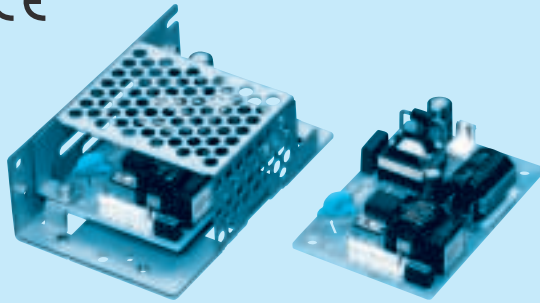


LFA10F

① LF ② A ③ 10 ④ F ⑤ -□ ⑥ -□



Recommended Noise Filter
NAC-04-472



High voltage pulse noise type : NAP series
Low leakage current type : NAM series
*The Noise Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional
- C : with Coating
- G : Low leakage current
- J1 : VH(J.S.T.)connector type
- S : with Chassis
- SI : 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

SPECIFICATIONS

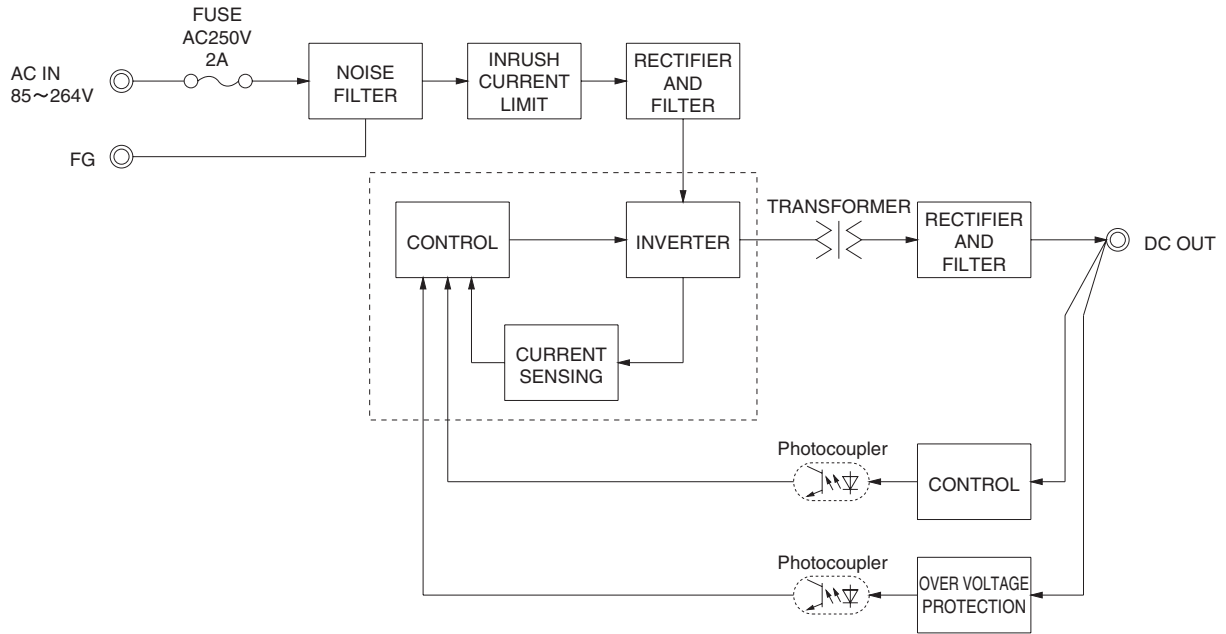
	MODEL	LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ (Refer to Instruction Manual 1.1 and 3.2) *3					
	CURRENT[A]	ACIN 100V	0.18typ (Io=100%)	0.26typ (Io=100%)			
		ACIN 200V	0.11typ (Io=100%)	0.16typ (Io=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 440)					
	EFFICIENCY[%]	ACIN 100V	68.0typ	74.0typ	76.5typ	77.5typ	79.5typ
		ACIN 200V	68.5typ	76.0typ	79.0typ	80.0typ	83.0typ
INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%)					
	ACIN 200V	30typ (Io=100%)					
LEAKAGE CURRENT[ma]	0.15/0.30max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)						
OUTPUT	VOLTAGE[V]	3.3	5	12	15	24	
	CURRENT[A]	2.0	2.0	0.9	0.7	0.5	
	LINE REGULATION[mV]	20max	20max	48max	60max	96max	
	LOAD REGULATION[mV]	40max	40max	100max	120max	150max	
	RIPPLE[mVp-p]	0 to +50°C	80max	80max	120max	120max	120max
		-10 - 0°C	140max	140max	160max	160max	160max
		Io=0 - 35%	190max	160max	240max	240max	280max
	RIPPLE NOISE[mVp-p]	0 to +50°C	120max	120max	150max	150max	150max
		-10 - 0°C	160max	160max	180max	180max	180max
		Io=0 - 35%	240max	240max	300max	300max	320max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max
		-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 RANGE[V]	2.85 to 3.63		Fixed ("Y" option is available for adjusting output voltage between ±10%)				
OUTPUT VOLTAGE SETTING[V]	3.30 to 3.40		4.90 to 5.30		11.50 to 12.50	14.40 to 15.60	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically					
	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	
	OPERATING INDICATION	Not provided					
	REMOTE SENSING	Not provided					
	REMOTE ON/OFF	Not provided					
ISOLATION	INPUT-OUTPUT	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max *3					
	STORAGE TEMP.,HUMID.AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (At only AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B					
	CE MARKING	Low Voltage Directive, EMC Directive					
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (Not built-in to active filter *4)					
OTHERS	CASE SIZE/WEIGHT	50×22×73.5mm (W×H×D) / 55g max (without chassis and cover)					
	COOLING METHOD	Convection					

*1 This is the value that measured on measuring board with capacitor of 22μF 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.
*2 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.
*3 When two or more units are operating it may not

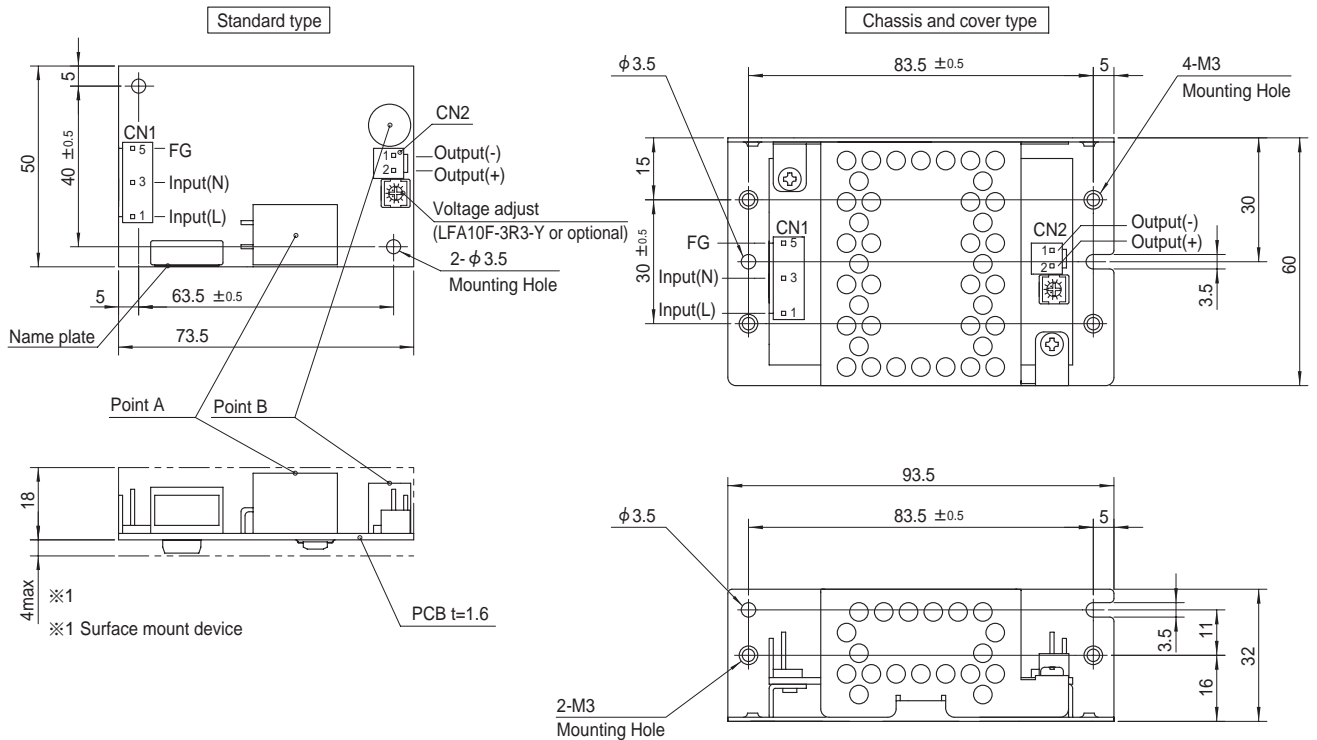
comply with the IEC61000-3-2. Please contact us for details.
*4 To meet the specifications. Do not operate over-loaded condition. Parallel operation is not possible. Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse load.

Block diagram



LFA

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.

※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector	Mating connector	Terminal
CN1	1-1123724-3	Chain 1123721-1
		Loose 1318912-1
CN2	1-1123723-2	Chain 1123721-1
		Loose 1318912-1

(Mfr:Tyco Electronics AMP)

※ I/O Connector is Mfr. Tyco Electronics AMP

※ 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

※ Weight : 55g max (without chassis and cover)

※ PCB material / thickness : CEM3 / 1.6mm

※ Optional chassis and cover material : Electric galvanizing steel board.

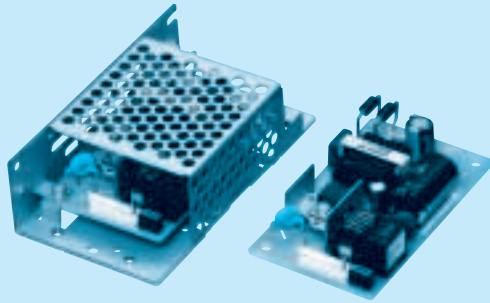
※ Dimensions in mm

※ Mounting torque (Mounting hole of chassis) : 0.6N · m (6.3kgf · cm) max

LFA15F

LF A 15 F - □ - □

① ② ③ ④ ⑤ ⑥



**Recommended Noise Filter
NAC-04-472**



High voltage pulse noise type : NAP series
Low leakage current type : NAM series
*The Noise Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional
- C : with Coating
- G : Low leakage current
- J1 : VH(J.S.T.)connector type
- S : with Chassis
- SI: 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

	MODEL	LFA15F-3R3-Y	LFA15F-5	LFA15F-12	LFA15F-15	LFA15F-24	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ (Refer to Instruction Manual 1.1 and 3.2) *3					
	CURRENT[A]	ACIN 100V	0.24typ (Io=100%)	0.35typ (Io=100%)			
		ACIN 200V	0.15typ (Io=100%)	0.20typ (Io=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 440)					
	EFFICIENCY[%]	ACIN 100V	68.0typ	73.0typ	76.0typ	77.0typ	78.0typ
		ACIN 200V	69.0typ	76.0typ	78.5typ	80.0typ	81.5typ
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)				
ACIN 200V		30typ (Io=100%) (At cold start) (Ta=25°C)					
LEAKAGE CURRENT[ma]	0.15/0.30max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)						
OUTPUT	VOLTAGE[V]	3.3	5	12	15	24	
	CURRENT[A]	3.0	3.0	1.3	1.0	0.7	
	LINE REGULATION[mV]	20max	20max	48max	60max	96max	
	LOAD REGULATION[mV]	40max	40max	100max	120max	150max	
	RIPPLE[mVp-p]	0 to +50°C	80max	80max	120max	120max	120max
		-10 - 0°C	140max	140max	160max	160max	160max
		Io=0 - 35%	190max	160max	240max	240max	280max
	RIPPLE NOISE[mVp-p]	0 to +50°C	120max	120max	150max	150max	150max
		-10 - 0°C	160max	160max	180max	180max	180max
		Io=0 - 35%	240max	240max	300max	300max	320max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max
		-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 RANGE[V]	2.85 to 3.63 Fixed ("Y" option is available for adjusting output voltage between ±10%)						
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		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically					
	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	
	OPERATING INDICATION	Not provided					
	REMOTE SENSING	Not provided					
ISOLATION	REMOTE ON/OFF	Not provided					
	INPUT-OUTPUT	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	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 CURVE), 3,000m (10,000 feet) max *3					
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
	AGENCY APPROVALS (At only AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B					
	CE MARKING	Low Voltage Directive, EMC Directive					
OTHERS	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (Not built-in to active filter *4)					
	CASE SIZE/WEIGHT	50×22×87.5mm (W×H×D) / 80g max (without chassis and cover)					
	COOLING METHOD	Convection					

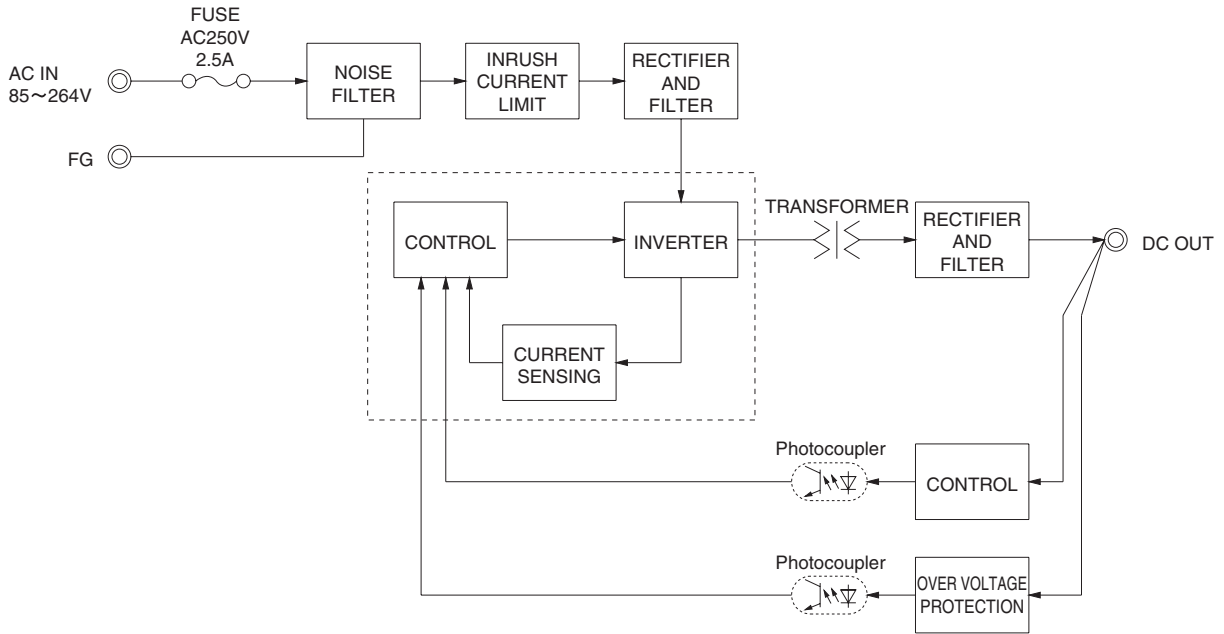
*1 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit. Therefore, the internal switch element is intermittent operated, and the Ripple/Ripple Noise specification in load factor Io=0-35% is different. Please refer to the Instruction Manual 1.7.

*2 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.

*3 When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

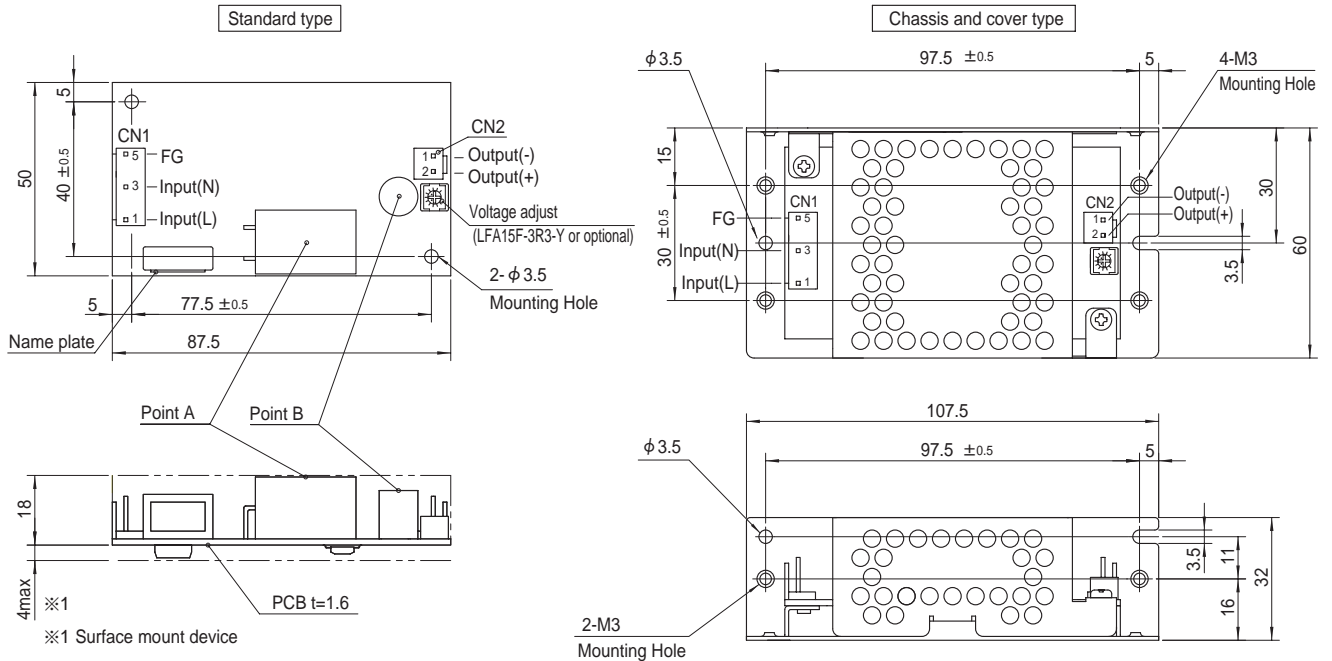
*4 To meet the specifications. Do not operate over-loaded condition. Parallel operation is not possible. Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse load.

Block diagram



LFA

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.
- ※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

I/O Connector	Mating connector	Terminal
CN1	1-1123722-5	Chain 1123721-1
		Loose 1318912-1
CN2	1-1123722-2	Chain 1123721-1
		Loose 1318912-1

(Mfr:Tyco Electronics AMP)

- ※ I/O Connector is Mfr. Tyco Electronics AMP
- ※ 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

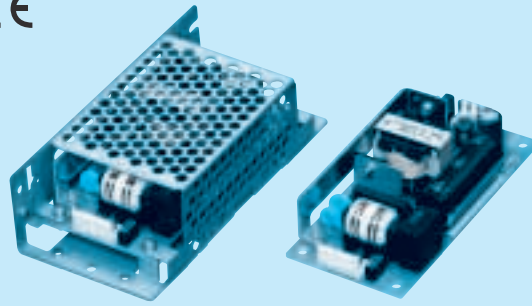
Pin No.	Output
1	-V
2	+V

- ※ Tolerance : ±1
- ※ Weight : 80g max (without chassis and cover)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm
- ※ Mounting torque (Mounting hole of chassis) : 0.6N · m (6.3kgf · cm) max

LFA30F

LF A 30 F - □ - □

① ② ③ ④ ⑤ ⑥



**Recommended Noise Filter
NAC-04-472**



High voltage pulse noise type : NAP series
Low leakage current type : NAM series
*The Noise Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional
- C : with Coating
- G : Low leakage current
- J1 : VH(J.S.T.)connector type
- S : with Chassis
- SI: 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

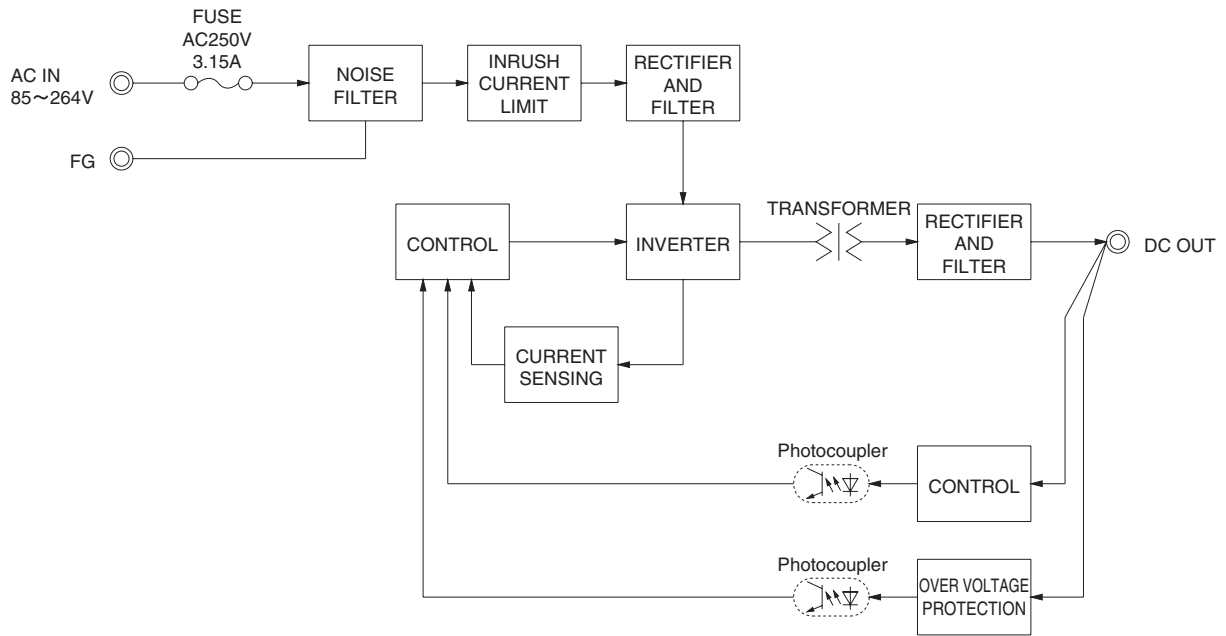
SPECIFICATIONS

	MODEL	LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24	
INPUT	VOLTAGE[V]	AC85 - 264 1φ (Refer to Instruction Manual 1.1 and 3.2) *3					
	CURRENT[A]	ACIN 100V	0.50typ (Io=100%)	0.65typ (Io=100%)			
		ACIN 200V	0.30typ (Io=100%)	0.35typ (Io=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 440)					
	EFFICIENCY[%]	ACIN 100V	73typ	76typ	79typ	81typ	82typ
		ACIN 200V	75typ	79typ	81typ	83typ	84typ
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)				
ACIN 200V		30typ (Io=100%) (At cold start) (Ta=25°C)					
LEAKAGE CURRENT[mA]	0.30 / 0.65max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)						
OUTPUT	VOLTAGE[V]	3.3	5	12	15	24	
	CURRENT[A]	6.0	6.0	2.5	2.0	1.3	
	LINE REGULATION[mV]	20max					
	LOAD REGULATION[mV]	40max					
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max
		-10 -0°C *1	140max	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max
		-10 -0°C *1	160max	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max
		-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 available for adjusting output voltage between ±10%)						
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	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically					
	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	
	OPERATING INDICATION	Not provided					
	REMOTE SENSING	Not provided					
	REMOTE ON/OFF	Not provided					
ISOLATION	INPUT-OUTPUT	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)					
	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)					
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max *3					
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (At only AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN					
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B					
	CE MARKING	Low Voltage Directive, EMC Directive					
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (Not built-in to active filter *4)					
OTHERS	CASE SIZE/WEIGHT	50×26.5×105mm (W×H×D) / 130g max (without chassis and cover)					
	COOLING METHOD	Convection					

*1 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).
*2 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.
*3 Derating is required.

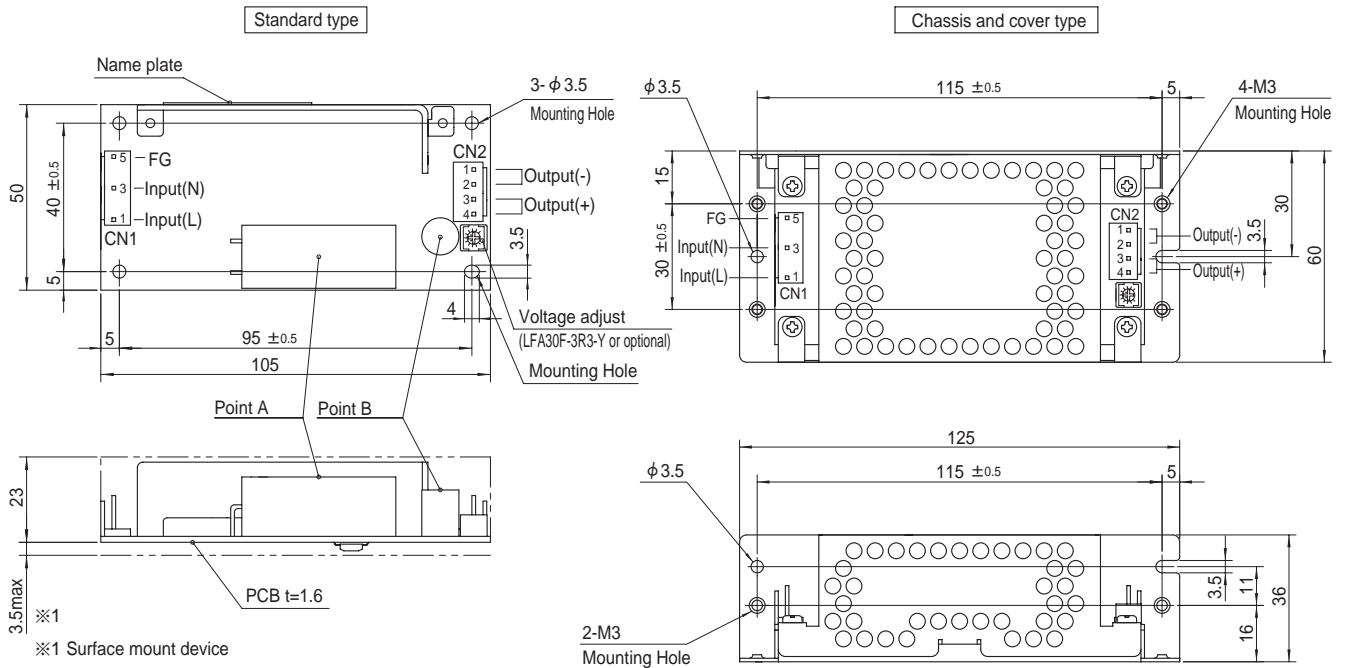
*4 When two or more units are operating it may not comply with the IEC61000-3-2.
Please contact us for details.
* To meet the specifications. Do not operate over-loaded condition.
* Parallel operation is not possible.
* Derating is required when operated with chassis and cover.
* Sound noise may be generated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

Block diagram



LFA

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
CN1	1-1123724-3	Chain 1123721-1
		Loose 1318912-1
CN2	1-1123723-4	Chain 1123721-1
		Loose 1318912-1

(Mfr:Tyco Electronics AMP)

- ※ I/O Connector is Mfr. Tyco Electronics AMP
- ※ 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, 2	-V
3, 4	+V

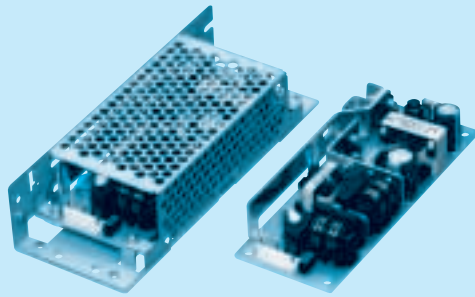
- ※ Tolerance : ±1
- ※ Weight : 130g max (without chassis and cover)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm
- ※ Mounting torque (Mounting hole of chassis) : 0.6N · m (6.3kgf · cm) max

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

LFA50F

LF A 50 F - □ - □

① ② ③ ④ ⑤ ⑥



Recommended Noise Filter
NAC-04-472



High voltage pulse noise type : NAP series
Low leakage current type : NAM series
*The Noise Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional
- C : with Coating
- G : Low leakage current
- J1 : VH(J.S.T.)connector type
- S : with Chassis
- SlI: 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

SPECIFICATIONS

	MODEL	LFA50F-3R3-Y	LFA50F-5	LFA50F-12	LFA50F-15	LFA50F-24	LFA50F-36	LFA50F-48	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ (Refer to Instruction Manual 1.1 and 3.2) *3							
	CURRENT[A]	ACIN 100V	0.47typ (Io=100%)	0.67typ (Io=100%)					
		ACIN 200V	0.27typ (Io=100%)	0.36typ (Io=100%)					
	FREQUENCY[Hz]	50 / 60 (47 - 63)							
	EFFICIENCY[%]	ACIN 100V	73.5typ	77.5typ	80.0typ	80.5typ	81.5typ	82.0typ	81.0typ
		ACIN 200V	74.0typ	79.0typ	81.5typ	81.5typ	83.0typ	83.5typ	82.5typ
	POWER FACTOR (Io=100%)	ACIN 100V	0.96typ	0.97typ					
		ACIN 200V	0.83typ	0.90typ					
INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)							
	ACIN 200V	30typ (Io=100%) (At cold start) (Ta=25°C)							
LEAKAGE CURRENT[mA]	0.40 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)								
OUTPUT	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]	20max	20max	48max	60max	96max	144max	192max	
	LOAD REGULATION[mV]	40max	40max	100max	120max	150max	240max	240max	
	RIPPLE [mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max
		-10 - 0°C *1	140max	140max	160max	160max	160max	200max	200max
	RIPPLE NOISE [mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max
		-10 - 0°C *1	160max	160max	180max	180max	180max	300max	300max
	TEMPERATURE REGULATION [mV]	0 to +50°C	50max	50max	120max	150max	240max	360max	480max
		-10 to +50°C	60max	60max	150max	180max	290max	450max	600max
	DRIFT [mV]	*2	20max	20max	48max	60max	96max	144max	192max
	START-UP TIME [ms]	350typ (ACIN 100V, Io=100%)							
	HOLD-UP TIME [ms]	20typ (ACIN 100V, Io=100%)							
OUTPUT VOLTAGE ADJUSTMENT RANGE [V]	2.85 to 3.63 Fixed ("Y" option is available for adjusting output voltage between ±10%)								
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	34.50 to 37.50	46.00 to 50.00		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically							
	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	41.40 to 50.40	55.20 to 67.20	
	OPERATING INDICATION	Not provided							
	REMOTE SENSING	Not provided							
	REMOTE ON/OFF	Not provided							
ISOLATION	INPUT-OUTPUT	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)							
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max *3							
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max							
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis							
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (At only AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN							
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B							
	CE MARKING	Low Voltage Directive, EMC Directive							
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2							
OTHERS	CASE SIZE/WEIGHT	50 X 26.5 X 132mm (W X H X D) / 165g max (without chassis and cover)							
	COOLING METHOD	Convection							

*1 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).

*2 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.

*3 Derating is required.

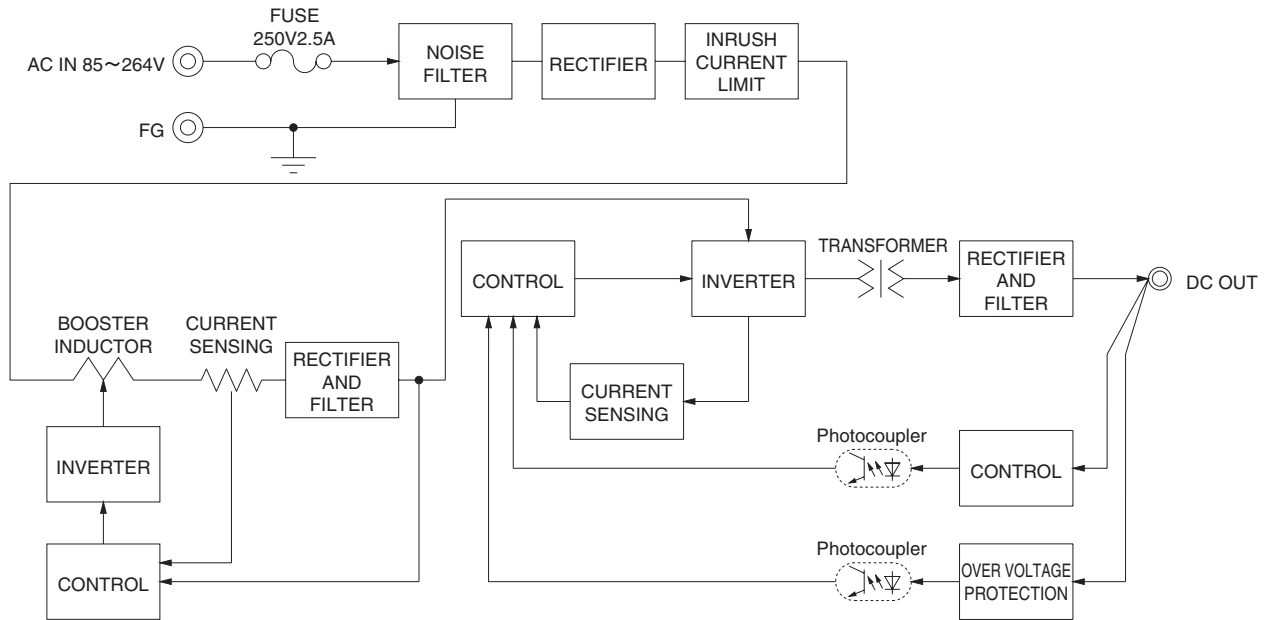
* To meet the specifications. Do not operate over-loaded condition.

* 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

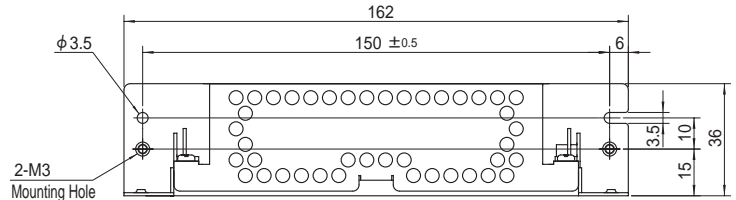
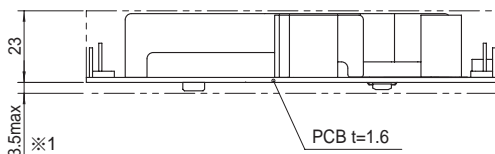
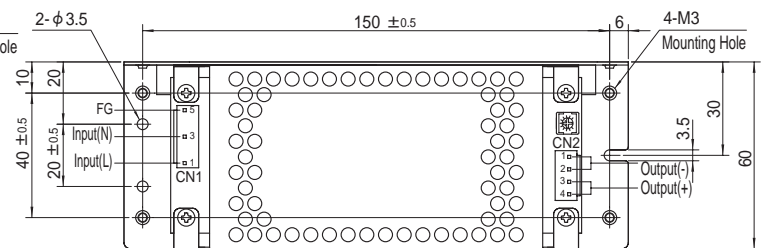
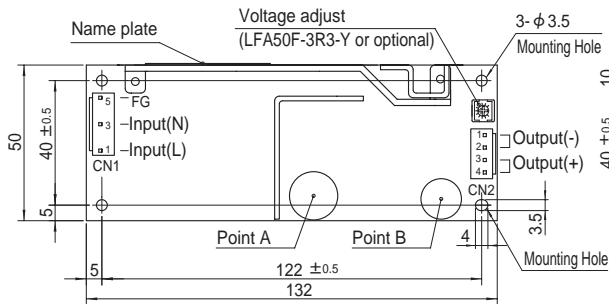


LFA

External view

Standard type

Chassis and cover type



※1 Surface mount device

- ※ 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.

<PIN CONNECTION>

I/O Connector	Mating connector	Terminal
CN1	1-1123724-3	Chain 1123721-1
		Loose 1318912-1
CN2	1-1123723-4	Chain 1123721-1
		Loose 1318912-1

(Mfr:Tyco Electronics AMP)

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

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

- ※ Tolerance : ±1
- ※ Weight : 165g max (without chassis and cover)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm
- ※ Mounting torque (Mounting hole of chassis) : 0.6N · m (6.3kgf · cm) max

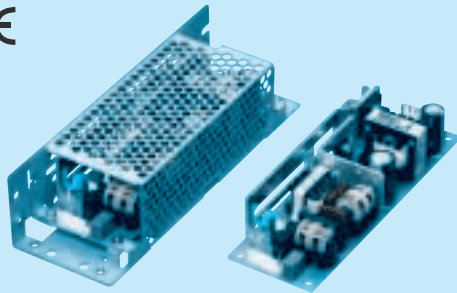
- ※ I/O Connector is Mfr. Tyco Electronics AMP
- ※ Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 5.

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

LFA75F

LF A 75 F - □ - □

① ② ③ ④ ⑤ ⑥



Recommended Noise Filter
NAC-04-472



High voltage pulse noise type : NAP series
Low leakage current type : NAM series
*The Noise Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional
- C : with Coating
- G : Low leakage current
- J1 : VH(J.S.T.)connector type
- S : with Chassis
- SlI: 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

SPECIFICATIONS

	MODEL	LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48	
INPUT	VOLTAGE[V]	AC85 - 264 1 φ (Refer to Instruction Manual 1.1 and 3.2) *3							
	CURRENT[A]	ACIN 100V	0.70typ (Io=100%)	1.00typ (Io=100%)					
		ACIN 200V	0.40typ (Io=100%)	0.50typ (Io=100%)					
	FREQUENCY[Hz]	50 / 60 (47 - 63)							
	EFFICIENCY[%]	ACIN 100V	73.5typ	78.0typ	81.5typ	81.5typ	82.5typ	82.5typ	82.5typ
		ACIN 200V	75.0typ	80.0typ	83.0typ	83.0typ	84.5typ	84.5typ	84.5typ
	POWER FACTOR (Io=100%)	ACIN 100V	0.96typ	0.97typ					
		ACIN 200V	0.83typ	0.90typ					
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)						
ACIN 200V		30typ (Io=100%) (At cold start) (Ta=25°C)							
LEAKAGE CURRENT[mA]	0.40 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)								
OUTPUT	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]	20max	20max	48max	60max	96max	144max	192max	
	LOAD REGULATION[mV]	40max	40max	100max	120max	150max	240max	240max	
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max
		-10 - 0°C *1	140max	140max	160max	160max	160max	200max	200max
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	250max	250max
		-10 - 0°C *1	160max	160max	180max	180max	180max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	50max	120max	150max	240max	360max	480max
		-10 to +50°C	60max	60max	150max	180max	290max	450max	600max
	DRIFT[mV]	*2	20max	20max	48max	60max	96max	144max	192max
	START-UP TIME[ms]	350typ (ACIN 100V, Io=100%)							
	HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.85 to 3.63 Fixed ("Y" option is available for adjusting output voltage between ±10%)							
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	34.50 to 37.50	46.00 to 50.00		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically							
	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	41.40 to 50.40	55.20 to 67.20	
	OPERATING INDICATION	Not provided							
	REMOTE SENSING	Not provided							
	REMOTE ON/OFF	Not provided							
ISOLATION	INPUT-OUTPUT	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
	OUTPUT-FG	AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)							
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max *3							
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max							
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis							
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (At only AC input)	UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN							
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B							
	CE MARKING	Low Voltage Directive, EMC Directive							
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2							
OTHERS	CASE SIZE/WEIGHT	50 X 33.5 X 150mm (W X H X D) / 230g max (without chassis and cover)							
	COOLING METHOD	Convection							

*1 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).

*2 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.

*3 Derating is required.

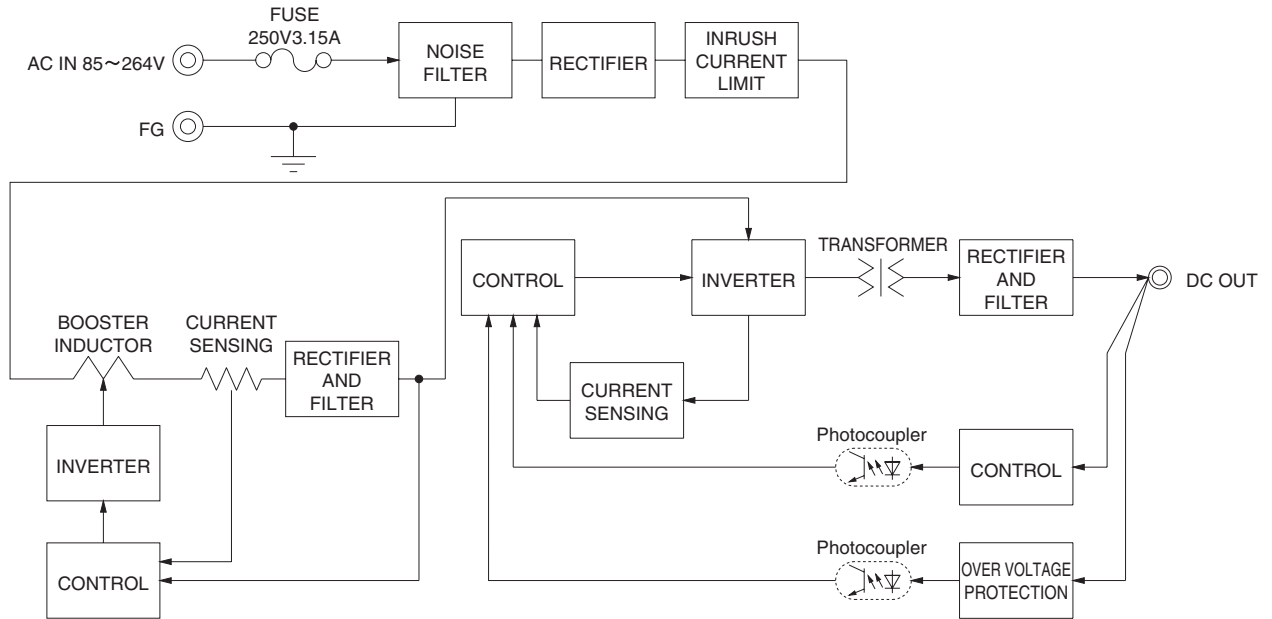
* To meet the specifications. Do not operate over-loaded condition.

* Parallel operation is not possible.

* Derating is required when operated with chassis and cover.

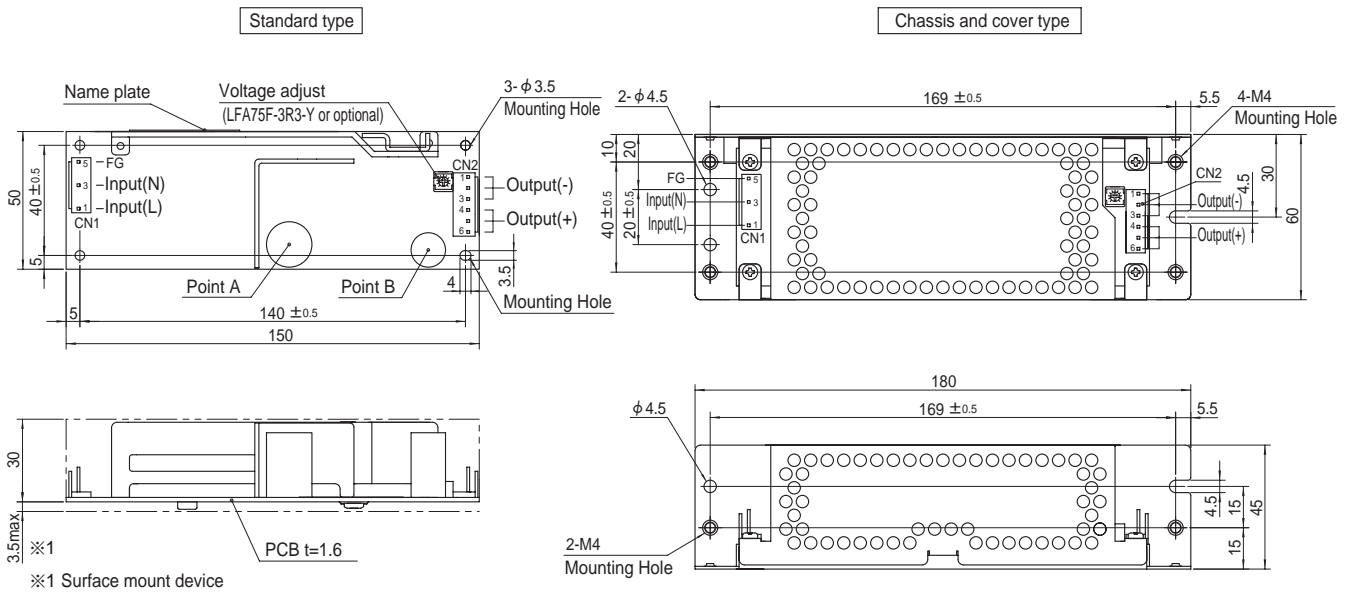
* Sound noise may be generated by power supply in case of pulse load.

Block diagram



LFA

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
CN1	1-1123724-3 1-1123722-5	Chain 1123721-1
		Loose 1318912-1
CN2	1-1123723-6 1-1123722-6	Chain 1123721-1
		Loose 1318912-1

(Mfr:Tyco Electronics AMP)

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

<PIN CONNECTION>

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

- ※ Tolerance : ±1
- ※ Weight : 230g max (without chassis and cover)
- ※ PCB material / thickness : CEM3 / 1.6mm
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm
- ※ Mounting torque (Mounting hole of chassis) :1.5N · m (16kgf · cm) max

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