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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Recommended EMI/EMC Filter NAC-04-472

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

\*The EMI/EMC Filter is recommended to connect with several devices.

- 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.

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

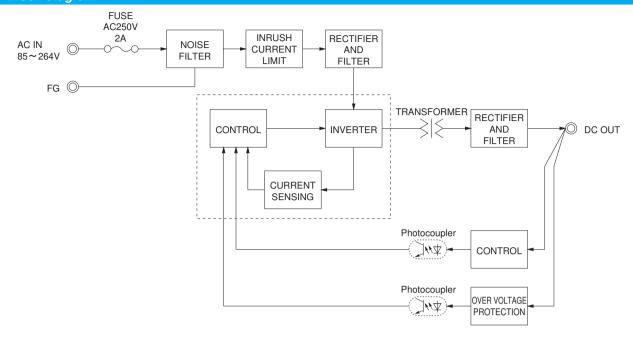
	MODEL		LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24		
	VOLTAGE[V]		AC85 - 264 1 \$\phi\$ (Refer to Instruction Manual 1.1 and 3.2) *3						
	CURRENT[A]	ACIN 100V	0.18typ (lo=100%)	0.26typ (lo=100%)					
	CORNENT[A]	ACIN 200V	0.11typ (lo=100%)						
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
INPUT	EFFICIENCY[%]	ACIN 100V	68.0typ	74.0typ	76.5typ	77.5typ	79.5typ		
	EFFICIENCI[%]	ACIN 200V	68.5typ	76.0typ	79.0typ	80.0typ	83.0typ		
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%)						
	INNUSH CUNNENT[A]	ACIN 200V	30typ (lo=100%)						
	LEAKAGE CURRENT	[mA]	0.15/0.30max (ACIN 10	00V / 240V 60Hz, lo=10	0%, According to IEC60	950-1 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		
	DIDDLET V. 1	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		
		0 to +50°C	120max	120max	150max	150max	150max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0℃	160max	160max	180max	180max	180max		
	**	lo=0 - 35%	240max	240max	300max	300max	320max		
	TEMPEDATURE DECLU ATION(m)/1	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			t voltage between ±10%	5)		
	OUTPUT VOLTAGE SETT	ING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00		
	OVERCURRENT PROTE	CTION	Works over 105% of ra	ting and recovers autom	atically				
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	Not provided					
OTHERS	REMOTE SENSING		Not provided						
	REMOTE ON/OFF		Not provided	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 $\Omega$ min (At Room Temperature)						
	OUTPUT-FG				$00V 50M\Omega$ min (At Room				
	OPERATING TEMP.,HUMID.AND	ALTITUDE				al 3.2), 3,000m (10,000 t	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			EN60065, EN50178 Cor	nplies with DEN-AN			
NOISE	CONDUCTED NOISE		Complies with FCC-B,	VCCI-B, CISPR-B, EN55	5011-B, EN55022-B				
REGULATIONS	HARMONIC ATTENU	ATOR			built-in to active filter) *4				
OTHERS	CASE SIZE/WEIGHT				, , , ,	h chassis & cover : 150g	max)		
	COOLING METHOD		Convection (Refer to In	struction Manual 3.1 and	d 3.2) *3				

- This is the value that measured on measuring board with capacitor of 22 µF at 150mm from output terminal.

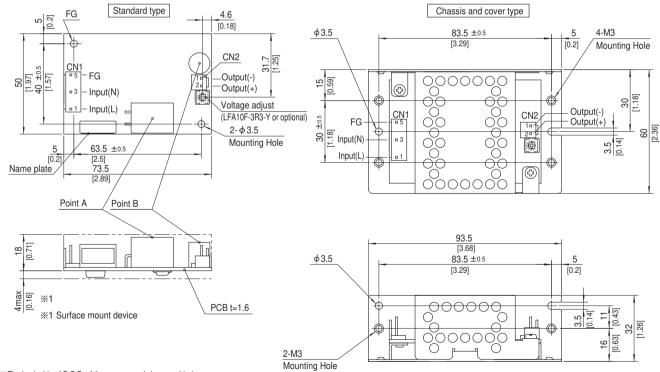
  Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit. Therefore, the internal switch element is intermittent operated, and the Ripple/Ripple Noise specification in load
- factor Io=0-35% is different.
- Please refer to the Instruction Manual 1.7.
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Derating is required.
- When two or more units are operating it may not comply with the IEC61000-3-2.
- Please contact us about dynamic load and input response.
- Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse

# LFA10F | COSEL

# Block diagram



## **External view**



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

I/C	I/O Connector Mating connector		Terminal		
ONIA	1-1123724-3	1-1123722-5	Chain	1123721-1	
CNI	1-1123/24-3	1-1123/22-5	Loose	1318912-1	
ONIO	4 4400700 0	1-1123722-2	Chain	1123721-1	
CN2	1-1123723-2	1-1123/22-2	Loose	1318912-1	
(Mfr:Type Fleetrapies					

(Mfr:Tyco Electronics)

- $\ensuremath{\,\mathbb{X}}$  I/O Connector is Mfr. Tyco Electronics
- $\ \ \, \mbox{\@iff}$  Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

#### <PIN CONNECTION>

CN1					
Input					
AC(L)					
AC(N)					
FG					

	GNZ						
out		Pin No.	Output				
C(L)		1	-V				
S(N)		2	+V				
G							

- \*\* 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



Recommended EMI/EMC Filter NAC-04-472

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

to connect with several devices.

\*The EMI/EMC Filter is recommended

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.

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**

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**RoHS** 

	MODEL		LFA15F-3R3-Y	LFA15F-5	LFA15F-12	LFA15F-15	LFA15F-24	
	VOLTAGE[V]		AC85 - 264 1 $\phi$ (Refer to Instruction Manual 1.1 and 3.2) *3					
	CUDDENTIAL	ACIN 100V	0.24typ (lo=100%)					
	CURRENT[A]	ACIN 200V	0.15typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 440)					
NPUT	EFFICIENCY[%]	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 (lo=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 10	00V / 240V 60Hz, lo=10	0%, According to IEC60	950-1 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[m	ıV] *5	20max	20max	48max	60max	96max	
	LOAD REGULATION[	mV] *5	40max	40max	100max	120max	150max	
	DIDDI FiV1	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	
	٠1	lo=0 - 35%	240max	240max	300max	300max	320max	
	TEMPEDATURE RECUI ATIONSVI	0 to +50°C	50max	50max	120max	150max	240max	
	TEMPERATURE REGULATION[mV]	-10 to +50°C	60max	60max	150max	180max	290max	
	DRIFT[mV]	*2	20max	20max	48max	60max	96max	
	START-UP TIME[ms]		200typ (ACIN 100V, lo=100%) *Start-up time is 700ms typ for less than 1 minute of applying input again from turning off the input voltage					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMENT F	RANGE[V]	2.85 to 3.63	Fixed ("Y"option is ava	ilable for adjusting outpu	ut voltage between ±10%	5)	
	OUTPUT VOLTAGE SETTING[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 ra	ting and recovers autom	atically			
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	
	<b>OPERATING INDICAT</b>	ION	Not provided					
THERS	REMOTE SENSING		Not provided					
	REMOTE ON/OFF		Not provided					
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)					
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)					
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)					
	OPERATING TEMP., HUMID. AND		-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000 feet) max *3					
NVIRONMENT ⊢	STORAGE TEMP., HUMID. AND A	LTITUDE	-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION		, ,	G), 3minutes period, 60r		and Z axis		
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis					
	AGENCY APPROVAL	S		A60950-1), EN60950-1,	· · · · · · · · · · · · · · · · · · ·	mplies with DEN-AN		
	CONDUCTED NOISE			VCCI-B, CISPR-B, EN5				
	HARMONIC ATTENUA	ATOR		00-3-2 (Class A) *6 (Not				
THERS	CASE SIZE/WEIGHT		50×22×87.5mm [1.97	"×0.87×3.44 inches] (V	V×H×D) / 80g max (wi	th chassis & cover : 190g	ı max)	
	COOLING METHOD		Convection (Refer to In	struction Manual 3.1 and	d 3.2) *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

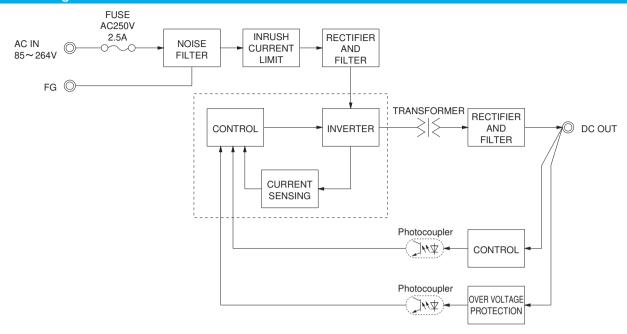
Please refer to the Instruction Manual 1.7.

- 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.

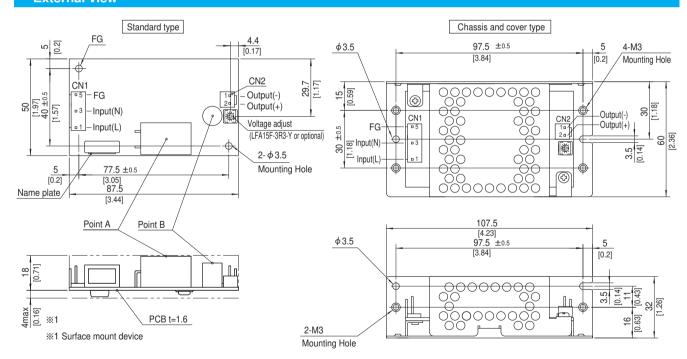
- Please contact us about dynamic load and input response.
- Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
- Derating is required when operated with chassis and cover. Sound noise may be generated by power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

# LFA15F | CO\$EL

# Block diagram



## **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. \*\* Use the spacer of 8mm length or more regarding insulation.
- Wose 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		I/O Connector Mating connector		erminal		
ONIA	1-1123724-3	1-1123722-5	Chain	1123721-1		
CN1	1-1123724-3	1-1123722-5	Loose	1318912-1		
ONIO	4 4400700 0	1-1123722-2	Chain	1123721-1		
CN2 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 5.

#### <PIN CONNECTION>

CN1	
Pin No.	Input
1	AC(L)
2	
3	AC(N)
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.
- $\ensuremath{\,\times\,}$  Mounting torque (Mounting hole of chassis) : 0.6N  $^{\circ}$  m (6.3kgf  $^{\circ}$  cm) max

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**RoHS** 

eco



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

\*The EMI/EMC Filter is recommended to connect with several devices.

- 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.

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

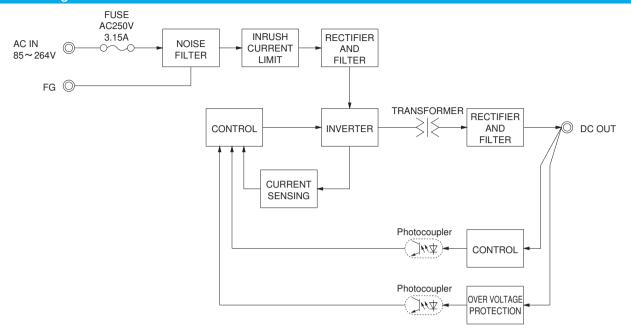
	MODEL		LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24		
	VOLTAGE[V]		AC85 - 264 1 $\phi$ (Refer to Instruction Manual 1.1 and 3.2) *3						
	CUDDENTIAL	ACIN 100V	0.50typ (lo=100%)	0.65typ (lo=100%)					
	CURRENT[A]	ACIN 200V	0.30typ (lo=100%)	0.35typ (lo=100%)					
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
INPUT	EEEIOIENOVIO/1	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	typ (Io=100%) (At cold start) (Ta=25℃)					
	INNUSH CONNENT[A]	ACIN 200V	30typ (Io=100%) (At c	old start) (Ta=25°C)					
	LEAKAGE CURREN	Γ[mA]	0.30 / 0.65max (ACIN	100V / 240V 60Hz, lo	=100%, According to IE	C60950-1 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		
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max		
	rr[vp-p]	-10-0℃ *1	140max	140max	160max	160max	160max		
	RIPPLE NOISE[mVp-p]	0 to +50°C <b>*</b> 1	120max	120max	150max	150max	150max		
OUTPUT	TIII T EE NOISE[IIIVP-P]	-10 - 0℃ *1	160max	160max	180max	180max	180max		
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max		
	TEMP ENATONE NEGOEATION[IIIV]	-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, lo=100%)						
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63	· · ·	, ,	put voltage between ±			
	OUTPUT VOLTAGE SETTING[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		Works over 105% of rating and recovers automatically						
PROTECTION	OVERVOLTAGE PROTE		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		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)						
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)						
	OPERATING TEMP., HUMID. AND		-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max *3						
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		. , , , ,	s, once each X, Y and		0 " " " "			
SAFETY AND									
NOISE	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter) *4						
NEGULATIONS	HARMONIC ATTENU			, , ,					
OTHERS	CASE SIZE/WEIGHT					ax (with chassis & cove	r : 260g max)		
	COOLING METHOD		Convection (Refer to I	nstruction Manual 3.1 a	and 3.2) *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
- $25^\circ\!\!\!\mathrm{C},$  with the input voltage held constant at the rated input/output.
- Derating is required.

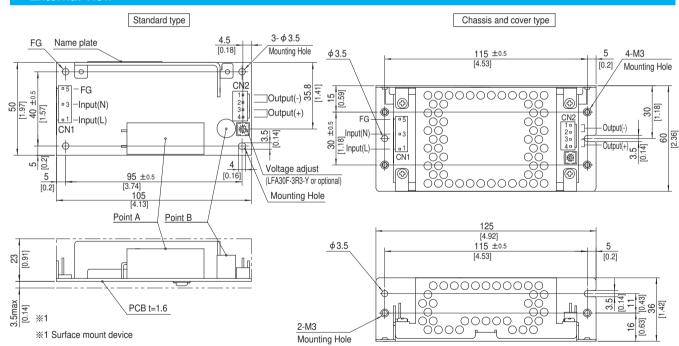
- When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.
- Please contact us about dynamic load and input response. Please contact us about another class.
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is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



# Block diagram



### **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	1 1 1100701 0 1 110070		Chain	1123721-1
CNI	CN1 1-1123724-3	1-1123722-5	Loose	1318912-1
ONIO	4 4400700 4	1-1123722-4	Chain	1123721-1
CN2	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 5.

#### <PIN CONNECTION>

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

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

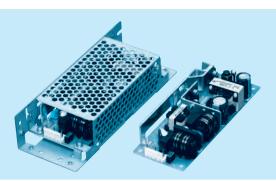
- % Tolerance : ±1 [±0.04]
  % Weight: 130g max (with chassis & cover : 260g max)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- \* Dimensions in mm, [ ]=inches
- Mounting torque (Mounting hole of chassis): 0.6N · m (6.3kgf ·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

CN<sub>2</sub>

<sup>%</sup> Keep drawing current per pin below 5A for CN2.

c Sus 🛕 C E **RoHS** 







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

\*The EMI/EMC Filter is recommended to connect with several devices.

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.

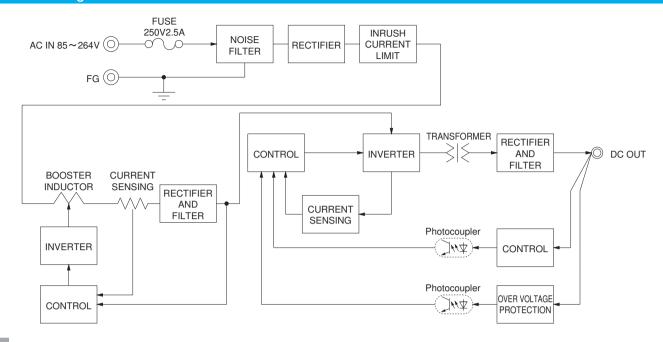
This power supply is manufactured by SMD technology. The stress to P.C.B like twisting or bending causes the defect of the unit, so handle the unit with care.

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 10A	12V 4.3A	15V 3.5A	24V 2.1A	36V 1.4A	48V 1.1A

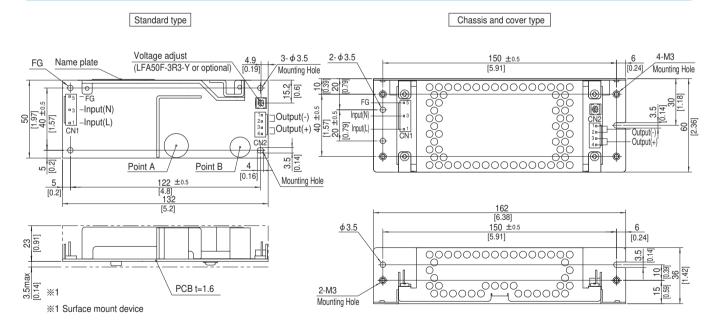
	MODEL		LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48	
	VOLTAGE[V]		AC85 - 264 1 φ		ction Manual 1.1	and 3.2) *3				
	CURRENTIAL	ACIN 100V	0.47typ (lo=100%)	0.67typ (lo=10	0%)					
	CURRENT[A] ACIN 200V		0.27typ (lo=100%)	0.36typ (lo=10	0%)					
	FREQUENCY[Hz]		50 / 60 (47 - 63)	)						
	EEEICIENCVI9/1	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	
	DOWED EACTOR (In 1000())	ACIN 100V	0.96typ	0.97typ					•	
	POWER FACTOR (lo=100%)	ACIN 200V	0.83typ	0.90typ						
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%	(At cold start)	(Ta=25℃)					
	INKUSH CUKKENI[A]	ACIN 200V	30typ (lo=100%	(At cold start)	(Ta=25℃)					
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max	(ACIN 100V / 24	40V 60Hz, lo=10	00%, According	to IEC60950-1 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	
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max	
	MIPPLE[IIIVP-P]	-10 - 0℃ *1	140max	140max	160max	160max	160max	200max	200max	
	DIDDI E NOICE[m//n m]	0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max	
DUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0℃ *1	160max	160max	180max	180max	180max	300max	300max	
	TEMPEDATURE REQUIRATIONSVI	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 1	00V, lo=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 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	recovers automa	atically				
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 $\Omega$ min (At Room Temperature)							
SOLATION	INPUT-FG		AC2,000V 1 minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)							
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)							
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max *3							
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max							
INVINONINLINI	VIBRATION		10 - 55Hz, 19.6	- 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
	IMPACT		196.1m/s <sup>2</sup> (20G	), 11ms, once e	ach X, Y and Z a	ıxis				
SAFETY AND	AGENCY APPROVAL	LS								
NOISE	CONDUCTED NOISE		Complies with F	CC-B, VCCI-B,	CISPR-B, EN55	011-B, EN55022	2-B			
REGULATIONS	HARMONIC ATTENU	JATOR	OR Complies with IEC61000-3-2 (Class A) *5							
OTHERS C	CASE SIZE/WEIGHT		50×26.5×132	mm [1.97×1.04	×5.20 inches] (	W×H×D) / 165	g max (with chas	sis & cover : 325	g max)	
	COOLING METHOD		Convection (Po	for to Inatrication	M	50 × 26.5 × 132mm [1.97 × 1.04 × 5.20 inches] (W × H × D) / 165g max (with chassis & cover : 325g max)  Convection (Refer to Instruction Manual 3.1 and 3.2) *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.

# Block diagram



### **External view**



- % 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.
- Use the spacer of 8mm length or more regarding insulation.
- And do not use press-fitting bush.

1/0	O Connector	Mating connector	Terminal		
ONIA	1-1123724-3	1-1123722-5	Chain	1123721-1	
CIVI	1-1123724-3	1-1123/22-5	Loose	1318912-1	
CNIO	1-1123723-4	1-1123722-4	Chain	1123721-1	
CINZ	1-1123/23-4	1-1123/22-4	Loose	1318912-1	
			(Mfr:Ty	co Electronics)	

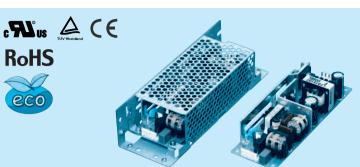
 $\ensuremath{\text{\%}}$  Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

### <PIN CONNECTION>

CN1		CN2	
Pin No.	Input	Pin No.	Outpu
1	AC(L)	1.0	-V
2		1, 2	- V
3	AC(N)	3, 4	+V
4		3, 4	+ V
5	FG		

- \*\* Tolerance : ±1 [±0.04]
- \*\* Weight: 165g max (with chassis & cover: 325g max)
- \* PCB material / thickness : CEM3 / 1.6mm
- \* Optional chassis and cover material : Electric galvanizing steel board.
- Dimensions in mm, [ ]=inches
- \*\* Mounting torque (Mounting hole of chassis) : 0.6N · m (6.3kgf · cm) max

\* Keep drawing current per pin below 5A for CN2.







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

\*The EMI/EMC Filter is recommended to connect with several devices.

- 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.

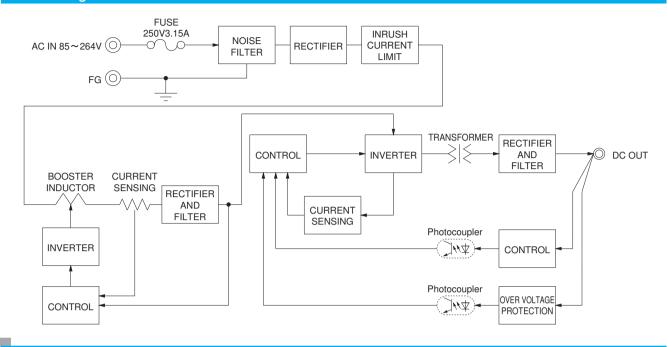
MODEL	LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48
MAX OUTPUT WATTAGE[W]	49.5	75	75.6	75	76.8	75.6	76.8
DC OUTPUT	3.3V 15A	5V 15A	12V 6.3A	15V 5A	24V 3.2A	36V 2.1A	48V 1.6A

I N	MODEL		LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48	
V	VOLTAGE[V]		AC85 - 264 1 φ (Refer to Instruction Manual 1.1 and 3.2) *3							
	OUDDENITIAL	ACIN 100V	0.70typ (lo=100%)	0.70typ (lo=100%)   1.00typ (lo=100%)						
1	CURRENT[A]	ACIN 200V	0.40typ (lo=100%)	0.50typ (lo=100	0%)					
F	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   E	EFFICIENCY[%]	ACIN 200V	75.0typ	80.0typ	83.0typ	83.0typ	84.5typ	84.5typ	84.5typ	
	OWED ELOTOD (L. 4000())	ACIN 100V	0.96typ							
	POWER FACTOR (lo=100%)	ACIN 200V	0.83typ	0.90typ						
Ī.,		ACIN 100V	15typ (lo=100%	(At cold start)	Ta=25℃)					
"	NRUSH CURRENT[A]	ACIN 200V		(At cold start)	<u> </u>					
L	EAKAGE CURREN	T[mA]	, ,	, . , .		00%, According t	o IEC60950-1 an	id DEN-AN)		
	/OLTAGE[V]	• •	3.3	5	12	15	24	36	48	
C	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		40max	40max	100max	120max	150max	240max	240max	
		0 to +50℃ *1	80max	80max	120max	120max	120max	150max	150max	
	RIPPLE[mVp-p]			140max	160max	160max	160max	200max	200max	
		0 to +50°C *1		120max	150max	150max	150max	250max	250max	
OUTPUT R	RIPPLE NOISE[mVp-p]	-10 - 0°C *1	160max	160max	180max	180max	180max	300max	300max	
		0 to +50°C		50max	120max	150max	240max	360max	480max	
TI	TEMPERATURE REGULATION[mV]	-10 to +50°C		60max	150max	180max	290max	450max	600max	
Г	ORIFT[mV]	*2	20max	20max	48max	60max	96max	144max	192max	
_	START-UP TIME[ms]		350typ (ACIN 1			1001110111	100	1	1	
<u> </u>	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 adjusting output voltage between ±10%)							
_	OUTPUT VOLTAGE SET		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			% of rating and			20.00 to 20.00	0 1.00 10 07 100	10.00 10 00.01	
	OVERVOLTAGE PROTE		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	
	OPERATING INDICA		Not provided	0.70 10 7.00	10.00 10 10.00	11120 10 21100	27.00 to 00.00		00.20 (0 07.20	
<u> </u>	REMOTE SENSING		Not provided  Not provided							
_	REMOTE ON/OFF		Not provided							
	NPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)							
<u> </u>	NPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)							
_	OUTPUT-FG		AC500V 1minute, Cutoff current = 10fmA, DC500V 50MΩ min (At Room Temperature)							
	DPERATING TEMP.,HUMID.AND	ΔITITUDE								
S	STORAGE TEMP., HUMID.AND		-10 to +70 C, 20 - 90%RH (Non condensing) (Refer to instruction Manual 3.2), 3,000m (10,000feet) max *3							
$NVIRONMENT \vdash$	VIBRATION	ALITIODE		0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis						
_	MPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis							
	AGENCY APPROVAL	S		· · · · · · · · · · · · · · · · · · ·			78 Complies with	n DFN-AN		
· · · · · · · · · · · · · · · · · · ·	CONDUCTED NOISE				,,			100147114		
	HARMONIC ATTENU	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B  Complies with IEC61000-3-2 (Class A) *5								
(	CASE SIZE/WEIGHT					XHXD) / 230a	max (with chassi	s & cover · 440a	max)	
)THERS ⊢				fer to Instruction			max (with chass)	3 & COVEL . 440g	man)	
	COLING METIOD		CONVECTION (NE	ioi to ilibiliuction	iviariuai J. i allu	U.L) 📆				

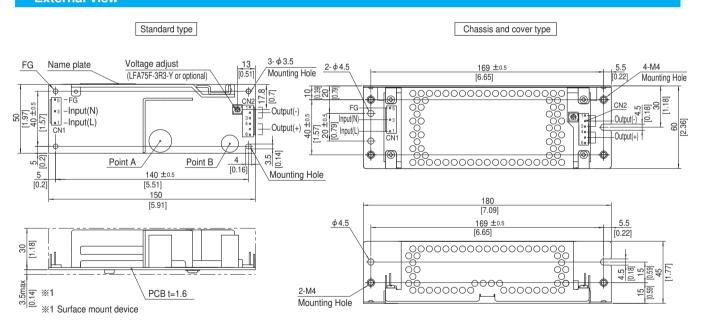
- This is the value that measured on measuring board with capacitor of 22  $\mu\,F$  at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:
- RM103). Drift is the change in DC output for an eight hour period after a half-hour warm-up at
- 25°C, 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.

# LFA75F | COSEL

# Block diagram



### **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.
- \* 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 1100704 0	1 1100700 F	Chain	1123721-1
	CN1 1-1123724-3		1-1123722-3	Loose	1318912-1
	CN2 1-1123723-6		4 4400700 0	Chain	1123721-1
			1-1123/22-0	Loose	1318912-1
				/Mfr:Tv	oo Eleetronice)

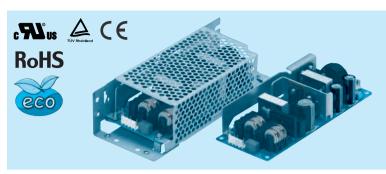
- \* I/O Connector is Mfr. Tyco Electronics
- Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

#### <PIN CONNECTION>

#### CNO CN1 Pin No. Input AC(L) 2 AC(N) 3 FG

CIVE	
Pin No.	Output
1 to 3	-V
4 to 6	+V

- ※ 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



Recommended EMI/EMC Filter NAC-04-472

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

\*The EMI/EMC Filter is recommended to connect with several devices.

 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

Y: with Potentiometer

Please refer to Instruction manual 5.

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.	

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

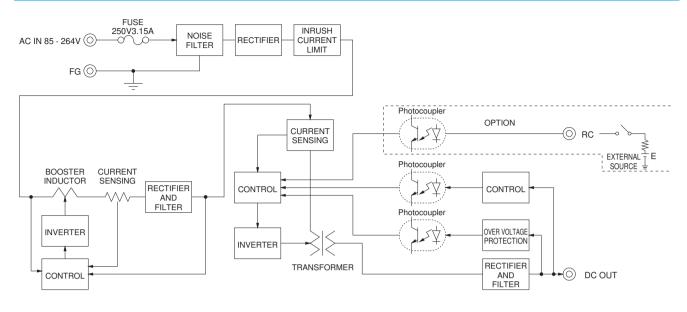
	MODEL		LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-4		
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to Ins	struction Manu	al 1.1 and 3.2)	*4					
	CURRENT[A]	ACIN 100V	0.9typ (lo=100%)   1.3typ (lo=100%)									
	CURRENT[A]	ACIN 200V	0.5typ (lo=100%)									
	FREQUENCY[Hz]	,	50 / 60 (47 - 63)									
	EEEICIENCVI0/1	ACIN 100V	77.0typ	82.0typ	82.0typ	83.0typ	84.0typ	84.0typ	84.0typ	84.5typ		
NPUT	EFFICIENCY[%]	ACIN 200V	79.0typ	84.0typ	84.5typ	85.5typ	87.0typ	87.0typ	87.0typ	87.0typ		
	DOWED FACTOR (In 1000()	ACIN 100V	0.98typ									
	POWER FACTOR (lo=100%)	ACIN 200V	0.92typ	0.95typ								
	INDUCH CUDDENTIAL	ACIN 100V	15typ (lo=100	15typ (Io=100%) (At cold start) (Ta=25°C)								
	INRUSH CURRENT[A]	ACIN 200V	30typ (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	0950-1 and DE	N-AN)			
	VOLTAGE[V]		3.3	5	12	15	24	24	36	48		
	CURRENT[A]	*5	20	20	8.5	6.7	4.3	4.3 (Peak 5.4)	2.8	2.1		
	LINE REGULATION[mV] *7		20max	20max	48max	60max	96max	96max	144max	192max		
	LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max		
	RIPPLE[mVp-p]	0 to +50°C *2	80max	80max	120max	120max	120max	240max	150max	150max		
	піг г шіпур-рі	-10-0℃ *2	140max	140max	160max	160max	160max	320max	200max	200max		
OUTPUT	RIPPLE NOISE[mVp-p]	0 to +50℃ *2	120max	120max	150max	150max	150max	300max	250max	250max		
	RIPPLE NOISE[IIIVP-P]	-10-0°C *2	160max	160max	180max	180max	180max	360max	300max	300max		
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max	240max	360max	480max		
	TEMPERATURE REGULATION[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	350typ (ACIN 100V, Io=100%)									
	HOLD-UP TIME[ms] 20		20typ (ACIN 100V, lo=100%)									
	OUTPUT VOLTAGE ADJUSTMENT	RANGE[V]	2.85 to 3.63	4.50 to 5.50	Fixed ("Y"opti	on is available	for adjusting of	output voltage)				
	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	5.00 to 5.15	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.0		
	OVERCURRENT PROT	ECTION	Works over 1	05% of rating (	works over 10	1% of peak cur	rent at option -	H) and recove	rs automaticall	у		
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	27.60 to 33.60	41.40 to 50.40	55.20 to 67.2		
	OPERATING INDICA	TION	Not provided									
THERS	REMOTE SENSING		Not provided									
	REMOTE ON/OFF		Option (Refer	to Instruction	Manual)							
	INPUT-OUTPUT-RC	*6			current = 10mA							
SOLATION	INPUT-FG		AC2,000V 1m	ninute, Cutoff o	current = 10mA	, DC500V 50M	$I\Omega$ min (At Roo	om Temperatur	e)			
DOLATION	OUTPUT-RC-FG	*6	AC500V 1mir	ute, Cutoff cur	rrent = $25mA$ , [	DC500V 50MΩ	min (At Room	n Temperature)	1			
	OUTPUT-RC	*6	AC100V 1mir	ute, Cutoff cur	rrent = 25mA, [	OC100V 10MΩ	min (At Room	n Temperature)				
	OPERATING TEMP., HUMID. AND	ALTITUDE *4							n (10,000feet) r	max		
NVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C,	20 - 90%RH (	Non condensin	g), 9,000m (30	,000feet) max					
WINONWENT	VIBRATION		10 - 55Hz, 19	.6m/s² (2G), 3ı	minutes period	, 60minutes ea	ch along X, Y a	and Z axis				
	IMPACT				e each X, Y an							
AFETY AND	AGENCY APPROVAL	_S			50-1), EN6095			nplies with DE	N-AN			
OISE	CONDUCTED NOISE		Complies with	FCC-B, VCC	I-B, CISPR-B, I	EN55011-B, EI	N55022-B					
EGULATIONS	HARMONIC ATTENU	IATOR		1EC61000-3-								
THERS	CASE SIZE/WEIGHT		62×33.5×15	55mm [2.44 × 1	.32×6.10 inch	nes] (W×H×D	) / 280g max (	with chassis &	cover : 480g m	ıax)		
	COOLING METHOD			Refer to Instruct								

- \*1 Specification is changed at option, refer to Instruction Manual.
- \*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
- 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.
- \*7 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.

# LFA100F | COSEL

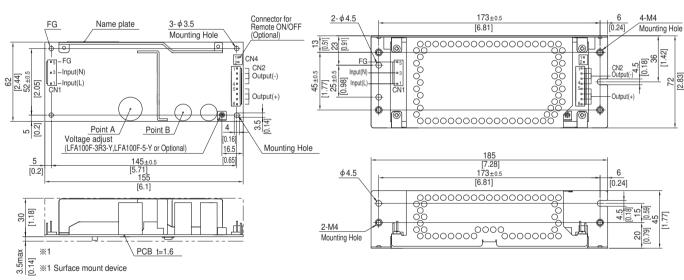
# Block diagram



#### **External view**

\* External size of option is different from standard model.

Standard type Chassis and cover type



- % 4 Mounting holes are existing.
- $\ensuremath{\,\times\,}$  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.
- \* 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.

1/0	O Connector	Mating connector	Terminal		
CNI	1-1123724-3	1-1123722-5	Chain	1123721-1	
CIVI	1-1123724-3	1-1123722-5	Loose	1318912-1	
ONIC	1-1123723-8	1-1123722-8	Chain	1123721-1	
CINZ	1-1123723-8	1-1123722-8	Loose	1318912-1	
		(Mfr:Ty	co Electronics)		

\* I/O Connector is Mfr. Tyco Electronics

- \* Option:-J1:VH(J.S.T) connector type.

#### <PIN CONNECTION>

#### CN1 Pin No. Inp AC(I AC(I 3 FG

	CN2	
ut	Pin No.	Output
L)	1 to 4	-V
N)	5 to 8	+V
; —		

- % 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

c Sus Livrheinsed CE **RoHS** eco

Recommended EMI/EMC Filter NAC-04-472

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

\*The EMI/EMC Filter is recommended to connect with several devices.

 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

Y: with Potentiometer

Please refer to Instruction manual 5.

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.

MODEL	LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-24	LFA150F-24-H	LFA150F-36	LFA150F-48
MAX OUTPUT WATTAGE[W] *5	99	150	150	150	151.2	151.2 (189.6)	151.2	153.6
DC OUTPUT *5	3.3V 30A	5V 30A	12V 12.5A	15V 10A	24V 6.3A	24V 6.3 (7.9)A	36V 4.2A	48V 3.2A

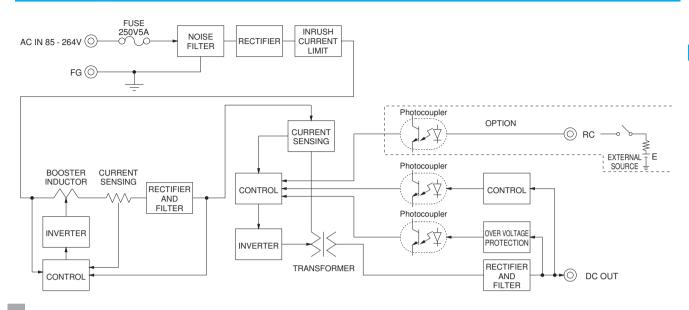
	MODEL		LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-24	LFA150F-24-H	LFA150F-36	LFA150F-4		
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to Ins	struction Manu	al 1.1 and 3.2)	*4					
	CURRENT[A]	ACIN 100V	1.4typ (lo=100%) 2.0typ (lo=100%)									
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%) 1.0typ (lo=100%)									
	FREQUENCY[Hz]		50 / 60 (47 - 63)									
	EFFICIENCY[0/]	ACIN 100V	80.0typ	82.5typ	82.5typ	84.0typ	85.0typ	85.0typ	85.0typ	85.5typ		
NPUT	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									
	POWER FACTOR (lo=100%)	ACIN 200V	0.92typ 0.95typ									
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100	)%) (At cold sta	ırt) (Ta=25°C)							
	INNUSTI CUNNENT[A]	ACIN 200V	30typ (lo=100%) (At cold start) (Ta=25 $^{\circ}$ C)									
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC60950-1 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	I[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max		
	RIPPLE[mVp-p]	0 to +40°C *2	80max	80max	120max	120max	120max	240max	150max	150max		
	IIII I EE[IIIVP-P]	-10 - 0℃ *2		140max	160max	160max	160max	320max	200max	200max		
	RIPPLE NOISE[mVp-p]		120max	120max	150max	150max	150max	300max	250max	250max		
OUTPUT 1	TILL TEE HOIOE[IIIVP P]	-10-0℃ *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]	350typ (ACIN 100V, Io=100%)										
			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											
	OUTPUT VOLTAGE SET		3.30 to 3.40	l	11.50 to 12.50		23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.0		
	OVERCURRENT PROT	_				<del></del>		H) and recove				
ROTECTION	OVERVOLTAGE PROTI		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 67.2		
THERS	OPERATING INDICA	IIION	Not provided									
JIHENS	REMOTE SENSING		Not provided Option (Refer to Instruction Manual)									
	REMOTE ON/OFF	40	<del>' ' '</del>			DOEGOV FON	IO min (At Da	T	-)			
	INPUT-OUTPUT-RC INPUT-FG	*6						om Temperatur				
SOLATION	OUTPUT-RC-FG	*6	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)  AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)									
	OUTPUT-RC	*6					2 min (At Roon					
	OPERATING TEMP., HUMID. AND						<u> </u>	al 3.2), 3,000m	(10 000feet)	may		
	STORAGE TEMP., HUMID. AND						),000feet) max		1 (10,0001661) 1	Παλ		
NVIRONMENT	VIBRATION	ALIIIODE					ch along X, Y					
	IMPACT				e each X, Y ar		3.0					
AFETY AND	-						EN50178 Cor	nplies with DEI	N-AN			
IOISE	CONDUCTED NOISE				I-B, CISPR-B,							
REGULATIONS				1EC61000-3-								
	CASE SIZE/WEIGHT					es] (WXHXD)	/ 390g max (w	ith chassis & c	over : 650g ma	ıx)		
THERS	COOLING METHOD				tion Manual 3.		, coog max (w	31140010 W 0	5.51 . 555g IIIC	···,		
4.4 0	on is changeed at option, refer			at the rated input/or			<b>∜</b> 0 Plane	se contact us about	anathar alasa			

- 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.
- \*7 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.

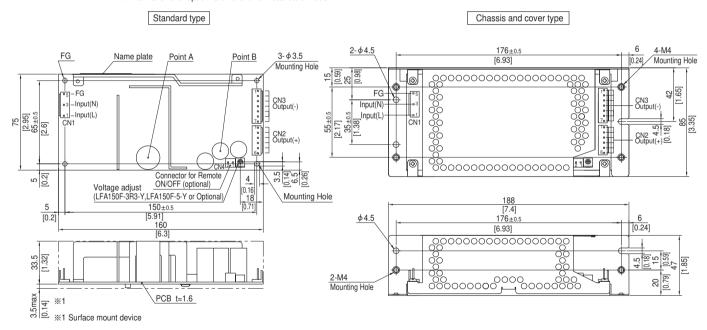


# Block diagram



#### **External view**

\* External size of option is different from standard model.



- % 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. \* Use the spacer of 8mm length or more regarding insulation.
- And do not use press-fitting bush.
- \* Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/C	Connector	Mating connector	Terminal		
CNI	1-1123724-3	1-1123722-5	Chain	1123721-1	
CIVI	1-1123724-3	1-1123/22-5	Loose	1318912-1	
0110	1-1123723-6	1-1123722-6	Chain	1123721-1	
CINZ	1-1123/23-6	1-1123/22-0	Loose	1318912-1	
CNIO	1-1123723-7	1-1123722-7	Chain	1123721-1	
CN3	1-1123/23-/	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>

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					
W 14		 		21.0	ONIO	

- ※ 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

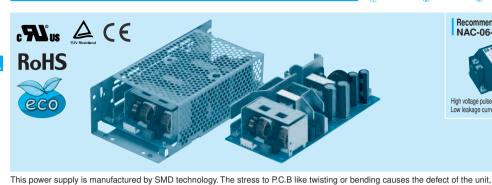
CN4 Option (Mfr:J.S.T)

PIN No.	Contents
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





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

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 5.

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**

so handle the unit with care.

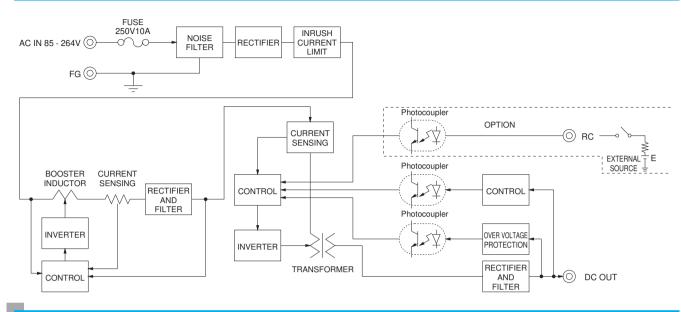
	MODEL		LFA240F-24	LFA240F-24-H	LFA240F-36	LFA240F-48					
	VOLTAGE[V]		AC85 - 264 1 ¢ (Refer to Instruction Manual 1.1 and 3.2) *4 3.3typ (Io=100%)								
	CURRENTIAL	ACIN 100V									
	CURRENT[A]	ACIN 200V	1.7typ (lo=100%)								
	FREQUENCY[Hz]		50 / 60 (47 - 63)								
	EEEIOIENOVIO/1	ACIN 100V	84.5typ	84.5typ	84.5typ	84.5typ					
IPUT	EFFICIENCY[%]	ACIN 200V	87.5typ	87.5typ	87.5typ	87.5typ					
	DOWED FACTOR (In 4000())	ACIN 100V	0.99typ								
	POWER FACTOR (lo=100%)	ACIN 200V	0.95typ								
	INDUCUI QUIDDENTIAL	ACIN 100V	15 / 30typ (Io=100%) (Prim	15 / 30typ (lo=100%) (Primary inrush current /Secondary inrush current) (More then 3 sec. to re-start)							
	INRUSH CURRENT[A]	ACIN 200V	30 / 30typ (Io=100%) (Prim	ary inrush current /Second	lary inrush current) (More	then 3 sec. to re-start)					
	LEAKAGE CURREN	T[mA]	0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC60950-1 and DEN-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					
	DIDDI E[m\/n n³	0 to +40°C *2	120max	240max	150max	150max					
	RIPPLE[mVp-p]	-10 - 0°C *2	160max	320max	200max	200max					
ОИТРИТ	RIPPLE NOISE[mVp-p]	0 to +40°C *2	150max	300max	250max	250max					
	RIPPLE NOISE[IIIVP-P]	-10 - 0°C *2	180max	360max	300max	300max					
	TEMPERATURE REGULATION[mV]	0 to +40°C	240max	240max	360max	480max					
	TEMPERATURE REGULATION[IIIV]	-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	current at option -H) and	recovers automatically					
ROTECTION	OVERVOLTAGE PROTE	ECTION	27.60 to 33.60	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		Option (Refer to Instruction	Manual)							
	INPUT-OUTPUT-RC	*6	AC3,000V 1minute, Cutoff	current = 10mA, DC500V 5	$50 \mathrm{M}\Omega$ min (At Room Tem	perature)					
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)								
OLATION	OUTPUT-RC-FG	*6	AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)								
	OUTPUT-RC	*6	AC100V 1minute, Cutoff cu	rrent = 25mA, DC100V 10	MΩ min (At Room Tempe	erature)					
	OPERATING TEMP., HUMID. AND	ALTITUDE *4	-10 to +70°C, 20 - 90%RH (	(Non condensing) (Refer to	Instruction Manual 3.2),	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								
A V IN O IN WILLIN I	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3	minutes period, 60minutes	s each along X, Y and Z a	xis					
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis								
AFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-UL (CSA609	950-1), EN60950-1, EN600	65, EN50178 Complies v	vith DEN-AN					
OISE	CONDUCTED NOISE		Complies with FCC-B, VCC	I-B, CISPR-B, EN55011-B	s, EN55022-B						
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with IEC61000-3-								
OTHERS	CASE SIZE/WEIGHT		84×46.5×180mm [3.31×	1.83 × 7.09 inches] (W × H	XD) / 550g max (with cha	assis & cover : 880g max)					
THENS	<b>COOLING METHOD</b>		Convection (Refer to Instru	ction Manual 3.1 and 3.2)	*4						

- \*1 Specification is changeed at option, refer to Instruction Manual. \*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).
- 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.
- \*7 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.

# LFA240F | COSEL

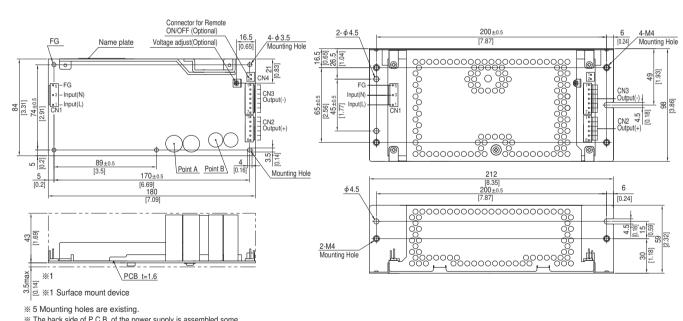
# Block diagram



#### **External view**

\* External size of option is different from standard model.

Standard type Chassis and cover type



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

	I/O Connector		Mating connector	Terminal			
ŀ	CNI	1-1123724-3	1-1123722-5	Chain	1123721-1		
	CIVI	1-1123724-3	1-1123722-5	Loose 1318912- Chain 1123721- Loose 1318912- Chain 1123721-	1318912-1		
	CNO	1-1123723-6	1-1123722-6	Chain	1123721-1		
	CIN2		1-1123722-6	Loose	1318912-1		
	0.10	4 4400700 7	1-1123722-7	Chain	1123721-1		
	CN3	1-1123723-7	1-1123722-7	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							

- % 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

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

**RoHS** ec0



Recommended EMI/EMC Filter NAC-06-472

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

(1) Series name
(2) Single output
(3) Output wattage
(4) Universal input
(5) Output voltage
(6) Optional \*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 (Tyco Electronics) connector type
(Except 3.3V and 5V)
H: VH (J.S.T.) connector type
(Except 3.3V and 5V)
R: with Remote ON/OFF
S: with Chassis
SNF: with Chassis & cover & fan
(Only 5V, 12V and 24V)
T1: Hollizontal terminal block
Please refer to Instruction manual 5.

Please refer to Instruction manual 5.

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.

MODEL	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]		AGE[W] *5	198	300	324	330	336	336 (456)	330	338.4	336
DO OUTDI	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
DC OUTPO		Forced air	3.3V 60A	5V 60A	12V 27A	15V 22A	24V 14A	24V 14 (19)A	30V 11A	36V 9.4A	48V 7A

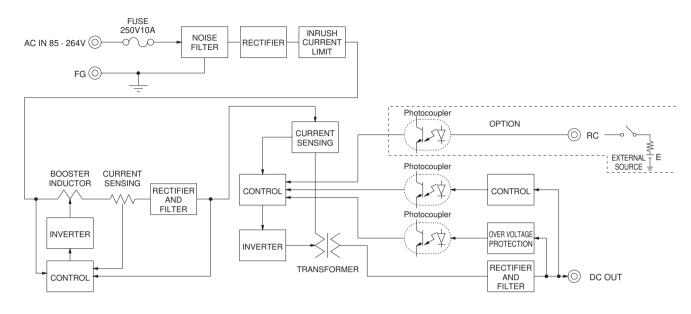
	MODEL		LFA300F-3R3-TY	LFA300F-5-TY	LFA300F-12-TY	LFA300F-15-TY	LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-TY	LFA300F-36-TY	LFA300F-48-T\		
	VOLTAGE[V]		AC85 - 264	1φ (Refer to	Instruction N	Manual 1.1 ar	nd 3.2) *4						
	CURRENT[A]	ACIN 100V											
	CONNENTIAL	ACIN 200V	1.4typ (lo=100%)	2.0typ (lo=1	00%)								
	FREQUENCY[Hz]		50 / 60 (47	- 63)									
	EFFICIENCY[0/]	ACIN 100V	75.0typ	79.0typ	80.0typ	81.5typ	85.0typ	85.0typ	85.5typ	85.5typ	85.5typ		
NPUT	EFFICIENCY[%]	ACIN 200V	77.0typ	82.5typ	83.0typ	84.5typ	88.0typ	88.0typ	88.0typ	88.0typ	88.0typ		
	DOMED ELOTOD (L. 1000)	ACIN 100V	0.98typ	0.99typ									
	POWER FACTOR (lo=100%)	ACIN 200V	0.92typ	0.95typ									
	INDUCUI OUDDENITIAL	ACIN 100V	15 / 30typ (lo=100%) (Primary inrush current /Secondary inrush current) (More then 3 sec. to re-start)										
	INRUSH CURRENT[A]	ACIN 200V	30 / 30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More then 3 sec. to re-start)										
	LEAKAGE CURRENT[mA]		0.45 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC60950-1 and DEN-AN)										
	VOLTAGE[V]		3.3	5	12	15	24	24	30	36	48		
		Convection	40	40	17	14	12.5	12.5 (Peak19)	10	8.4	6.3		
	CURRENT[A] *5	Forced air	60	60	27	22	14	14 (Peak19)	11	9.4	7		
	LINE REGULATION	mV] *7	20max	20max	48max	60max	96max	96max	144max	144max	192max		
	LOAD REGULATION		40max	40max	100max	120max	150max	150max	240max	240max	240max		
		0 to +40°C *2	80max	80max	120max	120max	120max	240max	150max	150max	150max		
	RIPPLE[mVp-p]	-10 - 0°C *2	140max	140max	160max	160max	160max	320max	200max	200max	200max		
		0 to +40°C *2	120max	120max	150max	150max	150max	300max	250max	250max	250max		
DUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	300max		
		0 to +40℃	50max	50max	120max	150max	240max	240max	360max	360max	480max		
	TEMPERATURE REGULATION[mV]	-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]		20typ (ACIN	typ (ACIN 100V, Io=100%)									
	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 52.8		
	OUTPUT VOLTAGE SETTING		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			48.00 to 49.9		
	OVERCURRENT PROT												
PROTECTION	N OVERVOLTAGE PROTECTION		4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	34.50 to 42.00	41.40 to 50.40	55.20 to 67.2		
	OPERATING INDICA	Not provided											
OTHERS	REMOTE SENSING	Not provided											
	REMOTE ON/OFF		Option (Refer to Instruction Manual)										
	INPUT-OUTPUT-RC	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)											
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)											
ISOLATION	OUTPUT-RC-FG	*6	AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)										
	OUTPUT-RC	*6	AC100V 1minute, Cutoff current = 25mA, DC100V 10M $\Omega$ min (At Room Temperature)										
	OPERATING TEMP., HUMID. AND	ALTITUDE *4											
	STORAGE TEMP., HUMID. AND ALTITUDE -20 to +			20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max									
ENVIRONMENT	VIBRATION 10 - 55Hz			0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis									
	IMPACT	196.1m/s² (20G), 11ms, once each X, Y and Z axis											
SAFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN										
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B											
-		Complies with IEC61000-3-2 (Class A) *8											
NOISE		JATOR	Complies w	ith IEC61000	-3-2 (Class A	<b>4) *</b> 8							
NOISE						A) *8 es] (W×H×D)	(without termin	nal block) / 810	g max (with ch	assis & cover :	1,270g max		

- \*1 Specification is changeed at option, refer to Instruction Manual.
- \*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
- 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.
- \*7 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.

# LFA300F | COSEL

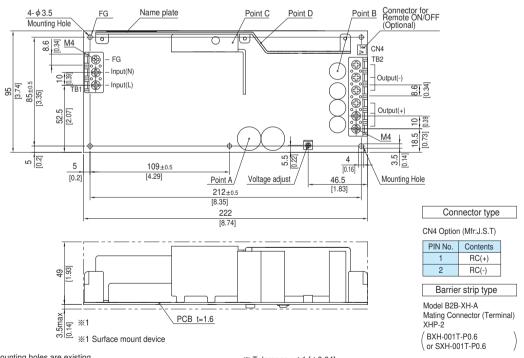
# Block diagram



#### **External view**

\* External size of option is different from standard model.

### Standard type



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