







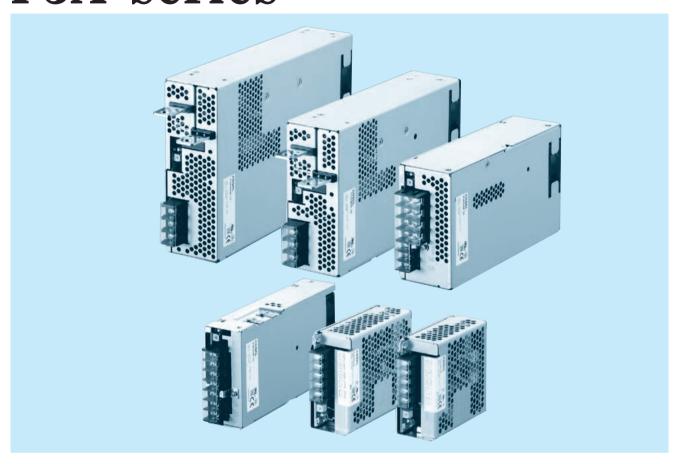








# **PJA-series**



#### Feature

Low Profile (PJA100F, 150F, 300F : 1U size)

(PJA600F, 1000F, 1500F : 2U size)

Wide temperature range (-20 $^{\circ}$ C to +70 $^{\circ}$ 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

Complies with SEMI F-47 (PJA1000F, 1500F can meet at 200V

input range only)

Many optional functions

### Safety agency approvals

UL62368-1, C-UL (CSA62368-1), EN62368-1 UL508 (PJA100F, 150F) Complies with DEN-AN

### 5-year warranty (See Instruction Manual)

### CE marking

Low Voltage Directive RoHS Directive

#### EMI

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

(PJA1500F: Class A. In conducted noise, it can meet class B by additional EMI/EMC filter.)

### **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

June 25, 2020 PJA-1

eco

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 \*6
   C: with Coating
   R: Remote on/off (Required external power source)
  - J : EP (Tyco Electronics)
- connector type J1 : VH (J.S.T.) connector type
- T : Vertical terminal block
- N2: with DIN rail

See 6.1 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		PJA100F-12	100F-5-N" about 5V outp	PJA100F-24	PJA100F-36	PJA100F-48		
	VOLTAGE[V]					_			
	VOLIAGE[V]	ACIN 100V	AC85 - 264 1 φ (Output derating is required at AC85V - 115V. Refer to "Derating" and instruction manual 1.1, 3)  1.2tvp (In=90%)						
	OUDDENTIAL		1.2typ (lo=90%) 1.1typ (lo=100%)						
	CURRENT[A]	ACIN 115V	** '						
		ACIN 230V	0.6typ (lo=100%)						
	FREQUENCY[Hz]	I	50 / 60 (47 - 63)	T "	1 "				
		ACIN 100V	82typ (lo=90%)	83typ (lo=90%)	85typ (lo=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	** '	Power factor correction is	s stopped at AC250V or	more.			
		ACIN 100V	16typ (Io=90%) Ta=25°						
	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]	0.75max (ACIN 240V, 6	60Hz, lo=100%, Accordi	ng to IEC62368-1 and D	DEN-AN)			
	VOLTAGE[V]		12	15	24	36	48		
	CURRENT[A]	ACIN 85-115V	Output derating is requ	ired at ACIN 115V or les	ss (Refer to "Derating")				
	CONNENT[A]	ACIN 115V-264V	8.4	6.7	4.3	2.8	2.1		
	WATTAGEIWI	ACIN 85-115V	Output derating is requ	ired at ACIN 115V or les	ss (Refer to "Derating")				
	WATTAGE[W]	ACIN 115V-264V	100.8	100.5	103.2	100.8	100.8		
	LINE REGULATION[m	iV] *3	48max	60max	96max	144max	192max		
	LOAD REGULATION	lo=30 to 100%	100max	120max	150max	150max	300max		
	[mV] *3	lo=0 to 30%	Burst operation (Please	e contact us about detail	)	<u>'</u>	<u>'</u>		
	RIPPLE[mVp-p]	0 to +40℃	120max	120max	120max	150max	150max		
	*1	-10 to 0℃	160max	160max	160max	200max	400max		
	lo: load factor	lo=0 to 30%	500max	500max	500max	500max	500max		
	RIPPLE NOISE[mVp-p]	0 to +40°C	150max	150max	150max	200max	200max		
	*1	-10 to 0°C	180max	180max	180max	240max	500max		
	lo: load factor		600max	600max	600max	600max	600max		
		0 to +40°C	120max	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]	**2	500typ (ACIN 115V, Io:		Joinax	144IIIax	192IIIax		
			** `						
	HOLD-UP TIME[ms]  OUTPUT VOLTAGE ADJUSTMEN	IT DANGERA	20typ (ACIN 115V, lo=	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80		
	OUTPUT VOLTAGE ADJUSTMEN		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	32.40 to 39.60 36.00 to 37.44	43.20 to 52.80 48.00 to 49.92		
	OVERCURRENT PROTE					30.00 to 37.44	40.00 (0 49.92		
DOTEOTIC:				ting and recovers autom	27.60 to 33.60	41.40 to 50.40	54.00 to 67.20		
ROTECTION	OVERVOLTAGE PROTE		13.80 to 16.80	17.20 10 21.00	21.00 10 33.00	41.40 (0 50.40	34.00 10 67.20		
CIRCUIT AND OTHERS		ION	LED (Green)						
J.IILIIJ	REMOTE SENSING		Not provided	ornal namer assures Out	ion D\				
	REMOTE ON/OFF	a =		ernal power source. Opt					
	INPUT-OUTPUT • RC	*8		toff current = 10mA, DC					
SOLATION	INPUT-FG			toff current = 10mA, DC	· · · · · · · · · · · · · · · · · · ·				
	OUTPUT RC-FG	*8	,	off current = 100mA, DC	· · · · · · · · · · · · · · · · · · ·				
	OUTPUT-RC	*8		off current = 100mA, DC					
	OPERATING TEMP., HUMID. AND		,	"Derating"), 20 - 90%RH	, ,,,,,,				
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE		RH (Non condensing), 9					
	VIBRATION			G), 3minutes period, 60r		and Z axes			
	IMPACT		. ,.	s, once each X, Y and Z		1			
SAFETY AND	AGENCY APPROVAL	S		A62368-1), EN62368-1,		J, -J1) Complies with DI	EN-AN		
NOISE	CONDUCTED NOISE		Complies with FCC-B,	VCCI-B, CISPR22-B, EN	N55011-B, EN55022-B				
REGULATIONS	HARMONIC ATTENUA	ATOR *7	Complies with IEC6100	00-3-2 class A					

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OTHERS	CASE SIZE/WEIGHT	41×97×109mm [1.61×3.82×4.29 inches] (Excluding terminal block and screw) (W×H×D) / 500g max
OTHERS	COOLING METHOD	Convection
WARRANTY	WARRANTY	*5 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 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. Refer to "Derating"
- See 4 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

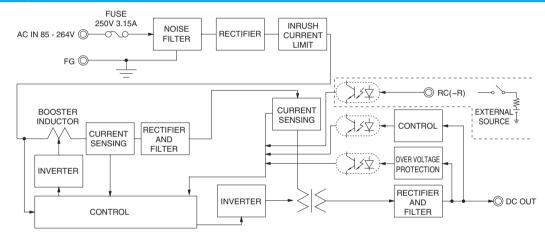
Parallel operation is not possible with this mode

Sound noise may be heard from the power supply when used for

#### **Features**

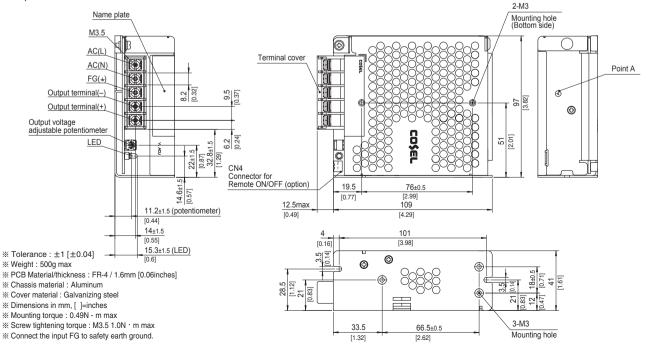
- · Compact design (Depth: 109mm 4.29inches)
- · High efficiency (88%typ PJA100F-24, AC230Vin, 100% load)
- · Low power consumption (1.5W typ AC240Vin, no load at standard model)
- · UL508 approved (Except option -J, -J1), and complies with SEMI F47 (see instruction manual 1.1)
- · Various connection interface options (vertical terminal [-T], AMP connector [-J], [-J1])

#### **Block diagram**



#### **External view**

The external size of -R option, -J option, -J1 option, -N2 option and -T option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



June 25, 2020

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# **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.

- ①Series name ②Single output ③Output wattage ④Universal input
- ⑤Output voltage
- ®Optional \*6
   C: with Coating
   R: Remote on/off
- (Required external power source)
- J : EP (Tyco Electronics)
- connector type J1 : VH (J.S.T.) connector type
- T: Vertical terminal block
- N2: with DIN rail

See 6.1 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.

J. LOII	ICATIONS		* Please consider "PBA"		_	1	1				
	MODEL		PJA150F-12	PJA150F-15	PJA150F-24	PJA150F-36	PJA150F-48				
	VOLTAGE[V]			t derating is required at	AC85V - 115V. Refer to	"Derating" and instructi	on manual 1.1, 3)				
		ACIN 100V	1.7typ (lo=90%)								
	CURRENT[A]	ACIN 115V	1.6typ (lo=100%)								
		ACIN 230V	0.8typ (lo=100%)								
	FREQUENCY[Hz]		50 / 60 (47 - 63)								
		ACIN 100V	84typ (lo=90%)	84typ (lo=90%)	87typ (lo=90%)	87typ (Io=90%)	87typ (Io=90%)				
	EFFICIENCY[%]	ACIN 115V	84typ (lo=100%)	84typ (lo=100%)	87typ (lo=100%)	87typ (lo=100%)	87typ (Io=100%)				
IPUT		ACIN 230V	87typ (lo=100%)	87typ (lo=100%)	90typ (lo=100%)	90typ (lo=100%)	90typ (Io=100%)				
		ACIN 100V	0.98typ (lo=90%)	77.							
	POWER FACTOR	ACIN 115V	0.98typ (lo=100%)	0.98typ (lo=100%)							
		ACIN 230V	** '		s stopped at AC250V or	more.					
		ACIN 100V	16typ (Io=90%) Ta=25°								
	INRUSH CURRENT[A]	ACIN 115V	16typ (lo=100%) Ta=25								
		ACIN 230V	32typ (lo=100%) Ta=25			,					
	LEAKAGE CURRENT	[mA]	0.75max (ACIN 240V, 6	60Hz, Io=100%, Accordi	ng to IEC62368-1 and D						
	VOLTAGE[V]		12	15	24	36	48				
	CURRENT[A]	ACIN 85-115V		ired at ACIN 115V or les							
		ACIN 115V-264V	12.5	10	6.4	4.2	3.2				
	WATTAGE[W]	ACIN 85-115V		ired at ACIN 115V or les	_ `						
		ACIN 115V-264V	150.0	150.0	153.6	151.2	153.6				
	LINE REGULATION[m	ıV] *3	48max	60max	96max	144max	192max				
	LOAD REGULATION	lo=30 to 100%	100max	120max	150max	150max	300max				
	[mV] *3	lo=0 to 30%	Burst operation (Please	e contact us about detai	)						
	RIPPLE[mVp-p]	0 to +40°C	120max	120max	120max	150max	150max				
	*1	-10 to 0℃	160max	160max	160max	200max	400max				
UTPUT	lo: load factor	lo=0 to 30%	500max	500max	500max	500max	500max				
	RIPPLE NOISE[mVp-p]	0 to +40°C	150max	150max	150max	200max	200max				
	*1	-10 to 0℃	180max	180max	180max	240max	500max				
	lo: load factor	lo=0 to 30%	600max	600max	600max	600max	600max				
	TEMPERATURE REGULATION[mV]	0 to +40°C	120max	150max	240max	360max	480max				
	TEMPERATURE REGULATION[IIIV]	-10 to +40°C	180max	180max	290max	440max	600max				
	DRIFT[mV]	*2	48max	60max	96max	144max	192max				
	START-UP TIME[ms]		500typ (ACIN 115V, lo=	=100%) Ta=25℃							
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=1	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 ra	ting and recovers autom	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				
RCUIT AND	OPERATING INDICAT	ION	LED (Green)								
THERS	REMOTE SENSING		Not provided								
	REMOTE ON/OFF			ernal power source. Opt							
	INPUT-OUTPUT • RC	*8			500V 50M $\Omega$ min (At roo						
OLATION	INPUT-FG				500V 50M $\Omega$ min (At roo						
01A11011	OUTPUT • RC-FG	*8			500V 50M $\Omega$ min (At roo						
	OUTPUT-RC	*8			500V 50M $\Omega$ min (At roo						
	OPERATING TEMP., HUMID. AND	ALTITUDE *4	-20 to +70°C (Refer to "	'Derating"), 20 - 90%RH	(Non condensing), 3,00	00m (10,000 feet) max					
VIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%	RH (Non condensing), 9	9,000m (30,000 feet) ma	х					
·····OHWILITI	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (20	G), 3minutes period, 60r	minutes each along X, Y	and Z axes					
	IMPACT		\ //	s, once each X, Y and Z							
AFETY AND	AGENCY APPROVAL	S	UL62368-1, C-UL (CSA	A62368-1), EN62368-1,	UL508 (Except option -	J, -J1) Complies with DI	EN-AN				
DISE	CONDUCTED NOISE		Complies with FCC-B,	VCCI-B, CISPR22-B, El	N55011-B, EN55022-B	·					
EGULATIONS			Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B Complies with IEC61000-3-2 class A								

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OTHERS	CASE SIZE/WEIGHT	41×97×129mm [1.61×3.82×5.08 inches] (Excluding terminal block and screw) (W×H×D) / 600g max
OTHERS	COOLING METHOD	Convection
WARRANTY	WARRANTY	*5 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 halfhour warm-up at 25℃.

- \*3 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. Refer to "Derating".
- See 4 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

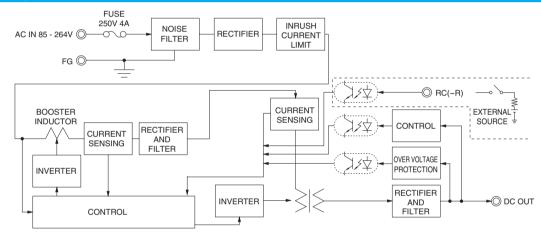
isolated from input, output, and FG.

- Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be
- Parallel operation is not possible with this mode
- Sound noise may be heard from the power supply when used for

#### **Features**

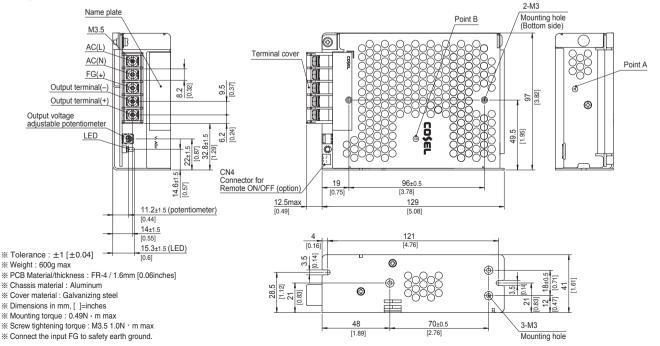
- · Compact design (Depth: 129mm 5.08inches)
- · High efficiency (90%typ PJA150F-24, AC230Vin, 100% load)
- · Low power consumption (1.5W typ AC240Vin, no load at standard model)
- · UL508 approved (Except option -J, -J1), and complies with SEMI F47 (see instruction manual 1.1)
- · Various connection interface options (vertical terminal [-T], AMP connector [-J], [-J1])

#### **Block diagram**



#### **External view**

The external size of -R option, -J option, -J1 option, -N2 option and -T option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



June 25, 2020

PJA-5

# **PJA300F**

300



Example recommended EMI/EMC filter NAC-06-472

- ①Series name ②Single output ③Output wattage ④Universal input
  - ⑤Output voltage
- (a) Output voltage
  (b) Optional \*6
  (c) with Coating
  (c) Low leakage current
  (c) V: External potentiometer for
  - output voltage adjustment R : Remote on/off
- (Required external power source) F4: Low speed fan

See 6.1 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		PJA300F-5	PJA300F-12	PJA300F-15	PJA300F-24	PJA300F-36	PJA300F-48				
	VOLTAGE[V]		AC85 - 264 1 φ (O	utput derating is req	uired at AC85V - 100	V. Refer to "Derating	" and instruction ma	nual 1.1, 3)				
		ACIN 100V	3.5typ (lo=100%)	3.9typ (lo=100%)								
	CURRENT[A]	ACIN 115V	3.0typ (lo=100%)	0typ (lo=100%) 3.3typ (lo=100%)								
		ACIN 230V	1.5typ (lo=100%)	1.7typ (lo=100%)								
	FREQUENCY[Hz]		50 / 60 (47 - 63)	71 ( /								
		ACIN 100V	73typ (lo=100%)	79typ (lo=100%)	81typ (lo=100%)	82typ (lo=100%)	83typ (lo=100%)	82typ (lo=100%				
	EFFICIENCY[%]	ACIN 115V	74typ (lo=100%)	80typ (lo=100%)	82typ (lo=100%)	83typ (lo=100%)	83typ (lo=100%)	83typ (lo=100%				
NPUT		ACIN 230V	77typ (lo=100%)	82typ (lo=100%)	84typ (lo=100%)	86typ (lo=100%)	87typ (lo=100%)	86typ (lo=100%				
		ACIN 100V	0.99typ (lo=100%)	1 - 71 (	1 - 31 (	1 31- (	1 - 31 (	1				
	POWER FACTOR	ACIN 115V	0.98typ (lo=100%)									
		ACIN 230V	0.95typ (lo=100%)									
		ACIN 100V	20typ (Io=100%) Ta	a=25°C at cold start								
	INRUSH CURRENT[A]	ACIN 115V	20typ (Io=100%) Ta									
	introdit contractify	ACIN 230V	40typ (lo=100%) Ta									
	LEAKAGE CURRENT	1	, , ,		According to IEC623	68-1 and DEN-ΔN)						
	VOLTAGE[V]	linyl	5	12	15	24	36	48				
		ACIN 85-100V	-		OV or less (Refer to "I		100	1 40				
	CURRENT[A]	ACIN 100V-264V	50	25	20	12.5	8.4	6.3				
		ACIN 85-100V		L -	OV or less (Refer to "I		0.4	0.5				
	WATTAGE[W]	ACIN 00-100V ACIN 100V-264V	250	300	300	300	302.4	302.4				
	LINE DECLIL ATIONS							192max				
	LINE REGULATION		20max 40max	48max	60max	96max	144max					
	LOAD REGULATION			100max	120max	150max	150max	300max				
	RIPPLE[mVp-p]	0 to +50℃	80max	120max	120max	120max	150max	150max				
DUTPUT	<b>Φ</b> 1	+	140max	160max	160max	160max	160max	400max				
	RIPPLE NOISE[mVp-p]	0 to +50°C		150max	150max	150max	200max	200max				
	*1	-10 to 0℃		180max	180max	180max	240max	500max				
	TEMPERATURE REGULATION[mV]	0 to +50°C		120max	150max	240max	360max	480max				
		-10 to +50°C	75max	180max	180max	290max	440max	600max				
	DRIFT[mV]	*2	20max	48max	60max	96max	144max	192max				
	START-UP TIME[ms]		300typ (ACIN 100\	·								
	HOLD-UP TIME[ms]		20typ (ACIN 100V,									
	OUTPUT VOLTAGE ADJUSTME			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			of rating and recover	, , , , , , , , , , , , , , , , , , , ,							
PROTECTION	OVERVOLTAGE PROTE		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	TION	LED (Green)	-								
OTHERS	REMOTE SENSING		Not provided									
	REMOTE ON/OFF		Optional (Required external power source. Option -R)									
	INPUT-OUTPUT • RC	*9	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)									
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At room temperature)									
SOLATION	OUTPUT • RC-FG	*9	AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At room temperature)									
	OUTPUT-RC	*9	AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At room temperature)									
	OPERATING TEMP., HUMID. AND	ALTITUDE *4	-20 to +70°C (Refer to "Derating"), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max									
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 9	90%RH (Non conde	nsing), 9,000m (30,00	00 feet) max						
INVIRUNINENT	VIBRATION		10 - 55Hz, 19.6m/s	<sup>2</sup> (2G), 3minutes per	riod, 60minutes each	along X, Y and Z ax	es					
	IMPACT		196.1m/s² (20G), 1	1ms, once each X, \	and Z axes							
SAFETY AND	AGENCY APPROVAL	s			2368-1 Complies with	DEN-AN						
NOISE	CONDUCTED NOISE				22-B, EN55011-B, EN							
			-									

PJA-6 June 25, 2020



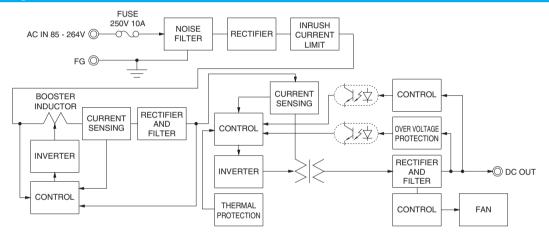


OTHERS	CASE SIZE/WEIGHT	102×41×190mm [4.02×1.61×7.48 inches] (Excluding terminal block and screw) (W×H×D) / 1.0kg max							
OTHERS	COOLING METHOD *7	Forced c	Forced cooling (internal fan)						
WARRANTY	WARRANTY *5	5 years (	ears (subject to the operating conditions)						
*1 This is the	*1 This is the result of measurement of the testing board with capacitors of *3 Consult us about dynamic load and input response. isolated from input, output, and FG.								
22 µ F and	$0.1\muF$ placed at 150 mm from the output termin	nals by a 20	*4 Output power derating is required. Refer to "Derating".	*	Do not use the power supply in overcurrent conditions or in unspecified				
MHz oscille	oscope or a ripple-noise meter equivalent to Keis	oku-Giken	*5 See 4 in Instruction Manual for more details.		input voltage ranges. Otherwise the internal components may be				
RM103.			*6 Consult us about safety agency approvals for the models with optional functions.		damaged.				
See 1.6 of	Instruction Manual for more details.		*7 The fan speed slows down at no load.	*	Parallel operation is not possible with this mode.				
*2 Drift is the	change in DC output for an eight hour period after	a half-hour *8 Consult us about other classes.			Sound noise may be heard from the power supply when used for				
warm-up a	t 25℃.		*9 The RC terminal is added to option –R models. The RC terminal is		pulse load.				

#### **Features**

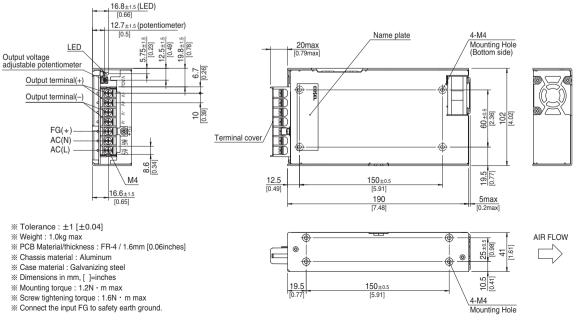
- · Cost-effective
- · Longer life (see Instruction Manual)
- · Low profile (meets 1U height = 41 mm or 1.61 inches)
- · Wide operating temperature range (-20°C to +70°C Refer to "Derating")
- · Slow fan speed at no load
- · Complies with SEMI F-47
- · Many optional functions

#### **Block diagram**



#### **External view**

The external size of -V option and -R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



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# 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.

- ①Series name
  ②Single output
  ③Output wattage
  ④Universal input
  ⑤Output voltage
  ⑥Optional \*6
  C: with Coating
  G: Low leakage current
  V: External potentiometer for output voltage adjustment
  W: Parallel operation,
  LV alarm and Remote sensing
  R: Remote on/off
  (Required external power source)
  F4: Low speed fan

See 6.1 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		PJA600F-5	PJA600F-12	PJA600F-15	PJA600F-24	PJA600F-36	PJA600F-48				
_	VOLTAGE[V]		AC85 - 264 1 φ (O	utput derating is req	uired at AC85V - 100	V. Refer to "Derating	" and instruction ma	nual 1.1, 3)				
		ACIN 100V	6.7typ (lo=100%)	6.7typ (lo=100%) 7.5typ (lo=100%)								
	CURRENT[A]	ACIN 115V	5.7typ (lo=100%)	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	ush current) (More t	han 3sec to re-start)					
	INRUSH CURRENT[A]	ACIN 115V	20/40typ (lo=100%	) (Primary inrush cu	rrent /Secondary inru	ush current) (More t	han 3sec to re-start)					
		ACIN 230V	40/40typ (lo=100%	) (Primary inrush cu	rrent /Secondary inru	ush current) (More t	han 3sec to re-start)					
	LEAKAGE CURRENT	[mA]	1.5max (ACIN 240)	V, 60Hz, Io=100%, A	according to IEC6236	8-1 and DEN-AN)						
	VOLTAGE[V]		5	12	15	24	36	48				
	CURRENT[A]	ACIN 85-100V	Output derating is	required at ACIN 100	OV or less (Refer to "	Derating")						
	COMMENTIAL	ACIN 100V-264V	100	50	40	25	16.7	12.5				
	WATTAGE[W]	ACIN 85-100V	Output derating is	required at ACIN 100	OV or less (Refer to "	Derating")						
	WATTAGE[W]	ACIN 100V-264V	500	600	600	600	601.2	600				
	LINE REGULATION[n	nV] *7	20max	48max	60max	96max	144max	192max				
	LOAD REGULATION	[mV] *7	40max	100max	120max	150max	150max	300max				
	RIPPLE[mVp-p] **I RIPPLE NOISE[mVp-p] **I TEMPERATURE REGULATION[mV]	0 to +50°C	80max	120max	120max	120max	150max	150max				
OUTPUT		-20 to 0°C	140max	160max	160max	160max	160max	400max				
JUIPUI		0 to +50°C	120max	150max	150max	150max	200max	200max				
		-20 to 0°C	160max	180max	180max	180max	240max	500max				
		0 to +50°C	50max	120max	150max	240max	360max	480max				
		-20 to +50°C	75max	180max	180max	290max	440max	600max				
	DRIFT[mV]	*2	20max	48max	60max	96max	144max	192max				
	START-UP TIME[ms]		300typ (ACIN 100\	/, Io=100%)		-						
	HOLD-UP TIME[ms]		20typ (ACIN 100V,	lo=100%)								
	OUTPUT VOLTAGE ADJUSTME	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	ECTION		of rating and recover	s automatically			_				
PROTECTION	OVERVOLTAGE PROTE		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	LION	LED (Green)									
OTHERS	REMOTE SENSING		Optional (Option -W)									
	REMOTE ON/OFF		Optional (Required external power source. Option -R)									
	INPUT-OUTPUT • RC	*3			mA, DC500V 50M $\Omega$							
ISOLATION	INPUT-FG				mA, DC500V 50M $\Omega$							
	OUTPUT • RC-FG	*3	,		mA, DC500V 50M $\Omega$							
	OUTPUT-RC	*3			mA, DC500V 50M $\Omega$							
	OPERATING TEMP., HUMID. AND		,		90%RH (Non conde	3,1 1	000 feet) max					
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE			nsing), 9,000m (30,0							
	VIBRATION		10 - 55Hz, 19.6m/s	<sup>2</sup> (2G), 3minutes per	riod, 60minutes each	along X, Y and Z ax	es					
	IMPACT		. ,.	1ms, once each X, Y			,					
SAFETY AND	AGENCY APPROVAL	_			2368-1 Complies with							
NOISE	CONDUCTED NOISE		<u> </u>		22-B, EN55011-B, El	N55022-B						
REGULATIONS	HARMONIC ATTENU	ATOR *9	Complies with IEC	61000-3-2 class A								

**PJA-8** June 25, 2020





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 *	Forced cooling (internal fan)
WARRANTY	WARRANTY *	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 -R models. The BC terminal is
- isolated from input, output, and FG.
- Output power derating is required. Refer to "Derating" See 4 in Instruction Manual for more details
- Consult us about safety agency approvals for the models with optional functions.
- Consult us about dynamic load and input response.
- \*8 The fan speed slows down at no load.

- 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.

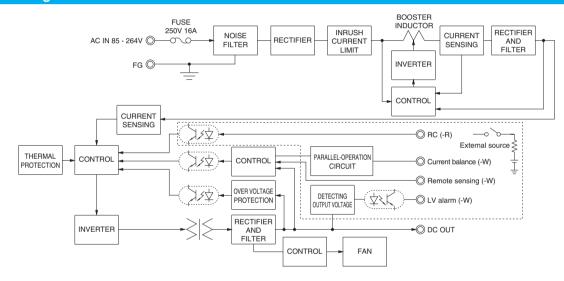
### **Features**

- · 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 Refer to
- "Derating")

#### · Slow fan speed at no load

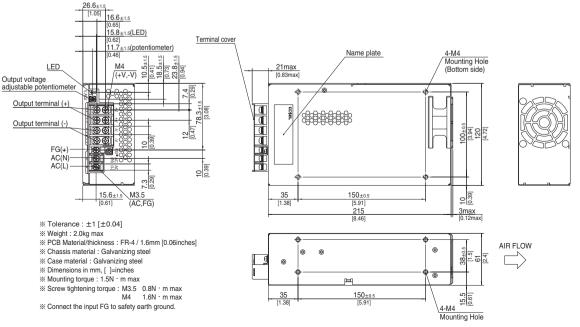
- · Complies with SEMI F-47
- · Many optional functions

#### **Block diagram**



#### **External view**

The external size of -V option, -W option and -R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



June 25, 2020 PJA-9

# **PJA1000F**

1000





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

- ①Series name ②Single output ③Output wattage ④Universal input ⑤Output voltage ⑥Optional \*8
  - C: with Coating
  - G: Low leakage current
  - V : External potentiometer for output voltage adjustment
  - W: Parallel operation, LV alarm and Remote sensing
  - R : Remote on/off
  - (Required external power source)

See 6.1 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**

M	IODEL		PJA1000F-12	PJA1000F-15	PJA1000F-24	PJA1000F-36	PJA1000F-48			
V	OLTAGE[V]		AC85 - 264 1 φ (Outp	ut derating is required a	t AC85V - 115V. Refer to	"Derating" and instructi	on manual 1.1, 3)			
		ACIN 100V	12.5typ (Io=90%)							
c	URRENT[A]	ACIN 115V	11.0typ (lo=100%)							
		ACIN 230V	5.5typ (to=100%)							
FI	REQUENCY[Hz]		50 / 60 (47 - 63)							
		ACIN 100V	81typ (lo=90%)	82typ (lo=90%)	84typ (Io=90%)	84typ (Io=90%)	84typ (lo=90%)			
E	FFICIENCY[%]	ACIN 115V	82typ (lo=100%)	82typ (lo=100%)	85typ (lo=100%)	85typ (lo=100%)	85typ (lo=100%)			
INPUT		ACIN 230V	85typ (Io=100%)	85typ (Io=100%)	88typ (Io=100%)	88typ (Io=100%)	88typ (lo=100%)			
		ACIN 100V	0.98typ (lo=90%)	1	1 71- (	1	1 31- (			
P	OWER FACTOR	ACIN 115V	0.98typ (lo=100%)							
		ACIN 230V	0.95typ (lo=100%)							
		ACIN 100V	71 \	rimary inrush current /S	econdary inrush current	(More than 10sec to re	e-start)			
IN	IRUSH CURRENT[A]	ACIN 115V	71 \ 7 \			t) (More than 10sec to				
""		ACIN 230V	71 \ /\		Secondary inrush curren	, <u> </u>				
11	EAKAGE CURRENT		,,,		ng to IEC62368-1 and D	, · ·				
	OLTAGE[V]	[]	12	15	24	36	48			
		ACIN 85-115V	·-		ess (Refer to "Derating")	55	1.0			
C	CURRENT[A] WATTAGE[W]	ACIN 115V-264V		67	42	28	21			
		ACIN 85-115V			ess (Refer to "Derating")	20	21			
w		ACIN 115V-264V	1008	1005	1008	1008	1008			
- I	LINE REGULATION[mV] *2		48max	60max	96max	144max	192max			
	LOAD REGULATION[mV] *2		100max	120max	150max	150max	300max			
<del></del>	-	0 to +50℃		180max	120max	150max	200max			
H	IPPLE[mVp-p]	-20 to 0°C		240max	160max	200max	500max			
OUTPUT -	IDDI E NOIGEL V. 1		210max	210max	150max	200max	300max			
RI	RIPPLE NOISE[mVp-p]	-20 to 0°C		270max	180max	240max	600max			
	*1	0 to +50°C		150max	240max	360max	480max			
TE	MPERATURE REGULATION[mV]	-20 to +50°C		180max	290max	440max	600max			
	DIET[m\/]	*3	48max	60max	96max	_				
_	RIFT[mV]	***			Bolliax	144max	192max			
_	TART-UP TIME[ms]	-	800typ (ACIN 115V, Ic							
_	OLD-UP TIME[ms]	T DANOERO	20typ (ACIN 115V, Io=	<del></del>	00.40.400.50	00 00 +- 40 00	40.00 +- 55.00			
_	UTPUT VOLTAGE ADJUSTMEN			13.50 to 17.30	20.40 to 28.50	30.60 to 40.80	40.80 to 55.20			
	UTPUT VOLTAGE SETTI		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			
	VERCURRENT PROTE			ating and recovers auto		40.00 ; 50.00				
	VERVOLTAGE PROTEC			18.00 to 21.80	28.80 to 34.80	43.20 to 52.20	57.00 to 67.20			
	PERATING INDICAT	ION	LED (Green)							
· · · ·	EMOTE SENSING		Optional (Option -W)		: D)					
	EMOTE ON/OFF		<u> </u>	ternal power source. Op	,					
<u> </u>	NPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At room temperature)							
	NPUT-FG				C500V 50MΩ min (At ro					
	UTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At room temperature)							
	PERATING TEMP., HUMID. AND A		,		H (Non condensing), 3,0					
FNVIRONMENT —	TORAGE TEMP., HUMID.AND	ALTITUDE			9,000m (30,000 feet) m					
V	IBRATION		- '		Ominutes each along X,	Y and Z axes				
	MPACT		· /·	196.1m/s² (20G), 11ms, once each X, Y and Z axes						
	GENCY APPROVALS	S	, ,		Complies with DEN-AN					
—	ONDUCTED NOISE				EN55011-B, EN55022-B					
REGULATIONS   H.	ARMONIC ATTENUA	ATOR *5	Complies with IEC610	000-3-2 class A						

**PJA-10** June 25, 2020





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 *		Forced cooling (internal fan)
WARRANTY	WARRANTY	*7	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
- warm-up at 25℃ Output power derating is required. Refer to "Derating".

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

Consult us about safety agency approvals for the models with optional functions.

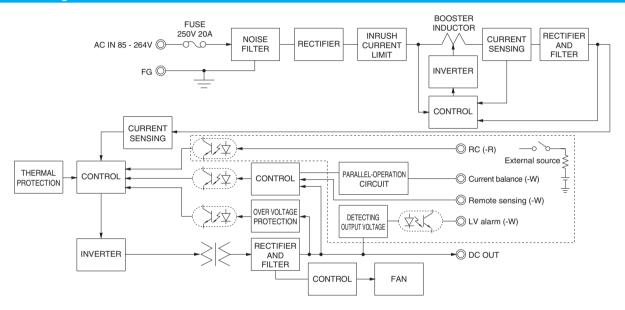
- See 1.6 of Instruction Manual for more details.
- Consult us about other classes
- Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged. Parallel operation is not possible with this mode.

- Consult us about dynamic load and input response
- The fan speed slows down or stops at no load. See 4 in Instruction Manual for more details.
- Audible noise may be heard from the power supply when used for pulse load.

#### **Features**

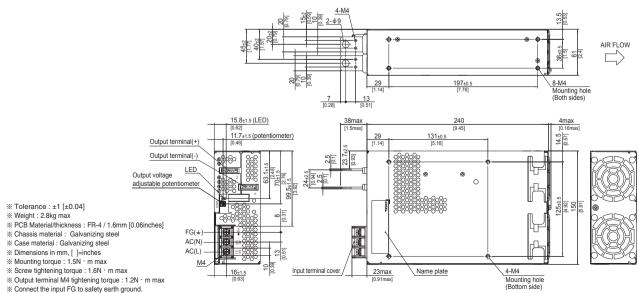
- · Cost-effective
- · Longer life (see Instruction Manual)
- · Low profile (meets 2U height = 61 mm or 2.4 inches)
- · Wide operating temperature range (-20°C to +70°C Refer to
- "Derating")
- · Stop or slow fan speed at no load

#### **Block diagram**



#### **External view**

The external size of -V option, -W option and -R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



# **PJA1500F**

1500



- ①Series name ②Single output ③Output wattage ④Universal input ⑤Output voltage ⑥Optional \*8

- C: with Coating
- G: Low leakage current
- V : External potentiometer for output voltage adjustment
- W: Parallel operation, LV alarm and Remote sensing
- R : Remote on/off
- (Required external power source)

See 6.1 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**

MC	ODEL		PJA1500F-12	PJA1500F-15	PJA1500F-24	PJA1500F-36	PJA1500F-48				
VC	DLTAGE[V]		AC85 - 264 1 φ (Output derating is required at AC85V - 115V. Refer to "Derating" and instruction manual 1.1, 3)								
		ACIN 100V	18typ (lo=90%)								
CL	JRRENT[A]	ACIN 115V	16typ (lo=100%)								
		ACIN 230V	8typ (lo=100%)								
FR	REQUENCY[Hz]		50 / 60 (47 - 63)								
		ACIN 100V	81typ (lo=90%)	82typ (lo=90%)	84typ (lo=90%)	84typ (lo=90%)	84typ (lo=90%)				
EF	FICIENCY[%]	ACIN 115V	82typ (lo=100%)	82typ (lo=100%)	85typ (lo=100%)	85typ (lo=100%)	84typ (lo=100%)				
INPUT		ACIN 230V	85typ (lo=100%)	85typ (lo=100%)	88typ (lo=100%)	88typ (lo=100%)	87typ (lo=100%)				
		ACIN 100V	0.98typ (lo=90%)								
PC	OWER FACTOR	ACIN 115V	0.98typ (lo=100%)								
		ACIN 230V	0.95typ (lo=100%)								
		ACIN 100V	15/30typ (Io=90%) (Pri	mary inrush current /Sed	condary inrush current)	(More than 10sec to re-s	start)				
INF	RUSH CURRENT[A]	ACIN 115V	15/30typ (lo=100%) (P	rimary inrush current /Se	econdary inrush current)	(More than 10sec to re-	-start)				
		ACIN 230V	30/30typ (lo=100%) (P	rimary inrush current /Se	econdary inrush current)	(More than 10sec to re-	-start)				
LE	AKAGE CURRENT	[mA]	1.5max (ACIN 240V, 60	Hz, Io=100%, According	g to IEC62368-1 and DE	N-AN)					
VC	DLTAGE[V]		12	15	24	36	48				
CI	IDDENT[A]	ACIN 85-115V	Output derating is requ	ired at ACIN 115V or les	ss (Refer to "Derating")						
	CURRENT[A]	ACIN 115V-264V	125	100	64	42	32				
10//	ATTAGE[W]	ACIN 85-115V	Output derating is requ	ired at ACIN 115V or les	ss (Refer to "Derating")						
VVA	ATTAGE[W]	ACIN 115V-264V	1500	1500	1536	1512	1536				
LI	LINE REGULATION[mV] *2		48max	60max	96max	144max	192max				
LC	DAD REGULATION[I	mV] *2	100max	120max	150max	150max	300max				
RII	PPLE[mVp-p]	0 to +50°C	180max	180max	120max	150max	200max				
оитрит 📙	*1	-20 to 0°C	240max	240max	160max	200max	500max				
	RIPPLE NOISE[mVp-p]	0 to +50°C	210max	210max	150max	200max	300max				
	*1	-20 to 0°C	270max	270max	270max	240max	600max				
TEM	MPERATURE REGULATION[mV]	0 to +50°C	120max	150max	240max	360max	480max				
12.	TEMPERATURE REGULATION[MV]	-20 to +50°C	180max	180max	290max	440max	600max				
DF	RIFT[mV]	*3	48max	60max	96max	144max	192max				
ST	TART-UP TIME[ms]		800typ (ACIN 115V, Io=	=100%)							
НС	OLD-UP TIME[ms]		20typ (ACIN 115V, Io=1	100%)							
OUT	TPUT VOLTAGE ADJUSTMEN	T RANGE[V]	10.80 to 13.50	13.50 to 17.30	20.40 to 28.50	30.60 to 40.80	40.80 to 55.20				
OU	JTPUT VOLTAGE SETTI	NG[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				
OV	ERCURRENT PROTE	CTION	Works over 105% of ra	ting and recovers autom	atically						
	ERVOLTAGE PROTEC		14.40 to 17.40	18.00 to 21.80	28.80 to 34.80	43.20 to 52.20	57.00 to 67.20				
	PERATING INDICAT	ION	LED (Green)								
	EMOTE SENSING		Optional (Option -W)								
	EMOTE ON/OFF		<u> </u>	ernal power source. Opti		<del></del>					
	PUT-OUTPUT			toff current = 25mA, DC	,						
	PUT-FG			toff current = 25mA, DC							
	UTPUT-FG			ff current = 100mA, DC5		<del></del>					
	ERATING TEMP., HUMID. AND A		`	Derating"), 20 - 90%RH							
FNVIRONMENT ├──	ORAGE TEMP., HUMID. AND	ALTITUDE		RH (Non condensing), 9							
VII	BRATION			G), 3minutes period, 60r		and Z axes					
	IPACT		· '-	, once each X, Y and Z							
OAI ETT AILE	GENCY APPROVALS	S		A62368-1), EN62368-1,							
· · · · · · · · · · · · · · · · · · ·	ONDUCTED NOISE				011-A, EN55022-A, addit	ional EMI/EMC Filter is re-	quired for meeting c				
REGULATIONS   HA	ARMONIC ATTENU <i>A</i>	ATOR *5	Complies with IEC6100	00-3-2 class A							

**PJA-12** June 25, 2020





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 *6	Forced cooling (internal fan)
WARRANTY	WARRANTY *7	5 years (subject to the operating conditions)

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

- 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
- warm-up at 25℃ Output power derating is required. Refer to "Derating".
- Consult us about safety agency approvals for the models with optional functions.

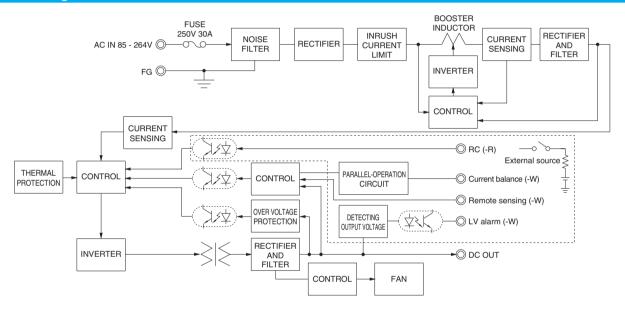
- See 1.6 of Instruction Manual for more details.
- Consult us about other classes
- Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged. Parallel operation is not possible with this mode.

- Consult us about dynamic load and input response
- The fan speed slows down or stops at no load. See 4 in Instruction Manual for more details.
- Audible noise may be heard from the power supply when used for pulse load.

#### **Features**

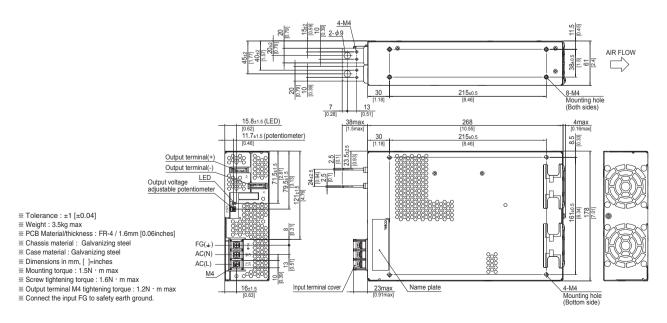
- · Cost-effective
- · Longer life (see Instruction Manual)
- · Low profile (meets 2U height = 61 mm or 2.4 inches)
- · Wide operating temperature range (-20°C to +70°C Refer to
- "Derating")
- · Stop or slow fan speed at no load

#### **Block diagram**



#### **External view**

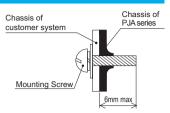
The external size of -V option, -W option and -R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



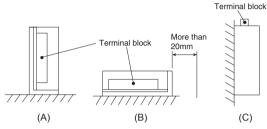
# **COSEL** | PJA-series

#### **Assembling and Installation Method**

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

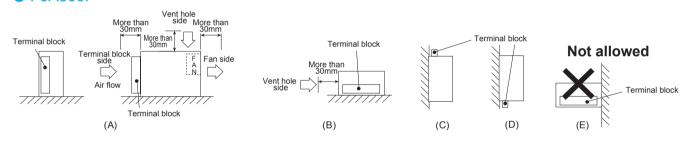


#### PJA100F, PJA150F

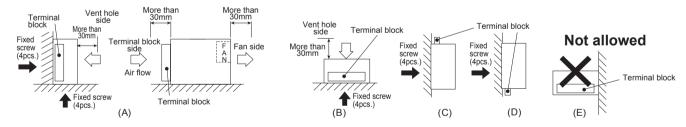


- ■If you use two or more power supplies side by side, please keep a sufficient distance between them to allow enough air ventilation.
- ■Ambient temperature around each power supply should not exceed the temperature range shown in "derating".

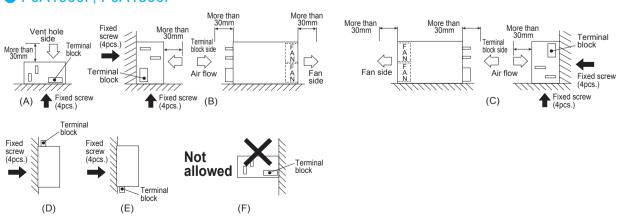
#### PJA300F



#### PJA600F



#### PJA1000F, PJA1500F



**PJA-14** 

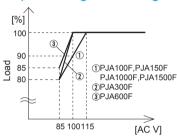


#### **Assembling and Installation Method**

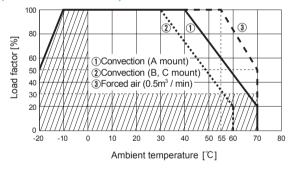
- ■When mounting the power supply with screws, it is recommended that this be done as shown above . If other methods are used, be sure the weight of the power supply is taken into account.
- ■Avoid the not allowed installation method as it gives excessive stress to the mounting holes.
- ■Do not block air flow of the built-in fan (terminal block and ventilation hole).
- If the power supply is used in a dusty environment, use an airfilter. Make sure air flow is not blocked.
- ■If the built-in fan stops, thermal protection will work and the outputwill stop.
- ■The life expectancy (R(t)=90%) of the built-in fan varies depending on the operating condition.

#### **Derating**

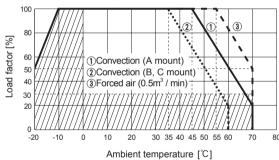
#### Input voltage Derating Curve



#### PJA100F/150F-12.15 Ambient temperature Derating Curve (Reference value)

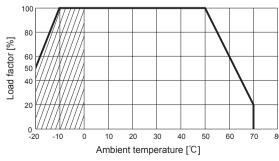


#### PJA100F/150F-24,36,48 Ambient temperature Derating Curve (Reference value)

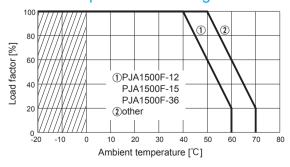


- ■In the hatched area, the specification of Ripple, Ripple Noise is different from other area.
- ■The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.
- ■Make sure the temperature at point A and point B is less than the temperatures shown in Instruction Manual 3.

### PJA300F Ambient temperature Derating Curve



### PJA600F/1000F/1500F Ambient temperature Derating Curve



■The ambient temperature is defined as the temperature of the air (at the terminal block side) that the built-in cooling fan blows into the power supply. Please pay attention to the heat generated by the input and output wires. Please consult us for more details.



#### **Instruction Manual**

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

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





#### **Basic Characteristics Data**

Model	Circuit method	Switching frequency [kHz]	Input current [A]	Rated input fuse	Inrush current protection circuit	PCB/Pattern			Series/Parallel operation availability	
						Material	Single sided	Double sided	Series operation	Parallel operation
PJA100F	Active filter	40 to 160	1.2 *1	250V 3.15A	Thermistor	FR-4		Yes	Yes	No
	Flyback converter	20 to 150 *2								
PJA150F	Active filter	40 to 160	1.7 *1	250V 4A	Thermistor	FR-4		Yes	Yes	No
	Flyback converter	20 to 150 *2								
PJA300F	Active filler	60	3.9 *3	250V 10A	Thermistor	FR-4		Yes	Yes	No
	Forward converter	140						res		
PJA600F	Active filler	60	7.5 *3	250V 16A	SCR	FR-4	Y	Vaa	Yes	*4
	Forward converter	220						Yes		
PJA1000F	Active filter	65	12.5 *1	250V 20A	TRIAC	FR-4		Yes	Yes	*4
	Forward converter	210								
PJA1500F	Active filter	65	18.0 *1	250V 30A	TRIAC	FR-4		Yes	Yes	*4
	Forward converter	210								

- \*1 The input current shown is at ACIN 100V and 90% load.
  \*2 The burst mode frequency varies according to the operating conditions. Consult us for more details.
  \*3 The input current shown is at ACIN 100V and 100% load.
- \*4 Parallal operation is possible with -W option. see "6.Option and Other" is Instruction Manual.



## Макро Групп – это:

- дистрибьютор электронных компонентов с 1994 года
- контрактный производитель электроники с 2007 года с собственным производством в Санкт-Петербурге (компания Макро ЕМС, входит в ГК Макро Групп)
- поставщик полупроводниковых материалов
- комплексный поставщик электронных компонентов
- моделирование и производство полупроводниковых эпитаксиальных гетероструктур для задач оптоэлектроники

Головной офис расположен в Санкт-Петербурге. Собственные представительства в крупных промышленных городах России и стран СНГ.

#### Преимущества для наших заказчиков:

- работа по тендерам с 2012 года
- оформление банковских гарантий
- отсрочки платежей
- поставка электронных компонентов по проектным ценам
- инженерная поддержка проектов заказчиков
- сертификат системы менеджмента качестве ISO 9001-2015
- необходимые сертификаты и лицензии

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