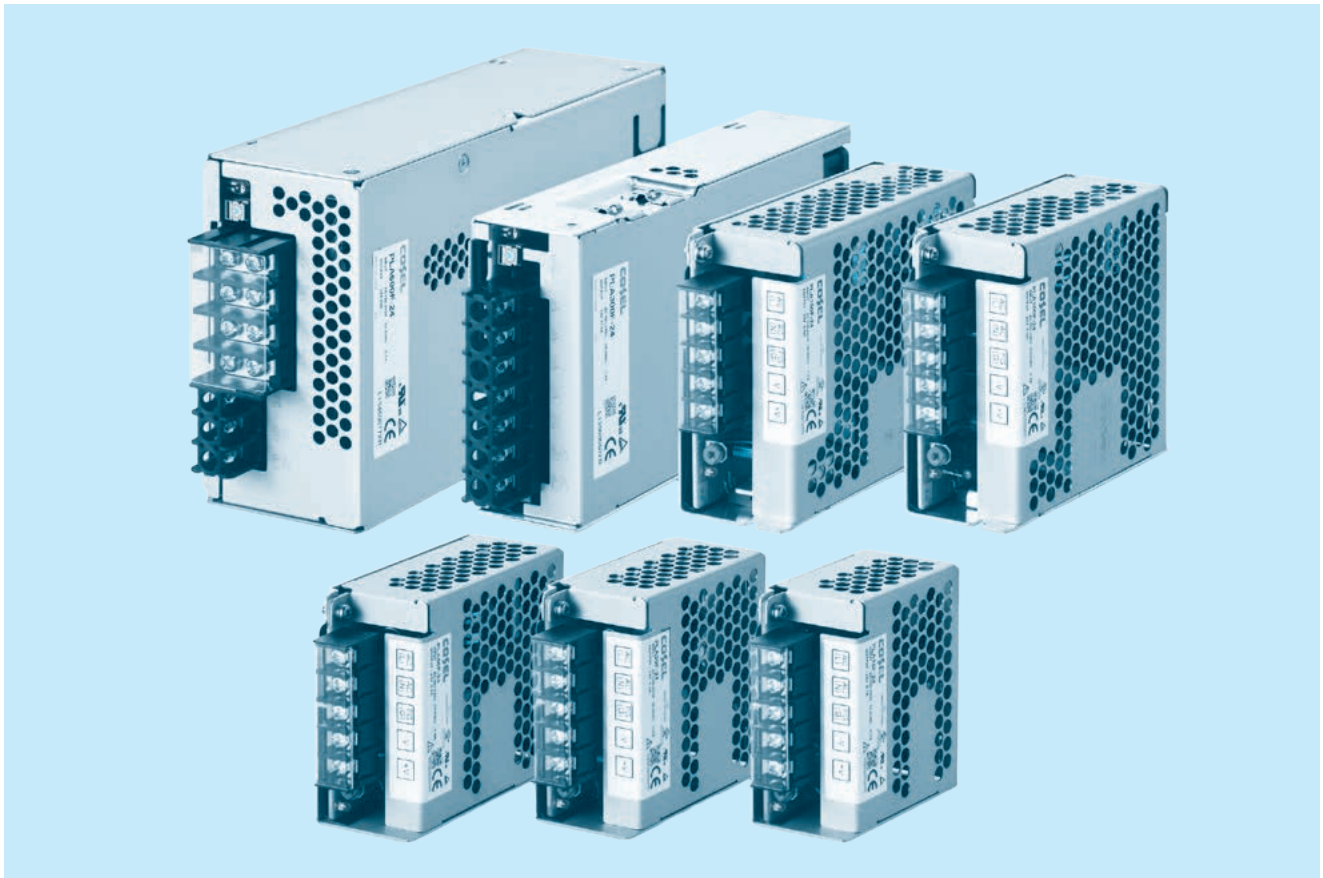




# PLA-series



## Feature

Low Profile (15, 30, 50, 100, 150, 300W : 1U size.  
600W : 2U size)  
Wide temperature range (-20°C to +70°C, Derating is required)  
Harmonic attenuator (Complies with IEC61000-3-2 class A)  
Universal input (AC85 - 264V, Derating is required)  
Low power consumption at no load  
Screw hold type terminal block (Only PLA300F and PLA600F)  
Complies with SEMI F-47 (Option -U : Refer to instruction manual)  
Many optional functions

## Safety agency approvals

UL60950-1, C-UL (CSA60950-1), EN62368-1  
UL508 (PLA15F-150F) approved  
Complies with DEN-AN

## 5-year warranty (See Instruction Manual)

## CE marking

Low Voltage Directive

## UKCA marking

Electrical Equipment Safety Regulations  
RoHS Regulations

## EMI

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

## 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

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Example recommended EMI/EMC filter  
NAC-04-472



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

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

See 5.1 in Instruction Manual.

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

## SPECIFICATIONS

	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%)	77.0typ (Io=90%)	78.0typ (Io=90%)
		ACIN 115V	73.5typ (Io=100%)	77.0typ (Io=100%)	78.5typ (Io=100%)
		ACIN 230V	75.5typ (Io=100%)	78.5typ (Io=100%)	79.5typ (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]	0.30max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 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	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
		-10 to 0°C	140max	160max	160max
		Io=0 to 35%	160max	240max	280max
	RIPPLE NOISE[mVp-p] *1	0 to +50°C	120max	150max	150max
		-10 to 0°C	160max	180max	180max
		Io=0 to 35%	240max	300max	320max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	120max	240max
		-10 to +50°C	60max	150max	290max
PROTECTION CIRCUIT AND OTHERS	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
	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)			
ISOLATION	REMOTE SENSING	Not provided			
	REMOTE ON/OFF	Not provided			
	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)			
ENVIRONMENT	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature)			
	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 <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes			
SAFETY AND NOISE REGULATIONS	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes			
	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN62368-1, 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)

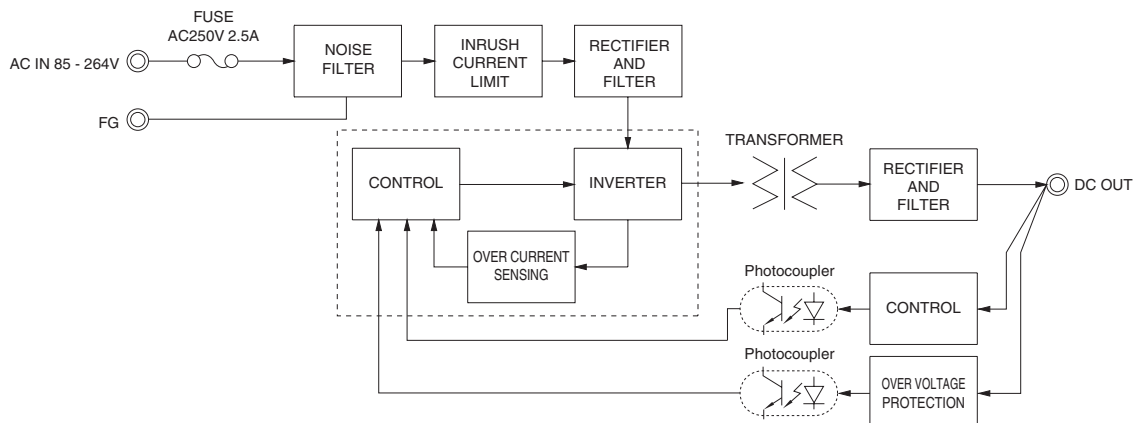
- \*1 This is the result of measurement of the testing board with capacitors of 22  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.  
See 1.6 of Instruction Manual for more details.  
When the load factor is 0 - 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 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.

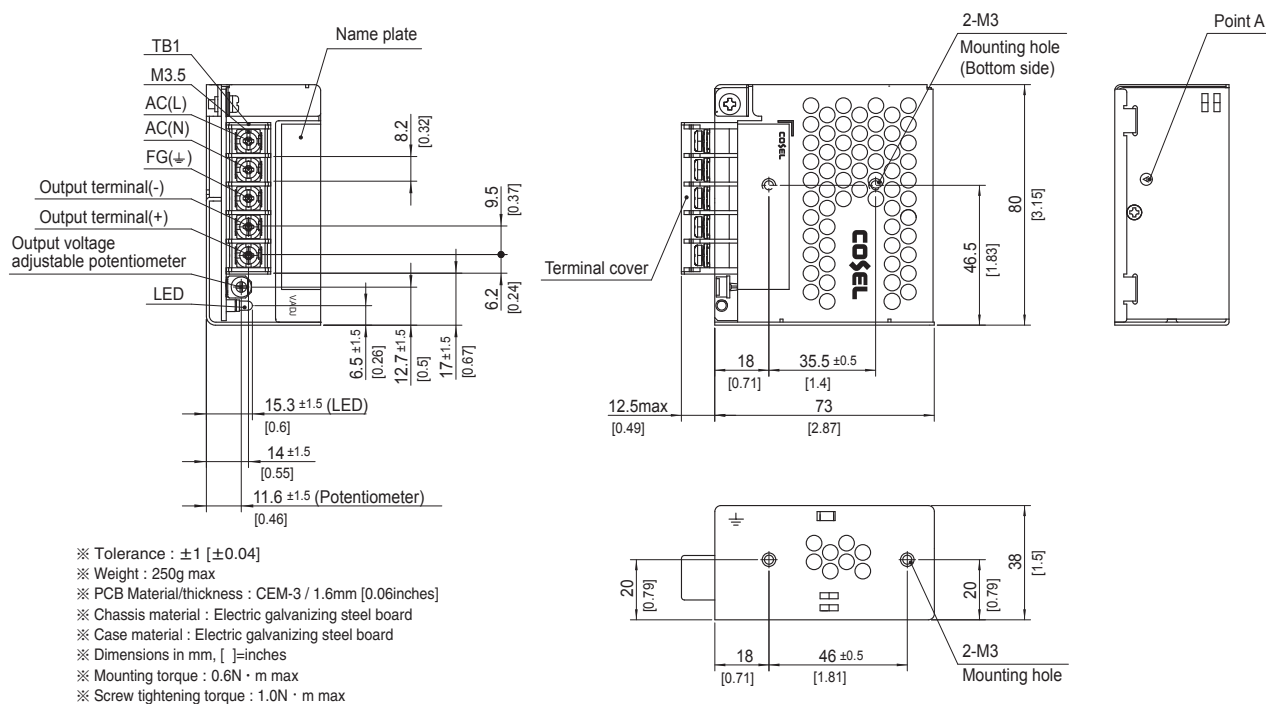
## Features

- 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



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Example recommended EMI/EMC filter  
NAC-04-472



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

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

See 5.1 in Instruction Manual.

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

## SPECIFICATIONS

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%)
		ACIN 115V	74.0typ (Io=100%)	80.5typ (Io=100%)	81.5typ (Io=100%)
		ACIN 230V	77.0typ (Io=100%)	81.0typ (Io=100%)	82.0typ (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]	0.65max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 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	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
		-10 to 0°C	140max	160max	160max
	RIPPLE NOISE[mVp-p] *1	0 to +50°C	120max	150max	150max
		-10 to 0°C	160max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	120max	150max
		-10 to +50°C	60max	150max	180max
	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%)			
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 <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes			
	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes			
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN62368-1, 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  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.

See 1.6 of Instruction Manual for more details.

\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.

\*3 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.

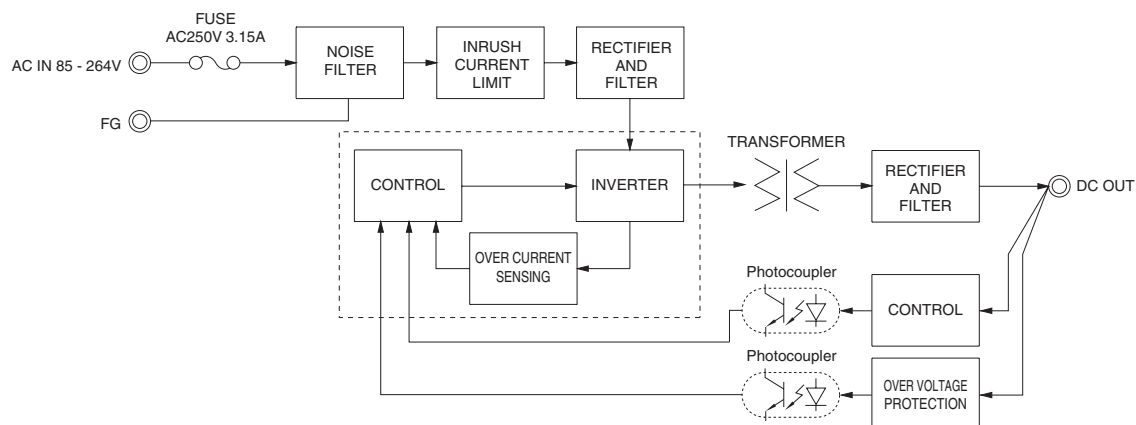
\* Parallel operation is not possible with this mode.

\* Sound noise may be heard from the power supply when used for pulse load.

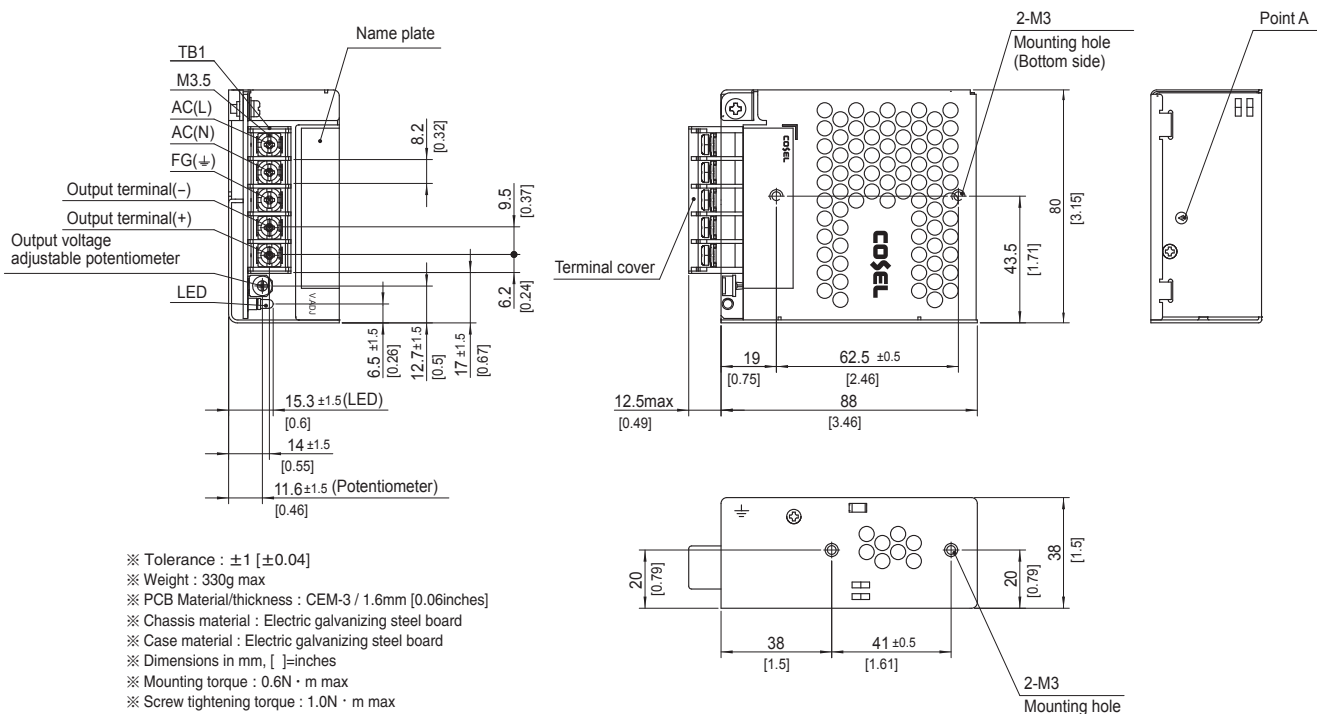
## Features

- 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



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Example recommended EMI/EMC filter  
NAC-04-472



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

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

See 5.1 in Instruction Manual.

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

## SPECIFICATIONS

	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%)	81.5typ (Io=90%)
		ACIN 115V	75.0typ (Io=100%)	80.5typ (Io=100%)	82.0typ (Io=100%)
		ACIN 230V	76.5typ (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%)	
OUTPUT	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 IEC62368-1 and DEN-AN)			
	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
	LINE REGULATION[mV]	*4	20max	48max	60max
	LOAD REGULATION[mV]	*4	40max	100max	120max
PROTECTION CIRCUIT AND OTHERS	RIPPLE[mVp-p]	*1	0 to +45°C	80max	120max
			-10 to 0°C	140max	160max
	RIPPLE NOISE[mVp-p]	*1	0 to +45°C	120max	150max
			-10 to 0°C	160max	180max
	TEMPERATURE REGULATION[mV]		0 to +45°C	50max	120max
			-10 to +45°C	60max	150max
	DRIFT[mV]	*2	20max	48max	60max
	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
ISOLATION	OUTPUT VOLTAGE SETTING[V]	5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	24.00 to 24.96
	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)			
ENVIRONMENT	REMOTE SENSING	Not provided			
	REMOTE ON/OFF	Not provided			
	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)			
SAFETY AND NOISE REGULATIONS	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature)			
	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 <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes			
HARMONIC ATTENUATOR *8	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes			
	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN62368-1, 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	HARMONIC ATTENUATOR	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  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.  
See 1.6 of Instruction Manual for more details.

\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.

\*3 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.

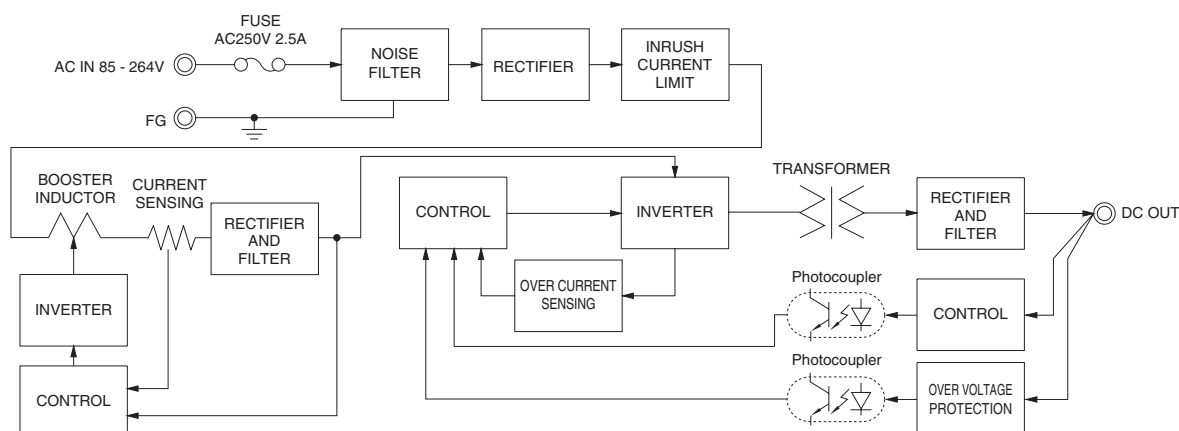
\* Parallel operation is not possible with this mode.

\* Sound noise may be heard from the power supply when used for pulse load.

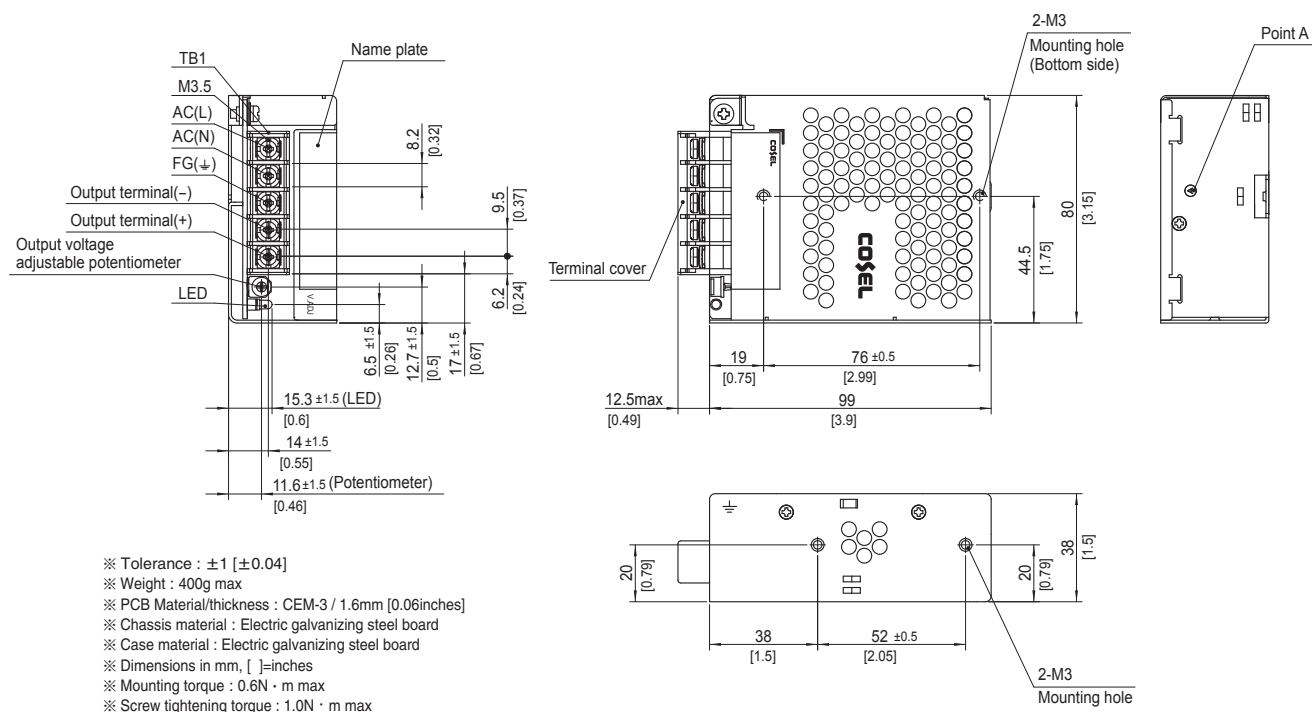
## Features

- 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



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Example recommended EMI/EMC filter  
NAC-04-472



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

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

See 5.1 in Instruction Manual.

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

## SPECIFICATIONS

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

	MODEL		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				
	CURRENT[A]	ACIN 100V	1.2typ (Io=90%)				
		ACIN 115V	1.1typ (Io=100%)				
		ACIN 230V	0.6typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	82typ (Io=90%)	83typ (Io=90%)	85typ (Io=90%)	86typ (Io=90%)	86typ (Io=90%)
		ACIN 115V	82typ (Io=100%)	83typ (Io=100%)	85typ (Io=100%)	86typ (Io=100%)	86typ (Io=100%)
		ACIN 230V	85typ (Io=100%)	86typ (Io=100%)	88typ (Io=100%)	89typ (Io=100%)	89typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.98typ (Io=90%)				
		ACIN 115V	0.98typ (Io=100%)				
ACIN 230V		0.95typ (Io=100%) * Power factor correction is stopped at AC250V or more.					
INRUSH CURRENT[A]	ACIN 100V	16typ (Io=90%) Ta=25℃ at cold start					
	ACIN 115V	16typ (Io=100%) Ta=25℃ at cold start					
	ACIN 230V	32typ (Io=100%) Ta=25℃ at cold start					
LEAKAGE CURRENT[ma]		0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 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℃	120max	120max	120max	150max	150max
		-10 to 0℃	160max	160max	160max	200max	400max
		Io: load factor	500max	500max	500max	500max	500max
	RIPPLE NOISE[mVp-p]	0 to +40℃	150max	150max	150max	200max	200max
		-10 to 0℃	180max	180max	180max	240max	500max
		Io: load factor	600max	600max	600max	600max	600max
	TEMPERATURE REGULATION[mV]	0 to +40℃	120max	150max	240max	360max	480max
		-10 to +40℃	180max	180max	290max	440max	600max
	DRIFT[mV]	*2	48max	60max	96max	144max	192max
START-UP TIME[ms]		500typ (ACIN 115V, Io=100%) Ta=25℃					
HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)					
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80	
OUTPUT VOLTAGE SETTING[V]		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]		13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	54.00 to 67.20
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Not provided				
	REMOTE ON/OFF		Optional (Required external power source. Option -R)				
ISOLATION	INPUT-OUTPUT • RC	*9	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)				
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)				
	OUTPUT • RC-FG	*9	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
	OUTPUT-RC	*9	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE *5		-20 to +70℃ (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
	STORAGE TEMP., HUMID. AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN62368-1, 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 × 97 × 109mm [1.61 × 3.82 × 4.29 inches] (Excluding terminal block and screw) (W×H×D) / 500g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY	5 years (subject to the operating conditions)

\*1 This is the result of measurement of the testing board with capacitors of 22  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.  
See 1.6 of Instruction Manual for more details.  
When the load factor is 0 - 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.

\*2 Drift is the change in DC output for an eight hour period after a half-

hour warm-up at 25°C.

\*3 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.

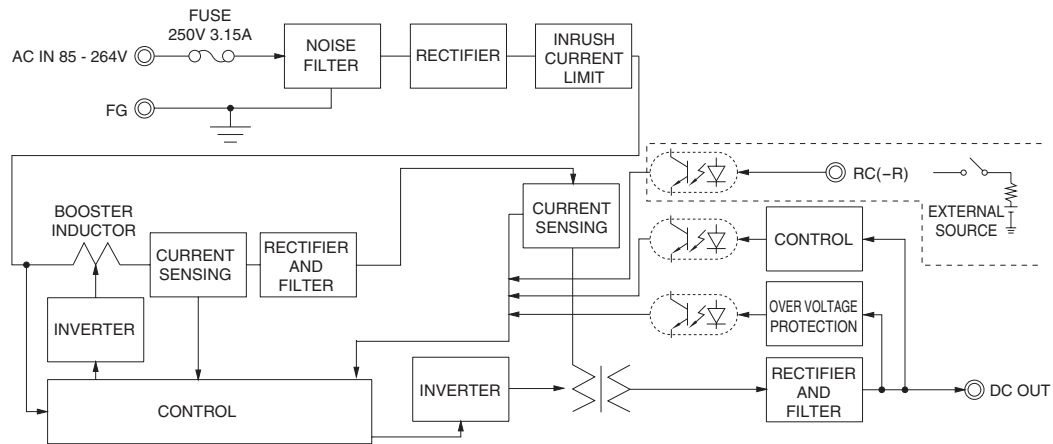
\* Parallel operation is not possible with this mode.

\* Sound noise may be heard from the power supply when used for pulse load.

## Features

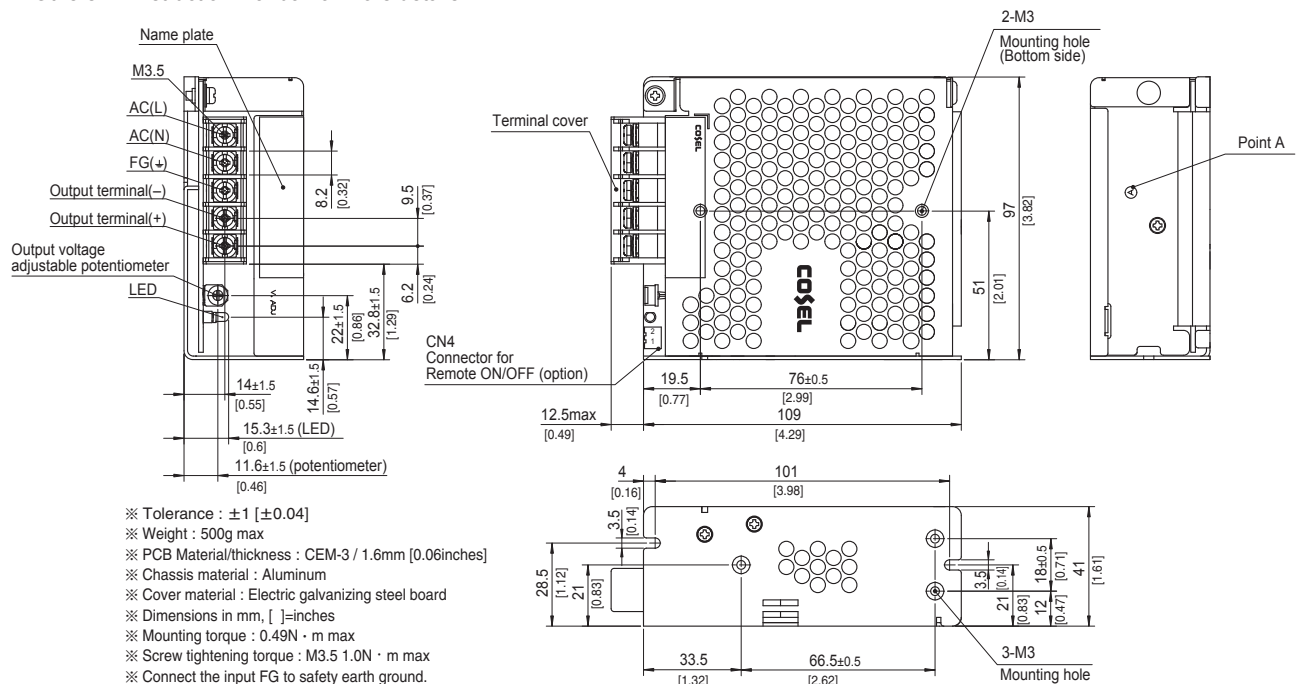
- Compact design (Depth: 109mm 4.29inches)
- High efficiency (88%typ PLA100F-24, AC230Vin, 100% load)
- Low power consumption (1.5W typ AC240Vin, no load at standard model)
- UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- Various connection interface options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



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Example recommended EMI/EMC filter  
NAC-04-472



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

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

See 5.1 in Instruction Manual.

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

## SPECIFICATIONS

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

	MODEL		PLA150F-12	PLA150F-15	PLA150F-24	PLA150F-36	PLA150F-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				
	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)				
	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℃ at cold start					
	ACIN 115V	16typ (Io=100%) Ta=25℃ at cold start					
	ACIN 230V	32typ (Io=100%) Ta=25℃ at cold start					
LEAKAGE CURRENT[ma]		0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 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	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]	Io=30 to 100%	100max	120max	150max	150max	300max
		*4 Io=0 to 30%	Burst operation (Please contact us about detail)				
	RIPPLE[mVp-p]	0 to +40℃	120max	120max	120max	150max	150max
		*1 -10 to 0℃	160max	160max	160max	200max	400max
		Io: load factor	500max	500max	500max	500max	500max
	RIPPLE NOISE[mVp-p]	0 to +40℃	150max	150max	150max	200max	200max
		*1 -10 to 0℃	180max	180max	180max	240max	500max
		Io: load factor	600max	600max	600max	600max	600max
	TEMPERATURE REGULATION[mV]	0 to +40℃	120max	150max	240max	360max	480max
		-10 to +40℃	180max	180max	290max	440max	600max
	DRIFT[mV]	*2	48max	60max	96max	144max	192max
START-UP TIME[ms]		500typ (ACIN 115V, Io=100%) Ta=25℃					
HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)					
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80	
OUTPUT VOLTAGE SETTING[V]		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]		13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	54.00 to 67.20
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Not provided				
	REMOTE ON/OFF		Optional (Required external power source. Option -R)				
ISOLATION	INPUT-OUTPUT • RC		*9	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	INPUT-FG			AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	OUTPUT • RC-FG		*9	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)			
	OUTPUT-RC		*9	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)			
ENVIRONMENT	OPERATING TEMP., HUMID.AND ALTITUDE		*5	-20 to +70℃ (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max			
	STORAGE TEMP., HUMID.AND ALTITUDE			-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max			
	VIBRATION			10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes			
	IMPACT			196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes			
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN62368-1, 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 × 97 × 129mm [1.61 × 3.82 × 5.08 inches] (Excluding terminal block and screw) (W×H×D) / 600g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY	5 years (subject to the operating conditions)

\*1 This is the result of measurement of the testing board with capacitors of 22  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.  
See 1.6 of Instruction Manual for more details.  
When the load factor is 0 - 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.

\*2 Drift is the change in DC output for an eight hour period after a half-

hour warm-up at 25°C.

\*3 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.

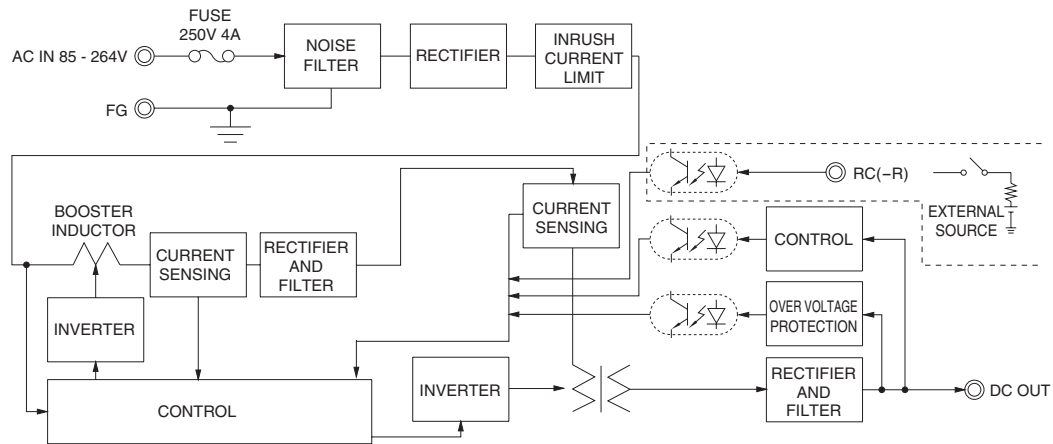
\* Parallel operation is not possible with this mode.

\* Sound noise may be heard from the power supply when used for pulse load.

## Features

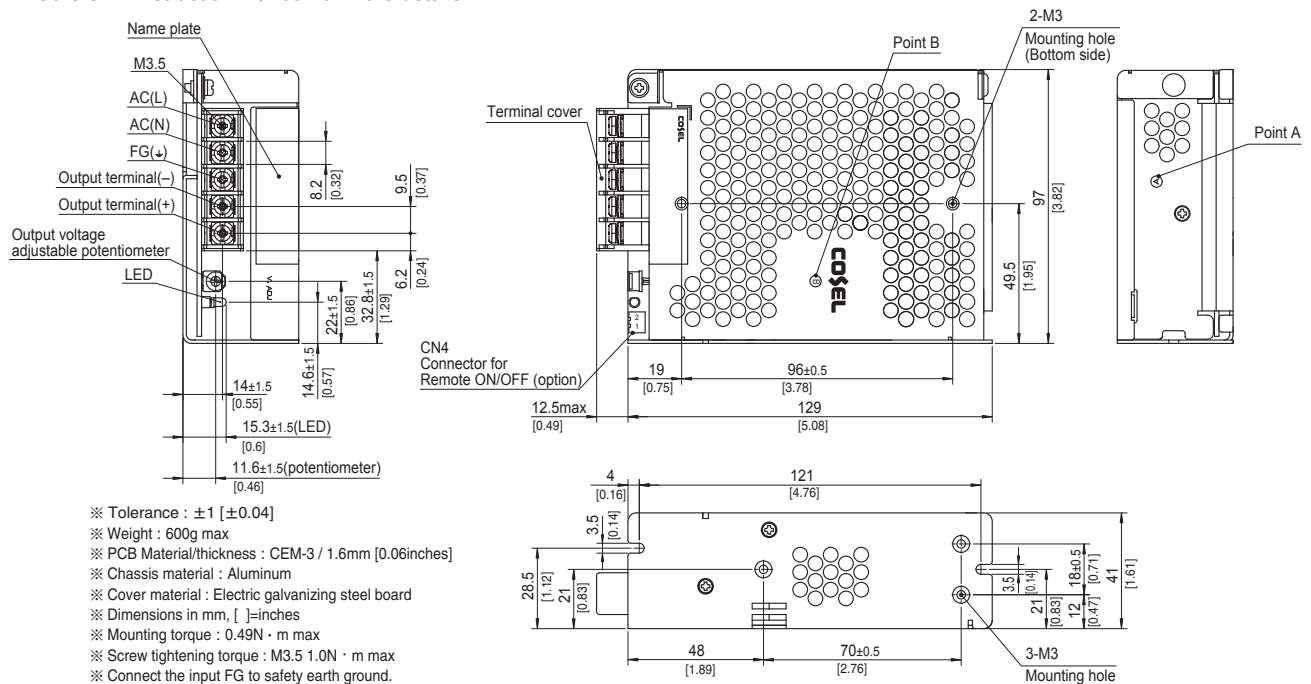
- Compact design (Depth: 129mm 5.08inches)
- High efficiency (90%typ PLA150F-24, AC230Vin, 100% load)
- Low power consumption (1.5W typ AC240Vin, no load at standard model)
- UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- Various connection interface options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



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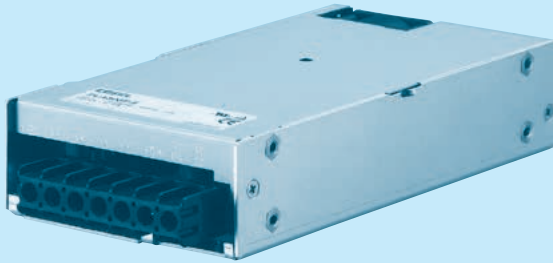
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Example recommended EMI/EMC filter  
NAC-06-472



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.

- 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.

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

## SPECIFICATIONS

INPUT	MODEL		PLA300F-5	PLA300F-12	PLA300F-15	PLA300F-24	PLA300F-36	PLA300F-48	
	VOLTAGE[V]		AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3						
	CURRENT[A]	ACIN 100V	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)						
	EFFICIENCY[%]	ACIN 100V	73typ (Io=90%)	78typ (Io=90%)	79typ (Io=90%)	81typ (Io=90%)	81typ (Io=90%)	82typ (Io=90%)	
		ACIN 115V	74typ (Io=100%)	78typ (Io=100%)	80typ (Io=100%)	82typ (Io=100%)	82typ (Io=100%)	83typ (Io=100%)	
		ACIN 230V	77typ (Io=100%)	81typ (Io=100%)	83typ (Io=100%)	86typ (Io=100%)	86typ (Io=100%)	86typ (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℃ at cold start							
	ACIN 115V	20typ (Io=100%) Ta=25℃ at cold start							
	ACIN 230V	40typ (Io=100%) Ta=25℃ at cold start							
LEAKAGE CURRENT[ma]		0.75max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 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℃	80max	120max	120max	120max	150max	150max	
		-10 to 0℃	140max	160max	160max	160max	160max	400max	
	RIPPLE NOISE[mVp-p] *1	0 to +50℃	120max	150max	150max	150max	200max	200max	
		-10 to 0℃	160max	180max	180max	180max	240max	500max	
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max	360max	480max	
		-10 to +50℃	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℃ (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max						
	STORAGE TEMP., HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max						
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes						
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes						
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN62368-1 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	102×41×190mm [4.02×1.61×7.48 inches] (Excluding terminal block and screw) (W×H×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  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.

See 1.6 of Instruction Manual for more details.

\*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 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.

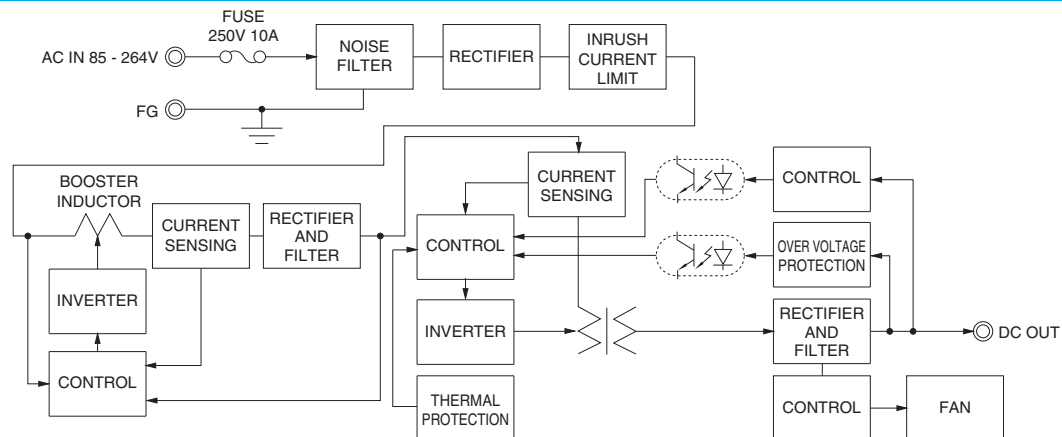
\* Parallel operation is not possible with this mode.

\* Sound noise may be heard from the power supply when used for pulse load.

## Features

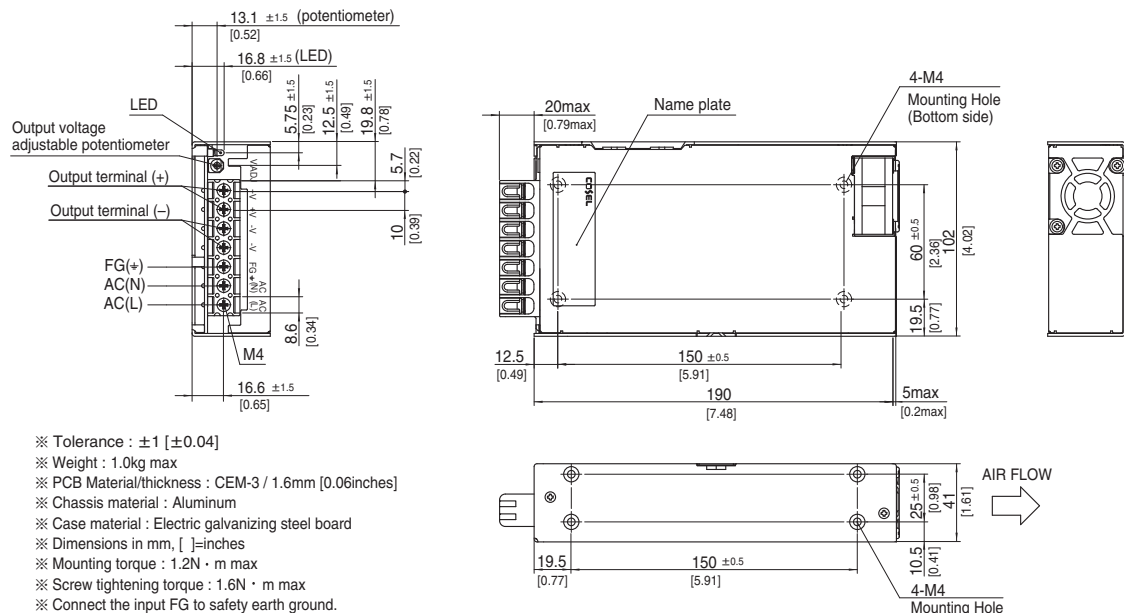
- Cost-effective
- Longer life (see Instruction Manual)
- Low profile (meets 1U height = 41 mm or 1.61 inches)
- Wide operating temperature range (-20°C to +70°C see instruction manual)
- Screw hold type terminal block
- Slow fan speed at no load
- Many optional functions
- Complies with SEMI F-47 (-U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

## Block diagram



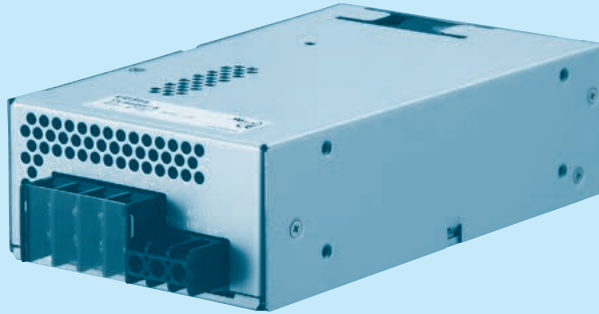
## External view

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 - -



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.

- 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.

\*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.  
\*Please consider "PLA600F-5" about 5V output.

## SPECIFICATIONS

	MODEL		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				
	CURRENT[A]	ACIN 100V	6.7typ (Io=90%)				
		ACIN 115V	6.5typ (Io=100%)				
		ACIN 230V	3.2typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	81typ (Io=90%)	81typ (Io=90%)	84typ (Io=90%)	85typ (Io=90%)	85typ (Io=90%)
		ACIN 115V	81typ (Io=100%)	81typ (Io=100%)	84typ (Io=100%)	85typ (Io=100%)	85typ (Io=100%)
		ACIN 230V	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 IEC62368-1 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	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	600	600	600	601.2	600
	LINE REGULATION[mV] *8		48max	60max	96max	144max	192max
	LOAD REGULATION[mV] *8		100max	120max	150max	150max	300max
	RIPPLE[mVp-p] *1	0 to +50℃	120max	120max	120max	150max	150max
		-20 to 0℃	160max	160max	160max	160max	400max
	RIPPLE NOISE[mVp-p] *1	0 to +50℃	150max	150max	150max	200max	200max
		-20 to 0℃	180max	180max	180max	240max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	120max	150max	240max	360max	480max
		-20 to +50℃	180max	180max	290max	440max	600max
	DRIFT[mV] *2		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]		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	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℃ (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
	STORAGE TEMP., HUMID. AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN62368-1 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  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.  
See 1.6 of Instruction Manual for more details.

\*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 As for DC input, consult us for advice.

\*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.

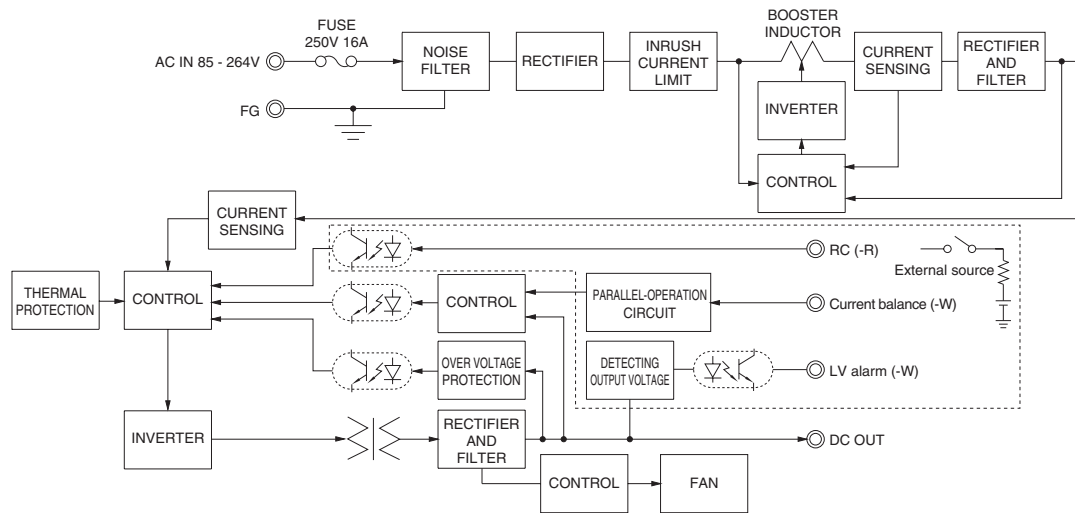
\* Parallel operation is allowed for PLA600F models with the -W option only.

\* 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 2U height = 61 mm or 2.40 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.

