Ordering information

# **PJA100F**

100







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.

①Series name ②Single output ③Output wattage ④Universal input

⑤Output voltage

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.

				TOUR-S-IN ADOUL SV OULP		1	1	
	MODEL		PJA100F-12	PJA100F-15	PJA100F-24	PJA100F-36	PJA100F-48	
	VOLTAGE[V]		` '	t derating is required at	AC85V - 115V. See 1.1	and 3.2 in Instruction M	anual) *3	
	ACIN 100V		1.2typ (lo=90%)					
	CURRENT[A]	ACIN 115V	1.1typ (lo=100%)					
		ACIN 230V	0.6typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 63)					
		ACIN 100V	82typ (Io=90%)	83typ (lo=90%)	85typ (Io=90%)	86typ (lo=90%)	86typ (Io=90%)	
	EFFICIENCY[%]	ACIN 115V	82typ (lo=100%)	83typ (lo=100%)	85typ (lo=100%)	86typ (lo=100%)	86typ (lo=100%)	
NPUT		ACIN 230V	85typ (lo=100%)	86typ (lo=100%)	88typ (lo=100%)	89typ (lo=100%)	89typ (lo=100%)	
		ACIN 100V	0.98typ (lo=90%)				•	
	POWER FACTOR	ACIN 115V	0.98typ (lo=100%)					
		ACIN 230V	0.90typ (lo=100%) * F	Power factor correction is	s stopped at AC250V or	more.		
		ACIN 100V	16typ (lo=90%) Ta=25°	C at cold start				
	INRUSH CURRENT[A]	ACIN 115V	16typ (lo=100%) Ta=25	5℃ at cold start				
		ACIN 230V	32typ (lo=100%) Ta=25	5℃ at cold start				
	LEAKAGE CURRENT	[mA]			According to IEC60950-	1 and DEN-AN)		
	VOLTAGE[V]		12	15	24	36	48	
		ACIN 85-115V	Output derating is requ	ired at ACIN 115V or le	ss (refer to instruction m	anual 3.2)		
	CURRENT[A]	ACIN 115V-264V		6.7	4.3	2.8	2.1	
		ACIN 85-115V		1	ss (refer to instruction m			
	WATTAGE[W]	ACIN 115V-264V	100.8	100.5	103.2	100.8	100.8	
	LINE REGULATION[m		48max	60max	96max	144max	192max	
	LOAD REGULATION	lo=30 to 100%		120max	150max	150max	300max	
	[mV] *4	lo=0 to 30%		e contact us about detai				
		0 to +40°C		120max	120max	150max	150max	
	RIPPLE[mVp-p]  *1  lo: load factor	-10 to 0℃		160max	160max	200max	400max	
OUTPUT		lo=0 to 30%	500max	500max	500max	500max	500max	
	RIPPLE NOISE[mVp-p]	0 to +40℃		150max	150max	200max	200max	
	*1	-10 to 0°C	180max	180max	180max	240max	500max	
	lo: load factor	lo=0 to 30%		600max	600max	600max	600max	
		0 to +40°C		150max	240max	360max	480max	
	TEMPERATURE REGULATION[mV]	-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=		Comax	TTIMOX	Tozmax	
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMEN	IT RANGEIVI		13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80	
	OUTPUT VOLTAGE SETT		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	
	OVERCURRENT PROTE			ting and recovers autom		123.00 10 0	1.5.00 to 10.02	
ROTECTION	OVERVOLTAGE PROTE		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	
IRCUIT AND	OPERATING INDICAT		LED (Green)					
THERS	REMOTE SENSING		Not provided					
	REMOTE ON/OFF		Optional (Required external power source. Option -R)					
	INPUT-OUTPUT • RC	*9						
	INPUT-FG		AC2,000V Iminute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At room temperature)					
SOLATION	OUTPUT • RC-FG	*9						
	OUTPUT-RC		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)  AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)					
	OPERATING TEMP., HUMID. AND							
	,				9,000m (30,000 feet) ma		.,iux	
NVIRONMENT	STORAGE TEMP.,HUMID.AND ALTITUDE				minutes each along X, Y			
	VIBRATION			s, once each X, Y and Z		una 2 anos		
ACCTV AND	AGENCY APPROVAL	<u> </u>	· /·	<del></del>		J) Complies with DEN-A	N	
SAFETY AND NOISE	CONDUCTED NOISE			VCCI-B, CISPR22-B, EI		J Complies with DEN-A	II V	
		ATOR **			NOOUT I-D, ENOOUZZ-B			
	HARMONIC ATTENUATOR *8 Complies with IEC61000-3-2 class A							

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	*6 5 years (subject to the operating conditions)

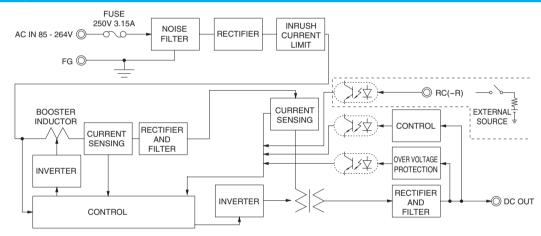
- \*1 This is the result of measurement of the testing board with canacitors of 22 U.F. and 0.1 U.F. placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103. See 1.6 of Instruction Manual for more details.
  - When the load factor is 0 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.
- Drift is the change in DC output for an eight hour period after a half-
- hour warm-up at 25℃.
- \*3 Output power derating is required
- 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.
- Output power derating is required. See 3.2 in Instruction Manual.
- See 3.3 in Instruction Manual for more details
- Consult us about safety agency approvals for the models with optional functions.
- Consult us about other classes.

- 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**

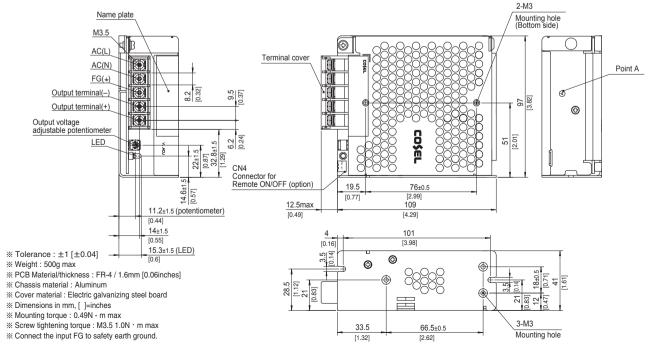
- · Compact design (Depth: 109mm 4.29inches)
- · High efficiency (88%typ PJA100F-24, AC230Vin, 100% load)
- · Low power consumption (1.5W typ AC240Vin, no load at standard model)
- · UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- · Various connection interface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



Ordering information

# **PJA150F**

150









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
- 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.

SPECIF	ICATIONS		* Please consider "PB/	A150F-5-N" about 5V outp	ut with case cover.				
	MODEL		PJA150F-12	PJA150F-15	PJA150F-24	PJA150F-36	PJA150F-48		
	VOLTAGE[V]		AC85 - 264 1 φ (Outp	ut derating is required at	AC85V - 115V. See 1.1	and 3.2 in Instruction M	/lanual) *3		
	ACIN 100V		1.7typ (lo=90%)						
	CURRENT[A]	ACIN 115V	1.6typ (lo=100%)						
		ACIN 230V	0.8typ (to=100%)						
	FREQUENCY[Hz]		50 / 60 (47 - 63)						
		ACIN 100V	84typ (lo=90%)	84typ (lo=90%)	87typ (lo=90%)	87typ (lo=90%)	87typ (lo=90%)		
	EFFICIENCY[%]	ACIN 115V	84typ (lo=100%)	84typ (lo=100%)	87typ (lo=100%)	87typ (lo=100%)	87typ (lo=100%)		
NPUT		ACIN 230V	87typ (lo=100%)	87typ (lo=100%)	90typ (lo=100%)	90typ (lo=100%)	90typ (lo=100%)		
		ACIN 100V	0.98typ (lo=90%)	- 71 (	1	1 31- (	1		
	POWER FACTOR	ACIN 115V	0.98typ (lo=100%)						
		ACIN 230V		Power factor correction i	s stopped at AC250V o	r more			
		ACIN 100V	16typ (Io=90%) Ta=25		o otoppod at 7.0200 v o	moro.			
	INRUSH CURRENT[A]	ACIN 115V	16typ (Io=100%) Ta=2						
	INTOON CONTINENT[A]	ACIN 230V	32typ (lo=100%) Ta=2						
	LEAKAGE CURRENT		, ,	/ 240V, 60Hz, Io=100%,	According to IEC60050	1 and DEN ANI)			
	VOLTAGE[V]	[IIIA]	12	15	24	36	48		
	VOLIAGE[V]	ACIN 85-115V		uired at ACIN 115V or le			40		
	CURRENT[A]	ACIN 05-115V ACIN 115V-264V	12.5	10	6.4	4.2	3.2		
		ACIN 115V-204V			1 -		3.2		
	WATTAGE[W]			uired at ACIN 115V or le		<del></del>	450.0		
	LINE DECLU ATIONS	ACIN 115V-264V	150.0	150.0	153.6	151.2	153.6		
	LINE REGULATION[n		48max	60max	96max	144max	192max		
	LOAD REGULATION	lo=30 to 100%	100max	120max	150max	150max	300max		
	[mV] *4			se contact us about detai	<u></u>	1	1		
	RIPPLE[mVp-p]	0 to +40℃	120max	120max	120max	150max	150max		
	*1	-10 to 0℃	160max	160max	160max	200max	400max		
OUTPUT	lo: load factor	lo=0 to 30%	500max	500max	500max	500max	500max		
	RIPPLE NOISE[mVp-p] *1 lo: load factor  TEMPERATURE REGULATION[mV]	0 to +40°C	150max	150max	150max	200max	200max		
		-10 to 0℃	180max	180max	180max	240max	500max		
		lo=0 to 30%	600max	600max	600max	600max	600max		
		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℃						
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMEN	IT 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 SETT	ING[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		
	OVERCURRENT PROTE	CTION	Works over 105% of r	ating and recovers auton	natically				
ROTECTION	OVERVOLTAGE PROTE	CTION[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		
IRCUIT AND	OPERATING INDICAT	ION	LED (Green)						
THERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Optional (Required external power source. Option -R)						
	INPUT-OUTPUT • RC	*9							
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At room temperature)						
SOLATION	OUTPUT • RC-FG	*9							
	OUTPUT-RC	*9							
	OPERATING TEMP., HUMID. AND			derating is required), 20			et) max		
	STORAGE TEMP., HUMID.AND			6RH (Non condensing),					
NVIRONMENT	VIBRATION			2G), 3minutes period, 60					
	IMPACT	-		is, once each X, Y and Z		and Z ands			
A CETY AND	AGENCY APPROVAL	<u> </u>		SA60950-1), EN60950-1,		I) Complies with DEN-	ΔNI		
AFETY AND	CONDUCTED NOISE			, VCCI-B, CISPR22-B, E		o, complies with DEN-7	-11 ¥		
REGULATIONS	HARMONIC ATTENUA	ATOR **	<u> </u>	<u> </u>	NJJUTT-D, ENJOUZZ-B				
LASEATIONS	HARINONIC AT LENUA	AIUN *8	Complies with IEC610	JUU-3-2 CIASS A					



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 *6	5 years (subject to the operating conditions)

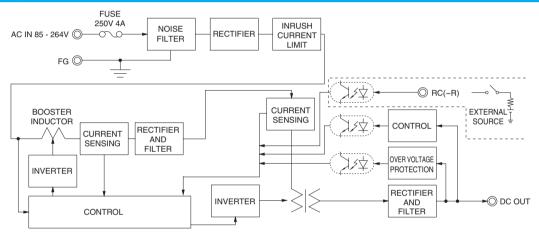
- This is the result of measurement of the testing board with capacitors of 22 U.F. and 0.1 U.F. placed at 150 mm from the output terminals by a 20. MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken
  - See 1.6 of Instruction Manual for more details. When the load factor is 0 - 30%, the switching power loss is reduced by
- burst operation, which will cause ripple and ripple noise to go beyond the specifications
- Drift is the change in DC output for an eight hour period after a half-
- hour warm-up at 25℃.
- Output power derating is required
- 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.
- Output power derating is required. See 3.2 in Instruction Manual.
- See 3.3 in Instruction Manual for more details.
- Consult us about safety agency approvals for the models with optional functions.
- Consult us about other classes

- 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**

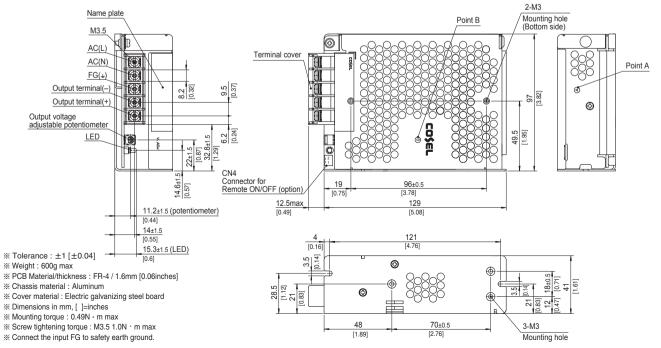
- · Compact design (Depth: 129mm 5.08inches)
- · High efficiency (90%typ PJA150F-24, AC230Vin, 100% load)
- · Low power consumption (1.5W typ AC240Vin, no load at standard model)
- · UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)
- · Various connection interface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



# PJA600F

600





Example recommended EMI/EMC filter NAC-16-472



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

\*A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

- 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
  W: Parallel operation,
  LV alarm Remote sensing
  R: Remote on/off
  (Required external power source)
  F4: Low speed fan

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.

	MODEL		PJA600F-5	PJA600F-12	PJA600F-15	PJA600F-24	PJA600F-36	PJA600F-48		
_	VOLTAGE[V]		AC85 - 264 1 $\phi$ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *4							
	ACIN 1		6.7typ (lo=100%) 7.5typ (lo=100%)							
	CURRENT[A]	ACIN 115V	5.7typ (lo=100%) 6.5typ (lo=100%)							
		ACIN 230V	2.8typ (lo=100%) 3.2typ (lo=100%)							
	FREQUENCY[Hz]	•	50 / 60 (47 - 63)							
		ACIN 100V	76typ (lo=100%)	81typ (lo=100%)	82typ (lo=100%)	84typ (lo=100%)	85typ (lo=100%)	85typ (lo=100%)		
	EFFICIENCY[%]	ACIN 115V	77typ (lo=100%)	82typ (lo=100%)	82typ (lo=100%)	85typ (lo=100%)	86typ (lo=100%)	85typ (lo=100%)		
INPUT		ACIN 230V	79typ (lo=100%)	84typ (lo=100%)	85typ (lo=100%)	88typ (lo=100%)	88typ (lo=100%)	88typ (lo=100%)		
		ACIN 100V	0.99typ (lo=100%)			,				
	POWER FACTOR	ACIN 115V	0.98typ (lo=100%)							
		ACIN 230V	0.95typ (lo=100%)							
		ACIN 100V	20/40typ (lo=100%)	) (Primary inrush cu	rrent /Secondary inru	ish current) (More the	han 3sec to re-start)			
	INRUSH CURRENT[A]	ACIN 115V	20/40typ (lo=100%)	) (Primary inrush cu	rrent /Secondary inru	sh current) (More that	han 3sec to re-start)			
		ACIN 230V	40/40typ (lo=100%)	) (Primary inrush cu	rrent /Secondary inru	ish current) (More the	han 3sec to re-start)			
	LEAKAGE CURRENT	[mA]	1.5max (ACIN 115\	/ / 240V, 60Hz, lo=1	00%, According to IE	C60950-1 and DEN	I-AN)			
	VOLTAGE[V]		5	12	15	24	36	48		
	CUDDENTIAL	ACIN 85-115V	Output derating is r	equired at ACIN 100	V or less (refer to ins	struction manual 3.2	2)			
	CURRENT[A]	ACIN 115V-264V	100	50	40	25	16.7	12.5		
		ACIN 85-115V	Output derating is r	equired at ACIN 100	V or less (refer to ins	struction manual 3.2	(1)			
	WATTAGE[W]	ACIN 115V-264V	500	600	600	600	601.2	600		
	LINE REGULATION[n	nV] *8	20max	48max	60max	96max	144max	192max		
	LOAD REGULATION	mV] *8	40max	100max	120max	150max	150max	300max		
	RIPPLE[mVp-p]	0 to +50°C	80max	120max	120max	120max	150max	150max		
	*1	-20 to 0°C	140max	160max	160max	160max	160max	400max		
OUTPUT	RIPPLE NOISE[mVp-p]	0 to +50°C	120max	150max	150max	150max	200max	200max		
	*1	-20 to 0°C	160max	180max	180max	180max	240max	500max		
		0 to +50°C	50max	120max	150max	240max	360max	480max		
	TEMPERATURE REGULATION[mV]	-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 100V							
	HOLD-UP TIME[ms]		20typ (ACIN 100V,	· · · · · · · · · · · · · · · · · · ·						
	OUTPUT VOLTAGE ADJUSTMEN	NT 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 SETT		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		
-	OVERCURRENT PROTE		Works over 105% c	of rating and recover	s automatically					
PROTECTION	OVERVOLTAGE PROTE	CTION[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		
CIRCUIT AND	OPERATING INDICAT	ION	LED (Green)							
OTHERS	REMOTE SENSING		Optional (Option -W)							
	REMOTE ON/OFF		Optional (Required external power source. Option -R)							
	INPUT-OUTPUT • RC	*3								
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)							
ISOLATION	OUTPUT • RC-FG	*3								
	OUTPUT-RC *3									
	OPERATING TEMP., HUMID. AND	ALTITUDE *5								
E10//B0:	STORAGE TEMP., HUMID.AND		· ·		nsing), 9,000m (30,00		, , ,			
ENVIRONMENT	VIBRATION				iod, 60minutes each		es			
	IMPACT			1ms, once each X, Y		J ,				
SAFETY AND	AGENCY APPROVAL	s	. ,.		2368-1 Complies with	DEN-AN		-		
NOISE	CONDUCTED NOISE	-			22-B, EN55011-B, EN					
REGULATIONS	HARMONIC ATTENUA	ATOR *10	Complies with IEC6							
			Copiioo miii iEoc					-		



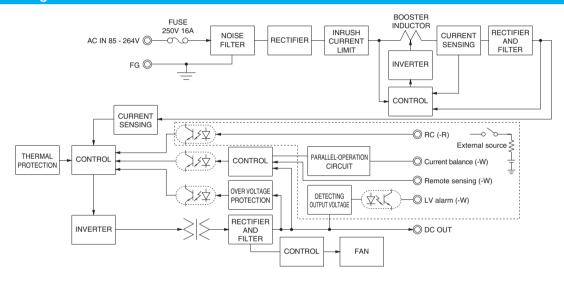
OTHERS	CASE SIZE/WEIGHT	120×61×215mm [4.72×2.40×8.46 inches] (Excluding terminal block and screw) (W×H×D) / 2.0kg max
OTHERS	COOLING METHOD	*9 Forced cooling (internal fan)
WARRANTY	WARRANTY	*6 5 years (subject to the operating conditions)

- 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. Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25 °C.
- The BC terminal is added to option -B models. The BC terminal is
- isolated from input, output, and FG. Output power derating is required.
- Output power derating is required. See 3.2 in Instruction Manual. See 3.3 in Instruction Manual for more details.
- Consult us about safety agency approvals for the models with optional functions
- \*8 Consult us about dynamic load and input response
- 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 PLA600FA models with the –W option only.
- Sound noise may be heard from the power supply when used for pulse load.

#### **Features**

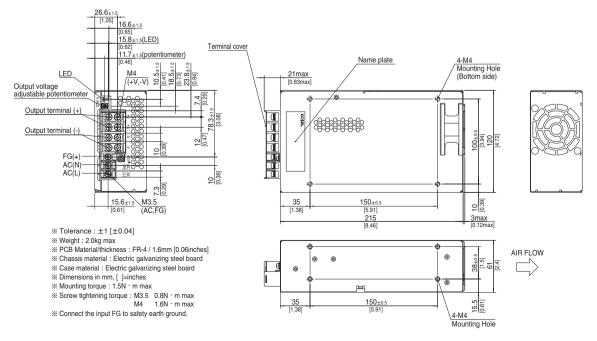
- · Cost-effective
- · Longer life (see Instruction Manual)
- · Low profile (meets 2U height = 61 mm or 2.40 inches)
- · Wide operating temperature range (-20°C to +70°C see instruction manual)
- · Slow fan speed at no load
- · Complies with SEMI F-47
- · Many optional functions

# **Block diagram**



#### **External view**

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



# **PJA1000F**

1000





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

- (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
  W: Parrallel operation,
  LV alarm Remote sensing
  R: Remote on/off
  (Required external) power source
- R: Hemote on/off
  (Required external power source
  or Option Z

  : AUX Output
  Z1: 5V
  Z2: 12V
- Z3:24V

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.

	MODEL		PJA1000F-24	PJA1000F-48			
VOLTAGE[V]			AC85 - 264 1 \$\phi\$ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *4				
	ACIN 100V		12.5typ (lo=90%)				
	CURRENT[A]	ACIN 115V	11.0typ (lo=100%)				
	ACIN 23		5.5typ (lo=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	ACIN 1		84typ (Io=90%)				
	EFFICIENCY[%]	ACIN 115V	85typ (lo=100%)	85typ (lo=100%)			
INPUT		ACIN 230V	88typ (Io=100%)	88typ (Io=100%)			
		ACIN 100V	0.98typ (Io=90%)	71 ( )			
	POWER FACTOR	ACIN 115V	.98typ (Io=100%)				
		ACIN 230V	9.95typ (Io=100%)				
		ACIN 100V	15/30typ (Io=90%) (Primary inrush current /Secondary inrush	h current) (More than 10sec to re-start)			
	INRUSH CURRENT[A]	ACIN 115V	15/30typ (Io=100%) (Primary inrush current /Secondary inru				
		ACIN 230V	30/30typ (Io=100%) (Primary inrush current /Secondary inru	, ,			
	LEAKAGE CURRENT		1.5max (ACIN 115V / 240V, 60Hz, Io=100%, According to IE				
	VOLTAGE[V]	ţ	24	48			
		ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to ins				
	CURRENT[A]	ACIN 115V-264V	42	21			
		ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to ins	struction manual 3.2)			
	WATTAGE[W]	ACIN 115V-264V	1008	1008			
	LINE REGULATION[n	nV1 *8	96max	192max			
	LOAD REGULATION		150max	300max			
	RIPPLE[mVp-p]	0 to +50℃	120max	200max			
	*1	-20 to 0°C	160max	500max			
OUTPUT	RIPPLE NOISE[mVp-p]	0 to +50°C	150max	300max			
	*1	-20 to 0°C	180max	600max			
		0 to +50°C	240max	480max			
	TEMPERATURE REGULATION[mV]	-20 to +50°C	290max	600max			
	DRIFT[mV]	*2	96max	192max			
	START-UP TIME[ms]		800typ (ACIN 115V, Io=100%)				
	HOLD-UP TIME[ms]		20typ (ACIN 115V, lo=100%)				
	OUTPUT VOLTAGE ADJUSTMEN	NT RANGE[V]	20.40 to 28.50	40.80 to 55.20			
	OUTPUT VOLTAGE SETT	ING[V]	24.00 to 24.96	48.00 to 49.92			
	OVERCURRENT PROTE	CTION	Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTE	CTION[V]	28.80 to 34.80 57.00 to 67.20				
PROTECTION CIRCUIT AND	OPERATING INDICAT	ION	LED (Green)				
OTHERS	<b>AUXILIARY OUTPUT</b>		Optional (Option -Z )				
	REMOTE SENSING		Optional (Option -W)				
	REMOTE ON/OFF		Optional (Option -R) Required external power source or auxiliary output (Option -Z□).				
	INPUT-OUTPUT • RC	*3	AC3,000V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At room temperature)				
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$	min (At room temperature)			
JOEATION	OUTPUT • RC • AUX-F	FG *3	AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At room temperature)				
	OUTPUT-RC • AUX	*3	AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At room temperature)				
	OPERATING TEMP., HUMID. AND		-20 to +70°C (Output derating is required), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
ENVIRONMENT	STORAGE TEMP., HUMID.AND	ALTITUDE	-20 to +75 $^{\circ}\mathrm{C}$ , 20 - 90%RH (Non condensing), 9,000m (30,00	00 feet) max			
TANION MENT	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axes				
SAFETY AND	AGENCY APPROVAL	S	UL62368-1, C-UL (CSA62368-1), EN62368-1 Complies with				
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN	I55022-B			
REGULATIONS	HARMONIC ATTENU	ATOR *10	Complies with IEC61000-3-2 class A				
			-				



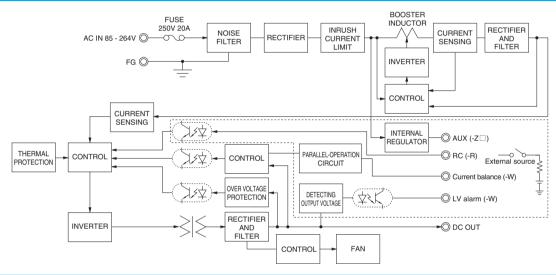
OTHERS	CASE SIZE/WEIGHT	150×61×240mm [5.91×2.40×9.45 inches] (Excluding terminal block and screw) (W×H×D) / 2.8kg max
OTHERS	COOLING METHOD *9 Forced cooling (internal fan)	
WARRANTY	WARRANTY *6	5 years (subject to the operating conditions)

- 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. Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25 °C.
- The BC/AUX terminal are added to option -B/-Z models. The BC/AUX
- terminals are isolated from input, output, and FG. Output power derating is required.
- Output power derating is required. See 3.2 in Instruction Manual. See 3.3 in Instruction Manual for more details.
- Consult us about safety agency approvals for the models with optional functions \*8 Consult us about dynamic load and input response.
- The fan speed slows down or stops 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 PLA1000F models with the –W option only.
- Sound noise may be heard from the power supply when used for pulse load.

#### **Features**

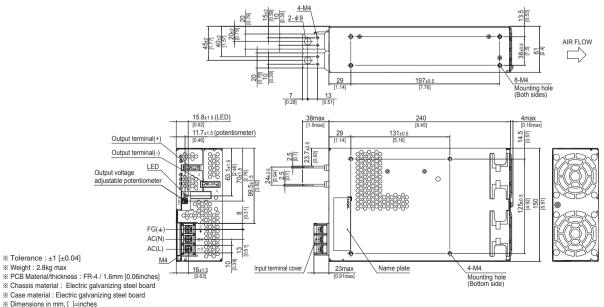
- · Cost-effective
- · Longer life (see Instruction Manual)
- · Low profile (meets 2U height = 61 mm or 2.4 inches)
- · Wide operating temperature range (-20°C to +70°C see instruction manual)
- · Stop or slow fan speed at no load
- · Many optional functions

# **Block diagram**



# **External view**

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



Screw tightening torque: 1.6N · m max
 Output terminal M4 tightening torque: 1.2N · m max

Mounting torque: 1.5N · m max

# **PJA1500F**

1500



(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
W: Parrallel operation,
LV alarm Remote sensing
R: Remote on/off
(Required external) power source

R: Hemote on/off
(Required external power source
or Option - Z

: AUX Output
Z1: 5V
Z2: 12V

Z3:24V

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.

	MODEL		PJA1500F-24	PJA1500F-48			
	VOLTAGE[V]		AC85 - 264 1 ¢ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) *4				
	ACIN 100V		18typ (lo=90%)				
	CURRENT[A]	ACIN 115V	16typ (lo=100%)				
		ACIN 230V	8typ (lo=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
		ACIN 100V	84typ (Io=90%) 84typ (Io=90%)				
	EFFICIENCY[%]	ACIN 115V	85typ (lo=100%)	84typ (lo=100%)			
INPUT		ACIN 230V	88typ (lo=100%)	87typ (lo=100%)			
		ACIN 100V	0.98typ (Io=90%)				
	POWER FACTOR	ACIN 115V	0.98typ (lo=100%)				
		ACIN 230V	0.95typ (Io=100%)				
		ACIN 100V	15/30typ (Io=90%) (Primary inrush current /Secondary inrush	h current) (More than 10sec to re-start)			
	INRUSH CURRENT[A]	ACIN 115V	15/30typ (Io=100%) (Primary inrush current /Secondary inru				
		ACIN 230V	30/30typ (Io=100%) (Primary inrush current /Secondary inru	, , ,			
	LEAKAGE CURRENT		1.5max (ACIN 115V / 240V, 60Hz, Io=100%, According to IE				
	VOLTAGE[V]		24	48			
		ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to ins	l - T			
	CURRENT[A]	ACIN 115V-264V	64	32			
		ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to ins	l <sup>5</sup>			
	WATTAGE[W]	ACIN 115V-264V	1536	1536			
	LINE REGULATION[n		96max	192max			
	LOAD REGULATION		150max	300max			
	_	0 to +50℃	120max	200max			
	RIPPLE[mVp-p]	-20 to 0°C	160max	500max			
OUTPUT	RIPPLE NOISE[mVp-p]	0 to +50°C	150max	300max			
	*1	-20 to 0°C	270max	600max			
		0 to +50°C	240max	480max			
	TEMPERATURE REGULATION[mV]	-20 to +50°C	290max	600max			
	DRIFT[mV]	*2	96max	192max			
	START-UP TIME[ms]		800typ (ACIN 115V, Io=100%)				
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMEN	IT RANGEIVI	20.40 to 28.50	40.80 to 55.20			
	OUTPUT VOLTAGE SETT		24.00 to 24.96	48.00 to 49.92			
	OVERCURRENT PROTE		Works over 105% of rating and recovers automatically	10.00 10 10.02			
	OVERVOLTAGE PROTE		28.80 to 34.80	57.00 to 67.20			
PROTECTION	OPERATING INDICAT		LED (Green)				
CIRCUIT AND	AUXILIARY OUTPUT		Optional (Option -Z□)				
OTHERS	REMOTE SENSING		Optional (Option -W)				
	REMOTE ON/OFF		Optional (Option -R) Required external power source or aux	iliary output (Option -7 )			
	INPUT-OUTPUT • RC	*3	AC3,000V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$				
	INPUT-FG		AC2,000V Iminute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At room temperature)				
ISOLATION	OUTPUT • RC-FG	*3					
	OUTPUT-RC	*3	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
	OPERATING TEMP., HUMID. AND	ALTITUDE *5					
	STORAGE TEMP., HUMID.AND						
ENVIRONMENT	VIBRATION		-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	IMPACT		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes  196.1m/s² (20G), 11ms, once each X, Y and Z axes				
CAEETV AND	AGENCY APPROVAL	s	UL62368-1, C-UL (CSA62368-1), EN62368-1, Complies with DEN-AN				
SAFETY AND NOISE	CONDUCTED NOISE		Complies with FCC-A, VCCI-A, CISPR22-A, EN55011-A, EN55				
REGULATIONS	HARMONIC ATTENU	ATOR *10	Complies with IEC61000-3-2 class A	DEL A, additional EMPLIMO Filter required for meeting class b			
00_7110110	HARINGING ATTENU	ATOR *10	Compiles with IECO 1000-5-2 Class A				



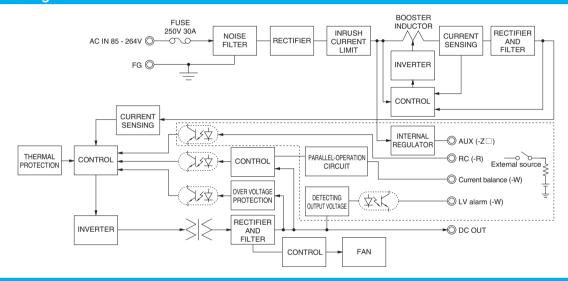
OTHERS	CASE SIZE/WEIGHT	178×61×268mm [7.01×2.40×10.55 inches] (Excluding terminal block and screw) (W×H×D) / 3.5kg max
OTHERS	COOLING METHOD *9	Forced cooling (internal fan)
WARRANTY	WARRANTY *6	5 years (subject to the operating conditions)

- 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. Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25 °C.
- The BC/AUX terminal are added to option -B/-Z models. The BC/AUX
- terminals are isolated from input, output, and FG.
- Output power derating is required.
- Output power derating is required. See 3.2 in Instruction Manual. See 3.3 in Instruction Manual for more details.
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- The fan speed slows down or stops 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 PLA1500F models with the –W option only.
  - Sound noise may be heard from the power supply when used for pulse load.

#### **Features**

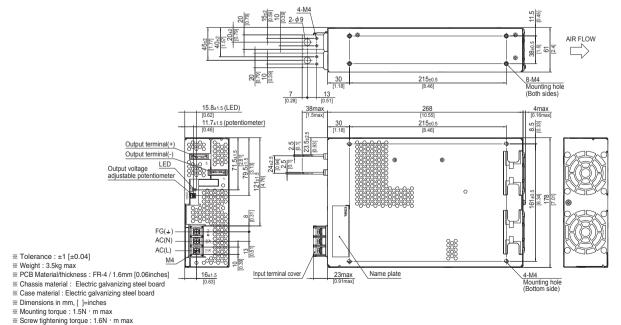
- · Cost-effective
- · Longer life (see Instruction Manual)
- · Low profile (meets 2U height = 61 mm or 2.4 inches)
- · Wide operating temperature range (-20°C to +70°C see instruction manual)
- · Stop or slow fan speed at no load
- · Many optional functions

### **Block diagram**



# **External view**

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



- Output terminal M4 tightening torque: 1.2N · m max
   Connect the input FG to safety earth ground.