









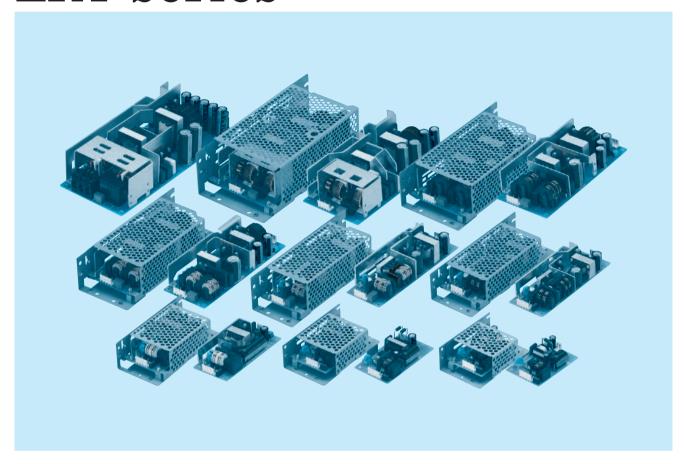








LFA-series



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, VCCI-B

5-year warranty (refer to Instruction Manual)

CE marking

Low Voltage Directive RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations RoHS Regulations

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 ¢ (Refer	to "Derating", Instruction	Manual 1 and 3) *3				
	CUDDENTIAL	ACIN 100V	0.18typ (lo=100%)						
	CURRENT[A]	ACIN 200V	0.11typ (lo=100%)	0.11typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
INPUT	EFFICIENCY[0/]	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		
	INDUCTION OF DEPT.	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		
		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		
	*1	lo=0 - 35%	240max	240max	300max	300max	320max		
	TEMPERATURE REQUILATIONS AS	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 available for adjusting output voltage between ±10%)					
	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 50MΩ 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						
LIA A IU O IAIMIE IA I	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	UL60950-1, C-UL (CSA	A60950-1), EN62368-1 (Complies with DEN-AN				
NOISE	CONDUCTED NOISE		Complies with FCC-B,	VCCI-B, CISPR-B, EN55	5011-B, EN55022-B				
REGULATIONS	HARMONIC ATTENU	ATOR	Complies with IEC6100	00-3-2 (Class A) *6 (Not	built-in to active filter) *4				
OTHERS	CASE SIZE/WEIGHT		50×22×73.5mm [1.97	'X0.87 X2.89 inches] (V	V×H×D) / 55g max (wit	h chassis & cover : 150g	ı max)		
OTHERS	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.

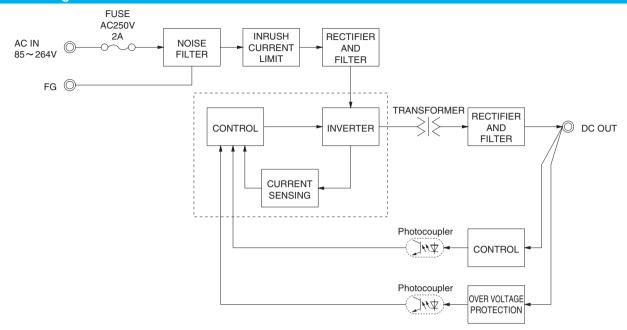
Please refer to the Instruction Manual 1.7.

- 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.

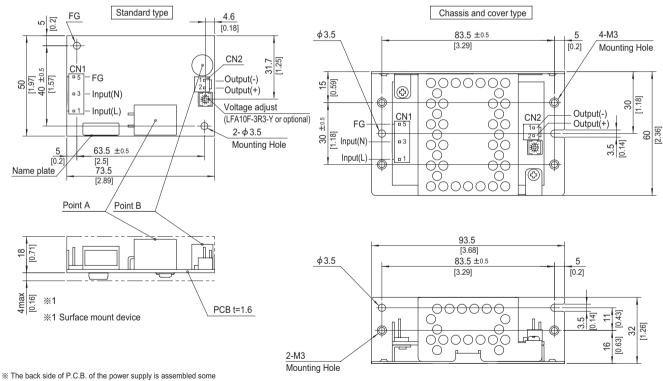
 December 27, 2022

- 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



- 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	Terminal		
ONIA	4 4400704 0	1-1123722-5	Chain	1123721-1	
CNT	CN1 1-1123724-3	1-1123722-5	Loose	1318912-1	
ONIO	4 4400700 0	1-1123722-2	Chain	1123721-1	
CNZ	1-1123723-2	1-1123722-2	Loose	1318912-1	
(Mfr:Tyco Floatronics)					

- $\ensuremath{\,\mathbb{X}}$ 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			

	CINZ	
nput	Pin No.	Output
C(L)	1	-V
C(N)	2	+V
FG		

CNS

- % 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.

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	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%)					
	CORNENT[A]	ACIN 200V	0.15typ (lo=100%)	0.15typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
INPUT	EEEICIENCVI9/1	ACIN 100V	68.0typ	73.0typ	76.0typ	77.0typ	78.0typ		
	EFFICIENCY[%]	ACIN 200V	69.0typ	76.0typ	78.5typ	80.0typ	81.5typ		
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At co	ld start) (Ta=25°C)					
	INNUSH CUNNENT[A]	ACIN 200V	30typ (Io=100%) (At co	ld start) (Ta=25°C)					
	LEAKAGE CURRENT	[mA]	0.15/0.30max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC62368-1 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		
	DIDDI Elm\/m m²	0 to +50°C	80max	80max	120max	120max	120max		
	RIPPLE[mVp-p]	-10 - 0℃	140max	140max	160max	160max	160max		
	**	lo=0 - 35%	190max	160max	240max	240max	280max		
	DIDDLE NOISE, V. 1	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 REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max		
	TEMPERATURE REGULATION[IIIV]	-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 1 minute 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 ava	ilable for adjusting outpu	t voltage between ±10%	b)		
	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		-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						
	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 (<u> </u>				
NOISE	CONDUCTED NOISE		<u> </u>	VCCI-B, CISPR-B, EN5					
REGULATIONS	HARMONIC ATTENU	ATOR			built-in to active filter) *4				
OTHERS	CASE SIZE/WEIGHT				V×H×D) / 80g max (wit	h chassis & cover : 190g	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

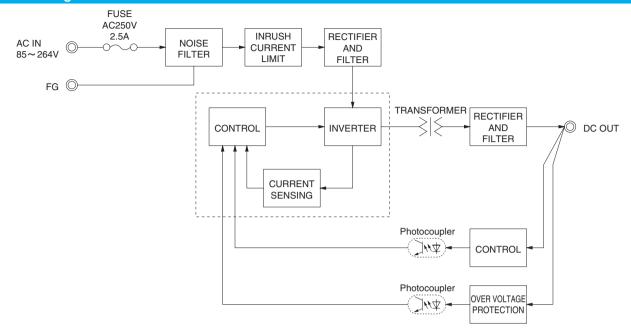
factor Io=0-35% is different.

Please refer to the Instruction Manual 1.7.

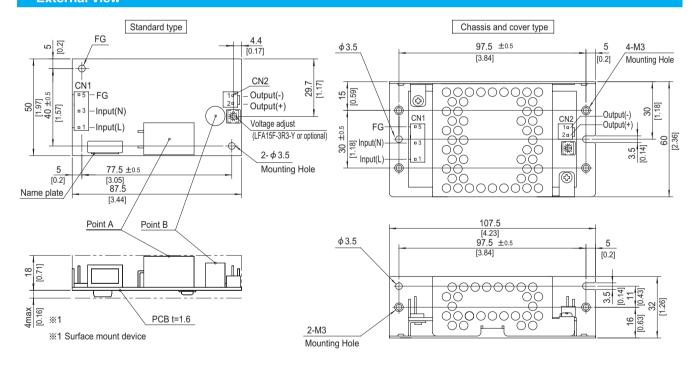
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Derating is required.
- When two or more units are operating it may not comply with the IEC61000-3-2.

 December 27, 2022
- 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/C	I/O Connector Mating connector		Terminal		
014	4 4400704 0	1-1123722-5	Chain	1123721-1	
CNT	CN1 1-1123724-3	1-1123722-5	Loose	1318912-1	
ONIO	1-1123723-2	1-1123722-2	Chain	1123721-1	
CNZ	1-1123723-2	1-1123722-2	Loose	1318912-1	

(Mfr:Tvco Electronics)

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

<PIN CONNECTION>

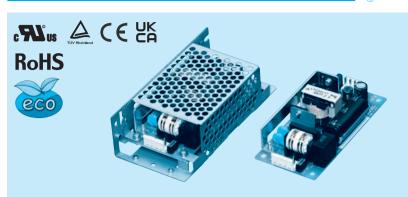
CN1	
Pin No.	Input
1	AC(L)
2	
3	AC(N)
4	
5	FG

CINZ	
Pin No.	Output
1	-V
2	11/

- % 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
- $\ensuremath{\,\%\,}$ Mounting torque (Mounting hole of chassis) : 0.6N $\,^{\star}$ m (6.3kgf $\,^{\star}$ cm) max

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

*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	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

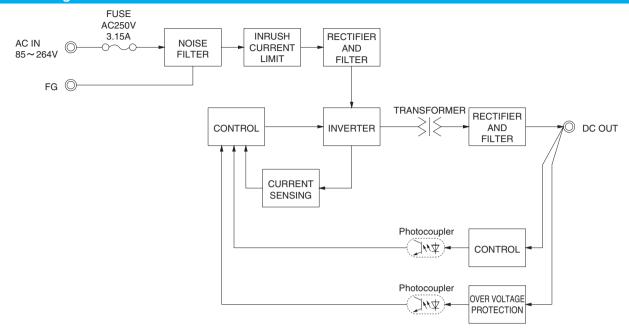
SPECIFICATIONS

	MODEL		LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24			
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to "Derating", Instruction Manual 1 and 3) *3							
	CUDDENTIAL	ACIN 100V	0.50typ (lo=100%) 0.65typ (lo=100%)							
	CURRENT[A]	ACIN 200V	0.30typ (lo=100%)	21 \ 7 \ 21 \ 7						
INPUT	FREQUENCY[Hz]		50 / 60 (47 - 440)							
	EFFICIENCY[%]	ACIN 100V	73typ	76typ	79typ	81typ	82typ			
	EFFICIENCY[%]	ACIN 200V	75typ	79typ	81typ	83typ	84typ			
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%) (At c	5typ (Io=100%) (At cold start) (Ta=25°C)						
	INNUSH CONNENT[A]	ACIN 200V	30typ (Io=100%) (At cold start) (Ta=25℃)							
	LEAKAGE CURREN	T[mA]	0.30 / 0.65max (ACIN	100V / 240V 60Hz, lo	=100%, According to IE	C62368-1 and DEN-A	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			
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max			
	NIPPLE[IIIVP-P]	-10-0℃ *1	140max	140max	160max	160max	160max			
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max			
UTPUT	HIPPLE NOISE[IIIVP-P]	-10-0℃ *1	160max	160max	180max	180max	180max			
	TEMPERATURE REGULATION(mV)	0 to +50℃	50max	50max	120max	150max	240max			
	TEMPERATURE REGULATION[IIV]	-10 to +50°C	60max	60max	150max	180max	290max			
	DRIFT[mV] *2		20max	20max	48max	60max	96max			
	START-UP TIME[ms]		150typ (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 av	ailable for adjusting out	<u> </u>				
	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							
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			
IRCUIT AND	OPERATING INDICA	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		-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000feet) max							
NVIRONMENT	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							
	IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis									
AFETY AND	AGENCY APPROVAL		, ,		1 Complies with DEN-A	N.				
OISE	CONDUCTED NOISE			, VCCI-B, CISPR-B, EN	· · · · · · · · · · · · · · · · · · ·					
EGULATIONS	HARMONIC ATTENU		<u> </u>	, , ,	built-in to active filter) *4					
THERS	CASE SIZE/WEIGHT				s] (W×H×D) / 130g m	ax (with chassis & cove	er : 260g max)			
	COOLING METHOD		Convection (Refer to '	Derating", Instruction N	Manual 3) *3					

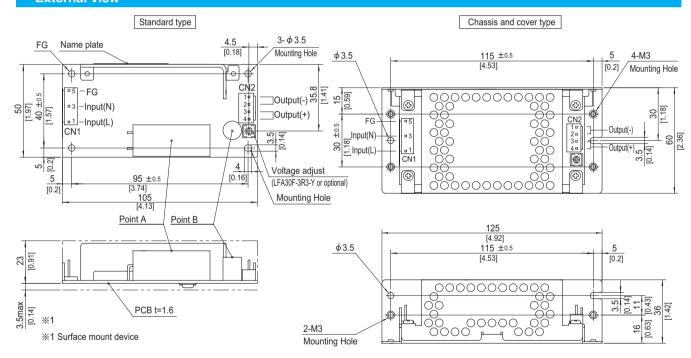
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.
- . Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at
- Derating is required.

- 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	T	erminal
ONIA	4 4400704 0	4 4400700 5	Chain	1123721-1
CNT	CN1 1-1123724-3	1-1123722-5	Loose	1318912-1
ONIO	4 4400700 4	4 4400700 4	Chain	1123721-1
CNZ	1-1123723-4	1-1123722-4	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>

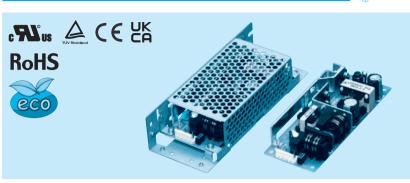
CN1	
Pin No.	Input
1	AC(L)
2	
3	AC(N)
4	
5	FG

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

LFA50F

A 50



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.

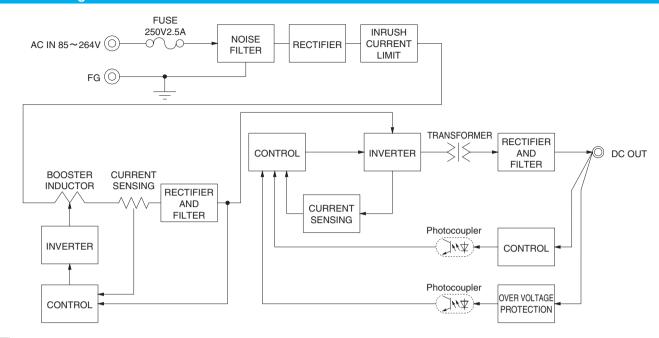
MODEL	LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48
MAX OUTPUT WATTAGE[W]	33	50	51.6	52.5	50.4	50.4	52.8
DC OUTPUT	3 3V 10A	5V 10Δ	12V 4.3A	15V 3.5A	24V 2 1A	36V 1 4A	48V 1 1A

SPECIFICATIONS

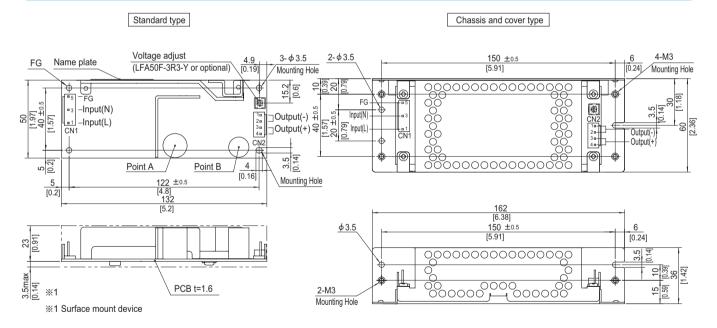
	MODEL		LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to "Derating", Instruction Manual 1 and 3) *3						
INDIT	CURRENTIAL		0.47typ (lo=100%) 0.67typ (lo=100%)						
			0.27typ (lo=100%)						
	FREQUENCY[Hz]		50 / 60 (47 - 63)					
	EFFICIENCY[%]	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
	POWER FACTOR (Io=100%)	ACIN 100V	0.96typ	0.97typ					
	POWER FACTOR (IO=100%)	ACIN 200V	0.83typ	0.90typ					
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%	(At cold start)	Ta=25℃)				
	INNUSH CONNENT[A]	ACIN 200V	30typ (Io=100%	(At cold start)	Ta=25℃)				
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max	(ACIN 100V / 24	0V 60Hz, lo=10	00%, According t	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
	DIDDI E[m\/n n]	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max
	RIPPLE[mVp-p]	-10-0℃ *1	140max	140max	160max	160max	160max	200max	200max
	DIDDLE NOICE(V1	0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max
OUTPUT	RIPPLE NOISE[mVp-p]	-10-0℃ *1	160max	160max	180max	180max	180max	300max	300max
	TEMPEDATURE RECUIL ATION(m//)	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, lo=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	1 ±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	ntically			
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	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		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	0 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000feet) max *					
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	,	20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
IVINIENI	VIBRATION					inutes each alon	g X, Y and Z axis	3	
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis						
SAFETY AND	AGENCY APPROVAL					omplies with DE			
NOISE	CONDUCTED NOISE					011-B, EN55022	-B		
REGULATIONS	HARMONIC ATTENU			EC61000-3-2 (C					
OTHERS	CASE SIZE/WEIGHT						max (with chase	sis & cover : 325	g max)
	COOLING METHOD		Convection (Re	fer to "Derating",	Instruction Man	ual 3) *3			

- 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	Connector	Mating connector	Terminal		
ONIA	4 4400704 0	1-1123722-5	Chain	1123721-1	
CNT	CN1 1-1123724-3	1-1123722-5	Loose	1318912-1	
CNO	1-1123723-4	1-1123722-4	Chain	1123721-1	
CINZ	JNZ 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>

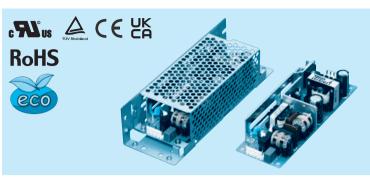
CN1					
Pin No.	Input				
1	AC(L)				
2					
3	AC(N)				
4					
5	FG				

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

- X 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



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.

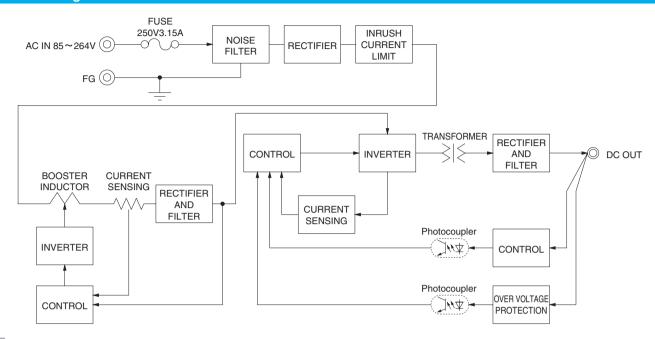
MODEL	LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48
MAX OUTPUT WATTAGE[W]	49.5	75	75.6	75	76.8	75.6	76.8
DC OUTPUT	3 3V 15A	5V 15Δ	12V 6.3A	15V 5A	24V 3 2A	36V 2 1A	48V 1 6A

SPECIFICATIONS

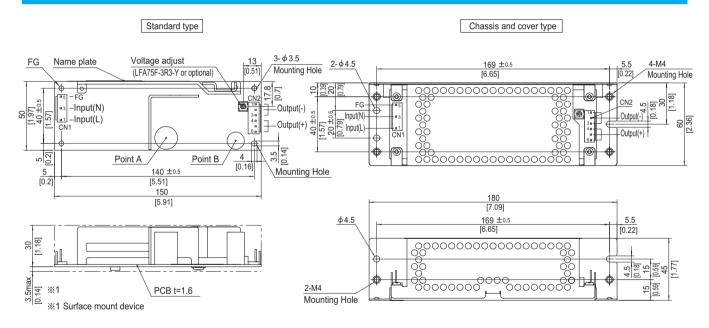
	MODEL		LFA75F-3R3-Y		LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48
	VOLTAGE[V]		AC85 - 264 1 ϕ (Refer to "Derating", Instruction Manual 1 and 3) *3						
	CURRENTIAL ACIN 100V		0.70typ (lo=100%) 1.00typ (lo=100%)						
	CURRENT[A]	ACIN 200V	0.40typ (lo=100%)	0.50typ (lo=100	0%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)					
	EFFICIENCY[0/]	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
	DOWED FACTOR (L. 4000())	ACIN 100V	0.96typ	0.97typ					
	POWER FACTOR (Io=100%)	ACIN 200V	0.83typ	0.90typ					
		ACIN 100V	15typ (lo=100%	(At cold start)	Ta=25℃)				
	INRUSH CURRENT[A]	ACIN 200V		(At cold start)					
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max	(ACIN 100V / 24	0V 60Hz, lo=10	0%, According to	IEC62368-1 ar	d 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	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	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	\ <u></u>		'
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			1			
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 50MΩ 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						
	STORAGE TEMP., HUMID. AND		-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max						
NVIRONMENT	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
	IMPACT			i), 11ms, once ea					
AFETY AND				UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN					
IOISE	CONDUCTED NOISE			CC-B, VCCI-B,	<u></u>	•			
	HARMONIC ATTENUATOR			EC61000-3-2 (C		,			
	HARMONIC ALLENU	JAIOK	COLLIDIES MILLI	LC01000-3-2 1C	iass Ai 📆				
	CASE SIZE/WEIGHT					×H×D) / 230a ı	max (with chassi	s & cover : 440g	max)

- 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:
- 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





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/O Connector		Mating connector	Terminal		
CN1 1-1123724-3		1-1123722-5	Chain	1123721-1	
CNT	1-1123724-3	1-1123722-5	Loose	1318912-1	
0140	1-1123723-6	1-1123722-6	Chain	1123721-1	
CNZ		1-1123/22-6	Loose	1318912-1	
			/A Afm. T.	aa Flastuanisa)	

- (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 Pin No. Input AC(L) 2 AC(N)

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

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.

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	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

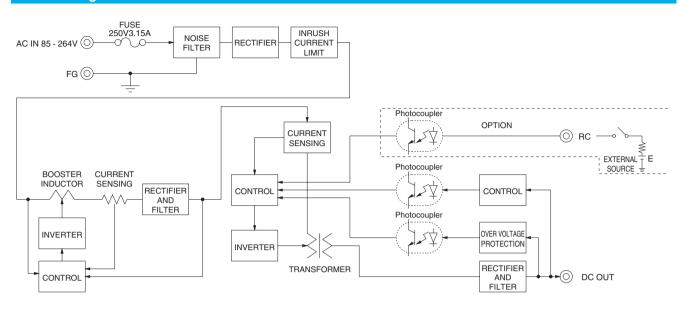
	MODEL		LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-48	
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to "Derating", Instruction Manual 1 and 3) *4								
	CUDDENTIAL	ACIN 100V	0.9typ (lo=100%)	0.9typ (lo=100%) 1.3typ (lo=100%)							
	CURRENT[A]	ACIN 200V	0.5typ (lo=100%) 0.7typ (lo=100%)								
	FREQUENCY[Hz]		50 / 60 (47 - 63)								
	EFFICIENCY[0/1	ACIN 100V	77.0typ	82.0typ	82.0typ	83.0typ	84.0typ	84.0typ	84.0typ	84.5typ	
INPUT	EFFICIENCY[%]	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								
	FOWER 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 sta	ırt) (Ta=25°C)						
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-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°C *2	80max	80max	120max	120max	120max	240max	150max	150max	
OUTPUT	mir r EE[mvp-p]	-10-0℃ *2	140max	140max	160max	160max	160max	320max	200max	200max	
	RIPPLE NOISE[mVp-p]	0 to +50°C *2	120max	120max	150max	150max	150max	300max	250max	250max	
	TIII T EE NOISE[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	
		-10 to +50°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, Io=100°	%)							
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%) 2.85 to 3.63 4.50 to 5.50 Fixed ("Y"option is available for adjusting output voltage)								
	OUTPUT VOLTAGE ADJUSTMENT			4.50 to 5.50	· · ·		, ,	1 0 /			
	OUTPUT VOLTAGE SET		3.30 to 3.40		11.50 to 12.50		23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00	
	OVERCURRENT PROT								rs automaticall		
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		TION	Not provided								
OTHERS	REMOTE SENSING	-	Not provided								
	REMOTE ON/OFF			to Instruction							
	INPUT-OUTPUT-RC	*6			urrent = 10mA						
ISOLATION	INPUT-FG				urrent = 10mA	<u></u>					
	OUTPUT-RC-FG	*6			rent = 25mA, [
	OUTPUT-RC				rent = 25mA, I						
	OPERATING TEMP., HUMID.AND					0, (3), 3,000m (10,	000feet) max	
ENVIRONMENT	STORAGE TEMP.,HUMID.AND	ALTITUDE			Non condensin	<u> </u>					
	VIBRATION		-	. ,.	minutes period		cn along X, Y a	and ∠ axis			
	IMPACT				e each X, Y ar		WILL DENI AND				
SAFETY AND	AGENCY APPROVAL			•	50-1), EN6236	.					
NOISE REGULATIONS	CONDUCTED NOISE		<u> </u>		I-B, CISPR-B,	EN55011-B, El	N55022-B				
nEGULATIONS	HARMONIC ATTENU		<u> </u>	IEC61000-3-2		1 (\A/\/\\\\) / 000+ · · · · ·	udala ala contro			
OTHERS	CASE SIZE/WEIGHT) / 280g max (with chassis &	cover : 480g m	iax)	
vid Considerati	COOLING METHOD		Convection (F	Refer to "Deratin	ng", Instruction I	vianual 3) *4	2.5				

- 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

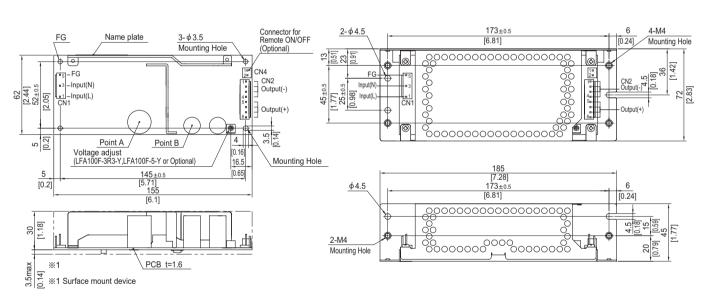




External view

* 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/C	Connector	Mating connector			
014	1-1123724-3	1-1123722-5	Chain	1123721-1	
CN1	1-1123724-3	1-1123722-5	Loose 1318912	1318912-1	
0110	1-1123723-8	1-1123722-8	Chain	1123721-1	
CN2	1-1123723-8	1-1123/22-8	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
Pin No.	Input	Pin No
1	AC(L)	1 to 4
2		1 10 4
3	AC(N)	5 to 8
4		3 10 6
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.

Output

-\/ +V

- ※ 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(-)	

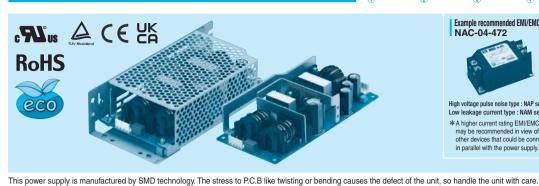
Barrier strip type

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 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 LFA1							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	36V 4.2A	48V 3.2A						

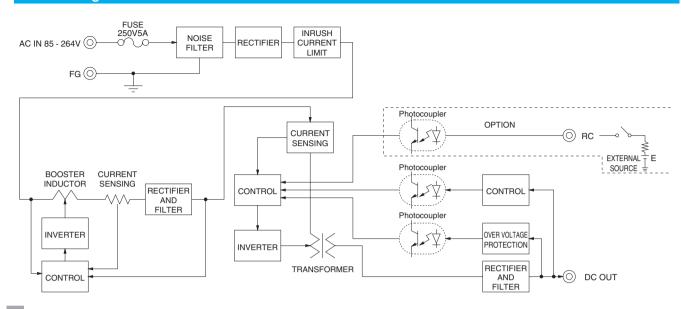
SPECIFICATIONS

	MODEL		LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-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				
		ACIN 100V	1.4typ (lo=100%)	2.0typ (lo=10	0%)						
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%)	0.7typ (lo=100%)							
	FREQUENCY[Hz]		50 / 60 (47 - 6		,						
INPUT	EEEIQIENQVIO/1	ACIN 100V	80.0typ	82.5typ	82.5typ	84.0typ	85.0typ	85.0typ	85.0typ	85.5typ	
	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	71 71							
	INDUCU CUDDENTIAL	ACIN 100V	15typ (lo=100	0%) (At cold sta	art) (Ta=25℃)						
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100	0%) (At cold sta	art) (Ta=25°C)						
	LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-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	
OUTPUT	RIPPLE[mVp-p]	0 to +40℃*2		80max	120max	120max	120max	240max	150max	150max	
	· ==[· p p]	-10 - 0°C *2		140max	160max	160max	160max	320max	200max	200max	
	RIPPLE NOISE[mVp-p]		120max	120max	150max	150max	150max	300max	250max	250max	
	1 22 NOIO2[17 P]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	
	TEMPERATURE REGULATION[mV]		50max	50max	120max	150max	240max	240max	360max	480max	
		-10 to +40℃ *3		60max	150max	180max	290max	290max	450max	600max	
	DRIFT[mV]	20max	20max	48max	60max	96max	96max	144max	192max		
	START-UP TIME[ms]	- ' '	100V, lo=100		,						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%) 2.85 to 3.63 4.50 to 5.50 Fixed ("Y"option is available for adjusting output voltage)								
	OUTPUT VOLTAGE ADJUSTMENT				, ,				04.50 1. 07.50	40.001.50.00	
	OUTPUT VOLTAGE SET			5.00 to 5.15		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				works over 10	· ·	· ·			ř –	
PROTECTION				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	
OTHERS	OPERATING INDICATION OF THE PROPERTY OF THE PR	IION	Not provided								
OTTLITO	REMOTE ON/OFF		Not provided Option (Refer to Instruction Manual)								
	INPUT-OUTPUT-RC	*6			urrent = 10mA	DC500V 50M	IO min (At Boo	om Temperatur	۵)		
	INPUT-FG				current = 10mA	<i></i>					
ISOLATION	OUTPUT-RC-FG	*6	-		rrent = 25mA, I	-		<u>.</u>	<i>c)</i>		
	OUTPUT-RC	*6			rrent = $25mA$, [
	OPERATING TEMP., HUMID. AND				Non condensin				3) 3 000m (10	000feet) max	
	STORAGE TEMP., HUMID.AND		-		Non condensin	0, (,,, 0,000 (10,		
ENVIRONMENT	VIBRATION				minutes period	<u> </u>	· · · · · · · · · · · · · · · · · · ·				
	IMPACT			. , , , , , , , , , , , , , , , , , , ,	e each X, Y ar						
SAFETY AND	AGENCY APPROVAL	LS	<u> </u>		50-1), EN6236		with DEN-AN				
NOISE	CONDUCTED NOISE				I-B, CISPR-B,						
REGULATIONS	HARMONIC ATTENU	JATOR	· ·	n IEC61000-3-		·					
	CASE SIZE/WEIGHT				.46×6.30 inche	es] (W×H×D)	/ 390g max (w	ith chassis & c	over : 650g ma	ıx)	
OTHERS	COOLING METHOD		-		ing", Instructior	- '					
*1 Specificati	on is changeed at option, refer	to Instruction					*8 Plass	e contact us about	another class		

- 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.

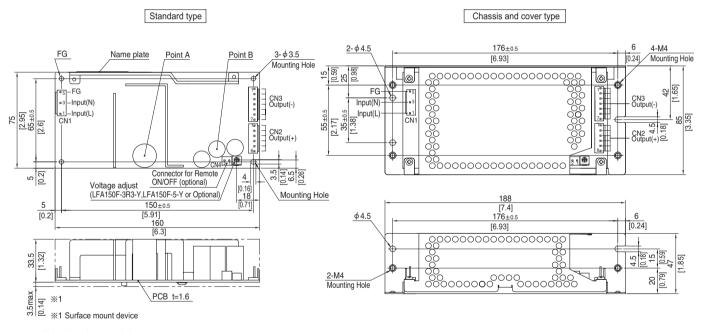
 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant
- at the rated input/output. Derating is required.
- () means peak current. There 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.





External view

* External size of option is different from standard model.



- $\ensuremath{\mathrm{\%}}$ 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.

	I/O Connector		Mating connector	Terminal	
1	CNIA	1-1123724-3	1-1123722-5	Chain	1123721-1
ľ	CNT	1-1123724-3	1-1123722-5	Loose	1318912-1
Ι.	0140	N2 1-1123723-6	1-1123722-6	Chain	1123721-1
9	CINZ		1-1123722-6	Loose	1318912-1
Γ.	0110	4 4400700 7	1-1123722-7	Chain	1123721-1
(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>

1 III COMMEDITOR								
CN1				CN3				
Input		Pin No.	Output		Pin No.	Output		
AC(L)								
AC(N)		1 to 6	+V		1 to 7	-V		
FG								
	Input AC(L)	Input AC(L)	CN2 Input AC(L) AC(N) 1 to 6	CN2 Input	CN2 Input	CN2 CN3 Input		

- % 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.
- ※ 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(+)

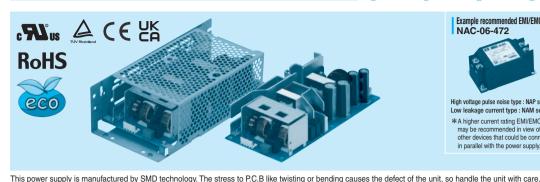
> RC(-) Barrier strip type

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

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

LFA240F

LF A 240



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
 - SN: with Chassis & cover T: Vertical terminal block
 - Y: with Potentiometer

Please refer to Instruction manual 6.

MODEL	1 EAG40E 04	1 EAG40E 04 II	LEAGAGE OC
*Make sure necessary tests will be carried out on you	ur end equipment with the power su	pply installed in accordance with ar	ny required EMC/EMI regulations.
rine perior cappi) is manadatared by citiz teermoregy.	The direct to Freib into timeting of b	orianing occupate and delegation and arms	, oo nanaa ara ara mar oara.

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

SPECIFICATIONS

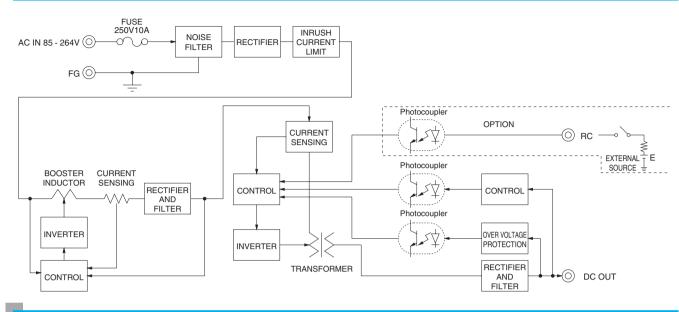
	MODEL		LFA240F-24	LFA240F-24-H	LFA240F-36	LFA240F-48				
	VOLTAGE[V]		AC85 - 264 1 φ (Refer to "Derating", Instruction Manual 1 and 3) *4							
	OUDDENTIAL	ACIN 100V	3.3typ (lo=100%)							
	CURRENT[A]	ACIN 200V	1.7typ (lo=100%)							
	FREQUENCY[Hz]		50 / 60 (47 - 63)							
	EFFICIEND/(C/)	ACIN 100V	84.5typ	84.5typ	84.5typ	84.5typ				
INPUT	EFFICIENCY[%]	ACIN 200V	87.5typ	87.5typ	87.5typ	87.5typ				
	DOWED FACTOR (L. 4000()	ACIN 100V	0.99typ							
	POWER FACTOR (lo=100%)	ACIN 200V	0.95typ							
	INDUOLI OUDDENTIAL	ACIN 100V	15 / 30typ (Io=100%) (Prima	3 sec. to re-start)						
	INRUSH CURRENT[A]	ACIN 200V	30 / 30typ (Io=100%) (Prima	0 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 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				
		0 to +40°C *2	120max	240max	150max	150max				
	RIPPLE[mVp-p]	-10 - 0°C *2		320max	200max	200max				
OUTPUT	DIDDI E NOICEIm/n n1	0 to +40°C *2	150max	300max	250max	250max				
	RIPPLE NOISE[mVp-p]	-10 - 0°C *2	180max	360max	300max	300max				
	TEMPERATURE REQUILATIONS	0 to +40℃	240max	240max	360max	480max				
	TEMPERATURE REGULATION[mV]	-10 to +40°C	290max	290max	450max	600max				
H	DRIFT[mV]	*3	96max	96max	144max	192max				
	START-UP TIME[ms]		350typ (ACIN 100V, lo=100	%)		·				
	HOLD-UP TIME[ms]		20typ (ACIN 100V, lo=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 c	urrent at option -H) and recov	ers automatically				
PROTECTION	OVERVOLTAGE PROTI	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 50	$M\Omega$ min (At Room Temperatu	ıre)				
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff of	current = 10mA, DC500V 50	$M\Omega$ min (At Room Temperatu	ıre)				
ISOLATION	OUTPUT-RC-FG	*6	AC500V 1minute, Cutoff cut	rrent = 25mA, DC500V 50M	Ω min (At Room Temperature	e)				
	OUTPUT-RC	*6	AC100V 1minute, Cutoff cut	rrent = 25mA, DC100V 10M	Ω min (At Room Temperature	e)				
	OPERATING TEMP.,HUMID.AND	ALTITUDE *4	-10 to +70℃, 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 (3	30,000feet) max					
LITTION	VIBRATION	_	10 - 55Hz, 19.6m/s² (2G), 3	minutes period, 60minutes e	each along X, Y and Z axis					
	IMPACT		196.1m/s ² (20G), 11ms, onc	e each X, Y and Z axis						
SAFETY AND	AGENCY APPROVA		UL60950-1, C-UL (CSA609							
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCC	I-B, CISPR-B, EN55011-B,	EN55022-B					
REGULATIONS	HARMONIC ATTENU		Complies with IEC61000-3-							
OTHERS	CASE SIZE/WEIGHT		84×46.5×180mm [3.31×1	I.83 X 7.09 inches] (WXHX	D) / 550g max (with chassis &	& cover : 880g max)				
	COOLING METHOD		Convection (Refer to "Derat	ing", Instruction Manual 3) *	4					
*1 Specificati	on is changeed at option, refer	to Instruction	on Manual. at the rated input/o	output.	*8 Please contact us about	it another class.				

- *2 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).
- *3 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
- *4 Derating is required.
- *5 () 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.
- *7 Please contact us about dynamic load and input response.
- 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

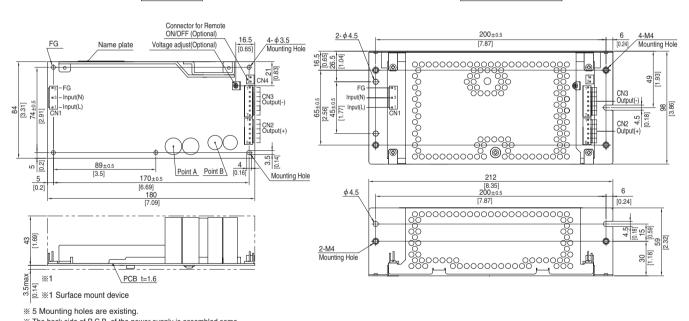




External view

* 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. 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			
CNI	1-1123724-3	1-1123722-5	Chain	1123721-1		
CNI	1-1123724-3	1-1123/22-5	Loose	1318912-1		
CN2	1-1123723-6	1-1123722-6	Chain	1123721-1		
		1-1123/22-0	Loose	1318912-1		
CNIO	1-1123723-7	1-1123722-7	Chain	1123721-1		
CN3		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 OUTPUT *5 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
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

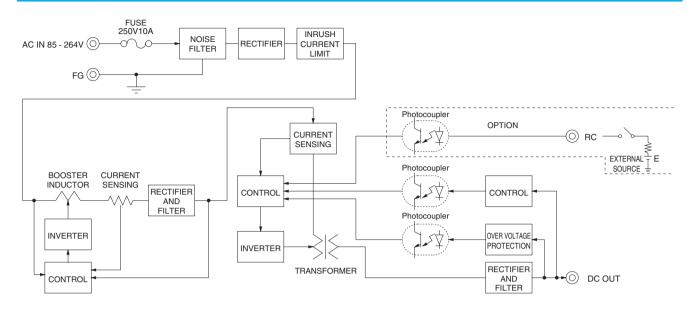
	MODEL		LFA300F-3R3-TY	LFA300F-5-TY	LFA300F-12-TY	LFA300F-15-TY	LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-TY	LFA300F-36-TY	LFA300F-48-TY		
	VOLTAGE[V]		AC85 - 264 1 ϕ (Refer to "Derating", Instruction Manual 1 and 3) *4										
	CURRENT[A] ACIN 100V		27typ (lo=100%) 4.1typ (lo=100%)										
	CONNENT[A]	ACIN 200V	1.4typ (lo=100%)	2.0typ (lo=1	00%)								
	FREQUENCY[Hz]	50 / 60 (47 - 63)											
	EFFICIENCY[%]	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									
	POWER FACTOR (IO=100%)	ACIN 200V	0.92typ	0.92typ 0.95typ									
	INRUSH CURRENT[A]	ACIN 100V		15 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)									
		ACIN 200V				current /Secor							
	LEAKAGE CURREN	T[mA]			0V / 240V 6	0Hz, lo=1009			-1 and DEN-	AN)			
	VOLTAGE[V]		3.3	5	12	15	24	24	30	36	48		
	CURRENT[A] *5	Convection	40	40	17	14	12.5	12.5 (Peak19)	10	8.4	6.3		
		Forced air	60	60	27	22	14	14 (Peak19)	11	9.4	7		
	LINE REGULATION		20max	20max	48max	60max	96max	96max	144max	144max	192max		
	LOAD REGULATION		40max	40max	100max	120max	150max	150max	240max	240max	240max		
	RIPPLE[mVp-p]	0 to +40℃*2	80max	80max	120max	120max	120max	240max	150max	150max	150max		
	IIII I EE[IIIVP-P]	-10 - 0°C *2	140max	140max	160max	160max	160max	320max	200max	200max	200max		
ОИТРИТ	RIPPLE NOISE[mVp-p]	0 to +40℃*2	120max	120max	150max	150max	150max	300max	250max	250max	250max		
	im i zz itoloz[mtp p]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	300max		
	TEMPERATURE REGULATION[mV]	0 to +40℃	50max	50max	120max	150max	240max	240max	360max	360max	480max		
		-10 to +40℃	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] OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		_ · · ·	I 100V, lo=10		10 501, 10 50	04 00 1, 07 50	04 00 1 07 50	07.00 00.00	00.401.00.00	100.001.50.00		
			2.85 to 3.63	4.50 to 5.50	10.80 to 13.20		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 SET OVERCURRENT PROT		3.30 to 3.40	5.00 to 5.15	12.00 to 12.48	15.00 to 15.60 er 101% of pe		24.00 to 24.96	30.00 to 31.20		48.00 to 49.92		
DDOTECTION			4.00 to 5.25	5.75 to 7.00				27.60 to 33.60	34.50 to 42.00	41.40 to 50.40	55.20 to 67.20		
PROTECTION CIRCUIT AND			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 67.2 Not provided										
OTHERS	REMOTE SENSING	Not provided Not provided											
	REMOTE ON/OFF		Option (Refer to Instruction Manual)										
	INPUT-OUTPUT-RC	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)											
	INPUT-FG		AC2.000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)										
ISOLATION	OUTPUT:RC-FG	*6											
	OUTPUT-RC	*6											
	OPERATING TEMP., HUMID. AND	ALTITUDE *4	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000m (10,000feet) max										
			-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max										
ENVIRONMENT						eriod, 60minu			Z axis				
	IMPACT		196.1m/s² (2	20G), 11ms,	once each X,	, Y and Z axis	;						
SAFETY AND	AGENCY APPROVAL	LS	UL60950-1,	C-UL (CSA6	0950-1), EN	62368-1 Con	nplies with DE	N-AN					
NOISE	CONDUCTED NOISE					R-B, EN5501	1-B, EN5502	2-B					
REGULATIONS	HARMONIC ATTENU	JATOR	OR Complies with IEC61000-3-2 (Class A) *8										
OTHERS	CASE SIZE/WEIGHT					es] (W×H×D)			g max (with ch	assis & cover :	1,270g max)		
OTHERS	COOLING METHOD		Convection	/ Forced air	(Refer to "De	rating", Instru	ction Manua	l 3) *4					

- *1 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-18

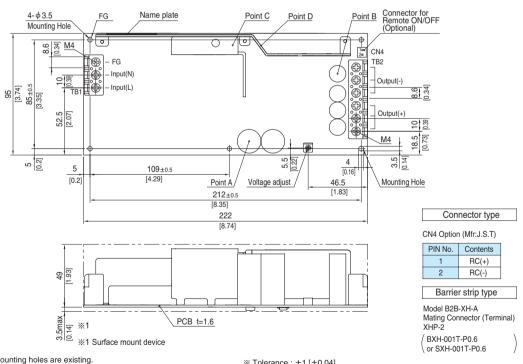




External view

* External size of option is different from standard model.

Standard type



- \times 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.

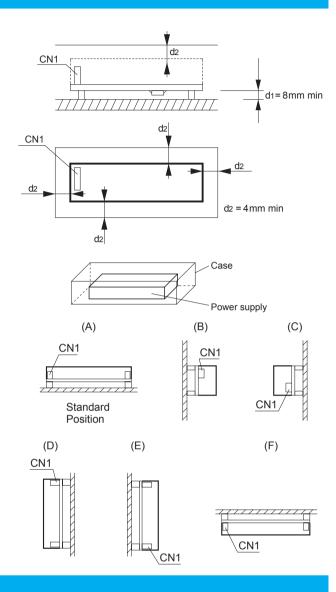
- ※ Tolerance: ±1 [±0.04]
- Weight: 810g max (with chassis & cover: 1,270g max)
 PCB material: CEM3
- * Dimensions in mm, []=inches
- * Screw tightening torque: M4 1.6N · m (16.9kgf · cm) max



Assembling and Installation Method

Installation method

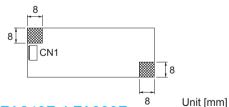
- ■This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.
- ■In case of metal chassis, keep the distance between d1 & d2 for to insulate between lead of component and metal chassis, use the spacer 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.



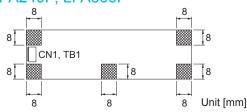
Mounting screw

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

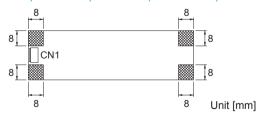
LFA10F, LFA15F



LFA240F, LFA300F



LFA30F, LFA50F, LFA75F, LFA100F, LFA150F



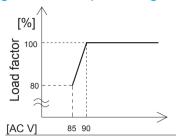
- ■If metallic fi ttings are used on the component side of the board,ensure there is no contact with surface mounted components.
- ■This product uses SMD technology.Please avoid the PCB installation method which includes the twisting stress or the bending stress.

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

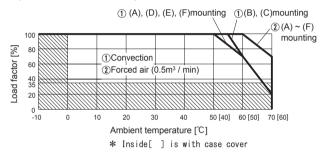


Derating

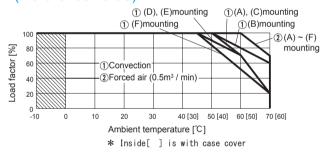
Derating curve for input voltage



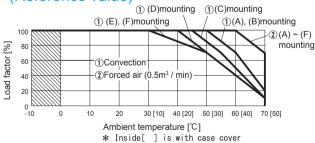
■ LFA10F Ambient temperature derating curve (Reference value)



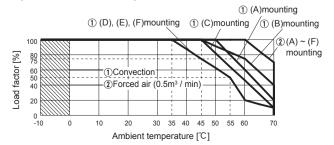
LFA30F Ambient temperature derating curve (Reference value)



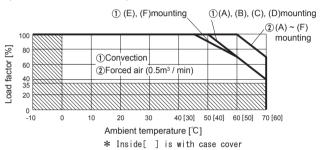
LFA75F Ambient temperature derating curve (Reference value)



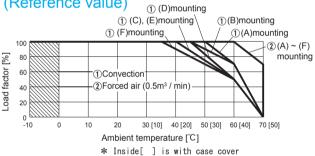
LFA100F Ambient temperature derating curve (Reference value)



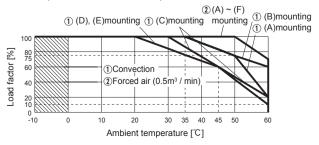
●LFA15F Ambient temperature derating curve (Reference value)



LFA50F Ambient temperature derating curve (Reference value)



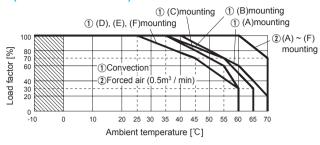
●LFA100F-□-SN Ambient temperature derating curve (Reference value)



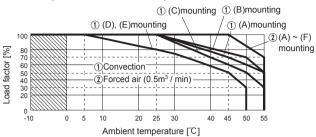


Derating

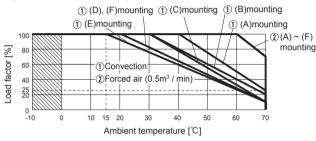
●LFA150F Ambient temperature derating curve (Reference value)



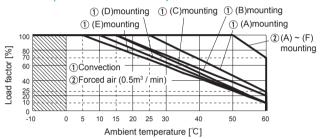
■LFA150F-☐-SN Ambient temperature derating curve (Reference value)



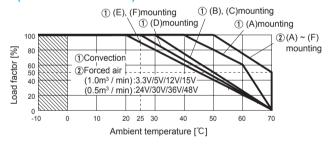
LFA240F Ambient temperature derating curve (Reference value)



●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					
5V	200.0	300.0					
12V	204.0	324.0					
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://www.cosel.co.jp/redirect/catalog/en/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/Patt		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			CEIVI-3				INO
LFA75F	Active filter	60-440	1.0	Thermistor	CEM-3	Yes		Yes	No
LFA/5F	Flyback converter	130	1.0		OLIVI-3	ies		ies	INO
LFA100F	Active filter	60	4.0	Thermistor	CEM-3		Yes	Voc	No
LFATOUF	Forward converter	140	1.3		OEIVI-3	1	res	Yes	No
LFA150F	Active filter	60	2.0	Thermistor	CEM-3		Yes	Yes	No
LFATSUF	Forward converter	140	2.0		CEIVI-3		res	res	INO
LFA240F	Active filter	60	0.0	SCR	CEM 2		\/	V	No
LFA240F	Forward converter	140	3.3		CEM-3		Yes	Yes	No
1 FA000F	Active filter	60	4.4	COD	OFMO		\/	V	NI-
LFA300F	Forward converter	140	4.1	SCR	CEM-3		Yes	Yes	No

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