











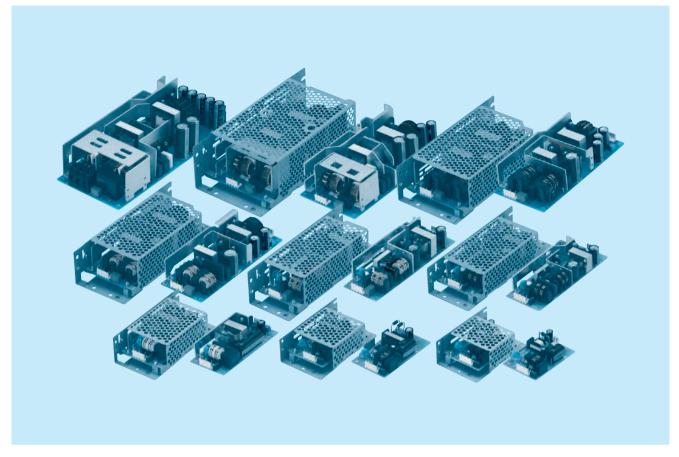






World wide





Feature

Small and compact PCB construction

Built-in inrush current, overcurrent and overvoltage protection circuits

Harmonic attenuator (Complies with IEC61000-3-2)

Universal input (AC85-264V)

Power factor correction (LFA50F-300F)

Built-in reducing standby power circuit (LFA10F, 15F)

Safety agency approvals

UL60950-1, C-UL(CSA60950-1), EN62368-1 Complies with DEN-AN

EMI

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

5-year warranty (refer to Instruction Manual)

CE marking

Low Voltage Directive **RoHS** Directive

EMS Compliance : EN61204-3, EN61000-6-2

EN61000-4-2

EN61000-4-3

EN61000-4-4

EN61000-4-5

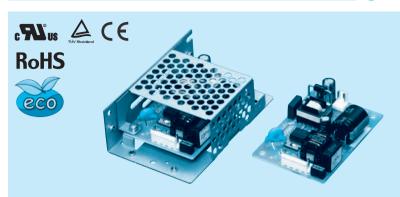
EN61000-4-6

EN61000-4-8

EN61000-4-11

LFA10F

LF A 10 F -



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.

- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- Optional
 C: with Coating
 G: Low leakage current
 - J1: VH(J.S.T.)connector type
 - S: with Chassis SN: with Chassis & cover
- Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *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	LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24
MAX OUTPUT WATTAGE[W]	6.6	10	10.8	10.5	12
DC OUTPUT	3.3V 2A	5V 2A	12V 0.9A	15V 0.7A	24V 0.5A

SPECIFICATIONS

	MODEL		LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24			
	VOLTAGE[V]		AC85 - 264 1 φ (Refer	to "Derating", Instruction	Manual 1 and 3) *3					
	CUDDENTIAL	ACIN 100V	0.18typ (lo=100%)	0.26typ (lo=100%)						
INPUT	CURRENT[A]	ACIN 200V	0.11typ (lo=100%)	.11typ (lo=100%)						
	FREQUENCY[Hz]	FREQUENCY[Hz]		50 / 60 (47 - 440)						
	EEEIOIENOVIO/1	ACIN 100V	68.0typ	74.0typ	76.5typ	77.5typ	79.5typ			
	EFFICIENCY[%]	ACIN 200V	68.5typ	76.0typ	79.0typ	80.0typ	83.0typ			
	INDUCUI OUDDENITAL	ACIN 100V	15typ (lo=100%)							
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%)							
	LEAKAGE CURRENT	[mA]	0.15/0.30max (ACIN 10	00V / 240V 60Hz, lo=10	0%, According to IEC62	368-1 and DEN-AN)				
	VOLTAGE[V]		3.3	5	12	15	24			
	CURRENT[A]		2.0	2.0	0.9	0.7	0.5			
	LINE REGULATION[n	nV] *5	20max	20max	48max	60max	96max			
	LOAD REGULATION	mV] *5	40max	40max	100max	120max	150max			
	DIDDLES V	0 to +50°C	80max	80max	120max	120max	120max			
	RIPPLE[mVp-p]	-10 - 0℃	140max	140max	160max	160max	160max			
	71	lo=0 - 35%	190max	160max	240max	240max	280max			
		0 to +50°C	120max	120max	150max	150max	150max			
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0℃	160max	160max	180max	180max	180max			
	*1	lo=0 - 35%	240max	240max	300max	300max	320max			
	TEMPERATURE REQUILATIONSVI	0 to +50°C	50max	50max	120max	150max	240max			
	TEMPERATURE REGULATION[mV]	-10 to +50°C	60max	60max	150max	180max	290max			
	DRIFT[mV] *2		20max	20max	48max	60max	96max			
	START-UP TIME[ms]		200typ (ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage							
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT I	RANGE[V]	2.85 to 3.63	Fixed ("Y"option is avai	ilable for adjusting outpu	t voltage between ±10%	5)			
	OUTPUT VOLTAGE SETT	ING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00			
	OVERCURRENT PROTE	ECTION	Works over 105% of rating and recovers automatically							
PROTECTION	OVERVOLTAGE PROTE	CTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60			
CIRCUIT AND	OPERATING INDICAT	TION	Not provided							
OTHERS	REMOTE SENSING		Not provided							
	REMOTE ON/OFF		Not provided							
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)							
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)							
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)							
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000 feet) max *3							
ENVIRONMENT	STORAGE TEMP., HUMID. AND A	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max							
Z. T.	VIBRATION		, ,	,,, , , , , , , , , , , , , , , , , ,	ninutes each along X, Y	and Z axis				
	IMPACT		<u> </u>	196.1m/s² (20G), 11ms, once each X, Y and Z axis						
SAFETY AND	AGENCY APPROVAL	S	UL60950-1, C-UL (CSA	A60950-1), EN62368-1 (Complies with DEN-AN					
NOISE	CONDUCTED NOISE		<u> </u>	VCCI-B, CISPR-B, EN55	· · · · · · · · · · · · · · · · · · ·					
REGULATIONS	HARMONIC ATTENU	ATOR	Complies with IEC6100	00-3-2 (Class A) *6 (Not	built-in to active filter) *4					
OTHERS	CASE SIZE/WEIGHT				, , ,	h chassis & cover : 150g	ı max)			
	COOLING METHOD		Convection (Refer to "Derating", Instruction Manual 3) *3							

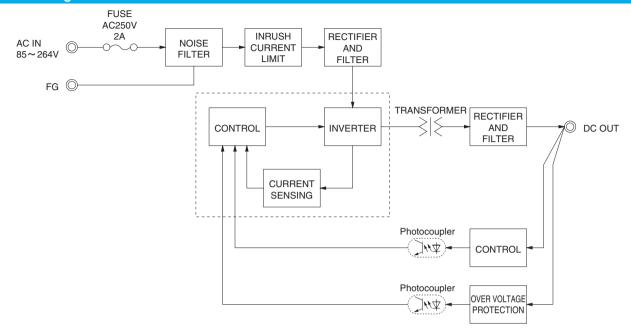
This is the value that measured on measuring board with capacitor of 22 $\mu\,\text{F}$ at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit. Therefore, the internal switch element is intermittent operated, and the Ripple/Ripple Noise specification in load

factor Io=0-35% is different.

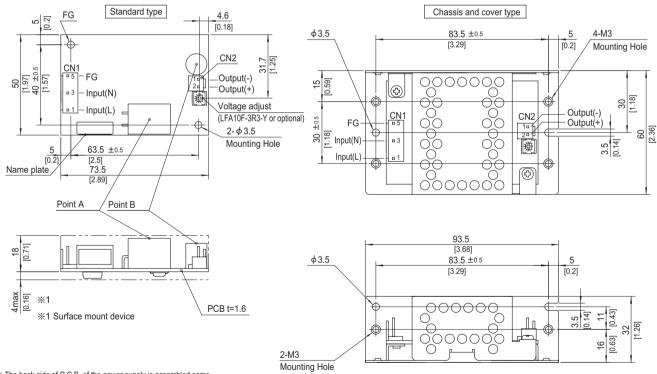
Please refer to the Instruction Manual 1.7.

- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Derating is required.
- When two or more units are operating it may not comply with the IEC61000-3-2.
- Please contact us about dynamic load and input response
- Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse





External view



- $\ensuremath{\ensuremath{\%}}$ The back side of P.C.B. of the power supply is assembled some SMDs. Be attention not to bump against the attached area by vibration.
- W Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- % Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector		Mating connector	T	erminal	
ONIA	4 4400704 0	4 4400700 5	Chain	1123721-1	
CN1	1-1123724-3	1-1123722-5	Loose	1318912-1	
ONIO	4 4400700 0	1-1123722-2	Chain	1123721-1	
CNZ	1-1123723-2		Loose	1318912-1	
(Mfr:Type Fleetrenice)					

(Mfr:Tyco Electronics)

- $\ensuremath{\,\mathbb{X}}$ I/O Connector is Mfr. Tyco Electronics
- % Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

<PIN CONNECTION>

CN1	
Pin No.	Input
1	AC(L)
2	
3	AC(N)
4	
5	FG
5	10

	CINZ					
ıt		Pin No.	Output			
_)		1	-V			
N)		2	+V			

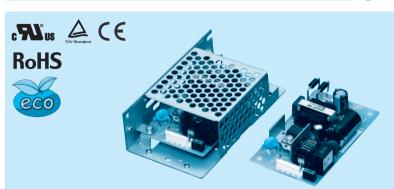
CND

- ※ Tolerance : ±1 [±0.04]
- ** Weight: 55g max (with chassis & cover: 150g max)

 ** PCB material / thickness: CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- * Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis): 0.6N m (6.3kgf cm) max

LFA15F

LF A 15 F -



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.

- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- Optional
 C: with Coating
 G: Low leakage current
 - J1: VH(J.S.T.)connector type
 - S: with Chassis SN: with Chassis & cover
- Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

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MODEL	LFA15F-3R3-Y	LFA15F-5	LFA15F-12	LFA15F-15	LFA15F-24
MAX OUTPUT WATTAGE[W]	9.9	15	15.6	15	16.8
DC OUTPUT	3.3V 3A	5V 3A	12V 1.3A	15V 1A	24V 0.7A

SPECIFICATIONS

	MODEL		LFA15F-3R3-Y	LFA15F-5	LFA15F-12	LFA15F-15	LFA15F-24			
	VOLTAGE[V]		AC85 - 264 1 φ (Refer	to "Derating", Instruction	Manual 1 and 3) *3					
	CURRENT[A]	ACIN 100V	0.24typ (lo=100%)	0.35typ (lo=100%)						
INPUT	CORNENT[A]	ACIN 200V	0.15typ (lo=100%)							
	FREQUENCY[Hz]	FREQUENCY[Hz]		50 / 60 (47 - 440)						
	EFFICIENCY[%]	ACIN 100V	68.0typ	73.0typ	76.0typ	77.0typ	78.0typ			
		ACIN 200V	69.0typ	76.0typ	78.5typ	80.0typ	81.5typ			
	INDUCTI CUDDENTIAL	ACIN 100V	15typ (lo=100%) (At co	ld start) (Ta=25°C)						
	INRUSH CURRENT[A]	ACIN 200V	0typ (lo=100%) (At cold start) (Ta=25℃)							
	LEAKAGE CURRENT	[mA]	0.15/0.30max (ACIN 10	00V / 240V 60Hz, lo=10	0%, According to IEC62	368-1 and DEN-AN)				
	VOLTAGE[V]		3.3	5	12	15	24			
	CURRENT[A]		3.0	3.0	1.3	1.0	0.7			
	LINE REGULATION[n	nV] *5	20max	20max	48max	60max	96max			
	LOAD REGULATION[mV] *5	40max	40max	100max	120max	150max			
	DIDDLET V. 1	0 to +50°C	80max	80max	120max	120max	120max			
	RIPPLE[mVp-p]	-10 - 0℃	140max	140max	160max	160max	160max			
	*1	lo=0 - 35%	190max	160max	240max	240max	280max			
		0 to +50°C	120max	120max	150max	150max	150max			
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0℃	160max	160max	180max	180max	180max			
	**	lo=0 - 35%	240max	240max	300max	300max	320max			
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max			
	TEMPERATURE REGULATION[mv]	-10 to +50°C	60max	60max	150max	180max	290max			
	DRIFT[mV] *2		20max	20max	48max	60max	96max			
	START-UP TIME[ms]		200typ (ACIN 100V, lo=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage.							
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT F	RANGE[V]	2.85 to 3.63	Fixed ("Y"option is avai	lable for adjusting outpu	t voltage between ±10%	<u>)</u>			
	OUTPUT VOLTAGE SETT	ING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00			
	OVERCURRENT PROTE	CTION	Works over 105% of rating and recovers automatically							
PROTECTION	OVERVOLTAGE PROTE	CTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60			
CIRCUIT AND	OPERATING INDICAT	ION	Not provided							
OTHERS	REMOTE SENSING	_	Not provided							
	REMOTE ON/OFF		Not provided							
	INPUT-OUTPUT	_	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)							
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)							
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)							
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000 feet) max *3							
ENVIRONMENT	STORAGE TEMP., HUMID. AND A	ALTITUDE			,000m (30,000 feet) max					
Littinoitim	VIBRATION		, ,	,, , , , , , , , , , , , , , , , , , ,	ninutes each along X, Y	and Z axis				
	IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis									
SAFETY AND	AGENCY APPROVAL	S		A60950-1), EN62368-1 C						
NOISE	CONDUCTED NOISE			VCCI-B, CISPR-B, EN55						
REGULATIONS	HARMONIC ATTENU	ATOR			built-in to active filter) *4					
OTHERS	CASE SIZE/WEIGHT				V×H×D) / 80g max (wit	h chassis & cover : 190g	ı max)			
	COOLING METHOD		Convection (Refer to "Derating", Instruction Manual 3) *3							

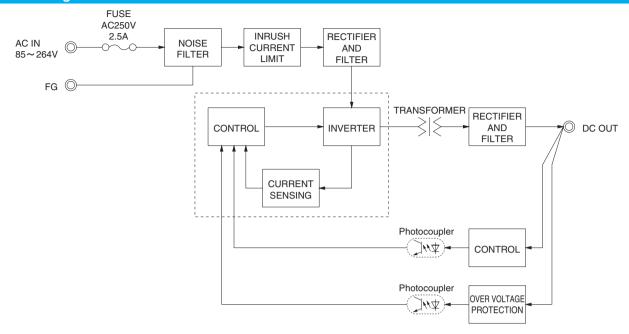
This is the value that measured on measuring board with capacitor of 22 μ F at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit. Therefore, the internal switch element is intermittent operated, and the Ripple/Ripple Noise specification in load

factor Io=0-35% is different.

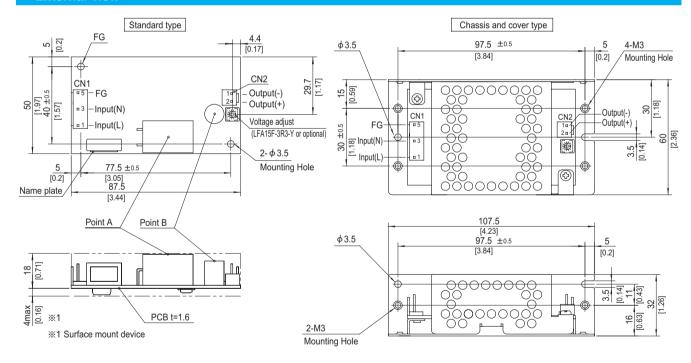
Please refer to the Instruction Manual 1.7.

- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Derating is required.
- When two or more units are operating it may not comply with the IEC61000-3-2.
- Please contact us about dynamic load and input response
- Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.
- Sound noise may be generated by power supply in case of pulse





External view



- $\ensuremath{\ensuremath{\%}}$ The back side of P.C.B. of the power supply is assembled some SMDs.
- Be attention not to bump against the attached area by vibration. W Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- * Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector		Mating connector		
CNIA	1-1123724-3	1-1123722-5	Chain	1123721-1
CN1	1-1123724-3	1-1123722-5	Loose	1318912-1
0110	1-1123723-2	1-1123722-2	Chain	1123721-1
CNZ	1-1123723-2	1-1123722-2	Loose	1318912-1

(Mfr:Tyco Electronics)

- ※ I/O Connector is Mfr. Tyco Electronics
- ※ Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

<PIN CONNECTION>

N1		CN2
Pin No.	Input	Pin I
1	AC(L)	4
2		'
3	AC(N)	2
4		
5	FG	

- % Tolerance : ±1 [±0.04]
- * Weight: 80g max (with chassis & cover: 190g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis): 0.6N · m (6.3kgf · cm) max

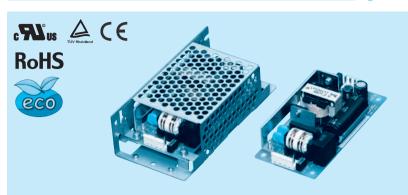
Output

-V

+\/

LFA30F

LF A 30 F -



Example recommended EMI/EMC filter NAC-04-472



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

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- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- Optional
 C: with Coating
 G: Low leakage current
 - J1: VH(J.S.T.)connector type
 - S: with Chassis
 - SN: with Chassis & cover
- Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *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	LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24
MAX OUTPUT WATTAGE[W]	19.8	30.0	30.0	30.0	31.2
DC OUTPUT	3.3V 6A	5V 6A	12V 2.5A	15V 2A	24V 1.3A

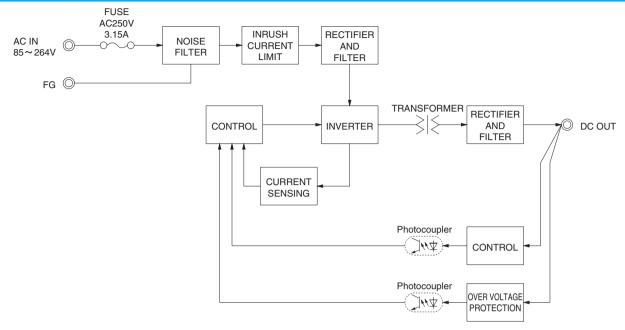
SPECIFICATIONS

	MODEL		LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24		
	VOLTAGE[V]		AC85 - 264 1 φ (Refe	r to "Derating", Instructi	on Manual 1 and 3) *3				
	CUDDENTIAL	ACIN 100V	0.50typ (lo=100%)	0.65typ (lo=100%)					
	CURRENT[A]	ACIN 200V	0.30typ (lo=100%)						
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
INPUT	EFFICIENCY[%]	ACIN 100V	73typ	76typ	79typ	81typ	82typ		
	EFFICIENCT[%]	ACIN 200V	75typ	79typ	81typ	83typ	84typ		
	INDUCU CUDDENTIAL	ACIN 100V	15typ (lo=100%) (At c	yp (Io=100%) (At cold start) (Ta=25°C)					
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%) (At c	old start) (Ta=25°C)					
	LEAKAGE CURREN	T[mA]	0.30 / 0.65max (ACIN	100V / 240V 60Hz, lo:	=100%, According to IE	C62368-1 and DEN-Al	N)		
	VOLTAGE[V]		3.3	5	12	15	24		
	CURRENT[A]		6.0	6.0	2.5	2.0	1.3		
	LINE REGULATION[mV] *5	20max	20max	48max	60max	96max		
	LOAD REGULATION	[mV] *5	40max	40max	100max	120max	150max		
	DIDDI E[m\/n n]	0 to +50°C *1	80max	80max	120max	120max	120max		
	RIPPLE[mVp-p]	-10-0℃ *1	140max	140max	160max	160max	160max		
	DIDDI E NOICE[m/m m]	0 to +50°C *1	120max	120max	150max	150max	150max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C *1	160max	160max	180max	180max	180max		
		0 to +50°C	50max	50max	120max	150max	240max		
	TEMPERATURE REGULATION[mV]	-10 to +50°C	60max	60max	150max	180max	290max		
	DRIFT[mV] *2		20max	20max	48max	60max	96max		
	START-UP TIME[ms]		150typ (ACIN 100V, Ic	=100%)					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63	Fixed ("Y"option is ava	ailable for adjusting out	out voltage between ±	10%)		
	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00		
	OVERCURRENT PROT	ECTION	Works over 105% of rating and recovers automatically						
PROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60		
CIRCUIT AND	OPERATING INDICA	TION	Not provided						
OTHERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)						
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)						
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000feet) max						
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max						
LIVINONWENT	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis						
SAFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-UL (CS	A60950-1), EN62368-	1 Complies with DEN-A	N			
NOISE	CONDUCTED NOISE	•	Complies with FCC-B	, VCCI-B, CISPR-B, EN	I55011-B, EN55022-B				
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with IEC6100	00-3-2 (Class A) *6 (Not	built-in to active filter) *4				
OTHERS	CASE SIZE/WEIGHT		50×26.5×105mm [1.	.97 × 1.04 × 4.13 inches	s] (W×H×D) / 130g ma	ax (with chassis & cove	r : 260g max)		
OTHENS	COOLING METHOD		Convection (Refer to "	Derating", Instruction M	Manual 3) *3				

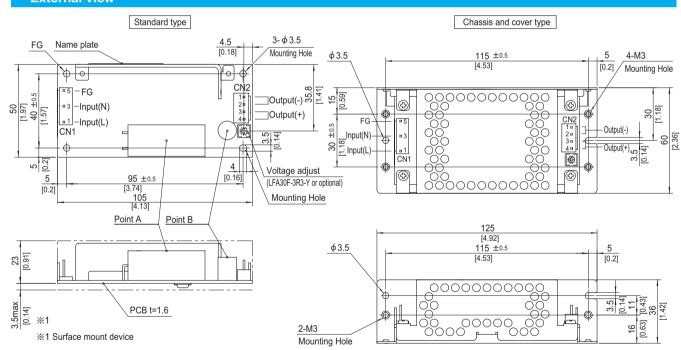
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal. . Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C , with the input voltage held constant at the rated input/output.
- Derating is required.

- When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.
- Please contact us about dynamic load and input response. Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.
- Sound noise may be generated by power supply in case of pulse load.





External view



- * 4 Mounting holes are existing.
- * The back side of P.C.B. of the power supply is assembled some SMDs.
- Be attention not to bump against the attached area by vibration. W Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- % Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/C	Connector	Mating connector	Terminal		
ONIA	4 4400704 0	4 4400700 5	Chain	1123721-1	
CNT	1-1123724-3	1-1123722-5	Loose	1318912-1	
ONIO	4 4400700 4	1-1123722-4	Chain	1123721-1	
CNZ	1-1123723-4		Loose	1318912-1	
0 K T 5 L 1					

(Mfr:Tyco Electronics)

- * I/O Connector is Mfr. Tyco Electronics
- Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

<PIN CONNECTION>

CN1			
Input			
AC(L)			
AC(N)			
FG			

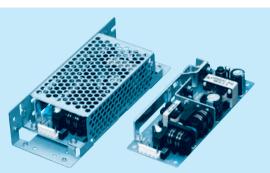
CN2					
Pin No.	Output				
1, 2	-V				
3, 4	+V				

- % Tolerance : ± 1 [± 0.04] $\,\%$ Weight: 130g max (with chassis & cover : 260g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- * Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis): 0.6N · m (6.3kgf · cm) max

^{*} Keep drawing current per pin below 5A for CN2.

A 50









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.

- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- Optional
 C: with Coating
 G: Low leakage current
 - J1: VH(J.S.T.)connector type S: with Chassis
 - SN: with Chassis & cover
 - Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *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	LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48
MAX OUTPUT WATTAGE[W]	33	50	51.6	52.5	50.4	50.4	52.8
DC OUTPUT	3 3V 10A	5V 10Δ	12V 4.3A	15V 3.5A	24V 2 1A	36V 1 4A	48V 1.1A

SPECIFICATIONS

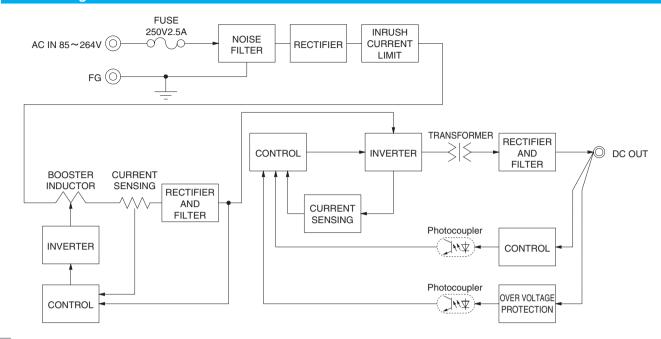
	MODEL		LFA50F-3R3-Y		LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to "Derating", Instruction Manual 1 and 3) *3						
	CURRENT[A] ACIN 100V ACIN 200V		0.47typ (lo=100%)	0.47typ (lo=100%) 0.67typ (lo=100%)					
			0.27typ (lo=100%)	0.36typ (lo=100)%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)					
	EFFICIENCY[0/]	ACIN 100V	73.5typ	77.5typ	80.0typ	80.5typ	81.5typ	82.0typ	81.0typ
NPUT	EFFICIENCY[%]	ACIN 200V	74.0typ	79.0typ	81.5typ	81.5typ	83.0typ	83.5typ	82.5typ
	DOWER FACTOR (L. 4000())	ACIN 100V	0.96typ	0.97typ	,				
	POWER FACTOR (lo=100%)	ACIN 200V	0.83typ	0.90typ			-		
	INDUCUI CURRENTIAL	ACIN 100V	15typ (lo=100%	(At cold start)	Ta=25℃)				
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%	(At cold start)	Ta=25℃)				
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max	(ACIN 100V / 24	0V 60Hz, lo=10	0%, According to	o IEC62368-1 ar	nd DEN-AN)	
	VOLTAGE[V]		3.3	5	12	15	24	36	48
	CURRENT[A]		10.0	10.0	4.3	3.5	2.1	1.4	1.1
	LINE REGULATION[mV] *4	20max	20max	48max	60max	96max	144max	192max
	LOAD REGULATION	[mV] *4	40max	40max	100max	120max	150max	240max	240max
	DIDDLES	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max
	RIPPLE[mVp-p]	-10 - 0°C *1	140max	140max	160max	160max	160max	200max	200max
		0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max
UTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C *1	160max	160max	180max	180max	180max	300max	300max
		0 to +50°C	50max	50max	120max	150max	240max	360max	480max
	TEMPERATURE REGULATION[mV]	-10 to +50°C	60max	60max	150max	180max	290max	450max	600max
	DRIFT[mV]	*2	20max	20max	48max	60max	96max	144max	192max
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63	Fixed ("Y"option	n is available for	adjusting output	voltage between	±10%)	
	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00
	OVERCURRENT PROT	ECTION	Works over 105	% of rating and	ecovers automa	tically	·		
ROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	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
IRCUIT AND		TION	Not provided	•					
THERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)						
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minut	te, Cutoff current	= 25mA, DC500	OV 50MΩ min (A	t Room Tempera	iture)	
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000feet) max						
NIVIDONIACNE	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max						
NVIRONMENT	VIBRATION		10 - 55Hz, 19.6	10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT		196.1m/s ² (20G), 11ms, once ea	ach X, Y and Z a	xis			
AFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-U	JL (CSA60950-1), EN62368-1 C	omplies with DEI	N-AN		
IOISE	CONDUCTED NOISE		Complies with F	FCC-B, VCCI-B,	CISPR-B, EN550	011-B, EN55022	-B		
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with I	EC61000-3-2 (C	lass A) *5	•			
	CASE SIZE/WEIGHT					V×H×D) / 165g	max (with chase	sis & cover : 325	g max)
DTHERS	COOLING METHOD			fer to "Derating",					

This is the value that measured on measuring board with capacitor of 22 $\mu\,F$ at 150mm from output terminal.

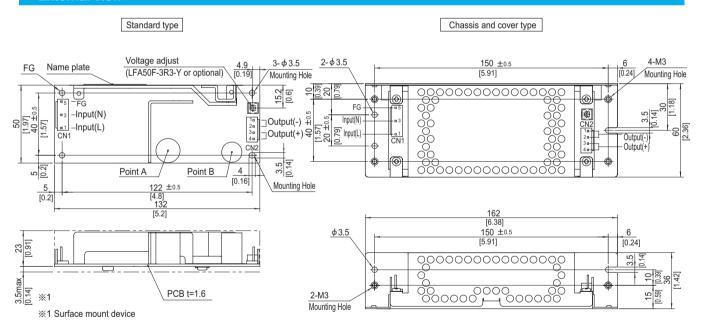
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).

- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Derating is required.
- Please contact us about dynamic load and input response.
- Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover
 - Sound noise may be generated by power supply in case of pulse load.





External view



- ¾ 4 Mounting holes are existing.
- * The back side of P.C.B. of the power supply is assembled some SMDs. Be attention not to bump against the attached area by vibration.
- W Use the spacer of 8mm length or more regarding insulation.
- And do not use press-fitting bush. * Point A, Point B are thermometry points. Please refer to
- Instruction Manual 3.

I/C	I/O Connector Mating connector		Terminal		
ONIA	1-1123724-3	4 4400700 5	Chain	1123721-1	
CIVI	1-1123/24-3 1-1123/22-5	1-1123724-3 1-1123722-5 Loos	1-1123722-5	Loose	1318912-1
CNIO	1-1123723-4	1-1123722-4	Chain	1123721-1	
CINZ	1-1123723-4	1-1123722-4	Loose	1318912-1	
			(Mfr:Ty	co Electronics)	

- % I/O Connector is Mfr. Tyco Electronics
- Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

<PIN CONNECTION>

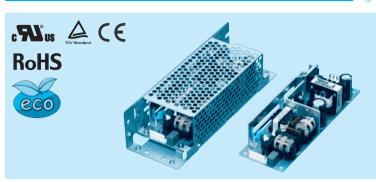
CN1					
Pin No.	Input				
1	AC(L)				
2					
3	AC(N)				
4					
E	FG				

CN2				
Pin No.	Output			
1, 2	-V			
3, 4	+V			

- ※ Tolerance: ±1 [±0.04]
- Weight: 165g max (with chassis & cover: 325g max)
- * Optional chassis and cover material : Electric galvanizing steel board.
- * Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis): 0.6N m (6.3kgf cm) max

[※] Keep drawing current per pin below 5A for CN2.

LF A 75 F 5



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.

- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- Optional
 C: with Coating
 G: Low leakage current
 - J1: VH(J.S.T.)connector type S: with Chassis
 - SN: with Chassis & cover
- Y: with Potentiometer

Specification is changed at option, refer to Instruction Manual.

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *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.

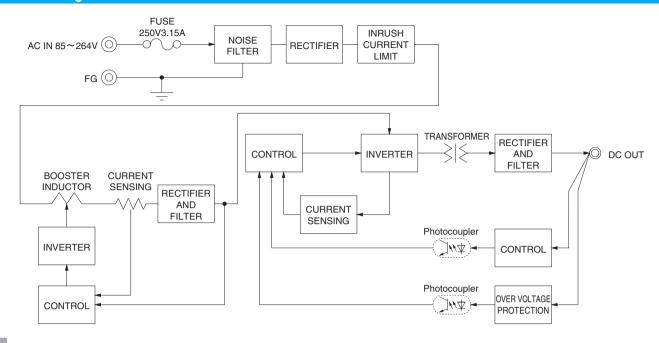
MODEL	LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48
MAX OUTPUT WATTAGE[W]	49.5	75	75.6	75	76.8	75.6	76.8
DC OUTPUT	3.3V 15A	5V 15A	12V 6.3A	15V 5A	24V 3.2A	36V 2.1A	48V 1.6A

SPECIFICATIONS

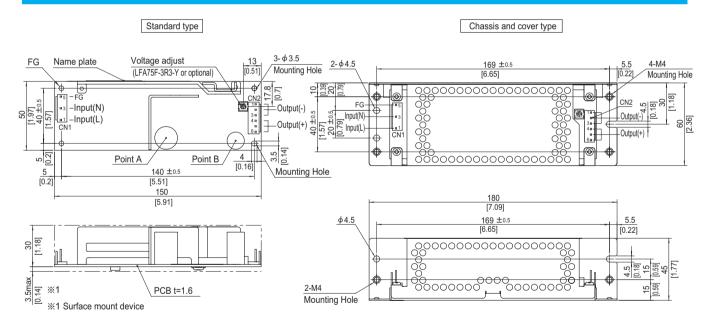
	MODEL		LFA75F-3R3-Y		LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to "Derating", Instruction Manual 1 and 3) *3						
	CURRENT[A]	ACIN 100V	0.70typ (lo=100%)	.70typ (lo=100%) 1.00typ (lo=100%)					
	ACIN 2		0.40typ (lo=100%)	0.50typ (lo=100)%)				
	FREQUENCY[Hz]	FREQUENCY[Hz])					
	EEEIOIENOVIO/1	ACIN 100V	73.5typ	78.0typ	81.5typ	81.5typ	82.5typ	82.5typ	82.5typ
NPUT	EFFICIENCY[%]	ACIN 200V	75.0typ	80.0typ	83.0typ	83.0typ	84.5typ	84.5typ	84.5typ
	DOWER FACTOR (L. 4000())	ACIN 100V	0.96typ	0.97typ					
	POWER FACTOR (lo=100%)	ACIN 200V	0.83typ	0.90typ			-		
	INDUCUI CURRENTIAL	ACIN 100V	15typ (lo=100%	(At cold start)	Ta=25℃)		-		
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%	(At cold start)	Ta=25℃)				
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max	(ACIN 100V / 24	0V 60Hz, lo=10	0%, According t	o IEC62368-1 ar	nd DEN-AN)	
	VOLTAGE[V]		3.3	5	12	15	24	36	48
	CURRENT[A]		15.0	15.0	6.3	5.0	3.2	2.1	1.6
	LINE REGULATION[mV] *4	20max	20max	48max	60max	96max	144max	192max
	LOAD REGULATION	[mV] *4	40max	40max	100max	120max	150max	240max	240max
	DIDDLES V	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max
	RIPPLE[mVp-p]	-10 - 0°C *1	140max	140max	160max	160max	160max	200max	200max
	DIDD! = 11010=1 1/ 1	0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max
UTPUT	RIPPLE NOISE[mVp-p]	-10-0℃ *1	160max	160max	180max	180max	180max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max	360max	480max
		-10 to +50°C	60max	60max	150max	180max	290max	450max	600max
	DRIFT[mV]	*2	20max	20max	48max	60max	96max	144max	192max
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63	Fixed ("Y"option	is available for a	djusting output vo	Itage between ±	10%)	
	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00
	OVERCURRENT PROT	ECTION	Works over 105	% of rating and	recovers automa	tically			
ROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	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
IRCUIT AND		TION	Not provided	•					
THERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)						
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)						
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000feet) max					
NIVIDONIACNIT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max						
NVIRONMENT	VIBRATION		10 - 55Hz, 19.6	m/s² (2G), 3minu	ites period, 60m	inutes each alon	g X, Y and Z axis	3	
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis						
AFETY AND	AGENCY APPROVAL	LS		JL (CSA60950-1			N-AN		
IOISE	CONDUCTED NOISE			CC-B, VCCI-B,	<u></u>				
REGULATIONS	HARMONIC ATTENU			EC61000-3-2 (C		· · · · · · · · · · · · · · · · · · ·			
	CASE SIZE/WEIGHT					×H×D) / 230a	max (with chassi	s & cover : 440g	max)
OTHERS	COOLING METHOD			fer to "Derating",					

- This is the value that measured on measuring board with capacitor of 22 $\mu\,F$ at 150mm from output terminal.
 - Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Derating is required.
- Please contact us about dynamic load and input response.
- Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover
- Sound noise may be generated by power supply in case of pulse load.





External view



- ¾ 4 Mounting holes are existing.
- * The back side of P.C.B. of the power supply is assembled some SMDs
- Be attention not to bump against the attached area by vibration.
- W Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- * Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/C	O Connector Mating connector		Terminal		
014	1-1123724-3	1-1123722-5	Chain	1123721-1	
CNT	1-1123724-3	1-1123/22-5	-1123724-3 1-1123722-5 Loose	Loose	1318912-1
ONIO	4 4400700 0	4 4400700 0	Chain	1123721-1	
CN2	1-1123723-6	1-1123722-6	Loose	1318912-1	

(Mfr:Tyco Electronics)

- * I/O Connector is Mfr. Tyco Electronics
- Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

<PIN CONNECTION>

CN1		CN2
Pin No.	Input	Pin No.
1	AC(L)	1 to 3
2		1 10 3
3	AC(N)	4 to 6
4		4 10 6
_		

CN2				
Pin No.	Output			
1 to 3	-V			
1 to 6	+\/			

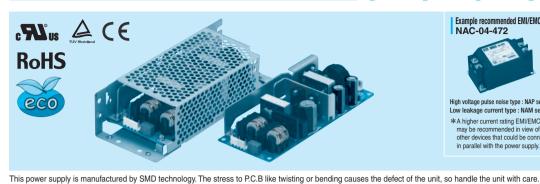
- ※ Tolerance : ±1 [±0.04]
- Weight: 230g max (with chassis & cover: 440g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- % Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis) :1.5N · m (16kgf · cm) max

[%] Keep drawing current per pin below 5A for CN2.

*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.

LFA100F

LF A 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.

- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- Optional *1
 C: with Coating
 G: Low leakage current
 - H: with the function to be acceptable to output peak current (only 24V)

 - J1: VH(J.S.T.)connector type R: with Remote ON/OFF R2: with Remote ON/OFF
- S: with Chassis
- SN: with Chassis & cover
- Y: with Potentiometer

Please refer to Instruction manual 6.

MODEL	LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-48
MAX OUTPUT WATTAGE[W] *5	66	100	102	100.5	103.2	103.2 (129.6)	100.8	100.8
DC OUTPUT *5	3.3V 20A	5V 20A	12V 8.5A	15V 6.7A	24V 4.3A	24V 4.3 (5.4)A	36V 2.8A	48V 2.1A

SPECIFICATIONS

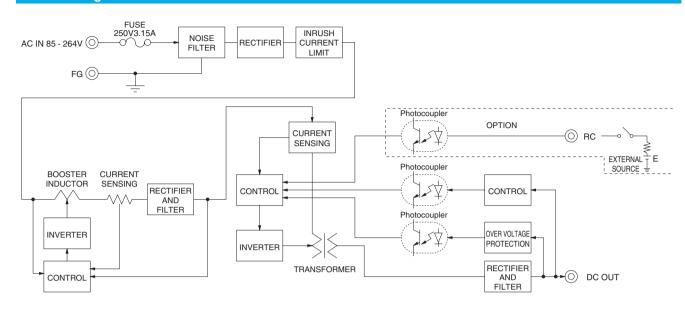
	MODEL		LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-4	
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to "D	erating", Instru	ction Manual 1	and 3) *4				
	OUDDENTIAL	ACIN 100V	0.9typ (lo=100%)	1.3typ (lo=10	0%)						
	CURRENT[A]	ACIN 200V	0.5typ (lo=100%)								
	FREQUENCY[Hz]		50 / 60 (47 - 63)								
	EFFICIENCY[%]	ACIN 100V	77.0typ	82.0typ	82.0typ	83.0typ	84.0typ	84.0typ	84.0typ	84.5typ	
NPUT	EFFICIENCI[%]	ACIN 200V	79.0typ	84.0typ	84.5typ	85.5typ	87.0typ	87.0typ	87.0typ	87.0typ	
	POWER FACTOR (Io=100%)	ACIN 100V	0.98typ	98typ 0.99typ							
	POWER FACTOR (10=100%)	ACIN 200V	0.92typ 0.95typ								
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100	%) (At cold sta	ırt) (Ta=25°C)						
	INNUSH CONNENT[A]	ACIN 200V	30typ (Io=100%) (At cold start) (Ta=25℃)								
	LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	x (ACIN 100V	/ 240V 60Hz,	lo=100%, Acc	ording to IEC6	2368-1 and DE	N-AN)		
	VOLTAGE[V]		3.3	5	12	15	24	24	36	48	
	CURRENT[A]	*5	20	20	8.5	6.7	4.3	4.3 (Peak 5.4)	2.8	2.1	
	LINE REGULATION[mV] *7		20max	20max	48max	60max	96max	96max	144max	192max	
	LOAD REGULATION[mV] *7		40max	40max	100max	120max	150max	150max	240max	240max	
	RIPPLE[mVp-p]	0 to +50℃ *2	80max	80max	120max	120max	120max	240max	150max	150max	
	HIFFEE[IIIVP-P]	-10 - 0℃ *2	140max	140max	160max	160max	160max	320max	200max	200max	
OUTPUT	RIPPLE NOISE[mVp-p]		120max	120max	150max	150max	150max	300max	250max	250max	
	IIII I EE NOIGE[IIIVP-P]	-10 - 0℃ *2	160max	160max	180max	180max	180max	360max	300max	300max	
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max	240max	360max	480max	
	TEMPERATORE REGULATION[IIIV]	-10 to +50°C	60max	60max	150max	180max	290max	290max	450max	600max	
			20max	20max	48max	60max	96max	96max	144max	192max	
	START-UP TIME[ms]	350typ (ACIN	100V, Io=100°	%)							
			20typ (ACIN 100V, Io=100%)								
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63	4.50 to 5.50			for adjusting of	output voltage)			
	OUTPUT VOLTAGE SET		3.30 to 3.40			14.40 to 15.60	23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.0	
	OVERCURRENT PROT	ECTION				· ·			rs automaticall	у	
PROTECTION	OVERVOLTAGE PROTE	ECTION		5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.2	
	OPERATING INDICA	TION	Not provided								
OTHERS	REMOTE SENSING		Not provided								
	REMOTE ON/OFF		<u> </u>	to Instruction			,				
	INPUT-OUTPUT-RC	*6				<u></u>	IΩ min (At Roo				
SOLATION	INPUT-FG						Ω min (At Roo				
	OUTPUT-RC-FG						2 min (At Room				
	OUTPUT-RC						min (At Room				
	OPERATING TEMP., HUMID. AND					<u>, , , , , , , , , , , , , , , , , , , </u>			3), 3,000m (10,	000feet) ma	
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE					0,000feet) max				
	VIBRATION						ch along X, Y a	and Z axis			
	IMPACT				e each X, Y ar		55				
SAFETY AND	AGENCY APPROVAL				50-1), EN6236						
IOISE	CONDUCTED NOISE				I-B, CISPR-B,	EN55011-B, E	N55022-B				
SEGULATIONS	HARMONIC ATTENU			IEC61000-3-		7.0405411:					
OTHERS	CASE SIZE/WEIGHT) / 280g max (with chassis &	cover : 480g m	ıax)	
-	on is changed at option, refer t		,		ng", Instruction I	Manual 3) *4		e contact us about a			

- Specification is changed at option, refer to Instruction Manual. This is the value that measured on measuring board with
- capacitor of 22 µ F at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant
- at the rated input/output. Derating is required.
- () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail.
- Applicable when Remote ON/OFF (optional) is added.
- Please contact us about dynamic load and input response.
- *8 Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.
- Sound noise may be generated by power supply in case of pulse load.

LFA-12

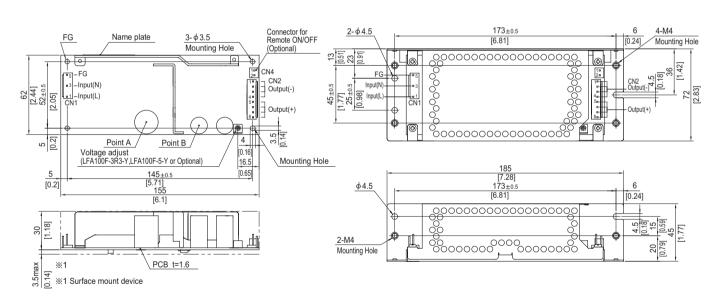




External view

* External size of option is different from standard model.

Chassis and cover type Standard type



- % 4 Mounting holes are existing.
- * The back side of P.C.B. of the power supply is assembled some Be attention not to bump against the attached area by vibration.
- W Use the spacer of 8mm length or more regarding insulation.
- And do not use press-fitting bush.
- % Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector		Mating connector	Terminal		
CN1 1-1123724-		1-1123722-5	Chain	1123721-1	
CN1 1-11	1-1123724-3	1-1123722-5	Loose	1318912-1	
CN2 1-1123723-8	4 4400700 0	4 4400700 0	Chain	1123721-1	
CNZ	1-1123723-8	1-1123722-8	Loose	1318912-1	

(Mfr:Tyco Electronics)

- * I/O Connector is Mfr. Tyco Electronics
- Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>

N1		CN2				
Pin No.	Input	Pin No.	Output			
1	AC(L)	1 to 4	-V			
2		1 10 4	- v			
3	AC(N)	5 to 8	+V			
4		3100	ŦV			
5	FG					

- % Keep drawing current per pin below 5A for CN2.
- ** Tolerance : ±1 [±0.04]
- Weight: 280g max (with chassis & cover: 480g max)
- ※ PCB material : CEM3
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis) :1.5N · m (16kgf · cm) max

Connector type

CN4 Option (Mfr:J.S.T)

PIN No.	Contents
1	RC(+)
2	RC(-)

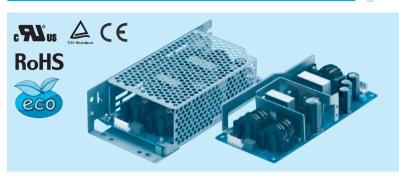
Barrier strip type

Model B2B-XH-A Mating Connector (Terminal) XHP-2

BXH-001T-P0.6 or SXH-001T-P0.6

LFA150F

LF A 150



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.

- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- Optional *1
 C: with Coating
 G: Low leakage current
 - H: with the function to be acceptable to output peak current (only 24V)

 - J1: VH(J.S.T.)connector type
 - R: with Remote ON/OFF R2: with Remote ON/OFF

 - S: with Chassis
 - SN: with Chassis & cover
- Y: with Potentiometer Please refer to Instruction

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. manual 6. *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	LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-24	LFA150F-24-H	LFA150F-36	LFA150F-48
MAX OUTPUT WATTAGE[W] *5	99	150	150	150	151.2	151.2 (189.6)	151.2	153.6
DC OUTPUT *5	3.3V 30A	5V 30A	12V 12.5A	15V 10A	24V 6.3A	24V 6.3 (7.9)A	36V 4.2A	48V 3.2A

SPECIFICATIONS

MODEL

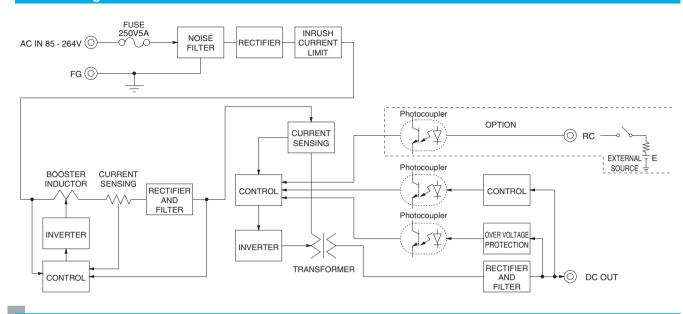
	MODEL		LFA150F-3R3-Y LFA150F-5-Y LFA150F-12 LFA150F-15 LFA1					FA150F-24 LFA150F-24-H LFA150F-36 LFA150F-48			
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to "D	erating", Instru	ction Manual 1	and 3) *4	*		*	
	OUDDENTIAL	ACIN 100V	1.4typ (lo=100%)	2.0typ (lo=10	0%)				-		
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%)	0.7typ (lo=100%) 1.0typ (lo=100%)							
	FREQUENCY[Hz]		50 / 60 (47 - 63)								
	EEEIOIENOVIO/1	ACIN 100V	80.0typ	82.5typ	82.5typ	84.0typ	85.0typ	85.0typ	85.0typ	85.5typ	
INPUT	EFFICIENCY[%]	ACIN 200V	82.0typ	85.5typ	85.0typ	86.5typ	87.5typ	87.5typ	87.5typ	88.0typ	
	DOWED FACTOR (In 1000()	ACIN 100V	0.98typ	0.99typ							
	POWER FACTOR (lo=100%)	ACIN 200V	0.92typ	92typ 0.95typ							
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100	15typ (Io=100%) (At cold start) (Ta=25°C)							
	INNUSH CURRENT[A]	ACIN 200V	30typ (Io=100	Otyp (Io=100%) (At cold start) (Ta=25°C)							
	LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	x (ACIN 100V	/ 240V 60Hz,	Io=100%, Acc	ording to IEC6	2368-1 and DE	EN-AN)		
	VOLTAGE[V]		3.3	5	12	15	24	24	36	48	
	CURRENT[A]	*5	30	30	12.5	10	6.3	6.3 (Peak 7.9)	4.2	3.2	
	LINE REGULATION[mV] *7	20max	20max	48max	60max	96max	96max	144max	192max	
	LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max	
	RIPPLE[mVp-p]	0 to +40℃ *2	80max	80max	120max	120max	120max	240max	150max	150max	
	KIPPLE[IIIVP-P]	-10 - 0℃ *2	140max	140max	160max	160max	160max	320max	200max	200max	
	RIPPLE NOISE[mVp-p]	0 to +40°C *2	120max	120max	150max	150max	150max	300max	250max	250max	
OUTPUT	KIPPLE NOISE[mvp-p]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	
	TEMPERATURE REGULATION[mV]	0 to +40°C	50max	50max	120max	150max	240max	240max	360max	480max	
	TEMPERATURE REGULATION[IIIV]	-10 to +40°C	60max	60max	150max	180max	290max	290max	450max	600max	
	DRIFT[mV]	*3	20max	20max	48max	60max	96max	96max	144max	192max	
	START-UP TIME[ms]		350typ (ACIN	100V, lo=100°	%)						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)								
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63	4.50 to 5.50	Fixed ("Y"opti	ion is available	for adjusting of	output voltage)			
	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	5.00 to 5.15	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00	
	OVERCURRENT PROT	ECTION	Works over 1	05% of rating (works over 10	1% of peak cur	rent at option -	-H) and recove	rs automatical	ly	
PROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20	
CIRCUIT AND	OPERATING INDICA	TION	Not provided								
OTHERS	REMOTE SENSING		Not provided								
	REMOTE ON/OFF			to Instruction							
	INPUT-OUTPUT-RC	*6	AC3,000V 1m	ninute, Cutoff c	urrent = 10mA	, DC500V 50M	Ω min (At Roo	om Temperatur	re)		
ISOLATION	INPUT-FG	_	· ·		urrent = 10mA	-					
IOOLATION	OUTPUT-RC-FG	*6			rent = 25mA, I	,			<u>'</u>	-	
	OUTPUT-RC	*6			rent = 25mA, I						
	OPERATING TEMP., HUMID. AND	ALTITUDE *4	-10 to +70℃,	20 - 90%RH (Non condensin	g) (Refer to "D	erating", Instru	ction Manual 3	3), 3,000m (10,	000feet) max	
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75℃,	20 - 90%RH (Non condensin	g), 9,000m (30	0,000feet) max				
LITTING	VIBRATION		,	0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT		<u> </u>		e each X, Y ar						
SAFETY AND	AGENCY APPROVAL				50-1), EN6236						
NOISE	CONDUCTED NOISE		· ·		I-B, CISPR-B,	EN55011-B, EI	N55022-B				
REGULATIONS	TIPATIMOTHIO PATTERIO			1EC61000-3-							
OTHERS	CASE SIZE/WEIGHT	•					/ 390g max (w	ith chassis & c	over : 650g ma	ax)	
UIILIO	COOLING METHOD		Convection (F	Refer to "Derati	ng", Instructior	Manual 3) *4					
*1 Specificati	on is changeed at option, refer	to Instructio	, , ,								

- Specification is changeed at option, refer to Instruction Manual. This is the value that measured on measuring board with
- capacitor of 22 µ F at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant
- at the rated input/output. Derating is required.
- () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail.
- Applicable when remote control (optional) is added.
- Please contact us about dynamic load and input response.
- Please contact us about another class
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.
- Sound noise may be generated by power supply in case of pulse load.

LFA-14





External view

* External size of option is different from standard model.

Standard type Chassis and cover type 176±0.5 4-M4 $2 - \phi 4.5$ FG Name plate Point A Point B $3 - \phi 3.5$ [6.93] [0.24] Mounting Hole Mounting Hole 15 [0.59] 25 [0.98] 42 [1.65] եյ−FG FG-CN3 Output(-) CN3 Output(-) -3 -Input(N) Input(N) 75 [2.95] 65±0.5 [2.6] _1_Input(L) CN1 Input(L) 3.35 18 CN2 416. CN2 Output(+) CN4[29] 29 🕸 5 Connector for Remote 4 ON/OFF (optional) Voltage adjust ON/OFF (optional) / (LFA150F-3R3-Y,LFA150F-5-Y or Optional)/ Mounting Hole 150±0.5 [7.4] [5.91] [0.2] $\phi 4.5$ 176±0.5 [0.24] [6.93] <u>0000000000000000000</u> 33.5 4.5 [0.18] 15 [0.59] 47 2-M4 8 Mounting Hole × Eug. 100 × 1 Surface mount device PCB t=1.6

- $\ensuremath{\mathrm{\%}}$ The back side of P.C.B. of the power supply is assembled some
- Be attention not to bump against the attached area by vibration.
- * Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- % Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

ı	I/O Connector		Mating connector	Terminal		
	CN1 1-1123724-3		1-1123722-5	Chain	1123721-1	
l	CIVI	1-1123/24-3	1-1123722-5	Loose	1318912-1	
	0110	CN2 1-1123723-6	1-1123722-6	Chain	1123721-1	
L	CNZ	1-1123723-6	1-1123722-6	Loose	1318912-1	
	0110	4 4400700 7	1-1123722-7	Chain	1123721-1	
l	CN3	1-1123723-7	1-1123/22-/	Loose	1318912-1	

(Mfr:Tyco Electronics)

- * I/O Connector is Mfr. Tyco Electronics
- * Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>

~I IIV	ALIN COMMECTIONS									
CN1			CN2		CN3					
Pin N	lo. Input		Pin No.	Output		Pin No.	Output			
1	AC(L)									
2										
3	AC(N)		1 to 6	+V		1 to 7	-V			
4]								
5	FG]								

- % Keep drawing current per pin below 5A for CN2,CN3.
- ※ Tolerance : ±1 [±0.04]
- Weight: 390g max (with chassis & cover: 650g max)
- ※ PCB material : CEM3
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- $\ensuremath{\mathbb{X}}$ Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis) :1.5N · m (16kgf · cm) max

Connector type

CN4 Option (Mfr.J.S.T) PIN No. Contents RC(+)

Barrier strip type

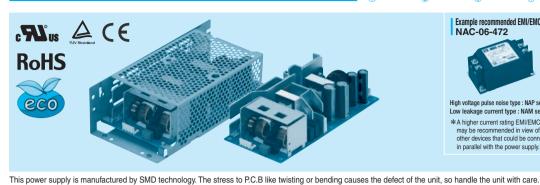
RC(-)

Model B2B-XH-A Mating Connector (Terminal) XHP-2

BXH-001T-P0.6 or SXH-001T-P0.6

LFA240F

LF A 240 (1)



Example recommended EMI/EMC filter NAC-06-472



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

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

Series name
 Single output
 Output wattage

4)Universal input

⑤Output voltage

®Optional *1
 C : with Coating
 G: Low leakage current

H: with the function to be acceptable to output peak current (only 24V) J1: VH(J.S.T.)connector type

R: with Remote ON/OFF R2: with Remote ON/OFF

S: with Chassis

with Chassis & cover T: Vertical terminal block

Y: with Potentiometer

Please refer to Instruction manual 6.

MODEL	LFA240F-24	LFA240F-24-H	LFA240F-36	LFA240F-48
MAX OUTPUT WATTAGE[W] *5	240	240 (300)	241.2	240
DC OUTPUT *5	24V 10A	24V 10 (12.5)A	36V 6.7A	48V 5A

*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

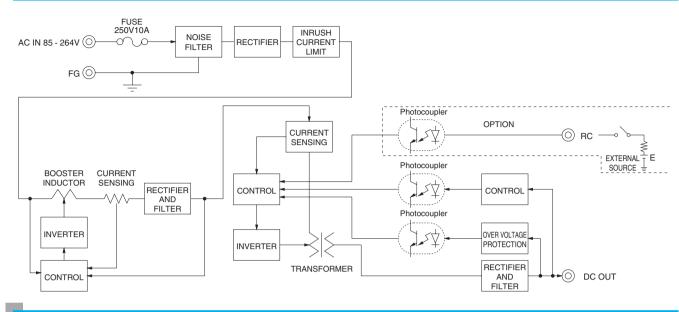
	MODEL		LFA240F-24	LFA240F-24-H	LFA240F-36	LFA240F-48				
	VOLTAGE[V]		AC85 - 264 1 ¢ (Refer to "De	erating", Instruction Manual 1	and 3) *4					
	OUDDENTIAL	ACIN 100V	3.3typ (lo=100%)							
	CURRENT[A]	ACIN 200V	1.7typ (lo=100%)							
	FREQUENCY[Hz]		50 / 60 (47 - 63)							
	EFFICIENCY[0/1	ACIN 100V	84.5typ	84.5typ	84.5typ	84.5typ				
INPUT	EFFICIENCY[%]	ACIN 200V	87.5typ	87.5typ	87.5typ	87.5typ				
	DOWED FACTOR (In 1000)	ACIN 100V	0.99typ							
	POWER FACTOR (lo=100%)	ACIN 200V	0.95typ							
	INDUCUI CURRENTIAL	ACIN 100V	15 / 30typ (Io=100%) (Prima	ary inrush current /Secondar	y inrush current) (More than 3	3 sec. to re-start)				
	INRUSH CURRENT[A]	ACIN 200V	30 / 30typ (Io=100%) (Prima	ary inrush current /Secondar	y inrush current) (More than 3	3 sec. to re-start)				
	LEAKAGE CURRENT[mA]		0.40 / 0.75max (ACIN 100V	/ 240V 60Hz, lo=100%, Ac	cording to IEC62368-1 and D	EN-AN)				
	VOLTAGE[V]		24	24	36	48				
	CURRENT[A]	*5	10	10 (Peak12.5)	6.7	5				
	LINE REGULATION[mV] *7		96max	96max	144max	192max				
	LOAD REGULATION	[mV] *7	150max	150max	240max	240max				
ОИТРИТ	DIDDI ElmVn n3	0 to +40°C *2	120max	240max	150max	150max				
	RIPPLE[mVp-p]	-10 - 0°C *2	160max	320max	200max	200max				
	DIDDLE NOICE(m.Vm m)	0 to +40°C *2	150max	300max	250max	250max				
	RIPPLE NOISE[mVp-p]	-10 - 0°C *2	180max	360max	300max	300max				
	TEMPEDATURE RECUI ATION(VI	0 to +40°C	240max	240max	360max	480max				
	TEMPERATURE REGULATION[mV]	-10 to +40°C	290max	290max	450max	600max				
	DRIFT[mV] *3		96max	96max	144max	192max				
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100	%)						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	Fixed ("Y"option is available for adjusting output voltage)							
	OUTPUT VOLTAGE SET	TING[V]	23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00				
	OVERCURRENT PROT	ECTION	Works over 105% of rating	works over 101% of peak cu	rrent at option -H) and recove	ers automatically				
PROTECTION	OVERVOLTAGE PROTE	ECTION	27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20				
CIRCUIT AND	OPERATING INDICA	TION	Not provided							
OTHERS	REMOTE SENSING		Not provided							
	REMOTE ON/OFF		Option (Refer to Instruction	Manual)						
	INPUT-OUTPUT-RC	*6	AC3,000V 1minute, Cutoff of	current = 10mA, DC500V 50I	MΩ min (At Room Temperatu	re)				
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff of	current = 10mA, DC500V 50I	$M\Omega$ min (At Room Temperatu	re)				
ISOLATION	OUTPUT-RC-FG	*6	AC500V 1minute, Cutoff cu	rrent = 25mA, DC500V 50M	Ω min (At Room Temperature)				
	OUTPUT-RC	*6	AC100V 1minute, Cutoff cu	rrent = 25mA, DC100V 10M	Ω min (At Room Temperature)				
	OPERATING TEMP., HUMID. AND	ALTITUDE *4	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "l	Derating", Instruction Manual	3), 3,000m (10,000feet) max				
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (3	0,000feet) max					
ENVIRONMENT	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis							
SAFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-UL (CSA609	50-1), EN62368-1 Complies	with DEN-AN					
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCC	I-B, CISPR-B, EN55011-B, E	N55022-B					
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with IEC61000-3-	2 (Class A) *8						
OTHERS	CASE SIZE/WEIGHT		84×46.5×180mm [3.31×1	I.83 X 7.09 inches] (W X H X	D) / 550g max (with chassis &	cover : 880g max)				
OTHERS	COOLING METHOD		Convection (Refer to "Derat	ing", Instruction Manual 3) *	4					
det Constituent	:	to to the state of	- Manual		de O. Dianas anatomism about					

- Specification is changeed at option, refer to Instruction Manual. This is the value that measured on measuring board with
- capacitor of 22 µ F at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant
- at the rated input/output.
- Derating is required. () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail.
- Applicable when remote control (optional) is added.
- Please contact us about dynamic load and input response.
- *8 Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.
- Sound noise may be generated by power supply in case of pulse load.

LFA-16

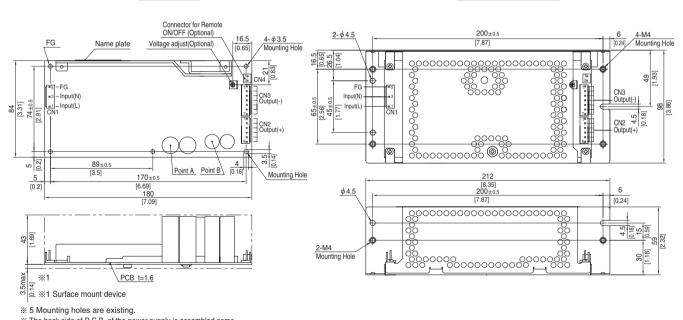




External view

* External size of option is different from standard model.

Standard type Chassis and cover type



- % 5 Mounting holes are existing.
- * The back side of P.C.B. of the power supply is assembled some
- Be attention not to bump against the attached area by vibration. * Use the spacer of 8mm length or more regarding insulation.
- And do not use press-fitting bush.
- % Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/C) Connector	Mating connector	Terminal		
CNI	1-1123724-3	1-1123722-5	Chain	1123721-1	
CIVI	1-1123724-3	1-1123/22-5	Loose	1318912-1	
CNIO	1-1123723-6	1-1123722-6	Chain	1123721-1	
CN2	1-1123723-6	1-1123/22-6	Loose	1318912-1	
CNIO	1-1123723-7	1-1123722-7	Chain	1123721-1	
CN3	1-1123723-7	1-1123/22-7	Loose	1318912-1	

(Mfr:Tyco Electronics)

- % I/O Connector is Mfr. Tyco Electronics
- ※ Option:-J1:VH(J.S.T) connector type.

<PIN CONNECTION>

CN1				CN2		CN3		
	Pin No.	Input		Pin No.	Output		Pin No.	Output
	1	AC(L)						
	2							
	3	AC(N)		1 to 6	+V		1 to 7	-V
	4							
	5	FG						

- $\ensuremath{\text{\%}}$ Keep drawing current per pin below 5A for CN2,CN3.
- % Tolerance : ±1 [±0.04]
- Weight: 550g max (with chassis & cover: 880g max)
- * PCB material : CEM3
- % Optional chassis and cover material: Electric galvanizing steel board.
- * Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis) :1.5N · m (16kgf · cm) max

Connector type

CN4 Option (Mfr:J.S.T)

PIN No.	Contents	
1	RC(+)	
2	RC(-)	

Barrier strip type

Model B2B-XH-A Mating Connector (Terminal) XHP-2

BXH-001T-P0.6 or SXH-001T-P0.6

LFA300F

A 300 (4)



Example recommended EMI/EMC filter NAC-06-472



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

*A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply. (1) Series name
(2) Single output
(3) Output wattage
(4) Universal input
(5) Output voltage
(6) Optional *1
C: with Coating
G: Low leakage current
H: with the function to be acceptable
to output peak current
(Only 24V, 30V, 36V and 48V)
J: EP (flow Electronics) connector type
(Except 3.3V and 5V)
J: VH (J.S.T.) connector type

(Except 3.3V and 5V)

J1 : VH (J.S.T.) connector type (Except 3.3V and 5V)
R: with Remote ON/OFF
R2: with Remote ON/OFF
S: with Chassis & cover & fan (Only 5V, 12V and 24V)
T1: Holizontal terminal block Please refer to Instruction manual 6.

This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care. *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	LFA300F-3R3-TY	LFA300F-5-TY	LFA300F-12-TY	LFA300F-15-TY	LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-TY	LFA300F-36-TY	LFA300F-48-TY	
MAX OUTPUT WATTAGE[W] *5		198	300	324	330	336	336 (456)	330	338.4	336
DC OUTDUT	Convection	3.3V 40A	5V 40A	12V 17A	15V 14A	24V 12.5A	24V 12.5 (19)A	30V 10A	36V 8.4A	48V 6.3A
DC OUTPUT *5	Forced air	3.3V 60A	5V 60A	12V 27A	15V 22A	24V 14A	24V 14 (19)A	30V 11A	36V 9.4A	48V 7A

SPECIFICATIONS

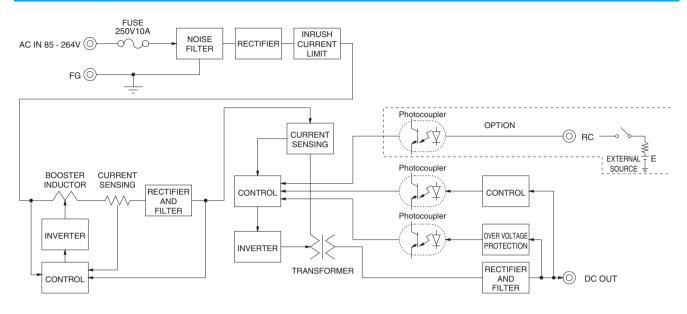
	MODEL		LFA300F-3R3-TY	LFA300F-5-TY	LFA300F-12-TY	LFA300F-15-TY	LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-TY	LFA300F-36-TY	LFA300F-48-TY	
	VOLTAGE[V]								,			
	ACIN 100		AC85 - 264 1 \$\phi\$ (Refer to "Derating", Instruction Manual 1 and 3) *4 2.7\psi (lo=100%) 4.1\typ (lo=100%)									
	CURRENT[A]	ACIN 200V	1.4typ (lo=100%) 2.0typ (lo=100%)									
	FREQUENCY[Hz]		50 / 60 (47	, , , , , , , , , , , , , , , , , , ,	,							
		ACIN 100V	75.0typ	79.0typ	80.0typ	81.5typ	85.0typ	85.0typ	85.5typ	85.5typ	85.5typ	
INPUT	EFFICIENCY[%]	ACIN 200V	77.0typ	82.5typ	83.0typ	84.5typ	88.0typ	88.0typ	88.0typ	88.0typ	88.0typ	
	POWER FACTOR (Io=100%)	ACIN 100V	0.98typ	0.99typ		1	1	1 2 2 2 2 3 7	1	1		
		ACIN 200V	0.92typ	0.95typ								
		ACIN 100V	15 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)									
	INRUSH CURRENT[A]	ACIN 200V	30 / 30typ (lo=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)									
	LEAKAGE CURREN		0.45 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN)									
	VOLTAGE[V]		3.3	5	12	15	24	24	30	36	48	
		Convection	40	40	17	14	12.5	12.5 (Peak19)	10	8.4	6.3	
	CURRENT[A] *5	Forced air	60	60	27	22	14	14 (Peak19)	11	9.4	7	
	LINE REGULATION[mV] *7	20max	20max	48max	60max	96max	96max	144max	144max	192max	
	LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max	240max	
	DIDDI E[m\/n n]	0 to +40℃*2	80max	80max	120max	120max	120max	240max	150max	150max	150max	
	RIPPLE[mVp-p]	-10 - 0°C *2	140max	140max	160max	160max	160max	320max	200max	200max	200max	
OUTPUT	DIDDLE NOICE(m/m ml	0 to +40°C *2	120max	120max	150max	150max	150max	300max	250max	250max	250max	
JUIPUI	RIPPLE NOISE[mVp-p]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	300max	
	TEMPERATURE REGULATION[mV]	0 to +40°C	50max	50max	120max	150max	240max	240max	360max	360max	480max	
		-10 to +40°C	60max	60max	150max	180max	290max	290max	450max	450max	600max	
	DRIFT[mV] *3		20max	20max	48max	60max	96max	96max	144max	144max	192max	
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)									
	HOLD-UP TIME[ms]		20typ (ACIN	1 100V, Io=10	0%)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63	4.50 to 5.50	10.80 to 13.20	13.50 to 16.50	21.60 to 27.50	21.60 to 27.50	27.00 to 33.00	32.40 to 39.60	39.60 to 52.80	
	OUTPUT VOLTAGE SETTING[V]		3.30 to 3.40	5.00 to 5.15	12.00 to 12.48		24.00 to 24.96	24.00 to 24.96	30.00 to 31.20	36.00 to 37.44	48.00 to 49.92	
	OVERCURRENT PROTECTION					 	eak current at					
PROTECTION			4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	34.50 to 42.00	41.40 to 50.40	55.20 to 67.20	
CIRCUIT AND	OPERATING INDICATION		Not provided									
OTHERS	REMOTE SENSING		Not provided									
	REMOTE ON/OFF		Option (Refer to Instruction Manual)									
	INPUT-OUTPUT-RC *6		ricogoco Timinato, Caton Carroni. Toma il 20000 Comini (il ricom Tomporataro)									
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)									
	OUTPUT-RC-FG *6		7.00001 Timilato, Gaton Gation 200011 20001 Com-1 Timilato, Carton Composition									
	OUTPUT-RC *6		7.10 100 V Tillimate, Gatem Garrette Zenist, 20 100 V Tenis (Vit 100 III Tenis (Vit 100 I									
	OPERATING TEMP.,HUMID.AND ALTITUDE *4		3, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									
ENVIRONMENT	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max									
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis									
CAFETY AND	AGENCY APPROVAL		196.1m/s² (20G), 11ms, once each X, Y and Z axis									
SAFETY AND NOISE			UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B									
REGULATIONS	HARMONIC ATTENUATOR				1-3-2 (Class A		. D, LN000Z					
	CASE SIZE/WEIGHT						(without termin	nal block) / 810	n max (with ch	assis & cover :	1 270g may)	
OTHERS	COOLING METHOD				- '	action Manua		y max (with the	40010 A 60VCI .	i,Li og max)		
	OCCUPATION INCLINED		COLLACTION	, i diceu all	(LIGIEL TO DE	rainy , mont	ionon mailua	10, ***				

- Specification is changeed at option, refer to Instruction Manual.
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.

 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant
- at the rated input/output.
- Derating is required. () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail.
- Applicable when remote control (optional) is added.
- Please contact us about dynamic load and input response.
- Please contact us about another class
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover.
- Sound noise may be generated by power supply in case of pulse load.

LFA-18

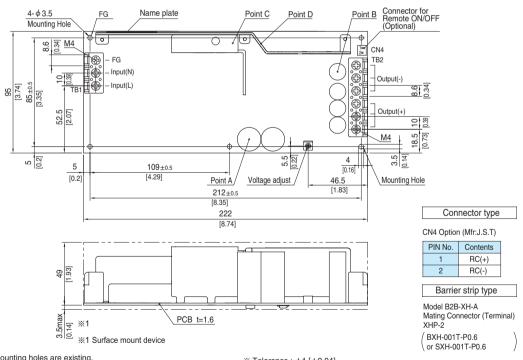




External view

* External size of option is different from standard model.

Standard type



- % 5 Mounting holes are existing.
- $\ensuremath{\mathbb{X}}$ The back side of P.C.B. of the power supply is assembled some SMDs.
- Be attention not to bump against the attached area by vibration.
- $\ensuremath{\,\times\,}$ Use the spacer of 8mm length or more regarding insulation. And do not use press-fitting bush.
- Point A, Point B, Point C, Point D are thermometry points. Please refer to Instruction Manual 3.
- * Keep drawing current per pin below 20A for TB2.

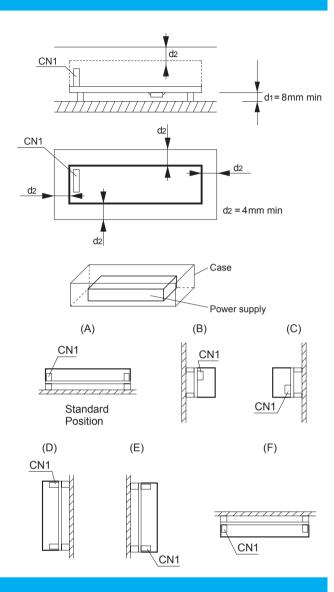
- ※ Tolerance: ±1 [±0.04]
- Weight: 810g max (with chassis & cover: 1,270g max)
 PCB material: CEM3
- * Dimensions in mm, []=inches
- * Screw tightening torque: M4 1.6N · m (16.9kgf · cm) max



Assembling and Installation Method

Installation method

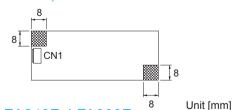
- ■This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.
- ■In case of metal chassis, keep the distance between d1 & d2 for to insulate between lead of component and metal chassis, use the spacer of 8mm or more between d1. If it is less than d1 & d2, insert the insulation sheet between power supply and metal chassis.
- ■There is a possibility that it is not possible to cool enough when the power supply is used by the sealing up space as showing in right figure.Please use it after confi rming the temperature of point A and point B of Instruction Manual 3.
- ■(F) mounting is not possible when unit is with case cover, but if need to operate unit by (F) positioning with case cover, temperature / load derating is necessary. For more details, please contact our sales or engineering departments.



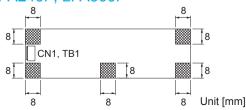
Mounting screw

■The mounting screw should be M3. The hatched area shows the allowance of metal parts for mounting.

LFA10F, LFA15F



LFA240F, LFA300F



LFA30F, LFA50F, LFA75F, LFA100F, LFA150F



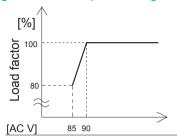
- ■If metallic fittings are used on the component side of the board,ensure there is no contact with surface mounted components.
- ■This product uses SMD technology.Please avoid the PCB installation method which includes the twisting stress or the bending stress.

 *Recommendation to electrically connect FG to metal chassis for reducing noise.

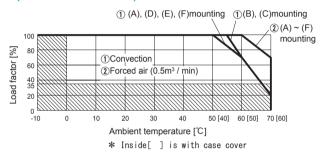


Derating

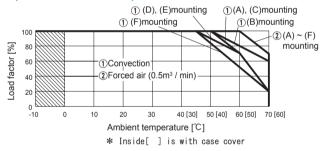
Derating curve for input voltage



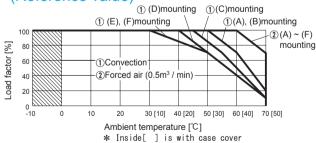
■ LFA10F Ambient temperature derating curve (Reference value)



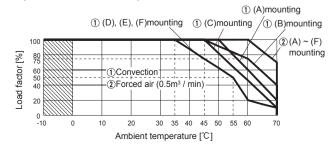
LFA30F Ambient temperature derating curve (Reference value)



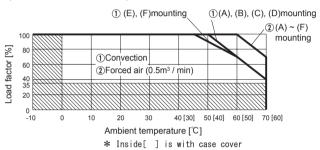
LFA75F Ambient temperature derating curve (Reference value)



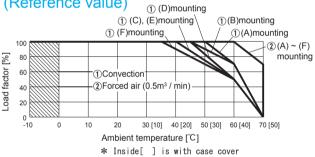
LFA100F Ambient temperature derating curve (Reference value)



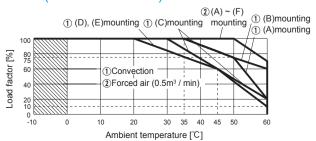
●LFA15F Ambient temperature derating curve (Reference value)



LFA50F Ambient temperature derating curve (Reference value)



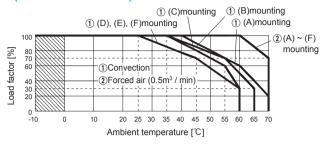
●LFA100F-□-SN Ambient temperature derating curve (Reference value)



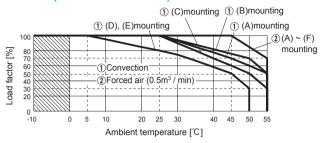


Derating

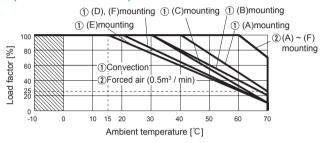
● LFA150F Ambient temperature derating curve (Reference value)



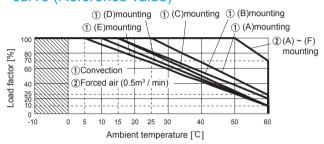
■LFA150F-□-SN Ambient temperature derating curve (Reference value)



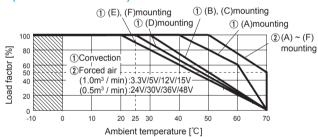
LFA240F Ambient temperature derating curve (Reference value)



●LFA240F-□-SN Ambient temperature derating curve (Reference value)



●LFA300F Ambient temperature derating curve (Reference value)



Output	Output power[W]						
voltage	①Convection	②Forced air					
3.3V	132.0	198.0 300.0 324.0					
5V	200.0						
12V	204.0						
15V	210.0	330.0					
24V	300.0	336.0					
30V	300.0	330.0					
36V	302.4	338.4					
48V	302.4	336.0					

- ■The operative ambient temperature is different by with / without chassis cover or mounting position.

 Note: In the hatched area, the specification of Ripple, Ripple Noise is different from other area.
- ■Make sure the temperature at point A and point B is less than the temperatures shown in Instruction Manual 3.
- ■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.

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/LFA/
Before using our produc https://en.cosel.co.jp/technical/caution/index.html









Basic Characteristics Data

Model	Circuit method	Switching frequency	Input current	Inrush current	PCB/Pattern			Series/Parallel operation availability *2	
wiodei	Circuit method	[kHz]	*1 [A]	protection	Material	Single sided	Double sided	Series operation	Parallel operation
LFA10F	Flyback converter	100	0.26	LF	CEM-3	Yes		Yes	No
LFA15F	Flyback converter	100	0.35	Thermistor	CEM-3	Yes		Yes	No
LFA30F	Flyback converter	130	0.65	Thermistor	CEM-3	Yes		Yes	No
LFA50F	Active filter	60-440	0.67	Thermistor	CEM-3	Yes		Yes	No
LFASUF	Flyback converter	130						res	INO
LFA75F	Active filter	60-440	1.0	Thermistor	CEM-3	Yes		Yes	No
LFA/5F	Flyback converter	130	1.0			res		ies	INO
LFA100F	Active filter	60	1.0	Thermistor	CEM-3		Yes	Yes	No
LFATOUF	Forward converter	140	1.3	Thermistor	CEIVI-3		res	res	INO
LFA150F	Active filter	60	0.0	TI	CEM-3		Yes	Yes	No
LFATSUF	Forward converter 140 2.0 Thermis	Thermistor	CEIVI-3		res	res	INO		
LFA240F	Active filter	60	0.0	SCR	CEM-3		V	\/	No
LFA240F	Forward converter	140	3.3				Yes	Yes	INO
1 FA000F	Active filter	60	4.4	COD	CEM-3		V	V	NI-
LFA300F	Forward converter	140	4.1	SCR			Yes	Yes	No

^{*1} The value of input current is at ACIN 100V and rated load. *2 Refer to Instruction Manual 2.