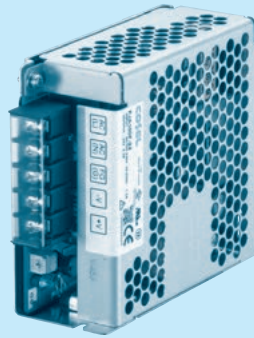


# PJA100F

PJ A 100 F -□ -□

① ② ③ ④ ⑤ ⑥



Example recommended EMI/EMC filter  
NAC-04-472



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

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

See 5.1 in Instruction Manual.

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

## SPECIFICATIONS

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

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

## SPECIFICATIONS

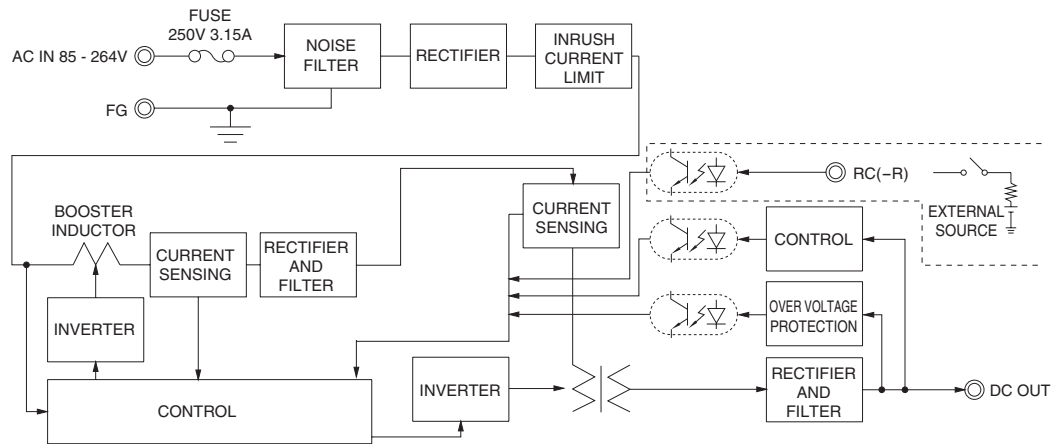
OTHERS	CASE SIZE/WEIGHT	41 X 97 X 109mm [1.61 X 3.82 X 4.29 inches] (Excluding terminal block and screw) (W X H X D) / 500g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY	*6 5 years (subject to the operating conditions)

- \*1 This is the result of measurement of the testing board with capacitors of 22  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103. See 1.6 of Instruction Manual for more details. When the load factor is 0 - 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.
- \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- \*3 Output power derating is required. 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

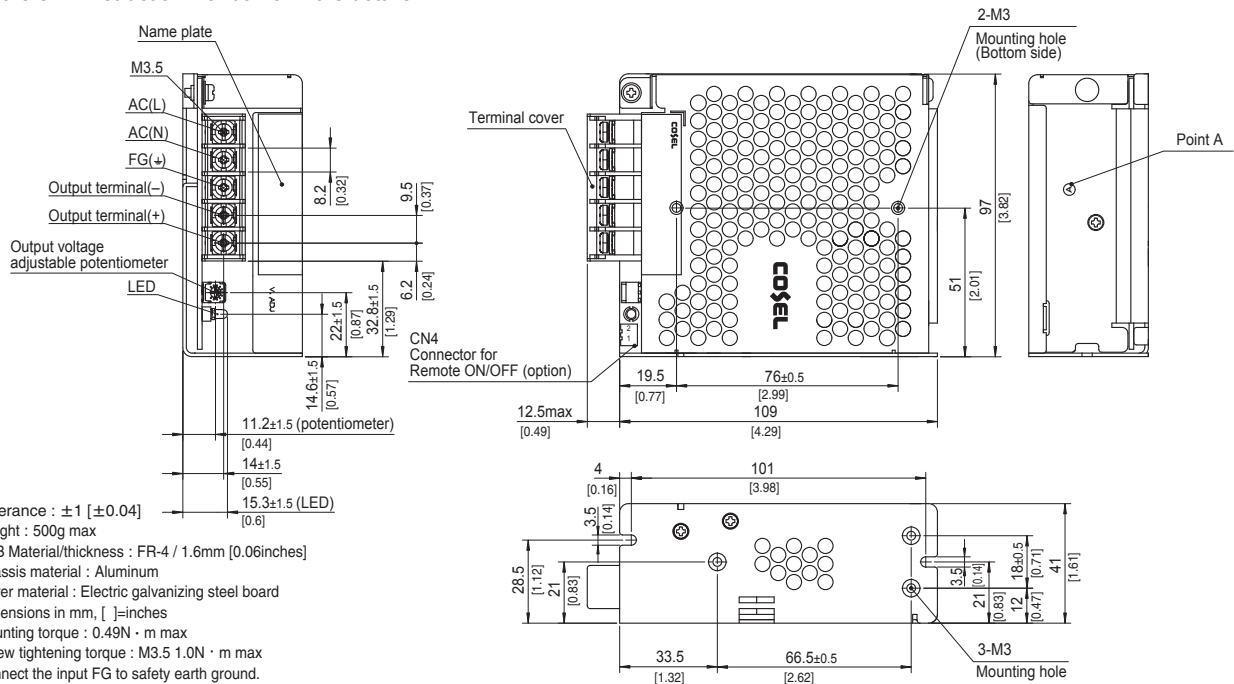
- Compact design (Depth: 109mm 4.29inches)
- High efficiency (88%typ PJA100F-24, AC230Vin, 100% load)
- Low power consumption (1.5W typ AC240Vin, no load at standard model)
- UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- Various connection interface options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

## Block diagram



## External view

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



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

# PJA150F

PJ A 150 F -□ -□

① ② ③ ④ ⑤ ⑥



Example recommended EMI/EMC filter  
NAC-04-472



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

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

See 5.1 in Instruction Manual.

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

## SPECIFICATIONS

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

MODEL		PJA150F-12	PJA150F-15	PJA150F-24	PJA150F-36	PJA150F-48
VOLTAGE[V]		AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *3				
CURRENT[A]	ACIN 100V	1.7typ (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	0.93typ (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] *1	0 to +40°C	120max	120max	120max	150max	150max
	-10 to 0°C	160max	160max	160max	200max	400max
	Io: load factor	500max	500max	500max	500max	500max
RIPPLE NOISE[mVp-p] *1	0 to +40°C	150max	150max	150max	200max	200max
	-10 to 0°C	180max	180max	180max	240max	500max
	Io: load factor	600max	600max	600max	600max	600max
TEMPERATURE REGULATION[mV]	0 to +40°C	120max	150max	240max	360max	480max
	-10 to +40°C	180max	180max	290max	440max	600max
DRIFT[mV] *2		48max	60max	96max	144max	192max
START-UP TIME[ms]		500typ (ACIN 115V, Io=100%) Ta=25°C				
HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)				
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80
OUTPUT VOLTAGE SETTING[V]		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	54.00 to 67.20
	OPERATING INDICATION	LED (Green)				
	REMOTE SENSING	Not provided				
REMOTE ON/OFF		Optional (Required external power source. Option -R)				
ISOLATION	INPUT-OUTPUT • RC *9	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)				
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)				
	OUTPUT • RC-FG *9	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
	OUTPUT-RC *9	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE *5	-20 to +70°C (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
	STORAGE TEMP.,HUMID.AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION	10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axes				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN508 (Except option -J) Complies with DEN-AN				
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B				
	HARMONIC ATTENUATOR *8	Complies with IEC61000-3-2 class A				

## SPECIFICATIONS

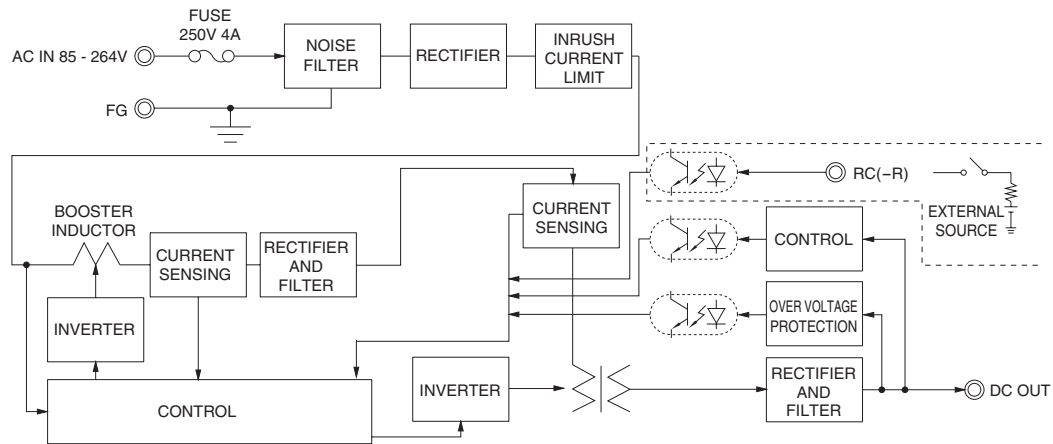
OTHERS	CASE SIZE/WEIGHT	41 X 97 X 129mm [1.61 X 3.82 X 5.08 inches] (Excluding terminal block and screw) (W X H X D) / 600g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY	*6 5 years (subject to the operating conditions)

- \*1 This is the result of measurement of the testing board with capacitors of 22  $\mu$ F and 0.1  $\mu$ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103. See 1.6 of Instruction Manual for more details. When the load factor is 0 - 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.
- \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- \*3 Output power derating is required. 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

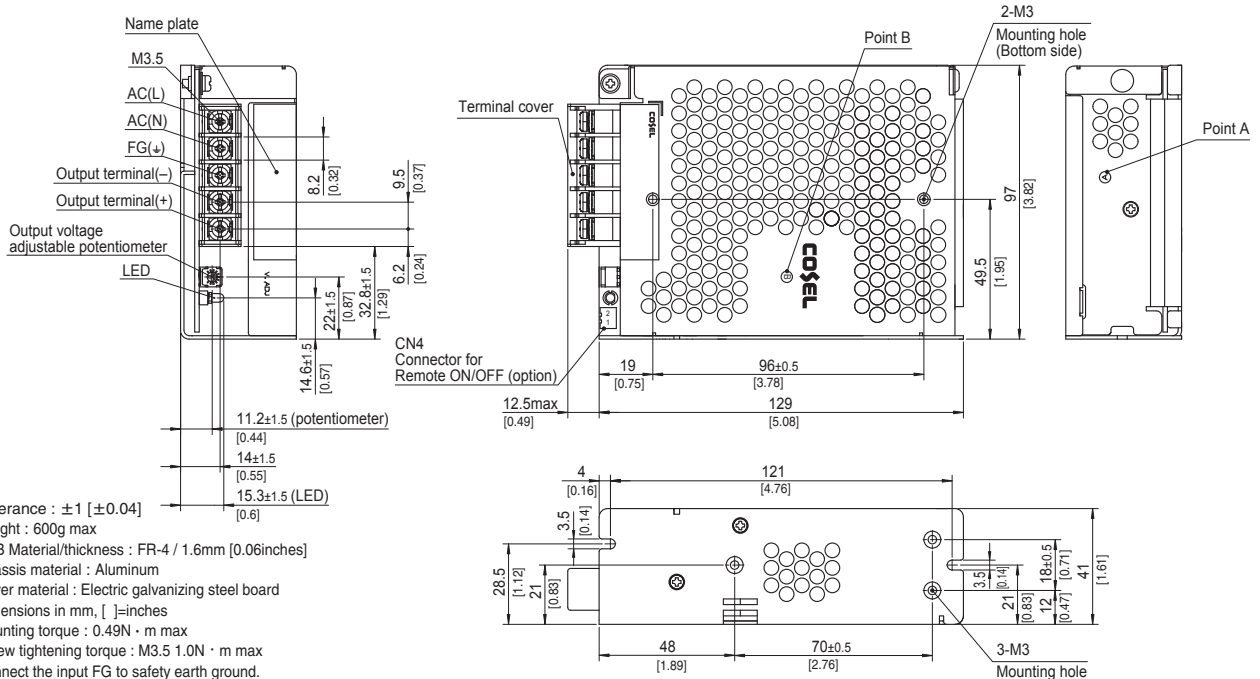
- Compact design (Depth: 129mm 5.08inches)
- High efficiency (90%typ PJA150F-24, AC230Vin, 100% load)
- Low power consumption (1.5W typ AC240Vin, no load at standard model)
- UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- Various connection interface options (vertical terminal [-T], AMP connector [-J])

## Block diagram



## External view

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



- ※ Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- ※ Weight : 600g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
- ※ Chassis material : Aluminum
- ※ Cover material : Electric galvanizing steel board
- ※ Dimensions in mm, [ ]=inches
- ※ Mounting torque : 0.49N · m max
- ※ Screw tightening torque : M3.5 1.0N · m max
- ※ Connect the input FG to safety earth ground.