











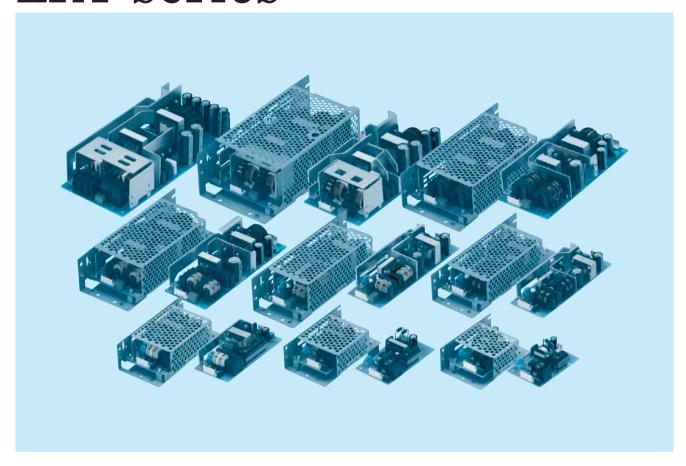








LFA-series



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), EN60950-1, EN62368-1, EN50178, EN60065 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

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

EN61000-4-2

EN61000-4-3

EN61000-4-4

EN61000-4-5

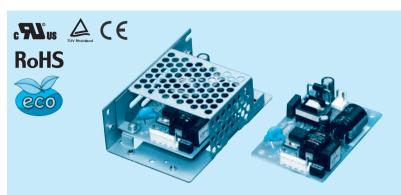
EN61000-4-6

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%)					
	CURRENT[A]	ACIN 200V	0.11typ (lo=100%)						
INPUT	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 (Io=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 REQUIREMENT AT	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 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 avail	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	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 50M Ω min (At Room Temperature)						
	OUTPUT-FG				$00V 50M\Omega$ min (At Roon				
	OPERATING TEMP.,HUMID.AND	ALTITUDE	· ·			ction 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						
PHAILION/MEN 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), EN60950-1,	EN62368-1, EN60065, E	N50178 Complies with I	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	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.

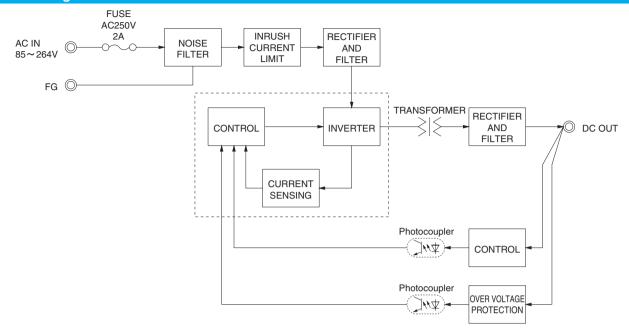
Please refer to the Instruction Manual 1.7.

- 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.

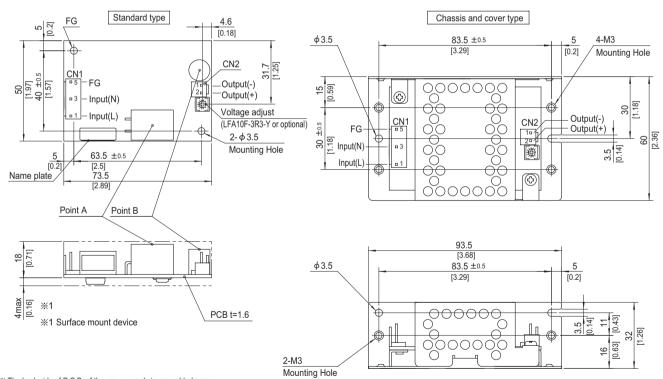
 June 26, 2020
- Please contact us about dynamic load and input response.
- Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse

LFA-2





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		nnector Mating connector		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	FG

	CINZ						
		Pin No.	Output				
_		1	-V				
		2	+V				

CNI

- ※ 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

Ordering information

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 ¢ (Refer to "Derating", Instruction Manual 1 and 3) *3						
	OUDDENITIAL	ACIN 100V	0.24typ (lo=100%)						
	CURRENT[A]	ACIN 200V	0.15typ (lo=100%)						
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
NPUT		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		
	INDUCTION OF DEPARTMENT	ACIN 100V	15typ (lo=100%) (At co	Styp (lo=100%) (At cold start) (Ta=25°C)					
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%) (At cold start) (Ta=25℃)						
	LEAKAGE CURRENT	[mA]	0.15/0.30max (ACIN 10	00V / 240V 60Hz, lo=10	00%, According to IEC6	2368-1 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		
		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		
UTPUT	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 1 minute of applying input again from turning off the input voltage.						
	HOLD-UP TIME[ms]		20typ (ACIN 100V, lo=100%)						
	OUTPUT VOLTAGE ADJUSTMENT F	RANGE[V]	2.85 to 3.63	Fixed ("Y"option is ava	ailable for adjusting outp	out voltage between ±10	0%)		
	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						
ROTECTION	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		
IRCUIT AND	OPERATING INDICAT	ION	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 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 (10,000 feet) max *3						
NVIRONMENT	STORAGE TEMP., HUMID. AND A	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max						
WINONWENT	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	S	UL60950-1, C-UL (CS/	A60950-1), EN60950-1,	EN62368-1, EN60065,	EN50178 Complies wit	h DEN-AN		
IOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B						
EGULATIONS	HARMONIC ATTENU	ATOR		00-3-2 (Class A) *6 (No					
THERS	CASE SIZE/WEIGHT		50×22×87.5mm [1.97	7×0.87×3.44 inches] (WXHXD) / 80g max (v	vith chassis & cover : 19	0g max)		
/LII	COOLING METHOD		Convection (Refer to "I	Derating", Instruction Ma	nual 3) *3				

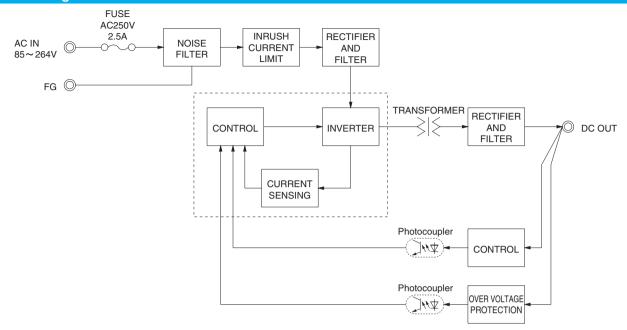
This is the value that measured on measuring board with capacitor of 22 $\mu\,\text{F}$ at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit. Therefore, the internal switch element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

Please refer to the Instruction Manual 1.7.

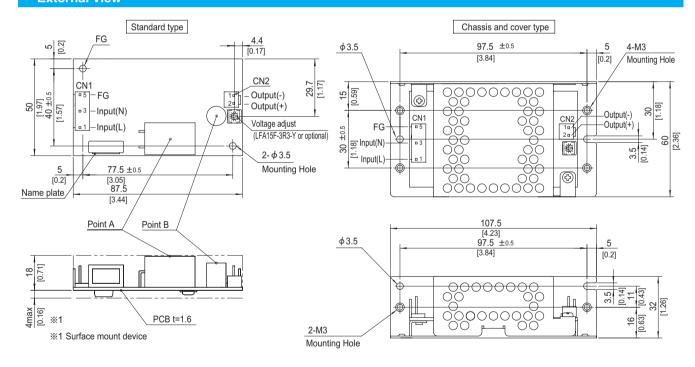
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Derating is required.
 - When two or more units are operating it may not comply with the IEC61000-3-2.

 June 26, 2020
- 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



- $\ensuremath{\mathrm{\%}}$ 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		Connector Mating connector		erminal
CNIA	1-1123724-3	1-1123722-5	Chain	1123721-1
CIVI	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>

С P

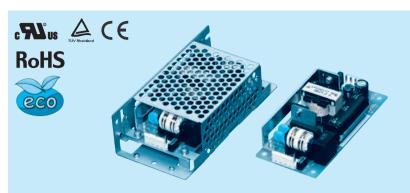
N1		CN2
Pin No.	Input	Pin No.
1	AC(L)	1
2		'
3	AC(N)	2
4		
5	FG	

CN2	
Pin No.	Output
1	-V
2	+V

- % 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

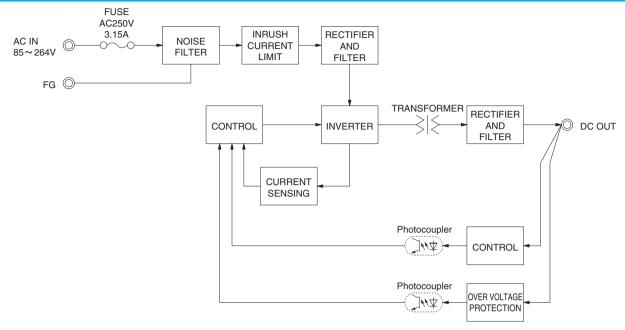
SPECIFICATIONS

	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%)						
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
INPUT	EFFICIENCY[%]	ACIN 100V	73typ	76typ	79typ	81typ	82typ		
	EFFICIENCY[%]	ACIN 200V	75typ	79typ	81typ	83typ	84typ		
	INDUCU CUDDENTIAL	ACIN 100V	15typ (lo=100%) (At c	5typ (Io=100%) (At cold start) (Ta=25℃)					
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%) (At cold 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, 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 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 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 (10,000feet) max						
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max						
LIVIIIOIVIIILIVI	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
	IMPACT			s, once each X, Y and Z					
SAFETY AND	AGENCY APPROVAL				1, EN62368-1, EN6006	5, EN50178 Complies	with DEN-AN		
NOISE	CONDUCTED NOISE		· · · · · · · · · · · · · · · · · · ·	, VCCI-B, CISPR-B, EN	· · · · · · · · · · · · · · · · · · ·				
REGULATIONS	TIPATIMOTHIO PATTERIO		· ·		built-in to active filter) *4				
OTHERS	CASE SIZE/WEIGHT				s] (W×H×D) / 130g ma	ax (with chassis & cove	r : 260g max)		
O.IILIIO	COOLING METHOD		Convection (Refer to "	Derating", Instruction M	1anual 3) *3				

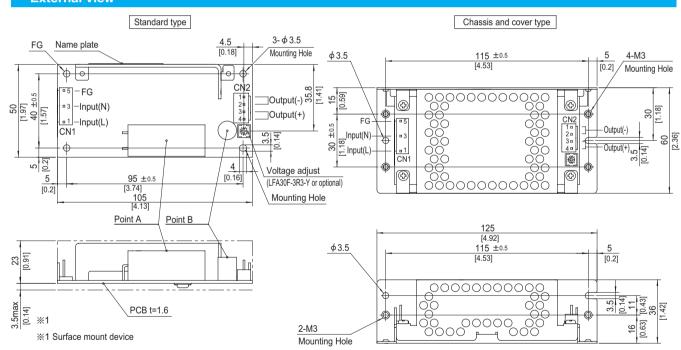
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal. . Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C , with the input 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	T	erminal
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	1-1123722-4	Loose	1318912-1
445 T FI : :				

(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					

0112	
Pin No.	Output
1, 2	-V
3, 4	+V

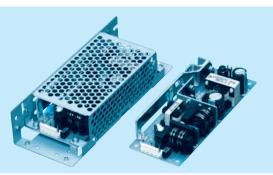
- % Tolerance : ± 1 [± 0.04] $\,\%$ Weight: 130g max (with chassis & cover : 260g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- * Dimensions in mm, []=inches
- Mounting torque (Mounting hole of chassis): 0.6N · m (6.3kgf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

CN₂

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

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.

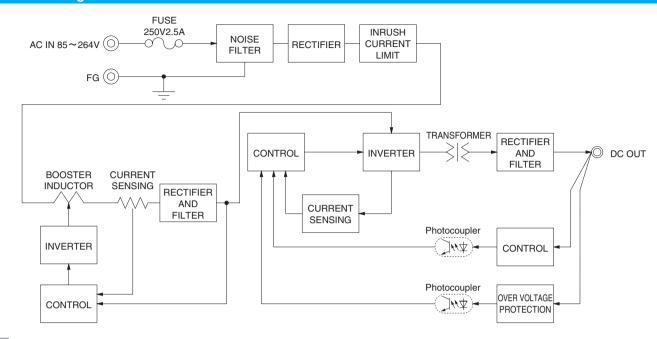
MODEL	LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48
MAX OUTPUT WATTAGE[W]	33	50	51.6	52.5	50.4	50.4	52.8
DC OUTPUT	3 3V 10A	5V 10Δ	12V 4.3A	15V 3.5A	24V 2 1A	36V 1 4A	48V 1 1A

SPECIFICATIONS

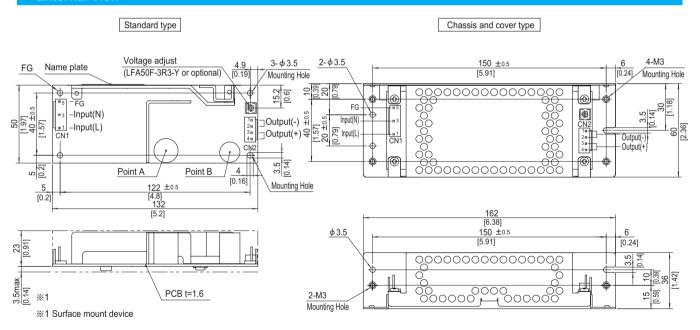
	MODEL		LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48		
	VOLTAGE[V]		AC85 - 264 1 φ	(Refer to "Derat	ing", Instruction	Manual 1 and 3)	*3				
	OUDDENTIAL	ACIN 100V	0.47typ (lo=100%) 0.67typ (lo=100%)								
INPUT	CURRENT[A] ACIN 200V		0.27typ (lo=100%)	0.36typ (lo=100)%)						
	FREQUENCY[Hz]		50 / 60 (47 - 63)								
	EEFICIENOVIO/1	ACIN 100V	73.5typ	77.5typ	80.0typ	80.5typ	81.5typ	82.0typ	81.0typ		
	EFFICIENCY[%]	ACIN 200V	74.0typ	79.0typ	81.5typ	81.5typ	83.0typ	83.5typ	82.5typ		
	DOWER	ACIN 100V	0.96typ	21 21 21 21 21							
	POWER FACTOR (lo=100%)	ACIN 200V	0.83typ								
	INDUCUI CURRENTIAL	ACIN 100V	15typ (lo=100%	(At cold start)	Ta=25℃)						
	INRUSH CURRENT[A]	ACIN 200V		(At cold start)							
-	LEAKAGE CURREN		* ' '	(ACIN 100V / 24		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		40max	40max	100max	120max	150max	240max	240max		
		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℃ *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] 35		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 i	recovers automa	ntically					
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	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 50MΩ min (At Room Temperature)								
	OUTPUT-FG		AC500V 1minut	500V 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								
NVIDONIMENT	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	z, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT		196.1m/s² (20G	² (20G), 11ms, once each X, Y and Z axis							
AFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-U	JL (CSA60950-1), EN60950-1, E	N62368-1, EN60	0065, EN50178 (Complies with DE	N-AN		
IOISE	CONDUCTED NOISE		Complies with F	CC-B, VCCI-B,	CISPR-B, EN55	011-B, EN55022	-B				
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with I	EC61000-3-2 (C	lass A) *5						
THERE	CASE SIZE/WEIGHT		50×26.5×132	mm [1.97×1.04	×5.20 inches] (\	W×H×D) / 165g	max (with chase	sis & cover : 325	g max)		
DTHERS				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	Connector	Mating connector	Terminal		
ONIA	4 4400704 0	1-1123722-5	Chain	1123721-1	
CNT	1-1123724-3	1-1123722-5	Loose	1318912-1	
CNO	1-1123723-4	1-1123722-4	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>

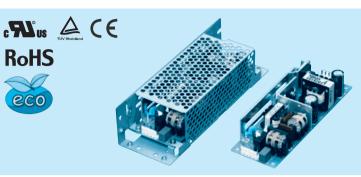
CN1		
Pin No.	Input	
1	AC(L)	
2		
3	AC(N)	
4		
5	FG	

CNZ	
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.

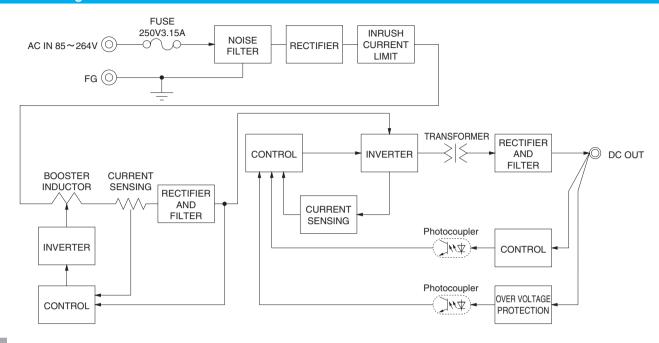
MODEL	LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48
MAX OUTPUT WATTAGE[W]	49.5	75	75.6	75	76.8	75.6	76.8
DC OUTPUT	3 3V 15A	5V 15Δ	12V 6.3A	15V 5A	24V 3 2A	36V 2 1A	48V 1.6A

SPECIFICATIONS

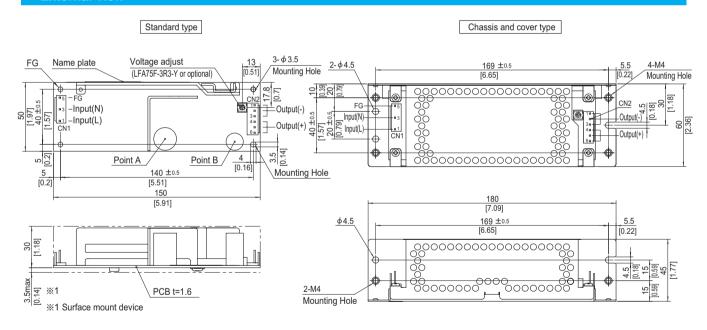
	MODEL		LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48		
	VOLTAGE[V]		AC85 - 264 1 φ	(Refer to "Derat	ing", Instruction	Manual 1 and 3)	*3				
	OUDDENTIAL	ACIN 100V	0.70typ (lo=100%) 1.00typ (lo=100%)								
INPUT	CURRENT[A]	ACIN 200V	71 7 7 71 7								
	FREQUENCY[Hz]		50 / 60 (47 - 63)							
	EEFICIENOVIO/1	ACIN 100V	73.5typ	78.0typ	81.5typ	81.5typ	82.5typ	82.5typ	82.5typ		
	EFFICIENCY[%]	ACIN 200V	75.0typ	80.0typ	83.0typ	83.0typ	84.5typ	84.5typ	84.5typ		
	DOWER	ACIN 100V	0.96typ	0.97typ							
	POWER FACTOR (lo=100%)	ACIN 200V	0.83typ								
		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	00%, 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		
	DIDDLET 1/ 1	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 MOIOEC W. 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] 35		350typ (ACIN 100V, Io=100%)								
	HOLD-UP TIME[ms] 20t		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	ltage 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 i	recovers automa	atically					
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	OPERATING INDICA	TION	Not provided						•		
THERS	REMOTE SENSING		Not provided								
	REMOTE ON/OFF		Not provided								
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)								
SOLATION	INPUT-FG		AC2,000V 1min	C2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)							
	OUTPUT-FG		AC500V 1minut	$00V$ 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)							
ĺ	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								
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20	20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max							
NVIRUNWENT	VIBRATION		10 - 55Hz, 19.6	19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT 196.1m/s² (2		196.1m/s ² (20G	/s² (20G), 11ms, once each X, Y and Z axis							
AFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-U	JL (CSA60950-1), EN60950-1, E	N62368-1, EN60	0065, EN50178 (Complies with DE	N-AN		
IOISE	CONDUCTED NOISE		Complies with F	CC-B, VCCI-B,	CISPR-B, EN55	011-B, EN55022	-B				
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with I	EC61000-3-2 (C	lass A) *5						
THERE	CASE SIZE/WEIGHT		50×33.5×150	mm [1.97×1.32>	<5.91 inches] (W	'×H×D) / 230g	max (with chassi	s & cover : 440g	max)		
OTHERS			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/O Connector		Mating connector	Terminal		
CNI	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	
CINZ	1-1123723-6		Loose	1318912-1	
			/A Afm. T.	aa Flastuanisa)	

- * 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
-	FC	

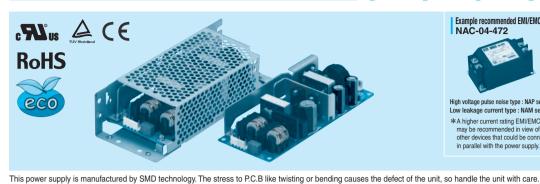
CN2		
Pin N	o. Out	put
1 to 3	3 -\	/
1 to 6	. 4	,

- ※ 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.

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.

*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. 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

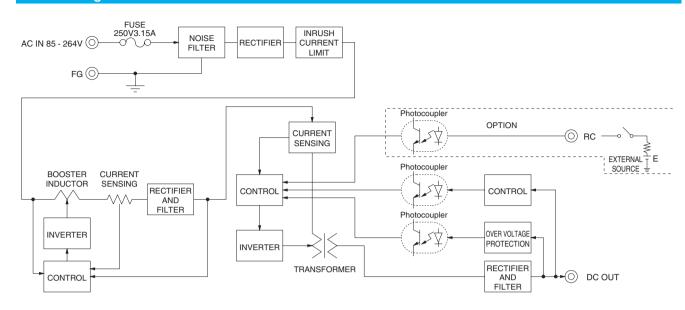
	MODEL		LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-4		
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to "D	erating", Instru	ction Manual 1	and 3) *4					
	OUDDENTIAL	ACIN 100V	0.9typ (lo=100%)	1.3typ (lo=10	0%)							
	CURRENT[A] ACIN 200V		0.5typ (lo=100%)	0.7typ (lo=10	0%)							
	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		
	DOWED FACTOR (In 1009/)	ACIN 100V	0.98typ	0.99typ								
	POWER FACTOR (Io=100%)	ACIN 200V	0.92typ	0.95typ								
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%) (At cold start) (Ta=25°C)									
	INNUSH CONNENT[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,	lo=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	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	120max	120max	120max	240max	150max	150max		
	IIII I EE[IIIVP-P]	-10-0°C *2	140max	140max	160max	160max	160max	320max	200max	200max		
	RIPPLE NOISE[mVp-p]		120max	120max	150max	150max	150max	300max	250max	250max		
OUTPUT	TIII T EE NOISE[IIIVP-P]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max		
	TEMPERATURE REGULATION[mV]		50max	50max	120max	150max	240max	240max	360max	480max		
	TEMP ENATORE REGUERROU[IIV]	-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%)									
	OUTPUT VOLTAGE ADJUSTMENT			4.50 to 5.50			for adjusting of		1	r		
	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					· ·			rs automaticall	ř –		
ROTECTION	OVERVOLTAGE PROTE			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					IΩ min (At Roo					
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)									
	OUTPUT-RC-FG						2 min (At Room					
	OUTPUT-RC						2 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			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 UL60950-1, C-UL (CSA60950-1), EN60950-1, EN62368-1, EN60065, EN50178 Complies with DEN-AN							***		
SAFETY AND	AGENCY APPROVAL							:N50178 Comp	olles with DEN-	AN		
NOISE CONDUCTED NOISE Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B REGULATIONS HARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *8												
IEGULATIONS				IEC61000-3-		7.0405411:						
OTHERS	CASE SIZE/WEIGHT	•) / 280g max (with chassis &	cover : 480g m	nax)		
_	COOLING METHOD		Convection (F		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

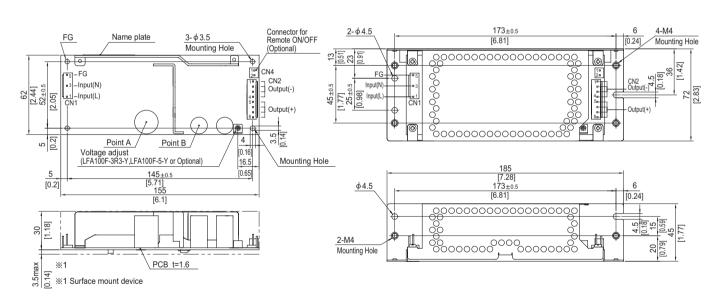




External view

* 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		
014	1-1123724-3	1-1123722-5	Chain	1123721-1	
CNT	1-1123724-3	1-1123722-5	Loose	1318912-1	
ONIO	1-1123723-8	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>

CN1		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		5106	+ν
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(-)

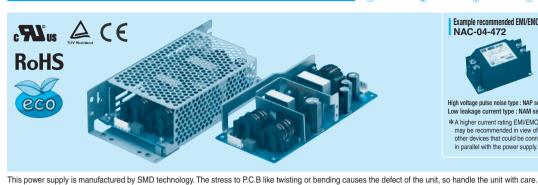
Barrier strip type

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

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

LFA150F

LF A 150



*5 3.3V 30A

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.

24V 6.3A

- Series name
 Single output
 Output wattage
- 4)Universal input
- ⑤Output voltage
- (a) Output voltage
 (b) 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

48V 3.2A

Y: with Potentiometer

Please refer to Instruction manual 6.

24V 6.3 (7.9)A 36V 4.2A

* 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

12V 12.5A

15V 10A

5V 30A

SPECIFICATIONS

DC OUTPUT

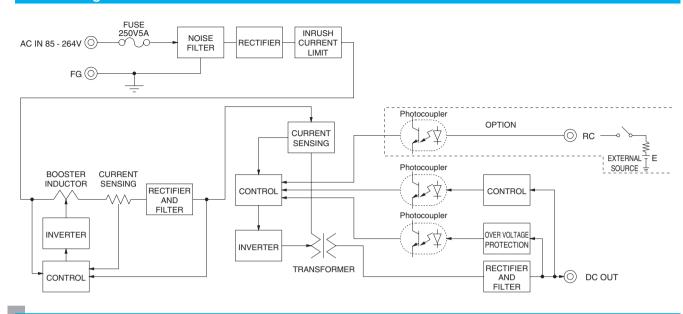
	MODEL		LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-24	LFA150F-24-H	LFA150F-36	LFA150F-48		
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to "D	erating", Instru	ction Manual 1	and 3) *4	•	•	•		
	OUDDENTIAL	ACIN 100V	1.4typ (lo=100%)	2.0typ (lo=10	0%)							
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%)	1.0typ (lo=10	0%)							
	FREQUENCY[Hz]		50 / 60 (47 - 6	63)								
	EFFICIENCY[9/1	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 1009)	ACIN 100V	0.98typ	0.99typ						•		
	POWER FACTOR (lo=100%)	ACIN 200V	0.92typ	0.95typ								
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100	15typ (Io=100%) (At cold start) (Ta=25°C)								
	INNUSH CONNENT[A]	ACIN 200V	30typ (lo=100	30typ (lo=100%) (At cold start) (Ta=25°C)								
	LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	ax (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	30	30	12.5	10	6.3	6.3 (Peak 7.9)	4.2	3.2		
	LINE REGULATION[20max	20max	48max	60max	96max	96max	144max	192max		
	LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max		
	RIPPLE [mVp-p] RIPPLE NOISE[mVp-p] TEMPERATURE REGULATION[mV]	0 to +40℃*2		80max	120max	120max	120max	240max	150max	150max		
		-10 - 0°C *2		140max	160max	160max	160max	320max	200max	200max		
		0 to +40℃*2		120max	150max	150max	150max	300max	250max	250max		
OUTPUT		-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max		
			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]	350typ (ACIN 100V, Io=100%)										
	HOLD-UP TIME[ms]		71 \	100V, lo=100%	/							
	OUTPUT VOLTAGE ADJUSTMENT				Fixed ("Y"opt							
	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 INDICA	IION	Not provided									
UIILING	REMOTE SENSING	-	Not provided	to Instruction	Manual							
	REMOTE ON/OFF INPUT-OUTPUT-RC	*6		to Instruction	urrent = 10mA	DC500V 50M	IO min (At Do	m Tomporatur	0)			
	INPUT-FG	***				<i></i>						
ISOLATION	OUTPUT-RC-FG	*6	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)									
	OUTPUT-RC	*6			rrent = $25mA$, I							
	OPERATING TEMP., HUMID. AND				Non condensin				3) 3 000m (10	000feet) may		
	STORAGE TEMP., HUMID. AND				Non condensin	0, (,, 0,000 (10,	0001001/1110/		
ENVIRONMENT	VIBRATION				minutes period							
	IMPACT				e each X, Y ar							
SAFETY AND	AGENCY APPROVAL	LS			50-1), EN6095		1, EN60065, E	N50178 Comp	lies with DEN-	AN		
NOISE	CONDUCTED NOISE				I-B, CISPR-B,							
	HARMONIC ATTENU		· ·	n IEC61000-3-								
	CASE SIZE/WEIGHT				.46×6.30 inche	es] (W×H×D)	/ 390g max (w	ith chassis & c	over : 650g ma	ix)		
OTHERS	COOLING METHOD				ing", Instruction	- '	- 3 (,		
*1 Specificati	on is changeed at option, refer	to Instruction					±9 Ploas	e contact us about	anothor 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).
- *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
- 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.

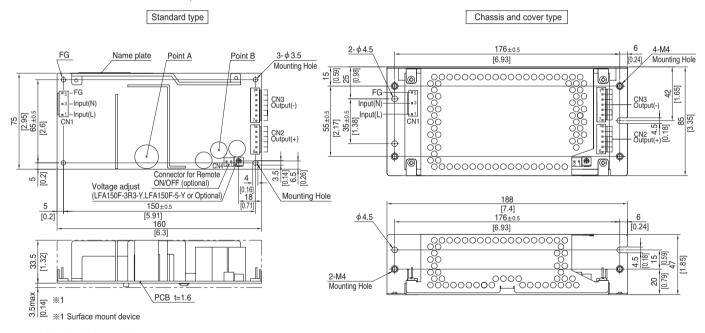
LFA-14





External view

* External size of option is different from standard model.



- * 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		
CNIA	1-1123724-3	1-1123722-5	Chain	1123721-1	
CIVI	1-1123724-3	1-1123722-5	Loose	1318912-1	
ONIO	1-1123723-6	1-1123722-6	Chain	1123721-1	
CNZ	1-1123723-6	1-1123722-6	Loose	1318912-1	
ONIO	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	IIV C	CIVINECTI	OIV-				
CI	N 1			CN2		CN3	
Pi	in 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					

- % 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	

	n (Mfr:J.S.T)
PIN No.	Contents

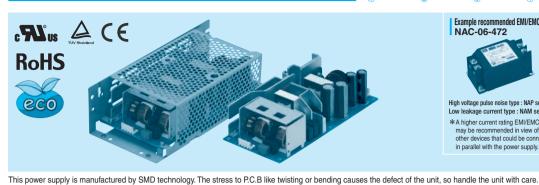
	0011101110	
1	RC(+)	
2	RC(-)	
		_

Barrier strip type Model B2B-XH-A

Mating Connector (Terminal) XHP-2 BXH-001T-P0.6 or SXH-001T-P0.6

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

SN: with Chassis & cover

T: Vertical terminal block Y: with Potentiometer

Please refer to Instruction

*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. 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

SPECIFICATIONS

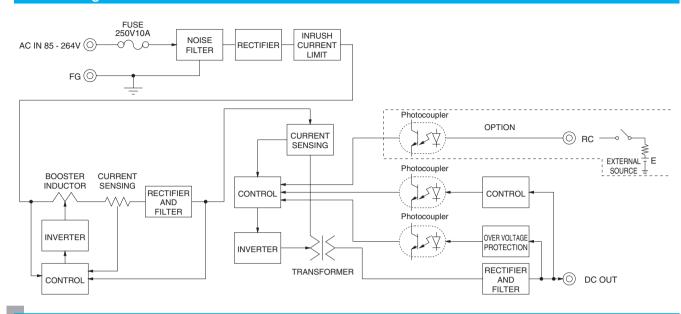
_	VOLTAGE[V]					LFA240F-48					
			AC85 - 264 1 φ (Refer to "Derating", Instruction Manual 1 and 3) *4								
	OUDDENTIAL	ACIN 100V	3.3typ (lo=100%)								
	CURRENT[A]	ACIN 200V	1.7typ (lo=100%)								
	FREQUENCY[Hz]		50 / 60 (47 - 63)	, , , , , , , , , , , , , , , , , , ,							
	EEEIOIENOVIO/1	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 (Io=100%)	ACIN 200V	0.95typ								
	INDUCH 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	3 sec. to re-start)							
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max (ACIN 100V	/ 240V 60Hz, lo=100%, Acc	cording to IEC62368-1 and D	EN-AN)					
	VOLTAGE[V]		24	24	36	48					
	CURRENT[A]	*5	10	10 (Peak12.5)	6.7	5					
Ī	LINE REGULATION[I	mV] *7	96max	96max	144max	192max					
Ī	LOAD REGULATION	[mV] *7	150max	150max	240max	240max					
Ī	RIPPLE[mVp-p]	0 to +40℃ *2	120max	240max	150max	150max					
	KIPPLE[IIIVP-P]	-10 - 0°C *2	160max	320max	200max	200max					
	DIDDI E NOICE[m/m m]	0 to +40°C *2	150max	300max	250max	250max					
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C *2	180max	360max	300max	300max					
	TEMPEDATURE RECULATIONS—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	irrent at option -H) and recove	ers automatically					
PROTECTION	OVERVOLTAGE PROTE	CTION	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 current = 10mA, DC500V 50M Ω min (At Room Temperature)								
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)								
SOLATION	OUTPUT-RC-FG	*6	AC500V 1minute, Cutoff cui	rrent = 25mA, DC500V 50Ms	Ω min (At Room Temperature)					
	OUTPUT-RC	*6			Ω min (At Room Temperature	<u> </u>					
	OPERATING TEMP., HUMID. AND A	ALTITUDE *4	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "I	Derating", Instruction Manual	3), 3,000m (10,000feet) max					
	STORAGE TEMP., HUMID. AND	ALTITUDE		Non condensing), 9,000m (3							
IVIAIMEIAI	VIBRATION		10 - 55Hz, 19.6m/s ² (2G), 3	minutes period, 60minutes e	ach along X, Y and Z axis						
	IMPACT		196.1m/s² (20G), 11ms, onc								
5741 E 1 1 7 14 15	AGENCY APPROVAL				8-1, EN60065, EN50178 Com	plies with DEN-AN					
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCC	I-B, CISPR-B, EN55011-B, E	N55022-B						
REGULATIONS	HARMONIC ATTENU	IATOR	Complies with IEC61000-3-								
OTHERS	CASE SIZE/WEIGHT		84×46.5×180mm [3.31×1	.83 X 7.09 inches] (W X H X I	D) / 550g max (with chassis &	cover : 880g max)					
JIIIENO	COOLING METHOD		Convection (Refer to "Derat	ing", Instruction Manual 3) *4	4						

- 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

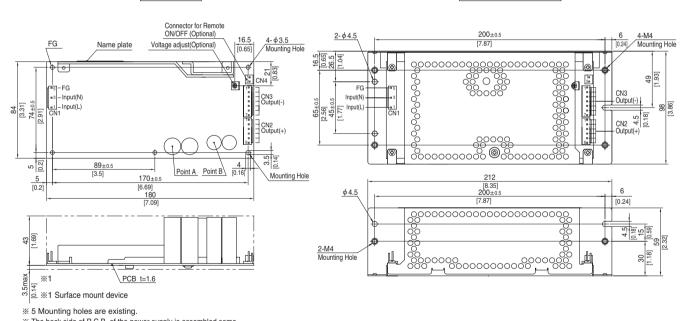




External view

* 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.
- 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			
CNI	1 1100704 0	1-1123722-5	Chain	1123721-1		
CIVI	N1 1-1123724-3	1-1123/22-5	Loose	1318912-1		
CNIO	1-1123723-6	1-1123722-6	Chain	1123721-1		
CINZ	1-1123723-6	1-1123/22-0	Loose	1318912-1		
CNIO	1-1123723-7	1-1123722-7	Chain	1123721-1		
CM3	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 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

<u> </u>	MODEL		LEADONE ODO TV	LEADONE E TV	1 FA200F 12 TV	LEADONE 45 TV	LEADONE DA TV	LEADONE DA LIEV	I FACOUL OU TA	I FACOUR OF TV	LEADONE 40 TV		
	MODEL		LFA300F-3R3-TY		LFA300F-12-TY		LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-1Y	LFA300F-36-TY	LFA300F-48-TY		
	VOLTAGE[V]	AOIN 400V	AC85 - 264 1 \$\phi\$ (Refer to "Derating", Instruction Manual 1 and 3) *4										
	CURRENT[A]	ACIN 100V	21 1	27typ (lo=100%) 4.1typ (lo=100%)									
	EDEOUENOVIU-1	ACIN 200V	1.4typ (lo=100%)	2.0typ (lo=1	00%)								
	FREQUENCY[Hz]	ACIN 100V	50 / 60 (47 - 75.0typ	79.0typ	90 Oh/n	O1 Etym	QE Ohin	85.0typ	OF Etym	85.5typ	85.5typ		
INPUT	EFFICIENCY[%]	ACIN 100V	71	71	80.0typ	81.5typ	85.0typ	- ''	85.5typ				
INPUI		ACIN 200V	77.0typ	82.5typ	83.0typ	84.5typ	88.0typ	88.0typ	88.0typ	88.0typ	88.0typ		
	POWER FACTOR (lo=100%)	ACIN 100V	0.98typ 0.92typ	0.99typ 0.95typ									
		ACIN 200V			imary inruch	current /Secon	ndary inruch o	urrent) (More	than 3 sec to	re-start)			
	INRUSH CURRENT[A]	ACIN 100V	, , ,	15 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start) 30 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)									
	LEAKAGE CURREN		, , ,		0V / 240V 6								
	VOLTAGE[V]	ı[ıııA]	3.3	5	12	15	24	24	30	36	48		
		Convection		40	17	14	12.5	12.5 (Peak19)	10	8.4	6.3		
	CURRENT[A] *5	Forced air		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		
		0 to +40°C *2		80max	120max	120max	120max	240max	150max	150max	150max		
	RIPPLE[mVp-p]	-10 - 0°C *2		140max	160max	160max	160max	320max	200max	200max	200max		
		0 to +40°C *2	120max	120max	150max	150max	150max	300max	250max	250max	250max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0℃ *2	160max	160max	180max	180max	180max	360max	300max	300max	300max		
		0 to +40°C	50max	50max	120max	150max	240max	240max	360max	360max	480max		
	TEMPERATURE REGULATION[mV]	-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	I 100V, Io=10	00%)								
	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 SET	TING[V]	3.30 to 3.40	5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	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 PROT				ng (works ove								
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	34.50 to 42.00	41.40 to 50.40	55.20 to 67.20		
CIRCUIT AND		TION	Not provided										
OTHERS	REMOTE SENSING		Not provided										
	REMOTE ON/OFF		Option (Refer to Instruction Manual)										
	INPUT-OUTPUT-RC	*6	7.66,666 Timilate, Caten Carrent Territ, 2.666 Territ, (A. T. 1661) Territoria (A. T. 1661)										
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)										
	OUTPUT RC-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)										
	OUTPUT-RC	*6	7.6 1007 Timilato, Gaten Garrette Zonza, Zonzor Tomin- Timilato, Temperature,										
	OPERATING TEMP., HUMID. AND STORAGE TEMP., HUMID. AND		, , , , , , , , , , , , , , , , , , , ,										
ENVIRONMENT	VIBRATION	ALIIIUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max 10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis										
	IMPACT				once each X,			ily A, T allu Z	L axis				
SAFETY AND	AGENCY APPROVAL	· S			60950-1), EN			30065 ENEO	178 Complie	s with DEN A	N		
NOISE	CONDUCTED NOISE				CCI-B, CISPI				170 Compile:	S WILL DEIN-A	11 4		
REGULATIONS					1-3-2 (Class A		, LN0002	ב ט					
	CASE SIZE/WEIGHT				.07 × 8.74 inche		(without termin	nal block) / 810	n max (with ch	assis & cover ·	1 270g may)		
OTHERS	COOLING METHOD					- '	<u>`</u>		y max (Willi Cil	uooio a UUVEI .	,LI OY IIIAX)		
	COOLING WILTHOD		Convection / Forced air (Refer to "Derating", Instruction Manual 3) *4										

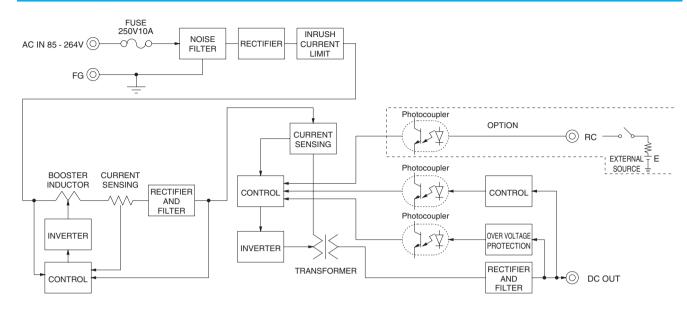
- Specification is changeed at option, refer to Instruction Manual.
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.

 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.

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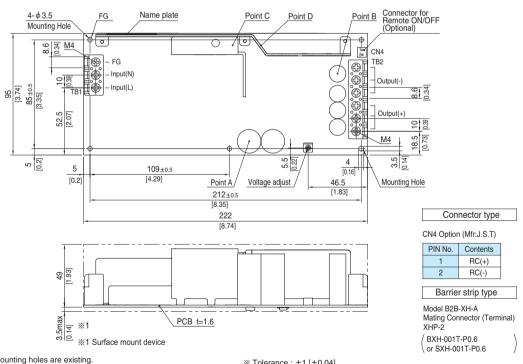




External view

* 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.

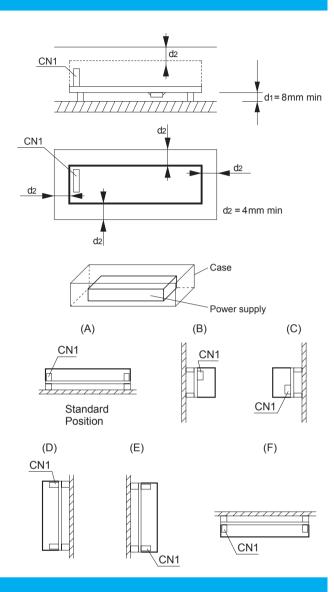
- ※ Tolerance: ±1 [±0.04]
- Weight: 810g max (with chassis & cover: 1,270g max)
 PCB material: CEM3
- * Dimensions in mm, []=inches
- * Screw tightening torque: M4 1.6N · m (16.9kgf · cm) max



Assembling and Installation Method

Installation method

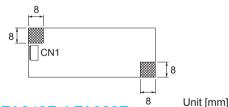
- ■This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.
- ■In case of metal chassis, keep the distance between d1 & d2 for to insulate between lead of component and metal chassis, use the spacer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



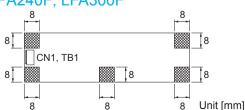
Mounting screw

■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.

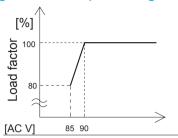
 *Recommendation to electrically connect FG to metal chassis for reducing noise.

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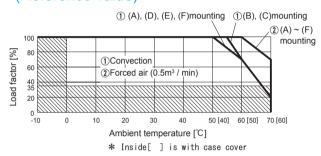


Derating

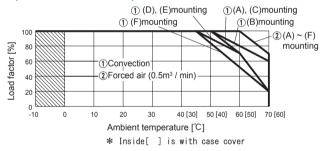
Derating curve for input voltage



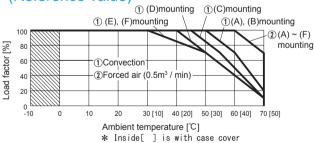
■ LFA10F Ambient temperature derating curve (Reference value)



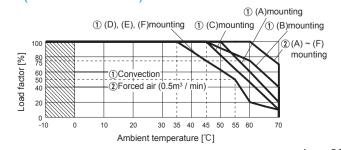
LFA30F Ambient temperature derating curve (Reference value)



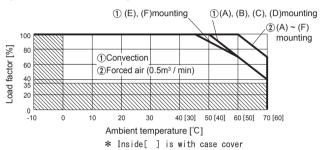
LFA75F Ambient temperature derating curve (Reference value)



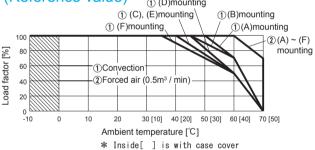
LFA100F Ambient temperature derating curve (Reference value)



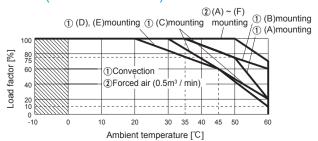
●LFA15F Ambient temperature derating curve (Reference value)



●LFA50F Ambient temperature derating curve (Reference value) (1) (D)mounting



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

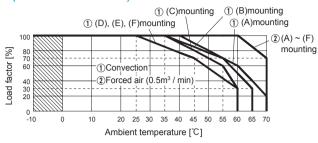


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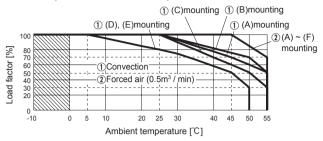


Derating

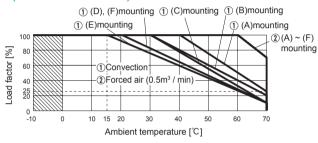
● LFA150F Ambient temperature derating curve (Reference value)



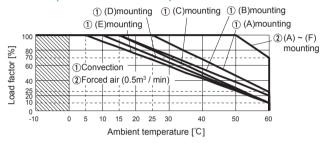
■LFA150F-□-SN Ambient temperature derating curve (Reference value)



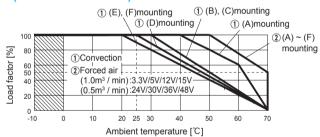
LFA240F Ambient temperature derating curve (Reference value)



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





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Basic Characteristics Data

Model	Circuit method	Switching frequency	Input current	Inrush current	PCB/Patt		Series/Parallel operation availability *2		
iviouei	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			OLIVI-3				NO
LFA75F	Active filter	60-440	1.0	1.0 Thermistor	CEM-3	Yes		Yes	No
LFA75F	Flyback converter	130	1.0			162		165	INO
LFA100F	Active filter	60	1.3	Thermistor	CEM-3		Yes	Yes	No
LFATOUF	Forward converter	140	1.3	Themision	CEIVI-3		res	ies	INO
LFA150F	Active filter	60	2.0	Thermistor	CEM-3		Yes	Yes	No
LFATOUF	Forward converter	140	2.0	Thermistor	CEIVI-3		res	res	INO
LFA240F	Active filter	60	3.3	SCR	CEM-3		Yes	Yes	No
LFAZ4UF	Forward converter	140	ა.ა	SUN	CEIVI-3		res	res	INO
LEAGOOE	Active filter	60	4.1	SCD.	CEM-3		Voc	Yes	No
LFA300F	Forward converter	140	4.1	SCR	U⊏IVI-3		Yes	res	No

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

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