | | | | |
| | | ACIN 230V | 3.0typ (Io=100%) | 3.2typ (Io=100%) | | | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) (DC input and 440Hz *4) | | | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 74typ (Io=90%) | 81typ (Io=90%) | 81typ (Io=90%) | 84typ (Io=90%) | 85typ (Io=90%) | 85typ (Io=90%) | |
| | | ACIN 115V | 75typ (Io=100%) | 81typ (Io=100%) | 81typ (Io=100%) | 84typ (Io=100%) | 85typ (Io=100%) | 85typ (Io=100%) | |
| | | ACIN 230V | 77typ (Io=100%) | 84typ (Io=100%) | 84typ (Io=100%) | 88typ (Io=100%) | 88typ (Io=100%) | 88typ (Io=100%) | |
| | POWER FACTOR | ACIN 100V | 0.98typ (Io=90%) | | | | | | |
| | | ACIN 115V | 0.98typ (Io=100%) | | | | | | |
| ACIN 230V | | 0.95typ (Io=100%) | | | | | | | |
| INRUSH CURRENT[A] | ACIN 100V | 20/40typ (Io=90%) (Primary inrush current /Secondary inrush current) (More than 3sec to re-start) | | | | | | | |
| | ACIN 115V | 20/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3sec to re-start) | | | | | | | |
| | ACIN 230V | 40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3sec to re-start) | | | | | | | |
| LEAKAGE CURRENT[ma] | 1.5max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) | | | | | | | | |
| OUTPUT | VOLTAGE[V] | 5 | 12 | 15 | 24 | 36 | 48 | | |
| | CURRENT[A] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | | | |
| | | ACIN 115V-264V | 100 | 50 | 40 | 25 | 16.7 | 12.5 | |
| | WATTAGE[W] | ACIN 85-115V | Output derating is required at ACIN 115V or less (refer to instruction manual 3.2) | | | | | | |
| | | ACIN 115V-264V | 500 | 600 | 600 | 600 | 601.2 | 600 | |
| | LINE REGULATION[mV] | *8 | 20max | 48max | 60max | 96max | 144max | 192max | |
| | LOAD REGULATION[mV] | *8 | 40max | 100max | 120max | 150max | 150max | 300max | |
| | RIPPLE[mVp-p] | *1 | 0 to +50°C | 80max | 120max | 120max | 120max | 150max | 150max |
| | | | -20 to 0°C | 140max | 160max | 160max | 160max | 160max | 400max |
| | RIPPLE NOISE[mVp-p] | *1 | 0 to +50°C | 120max | 150max | 150max | 150max | 200max | 200max |
| | | | -20 to 0°C | 160max | 180max | 180max | 180max | 240max | 500max |
| | TEMPERATURE REGULATION[mV] | | 0 to +50°C | 50max | 120max | 150max | 240max | 360max | 480max |
| | | | -20 to +50°C | 75max | 180max | 180max | 290max | 440max | 600max |
| | DRIFT[mV] | *2 | 20max | 48max | 60max | 96max | 144max | 192max | |
| | START-UP TIME[ms] | | 300typ (ACIN 115V, Io=100%) | | | | | | |
| | HOLD-UP TIME[ms] | | 20typ (ACIN 115V, Io=100%) | | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | | 4.50 to 5.50 | 10.80 to 13.20 | 13.50 to 16.50 | 21.60 to 26.40 | 32.40 to 39.60 | 43.20 to 52.80 | | |
| OUTPUT VOLTAGE SETTING[V] | | 5.00 to 5.15 | 12.00 to 12.48 | 15.00 to 15.60 | 24.00 to 24.96 | 36.00 to 37.44 | 48.00 to 49.92 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | | | |
| | OVERVOLTAGE PROTECTION[V] | 5.75 to 7.00 | 13.80 to 16.80 | 17.25 to 21.00 | 27.60 to 33.60 | 41.40 to 50.40 | 55.20 to 67.20 | | |
| | OPERATING INDICATION | LED (Green) | | | | | | | |
| | REMOTE SENSING | Optional (Option -W) | | | | | | | |
| REMOTE ON/OFF | Optional (Required external power source. Option -R) | | | | | | | | |
| ISOLATION | INPUT-OUTPUT • RC | *3 | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| | INPUT-FG | | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| | OUTPUT • RC-FG | *3 | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| | OUTPUT-RC | *3 | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature) | | | | | | |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE *5 | -20 to +70°C (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max | | | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axes | | | | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axes | | | | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN | | | | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B | | | | | | | |
| | HARMONIC ATTENUATOR *10 | Complies with IEC61000-3-2 class A | | | | | | | |

SPECIFICATIONS

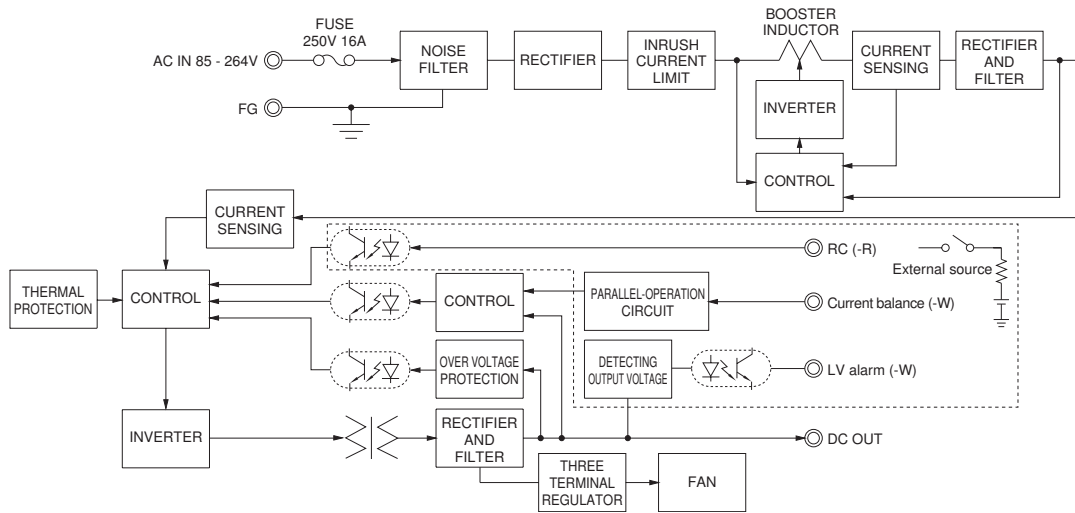
| | | |
|-----------------|-------------------------|---|
| OTHERS | CASE SIZE/WEIGHT | 120×61×215mm [4.72×2.40×8.46 inches] (Excluding terminal block and screw) (W×H×D) / 2.0kg max |
| | COOLING METHOD | *9 Forced cooling (internal fan) |
| WARRANTY | WARRANTY | *6 5 years (subject to the operating conditions) |

- *1 This is the result of measurement of the testing board with capacitors of 22 μ F and 0.1 μ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 The RC terminal is added to option –R models. The RC terminal is isolated from input, output, and FG.
- *4 Output power derating is required. Consult us if the power supply needs to be used for DC input, 440Hz input or AC265-277V input.
- *5 Output power derating is required. See 3.2 in Instruction Manual.
- *6 See 3.3 in Instruction Manual for more details.
- *7 Consult us about safety agency approvals for the models with optional functions.
- *8 Consult us about dynamic load and input response.
- *9 The fan speed slows down at no load.
- *10 Consult us about other classes.
- * Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
- * Parallel operation is allowed for PLA600F models with the –W option only.
- * Sound noise may be heard from the power supply when used for pulse load.

Features

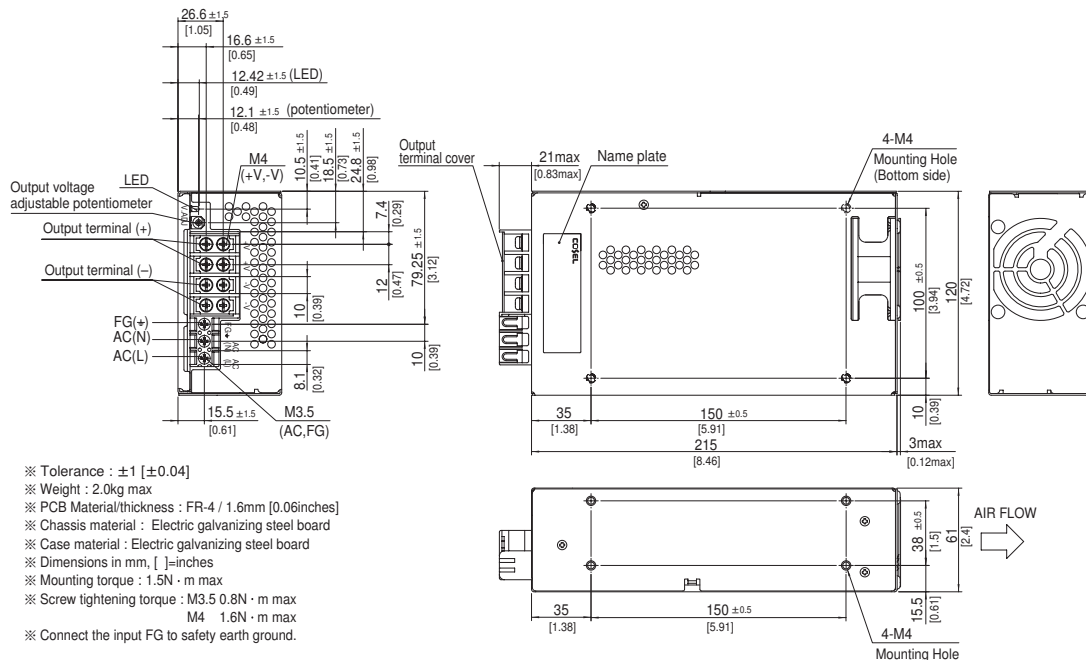
- Cost-effective
- Longer life (see Instruction Manual)
- Low profile (meets 1U height = 41 mm or 1.61 inches)
- Wide operating temperature range (-20°C to +70°C see instruction manual)
- Screw hold type terminal block
- Slow fan speed at no load
- Many optional functions
- Complies with SEMI F-47 (-U option, see Instruction Manual for details)

Block diagram



External view

The external size of –V option, –W option, –R option, and –T2 option is different from the standard model. See “5. Options and Others” in Instruction Manual for more details.



- ※ Tolerance : ± 1 [± 0.04]
- ※ Weight : 2.0kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
- ※ Chassis material : Electric galvanizing steel board
- ※ Case material : Electric galvanizing steel board
- ※ Dimensions in mm, []=inches
- ※ Mounting torque : 1.5N · m max
- ※ Screw tightening torque : M3.5 0.8N · m max
M4 1.6N · m max
- ※ Connect the input FG to safety earth ground.

FORTEC

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