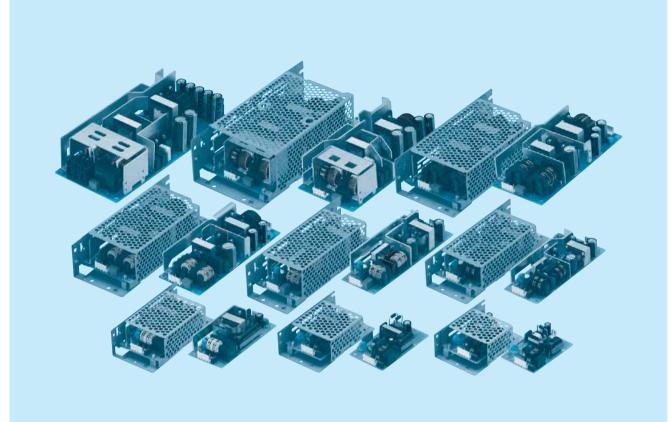
AC-DC Power Supplies Open Frame/ Enclosed Type





# **LFA-series**



### Feature

Small and compact PCB construction Built-in inrush current, overcurrent and overvoltage protection circuits Harmonic attenuator (Complies with IEC61000-3-2) Universal input (AC85-264V) Power factor correction (LFA50F-300F) Built-in reducing standby power circuit (LFA10F, 15F)

### Safety agency approvals

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

### EMI

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

**5-year warranty** (refer to Instruction Manual)

### CE marking

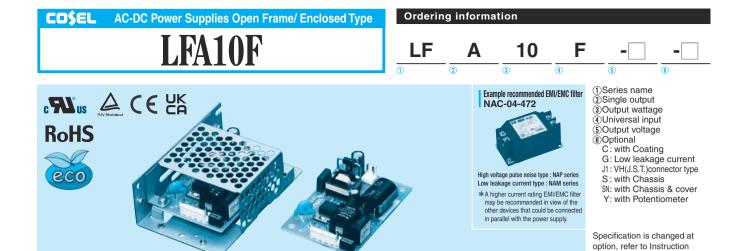
Low Voltage Directive RoHS Directive

### UKCA marking

Electrical Equipment Safety Regulations RoHS Regulations

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

EN61000-4-2 EN61000-4-3 EN61000-4-4 EN61000-4-5 EN61000-4-6 EN61000-4-8 EN61000-4-11



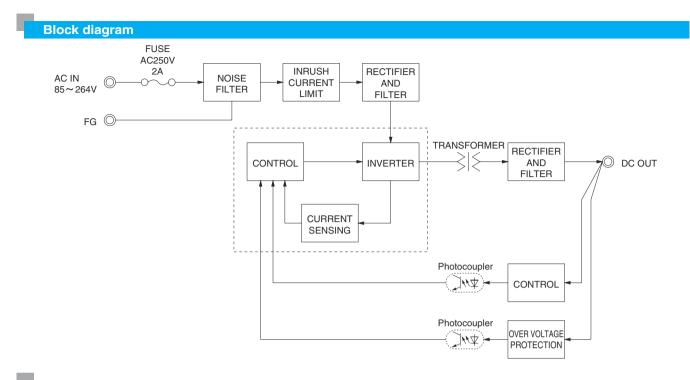
MODEL	LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24
MAX OUTPUT WATTAGE[W]	6.6	10	10.8	10.5	12
DC OUTPUT	3.3V 2A	5V 2A	12V 0.9A	15V 0.7A	24V 0.5A

### **SPECIFICATIONS**

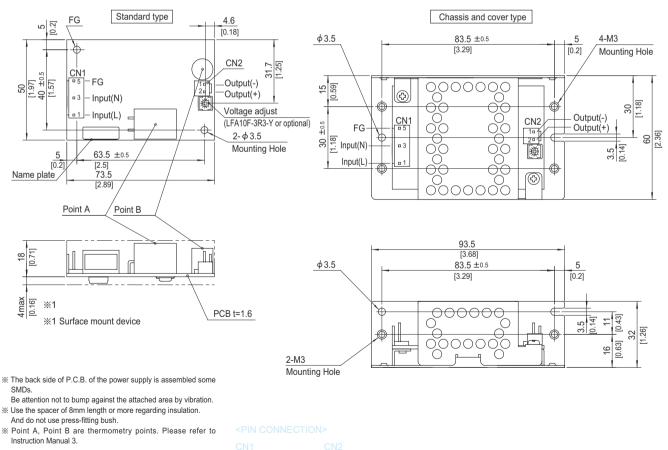
	MODEL		LFA10F-3R3-Y	LFA10F-5	LFA10F-12	LFA10F-15	LFA10F-24			
	VOLTAGE[V]		AC85 - 264 1 ¢ (Refe	r to "Derating", Instru	ction Manual 1 and 3) *3	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			
		ACIN 100V	0.18typ (lo=100%)	0.26typ (lo=100%	)					
	CURRENT[A]	ACIN 200V	0.11typ (lo=100%)	0.16typ (lo=100%	)					
	FREQUENCY[Hz]		50 / 60 (47 - 440)							
NPUT		ACIN 100V	68.0typ	74.0typ	76.5typ	77.5typ	79.5typ			
	EFFICIENCY[%]	ACIN 200V	68.5typ	76.0typ	79.0typ	80.0typ	83.0typ			
		ACIN 100V	15typ (lo=100%)							
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%)	30typ (lo=100%)						
	LEAKAGE CURRENT	[mA]	0.15/0.30max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)							
	VOLTAGE[V]		3.3	5	12	15	24			
	CURRENT[A]		2.0	2.0	0.9	0.7	0.5			
	LINE REGULATION[m	nV] *5	20max	20max	48max	60max	96max			
	LOAD REGULATION[	mV] *5	40max	40max	100max	120max	150max			
		0 to +50°C	80max	80max	120max	120max	120max			
	RIPPLE[mVp-p]	-10 - 0℃		140max	160max	160max	160max			
	*1	lo=0 - 35%	190max	160max	240max	240max	280max			
		0 to +50°C	120max	120max	150max	150max	150max			
OUTPUT	RIPPLE NOISE[mVp-p]	-10 - 0°C	160max	160max	180max	180max	180max			
	*1	lo=0 - 35%	240max	240max	300max	300max	320max			
		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=1	00%) *Start-up time is	700ms typ for less than 1 mir	nute of applying input again	from turning off the input voltage			
OL	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 o	utput 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			
	OVERCURRENT PROTE	CTION	Works over 105% of rating and recovers automatically							
ROTECTION	OVERVOLTAGE PROTE	CTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60			
IRCUIT AND	OPERATING INDICAT	ION	Not provided							
THERS	REMOTE SENSING		Not provided							
	REMOTE ON/OFF		Not provided							
	INPUT-OUTPUT				, DC500V 50M $\Omega$ min (At	/				
SOLATION	INPUT-FG				, DC500V 50M $\Omega$ min (At					
	OUTPUT-FG				DC500V 50MΩ min (At F					
	OPERATING TEMP., HUMID.AND				<del>, , , , , , , , , , , , , , , , , , , </del>	,	00m (10,000 feet) max *3			
INVIRONMENT	STORAGE TEMP., HUMID.AND A	LTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max							
	VIBRATION				, 60minutes each along >	(, Y and Z axis				
	IMPACT		196.1m/s² (20G), 11m							
SAFETY AND	AGENCY APPROVAL	s			8-1 Complies with DEN-A	AN				
NOISE	CONDUCTED NOISE				EN55011-B, EN55022-B					
REGULATIONS	HARMONIC ATTENU	ATOR			(Not built-in to active filter					
OTHERS	CASE SIZE/WEIGHT		-		es] (W×H×D) / 55g max	(with chassis & cover : 1	150g max)			
	COOLING METHOD		Convection (Refer to "	Derating", Instruction	n Manual 3) *3					
*1 This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103). A circuit reducing standby power is built in this unit. Therefore, the internal switch element is intermittent			Please r ter <b>*2</b> Drift is ti a half-ho constan	=0-35% is different. refer to the Instruction Mar he change in DC output fo our warm-up at 25°C, with t at the rated input/output. is required.	r an eight hour period after the input voltage held	<ul> <li>*6 Please contact us about a</li> <li>* To meet the specifications</li> <li>* Parallel operation is not performed and per</li></ul>	lynamic load and input response. Inother class. 5. Do not operate over-loaded conditi			
	I, and the Ripple/Ripple Noise	147	in load *4 When ty		ting it may not comply with	Sound noise may be gene	erated by power supply in case of p			

the IEC61000-3-2. December 27, 2022 Manual.





**External view** 



	4 4400700 5	Chain	1123721-1
	1-1123722-5	Loose	1318912-1
	4 4400700 0	Chain	1123721-1
	1-1123722-2	Loose	1318912-1

※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

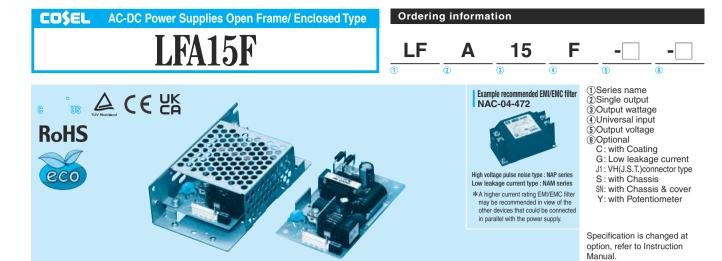
#### December 27, 2022

% Tolerance : ±1 [±0.04]
% Weight : 55g max (with chassis & cover : 150g max)
% PCB material / thickness : CEM3 / 1.6mm

\* Dimensions in mm, [ ]=inches

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

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



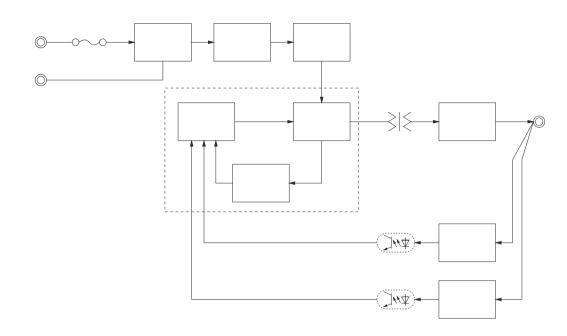
MODEL	LFA15F-3R3-Y	LFA15F-5	LFA15F-12	LFA15F-15	LFA15F-24
MAX OUTPUT WATTAGE[W]	9.9	15	15.6	15	16.8
DC OUTPUT	3.3V 3A	5V 3A	12V 1.3A	15V 1A	24V 0.7A

### **SPECIFICATIONS**

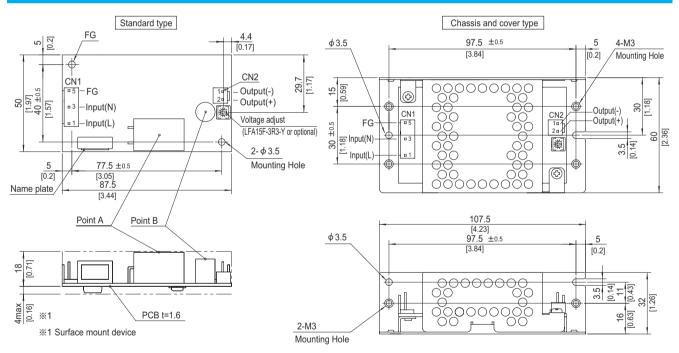
REQUENCY[Hz] FFICIENCY[%] RUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] URRENT[A] INE REGULATION[M OAD REGULATION[M	ACIN 100V ACIN 200V ACIN 100V ACIN 200V ACIN 100V ACIN 200V [mA]	30typ (lo=100%) (At co	0.35typ (lo=100%) 0.20typ (lo=100%) 73.0typ 76.0typ Id start) (Ta=25°C)	76.0typ 78.5typ	77.0typ					
REQUENCY[Hz] FFICIENCY[%] RUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] URRENT[A] INE REGULATION[M OAD REGULATION[M	ACIN 200V ACIN 100V ACIN 200V ACIN 100V ACIN 200V	0.15typ (lo=100%) 50 / 60 (47 - 440) 68.0typ 69.0typ 15typ (lo=100%) (At cc 30typ (lo=100%) (At cc	0.20typ (lo=100%) 73.0typ 76.0typ Id start) (Ta=25°C)							
REQUENCY[Hz] FFICIENCY[%] IRUSH CURRENT[A] EAKAGE CURRENT[ OLTAGE[V] CURRENT[A] INE REGULATION[M OAD REGULATION[M	ACIN 100V ACIN 200V ACIN 100V ACIN 200V	50 / 60 (47 - 440) 68.0typ 69.0typ 15typ (Io=100%) (At cc 30typ (Io=100%) (At cc	73.0typ 76.0typ Id start) (Ta=25°C)							
FFICIENCY[%] RUSH CURRENT[A] EAKAGE CURRENT[ OLTAGE[V] URRENT[A] INE REGULATION[m OAD REGULATION[m	ACIN 200V ACIN 100V ACIN 200V	68.0typ 69.0typ 15typ (Io=100%) (At cc 30typ (Io=100%) (At cc	76.0typ old start) (Ta=25°C)							
FFICIENCY[%] IRUSH CURRENT[A] EAKAGE CURRENT[ OLTAGE[V] URRENT[A] INE REGULATION[m OAD REGULATION[n	ACIN 200V ACIN 100V ACIN 200V	69.0typ 15typ (lo=100%) (At cc 30typ (lo=100%) (At cc	76.0typ old start) (Ta=25°C)							
NRUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] CURRENT[A] INE REGULATION[M OAD REGULATION[M	ACIN 100V ACIN 200V	15typ (lo=100%) (At co 30typ (lo=100%) (At co	old start) (Ta=25℃)	78.5typ		78.0typ				
IRUSH CURRENT[A] EAKAGE CURRENT OLTAGE[V] CURRENT[A] INE REGULATION[m OAD REGULATION[n	ACIN 200V	30typ (lo=100%) (At co	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		80.0typ	81.5typ				
EAKAGE CURRENT OLTAGE[V] :URRENT[A] INE REGULATION[m OAD REGULATION[r		<b>71</b> ( 7 (	(Int at a with (The 105°C))	15typ (lo=100%) (At cold start) (Ta=25°C)						
OLTAGE[V] CURRENT[A] INE REGULATION[m OAD REGULATION[t	[mA]	0.15/0.30max (ACIN 10	30typ (lo=100%) (At cold start) (Ta=25°C)							
URRENT[A] INE REGULATION[m OAD REGULATION[r			0.15/0.30max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN)							
INE REGULATION[m OAD REGULATION[i		3.3	5	12	15	24				
INE REGULATION[m OAD REGULATION[i		3.0	3.0	1.3	1.0	0.7				
OAD REGULATION[	V1 *5	20max	20max	48max	60max	96max				
-		40max	40max	100max	120max	150max				
	0 to +50℃	80max	80max	120max	120max	120max				
lIPPLE[mVp-p]	-10 - 0°C	140max	140max	160max	160max	160max				
*1	lo=0 - 35%	190max	160max	240max	240max	280max				
	0 to +50°C	120max	120max	150max	150max	150max				
IPPLE NOISE[mVp-p]	-10 - 0°C	160max	160max	180max	180max	180max				
*1	lo=0 - 35%	240max	240max	300max	300max	320max				
	0 to +50℃	50max	50max	120max	150max	240max				
EMPERATURE REGULATION[mV]	-10 to +50℃	60max	60max	150max	180max	290max				
DRIFT[mV] *2		20max	20max	48max	60max	96max				
TART-UP TIME[ms]	÷2			Oms typ for less than 1 minute						
HOLD-UP TIME[ms]				uns typ for less than Thinut	e or applying input again in	on the input voltag				
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		20typ (ACIN 100V, lo= 2.85 to 3.63	, , , , , , , , , , , , , , , , , , ,	vailable for adjusting outs		00/)				
			4.90 to 5.30	vailable for adjusting outp 11.50 to 12.50	14.40 to 15.60	23.00 to 25.00				
VERCURRENT PROTE		3.30 to 3.40	1		14.40 10 15.60	23.00 10 25.00				
		Works over 105% of rating and recovers automatically								
VERVOLTAGE PROTEC		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								
	ION									
					, ,					
,						0m (10,000 feet) max *3				
1	LTITUDE									
			<u> </u>		and Z axis					
	S									
	TOR	<u> </u>		/						
		-			ith chassis & cover : 19	JOg max)				
OOLING METHOD		Convection (Refer to "E	Derating", Instruction N	Ianual 3) *3						
f 22 µ F at 150mm from outp	ut terminal. pple-Noise n 3). t in this unit.	Please re neter *2 Drift is th a half-hor constant	efer to the Instruction Manua e change in DC output for ar ur warm-up at 25°C, with the at the rated input/output.	eight hour period after *6	Please contact us about and To meet the specifications. I Parallel operation is not pos	namic load and input response. other class. Do not operate over-loaded condit				
	MOTE SENSING MOTE ON/OFF PUT-OUTPUT PUT-FG TPUT-FG RATING TEMP,HUMID.AND / ARGE TEMP,HUMID.AND / ARATION PACT ENCY APPROVALS NDUCTED NOISE RMONIC ATTENU/ SE SIZE/WEIGHT OLING METHOD Use that measured on meas 2 µ F at 150mm from outp 20MHz oscilloscope or Ri KEISOKU-GIKEN: RM10 ing standby power is buil	MOTE ON/OFF PUT-OUTPUT PUT-FG TPUT-FG RATING TEMP,HUMID.AND ALTITUDE RAGE TEMP,HUMID.AND ALTITUDE RATION PACT ENCY APPROVALS NDUCTED NOISE RMONIC ATTENUATOR SE SIZE/WEIGHT OLING METHOD ue that measured on measuring boars 2 µ F at 150mm from output terminal. 20MHz oscilloscope or Ripple-Noise n KEISOKU-GIKEN: RM103). ing standby power is built in this unit.	MOTE SENSING         Not provided           MOTE ON/OFF         Not provided           PUT-OUTPUT         AC3,000V 1minute, Cut           PUT-FG         AC2,000V 1minute, Cut           TPUT-FG         AC500V 1minute, Cut           RATING TEMP, HUMID.AND ALTITUDE         -10 to +70°C, 20 - 90%           RAGE TEMP, HUMID.AND ALTITUDE         -20 to +75°C, 20 - 90%           BRATION         10 - 55Hz, 19.6m/s² (20G), 11ms           ENCY APPROVALS         UL60950-1, C-UL (CS/           NDUCTED NOISE         Complies with FCC-B,           RMONIC ATTENUATOR         S0×22×87.5mm [1.97           OLING METHOD         Convection (Refer to "T           PL et at 150mm from output terminal.         Please re           20Hz oscilloscope or Ripple-Noise meter         *2           PL et at 150mm from output terminal.         Please re           20MHz oscilloscope or Ripple-Noise meter         *2           REISOKU-GIKEN: RM103).         and Horo           ing standby power is built in this unit.         constant	MOTE SENSING         Not provided           MOTE ON/OFF         Not provided           MOTE ON/OFF         Not provided           PUT-OUTPUT         AC3,000V 1minute, Cutoff current = 10mA, D           PUT-FG         AC2,000V 1minute, Cutoff current = 25mA, DC           RATINGTEMP,HUMID.AND ALTITUDE         -10 to +70°C, 20 - 90%RH (Non condensing)           RAGE TEMP,HUMID.AND ALTITUDE         -20 to +75°C, 20 - 90%RH (Non condensing)           RAGE TEMP,HUMID.AND ALTITUDE         -20 to +75°C, 20 - 90%RH (Non condensing)           RAGE TEMP,HUMID.AND ALTITUDE         -20 to +75°C, 20 - 90%RH (Non condensing)           RAGE TEMP,HUMID.AND ALTITUDE         -20 to +75°C, 20 - 90%RH (Non condensing)           BRACT         196.1m/s² (20G), 11ms, once each X, Y and 2           BRONIC ATTENUATOR         Complies with FCC-B, VCCI-B, CISPR-B, EN           RMONIC ATTENUATOR         Complies with IEC61000-3-2 (Class A) *6' (No           SE SIZE/WEIGHT         50 ×22 × 87.5mm [1.97 × 0.87 × 3.44 inches]           OLING METHOD         Convection (Refer to "Derating", Instruction M           Que that measured on measuring board with 24 F at 150mm from output terminal.         *22           20Hz oscilloscope or Ripple-Noise meter         *22           %EISOKU-GIKEN: RM103).         Pater to the Instruction Manual Drift is the change in DC output for an a half-hour warm-up at 25°C, witht the constant at the r	MOTE SENSINGNot providedMOTE ON/OFFNot providedPUT-OUTPUTAC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At RoPUT-FGAC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At RoPUT-FGAC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At RoRATINGTEMP,HUMID.AND ALTITUDE-10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", InstrRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maRAGE TEMP,HUMID.AND ALTITUDE-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) maREALTON10 - 55Hz, 19.6m/s² (2GG), 11ms, once each X, Y and Z axisBINDUCTED NOISEComplexes with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-BRMONIC ATTENUATORComplexes with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-BS	MOTE SENSING         Not provided           MOTE ON/OFF         Not provided           MOTE ON/OFF         Not provided           PUT-OUTPUT         AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)           PUT-FG         AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)           TPUT-FG         AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)           RATINGTEMP,HUMID.AND ALTITUDE         -10 to +70°C, 20 - 90%RH (Non condensing) (Refer to "Derating", Instruction Manual 3), 3,000           RAGE TEMP,HUMID.AND ALTITUDE         -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max           IRATION         10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis           PACT         196.1m/s² (2G), 11ms, once each X, Y and Z axis           ENCY APPROVALS         UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN           NDUCTED NOISE         Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B           RMONIC ATTENUATOR         Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter) *4           SE SIZE/WEIGHT         50 ×22 × 87.5mm [1.97 × 0.87 × 3.44 inches] (W × H × D) / 80g max (with chassis & cover : 19           OLING METHOD         Convection (Refer to "Derating", Instruction Manual 3), *3           ue that measured on measuring board with KEISOKU-GIKEN: RM103).         factor lo-0-35% is differe				

the IEC61000-3-2. December 27, 2022





**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.

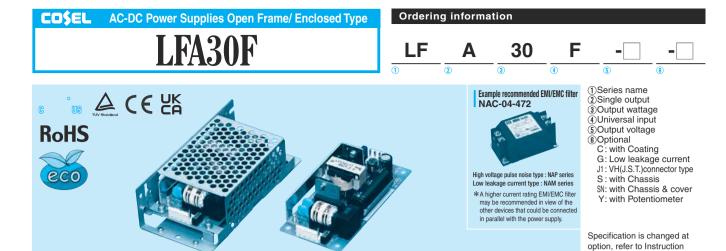
4 4400700 5	Chain	1123721-1
1-1123722-5	Loose	1318912-1
1-1123722-2	Chain	1123721-1
1-1123722-2	Loose	1318912-1

※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

% Tolerance : ±1 [±0.04]

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



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

\*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24
MAX OUTPUT WATTAGE[W]	19.8	30.0	30.0	30.0	31.2
DC OUTPUT	3.3V 6A	5V 6A	12V 2.5A	15V 2A	24V 1.3A

### **SPECIFICATIONS**

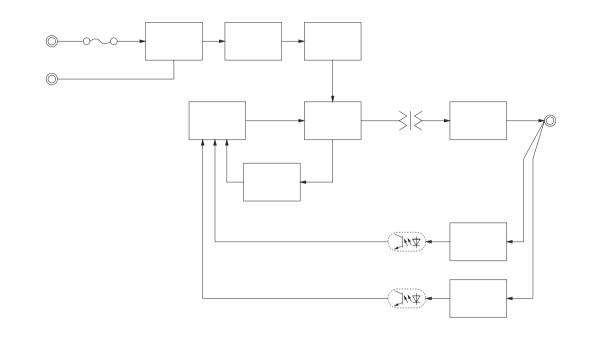
	MODEL		LFA30F-3R3-Y	LFA30F-5	LFA30F-12	LFA30F-15	LFA30F-24		
	VOLTAGE[V]		AC85 - 264 1 ¢ (Re	er to "Derating", Ins	truction Manual 1 and 3	) *3			
	CURRENT[A]	ACIN 100V	0.50typ (lo=100%)	0.65typ (lo=100%	%)				
	CONNENT[A]	ACIN 200V	0.30typ (lo=100%)	0.35typ (lo=100%	%)				
	FREQUENCY[Hz]		50 / 60 (47 - 440)						
NPUT	EFFICIENCY[%]	ACIN 100V	73typ	76typ	79typ	81typ	82typ		
		ACIN 200V	75typ	79typ	81typ	83typ	84typ		
		ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)						
	INRUSH CURRENT[A]	ACIN 200V	30typ (Io=100%) (At cold start) (Ta=25°C)						
	LEAKAGE CURRENT[mA]		0.30 / 0.65max (ACI	N 100V / 240V 60H	Iz, Io=100%, According	to IEC62368-1 and DEM	N-AN)		
	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		
		0 to +50℃*1	80max	80max	120max	120max	120max		
	RIPPLE[mVp-p]	-10-0°C *1	140max	140max	160max	160max	160max		
		0 to +50℃*1	120max	120max	150max	150max	150max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10-0°C *1	160max	160max	180max	180max	180max		
		0 to +50℃	50max	50max	120max	150max	240max		
	TEMPERATURE REGULATION[mV]	-10 to +50℃	60max	60max	150max	180max	290max		
	DRIFT[mV]	*2	20max	20max	48max	60max	96max		
Н	START-UP TIME[ms]		150typ (ACIN 100V,	lo=100%)					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, I	p=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63	Fixed ("Y"option	is available for adjusting	output voltage betweer	1 ±10%)		
	OUTPUT VOLTAGE SET	TING[V]	3.30 to 3.40	4.90 to 5.30	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00		
	OVERCURRENT PROT	ECTION	Works over 105% of rating and recovers automatically						
ROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60		
IRCUIT AND	<b>OPERATING INDICA</b>	TION	Not provided						
THERS	REMOTE SENSING		Not provided						
	<b>REMOTE ON/OFF</b>		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute,	Cutoff current = 10r	nA, DC500V 50M $\Omega$ min	(At Room Temperature	)		
SOLATION	INPUT-FG		AC2,000V 1minute,	Cutoff current = 10r	nA, 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	O ALTITUDE	-10 to +70°C, 20 - 90	%RH (Non condens	sing) (Refer to "Derating"	, Instruction Manual 3),	3,000m (10,000feet) ma		
NVIRONMENT	STORAGE TEMP., HUMID.AND	ALTITUDE	-20 to +75°C, 20 - 90	%RH (Non conden	sing), 9,000m (30,000fe	et) max			
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup>	(2G), 3minutes peri	od, 60minutes each alo	ng X, Y and Z axis			
	IMPACT		196.1m/s2 (20G), 11	ms, once each X, Y	and Z axis				
AFETY AND	AGENCY APPROVAL	LS	UL60950-1, C-UL (0	SA60950-1), EN62	368-1 Complies with DE	N-AN			
OISE	CONDUCTED NOISE		Complies with FCC-	B, VCCI-B, CISPR-I	B, EN55011-B, EN5502	2-B			
EGULATIONS	HARMONIC ATTENU	JATOR	Complies with IEC61	000-3-2 (Class A) *6	(Not built-in to active filte	r) *4			
DTHERS	CASE SIZE/WEIGHT		50×26.5×105mm	1.97×1.04×4.13 ir	nches] (W×H×D) / 130	g max (with chassis & c	over : 260g max)		
ULLUS	COOLING METHOD		Convection (Refer to	"Derating", Instruct	ion Manual 3) *3				
from ou	the value that measured or tput terminal. ed by 20MHz oscilloscope of				Please contact us for	out dynamic load and input res			

\*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.

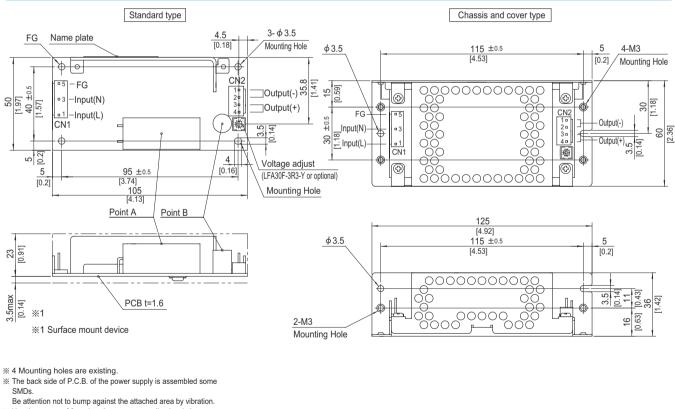
- To meet the specifications. Do not operate over-loaded condition.
- Parallel operation is not possible.
   Derating is required when operated with chassis and cover.
  - Derating is required when operated with chassis and cover. Sound noise may be generated by power supply in case of pulse load.

Manual.









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

I/C	Connector	Mating connector			
014	1-1123724-3	1-1123722-5	Chain	1123721-1	
CINT	1-1123724-3	1-1123722-5	Loose	1318912-1	
010	1-1123723-4	1-1123722-4	Chain	1123721-1	
CINZ	1-1123723-4	1-1123722-4	Loose	1318912-1	
			(Mfr:Tv	co Electronics)	

※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

CN1		CN2	
Pin No.	Input	Pin No.	Output
1	AC(L)		-\/
2		1, 2	- V
3	AC(N)		+\/
4		3, 4	ΨV
5	FG		

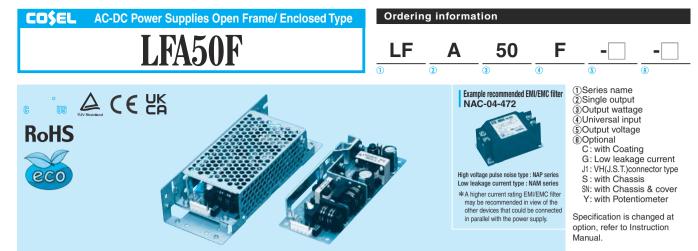
- % Tolerance : ±1 [±0.04] % Weight: 130g max (with chassis & cover : 260g max)
- % PCB material / thickness : CEM3 / 1.6mm

% Optional chassis and cover material : Electric galvanizing steel board. \* Dimensions in mm, [ ]=inches

% Mounting torque (Mounting hole of chassis) : 0.6N \* m (6.3kgf \* cm) max

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

### December 27, 2022



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	
	VOLTAGE[V]		AC85 - 264 1 φ	(Refer to "Derat	ing", Instruction	Manual 1 and 3)	*3			
		ACIN 100V	0.47typ (lo=100%)	0.67typ (lo=100	)%)					
	CURRENT[A]	ACIN 200V	0.27typ (lo=100%)	0.36typ (lo=100	)%)					
	FREQUENCY[Hz]		50 / 60 (47 - 63)							
		ACIN 100V	73.5typ	77.5typ	80.0typ	80.5typ	81.5typ	82.0typ	81.0typ	
IPUT	EFFICIENCY[%]	ACIN 200V	74.0typ	79.0typ	81.5typ	81.5typ	83.0typ	83.5typ	82.5typ	
		ACIN 100V	0.96typ	0.97typ						
	POWER FACTOR (Io=100%)	ACIN 200V	0.83typ 0.90typ							
		ACIN 100V	15typ (lo=100%) (At cold start) (Ta=25°C)							
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%) (At cold start) (Ta=25°C)							
	LEAKAGE CURREN		0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN)							
	VOLTAGE[V]		3.3	5	12	15	24	36	48	
	CURRENT[A]		10.0	10.0	4.3	3.5	2.1	1.4	1.1	
	LINE REGULATION	mV] *4	20max	20max	48max	60max	96max	144max	192max	
	LOAD REGULATION		40max	40max	100max	120max	150max	240max	240max	
		0 to +50℃*1	80max	80max	120max	120max	120max	150max	150max	
	RIPPLE[mVp-p]	-10-0°C *1	140max	140max	160max	160max	160max	200max	200max	
		0 to +50℃*1	120max	120max	150max	150max	150max	250max	250max	
UTPUT	RIPPLE NOISE[mVp-p]	-10-0°C *1	160max	160max	180max	180max	180max	300max	300max	
		0 to +50℃		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	
S	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)							
	HOLD-UP TIME[ms]		20typ (ACIN 100V, lo=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	tically				
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	41.40 to 50.40	55.20 to 67.20	
IRCUIT AND	OPERATING INDICA	TION	Not provided				-	-		
THERS	REMOTE SENSING		Not provided							
	<b>REMOTE ON/OFF</b>		Not provided							
	INPUT-OUTPUT		AC3,000V 1mir	ute, Cutoff curre	nt = 10mA, DC5	00V 50M $\Omega$ min	At Room Tempe	erature)		
SOLATION	INPUT-FG		AC2,000V 1mir	ute, Cutoff curre	nt = 10mA, DC5	00V 50M $\Omega$ min	(At Room Tempe	erature)		
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)							
	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +70℃, 20	) - 90%RH (Non	condensing) (Re	efer to "Derating",	Instruction Man	ual 3), 3,000m (1	0,000feet) max	
	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75℃, 2	0 - 90%RH (Non	condensing), 9,	000m (30,000fee	t) max			
NVIRONMENT	VIBRATION		10 - 55Hz, 19.6	m/s² (2G), 3minu	ites period, 60m	inutes each alon	g X, Y and Z axis	3		
	IMPACT		196.1m/s² (20G	), 11ms, once ea	ach X, Y and Z a	xis				
AFETY AND	AGENCY APPROVAL	s	UL60950-1, C-I	JL (CSA60950-1	), EN62368-1 C	omplies with DEI	N-AN			
OISE	CONDUCTED NOISE		Complies with F	CC-B, VCCI-B,	CISPR-B, EN55	011-B, EN55022	-B			
EGULATIONS	HARMONIC ATTENU	ATOR	Complies with I	EC61000-3-2 (C	lass A) *5					
	CASE SIZE/WEIGHT		50×26.5×132	mm [1.97×1.04	×5.20 inches] (V	V×H×D) / 165g	max (with chase	sis & cover : 325	g max)	
DTHERS	COOLING METHOD		Convection (Re	fer to "Derating",	Instruction Man	ual 3) *3				
from ou		Ripple-No	ise meter (Equivalen		*4 Pl 1: *5 Pl * To	erating is required. ease contact us about ease contact us about meet the specification	it another class. ons. Do not operate c	input response.		

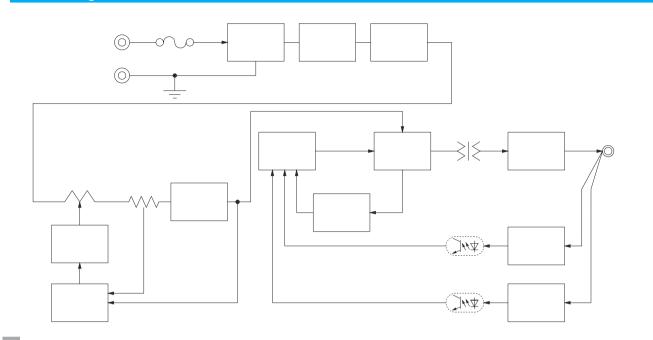
\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

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Parallel operation is not possible.

Derating is required when operated with chassis and cover

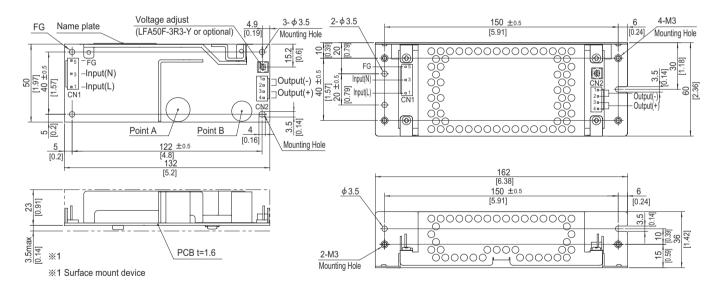




External view

Standard type

Chassis and cover type



% 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					
0.14	4 4400704 0	1-1123722-5	Chain	1123721-1			
CINT	CN1 1-1123724-3	1-1123722-5	Loose	1318912-1			
CNID	CN2 1-1123723-4	1-1123722-4	Chain	1123721-1			
CINZ		1-1123/22-4	Loose	1318912-1			
(Mfr:Tyco Electronics)							

<PIN CONNECTION>

Pin No.	Input		Pin No.	Output
1	AC(L)		1.2	1/
			1, 2	- V
3	AC(N)		3, 4	+\/
			3, 4	÷γ
5	FG	1		

% Tolerance : ±1 [±0.04]

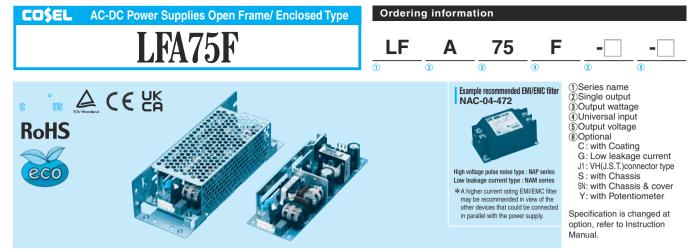
- \* Weight : 165g max (with chassis & cover : 325g max)
- % PCB material / thickness : CEM3 / 1.6mm
- % Optional chassis and cover material : Electric galvanizing steel board.
   % Dimensions in mm, [ ]=inches

% Mounting torque (Mounting hole of chassis) : 0.6N • m (6.3kgf • cm) max

% I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

% Keep drawing current per pin below 5A for CN2



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**

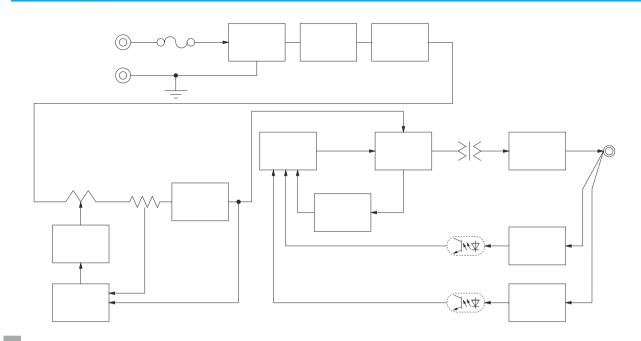
	MODEL		LFA75F-3R3-Y	LFA75F-5	LFA75F-12	LFA75F-15	LFA75F-24	LFA75F-36	LFA75F-48			
	VOLTAGE[V]		AC85 - 264 1 φ	(Refer to "Derat	ing", Instruction	Manual 1 and 3)	*3		- Fe			
		ACIN 100V	0.70typ (lo=100%)	1.00typ (lo=100	0%)							
	CURRENT[A]	ACIN 200V	0.40typ (lo=100%)	0.50typ (lo=100								
	FREQUENCY[Hz]		50 / 60 (47 - 63	)								
		ACIN 100V	73.5typ	78.0typ	81.5typ	81.5typ	82.5typ	82.5typ	82.5typ			
VPUT	EFFICIENCY[%]	ACIN 200V	75.0typ	80.0typ	83.0typ	83.0typ	84.5typ	84.5typ	84.5typ			
		ACIN 100V	0.96typ	0.97typ			71		71			
	POWER FACTOR (lo=100%)	ACIN 200V	0.83typ 0.90typ									
		ACIN 100V		) (At cold start) (	Ta=25℃)							
	INRUSH CURRENT[A]	ACIN 200V	71 (	b) (At cold start) (	/							
	LEAKAGE CURREN		31 (	, , , , , , , , , , , , , , , , , , , ,	,	0% According t	o IEC62368-1 ar	nd DEN-AN)				
	VOLTAGE[V]	. []	3.3	5	12	15	24	36	48			
	CURRENT[A]		15.0	15.0	6.3	5.0	3.2	2.1	1.6			
	LINE REGULATION	mV1 *4	20max	20max	48max	60max	96max	144max	1.0 192max			
	LOAD REGULATION	-	40max	40max	100max	120max	150max	240max	240max			
		0 to +50℃*1	80max	80max	120max	120max	120max	150max	150max			
	RIPPLE[mVp-p]	-10-0°C *1		140max	160max	160max	160max	200max	200max			
		0 to +50℃*1	120max	120max	150max	150max	150max	250max	250max			
OUTPUT	RIPPLE NOISE[mVp-p]	-10-0°C *1	160max	160max	180max	180max	180max	300max	300max			
		0 to +50℃		50max	120max	150max	240max	360max	480max			
	TEMPERATURE REGULATION[mV]	-10 to +50℃		60max	150max	180max	290max	450max	600max			
	DRIFT[mV]	*2		20max	48max	60max	96max	144max	192max			
: 	START-UP TIME[ms]	~2	350typ (ACIN 1		4011107	oomax	Joinax	14411187	1921118			
	HOLD-UP TIME[ms]		20typ (ACIN 10									
		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			
	OVERCURRENT PROT			% of rating and			20.00 10 20.00	04.00 10 07.00	140.00 10 30.00			
DOTECTION			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			
ROTECTION			Not provided	5.75 10 7.00	13.00 10 10.00	17.25 to 21.00	27.00 10 33.00	1.40 10 30.40	35.20 10 07.20			
THERS	REMOTE SENSING	TION	Not provided									
	REMOTE ON/OFF		Not provided									
	INPUT-OUTPUT		<u> </u>	uto Cutoff ourro	nt - 10mA DCE	500V 50MQ min	(At Room Tempe	vraturo)				
SOLATION	INPUT-FG						(At Room Tempe	,				
JOLATION	OUTPUT-FG		,	,	,		At Room Tempera	,				
	OPERATING TEMP., HUMID.AND							ual 3), 3,000m (1	0 000foot) max			
	STORAGE TEMP.,HUMID.AND		,	,	0, (	000m (30,000fee	,	uai 3), 3,00011 (1	0,00010001 1112			
NVIRONMENT	VIBRATION	ALITIODE			0,		g X, Y and Z axis					
	IMPACT			), 11ms, once ea			y x, r and z axis	>				
		e	````		,	omplies with DE						
AFETY AND OISE	CONDUCTED NOISE	-	,	,	1.	1						
EGULATIONS				ЕС61000-3-2 (С		011-B, EN55022	-0					
	CASE SIZE/WEIGHT				,	XHXD) / 020~	max (with abaasi	s & cover : 440g	max)			
OTHERS	CASE SIZE/WEIGHT					, ,	max (with chassi	s a cover : 440g	iiidX)			
				fer to "Derating",		iuai 3) 🐴						
from ou	the value that measured on tput terminal.				*4 PI		ut dynamic load and	input response.				
Moocur	ed by 20MHz oscilloscope or	Ripple-No	se meter (Equivalent to KEISOKU-GIKEN: *5 Please contact us about another class.									
RM103)					* To	most the specifi+	one Do not coorsta	wor loaded condition				

\*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.

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Derating is required when operated with chassis and cover

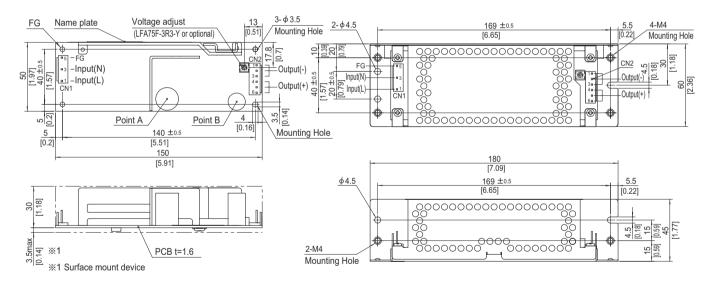




**External view** 

Standard type

Chassis and cover type



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

I/C	Connector	Mating connector	Terminal				
014	1-1123724-3	1-1123722-5	Chain	1123721-1			
CINT	1-1123724-3	1-1123722-5	Loose	1318912-1			
010	CN2 1-1123723-6	1-1123722-6	Chain	1123721-1			
CINZ		1-1123722-6	Loose	1318912-1			
(Mfr:Tyco Electronics)							

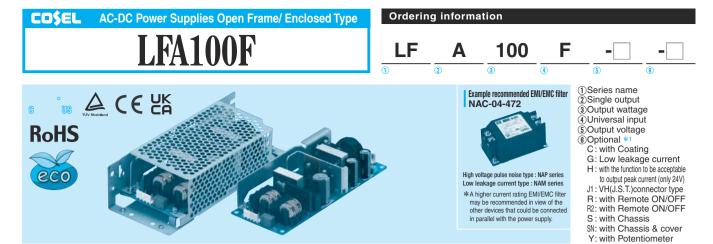
※ I/O Connector is Mfr. Tyco Electronics

% Option:-J1:(J.S.T) connector type. Refer to Instruction Manual 6.

PIN CONNECTION>

Pin No. Input	Pin No. Output	% Tolerance : ±1 [±0.04]
1 AC(L)	1 to 3 -V	Weight : 230g max (with chassis & cover : 440g max)
2	1 to 3 -V	※ PCB material / thickness : CEM3 / 1.6mm
3 AC(N)	4  to  6 + 1/2	% Optional chassis and cover material : Electric galvanizing steel board.
4	4 to 6 +V	※ Dimensions in mm, []=inches
5 FG	· · · · ·	※ Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max

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



MODEL	LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-48	
MAX OUTPUT WATTAGE[W]	*5 66	100	102	100.5	103.2	103.2 (129.6)	100.8	100.8	
DC OUTPUT	*5 3.3V 20A	5V 20A	12V 8.5A	15V 6.7A	24V 4.3A	24V 4.3 (5.4)A	36V 2.8A	48V 2.1A	
SPECIFICATIONS									
MODEL	LFA100F-3B3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-48	

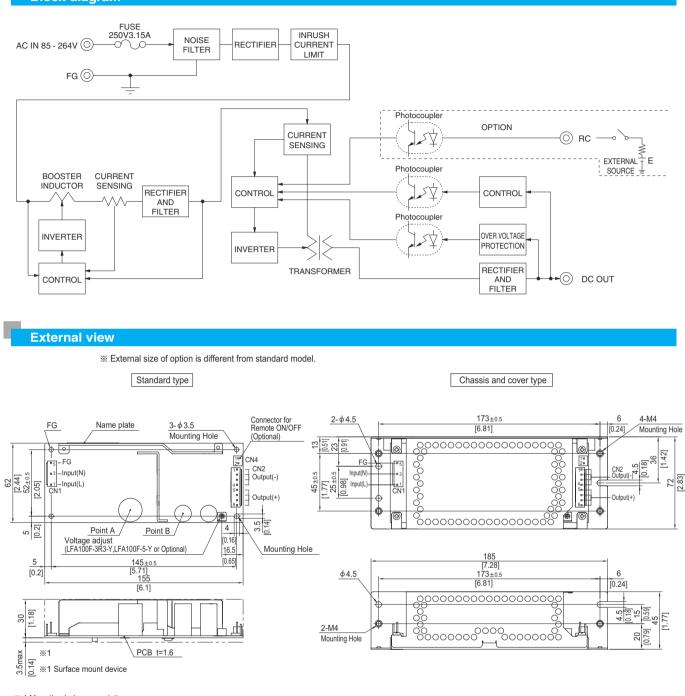
	MODEL		LFA100F-3R3-Y	LFA100F-5-Y	LFA100F-12	LFA100F-15	LFA100F-24	LFA100F-24-H	LFA100F-36	LFA100F-48		
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to "D	Derating", Instru	ction Manual 1	and 3) *4		·	·		
		ACIN 100V	0.9typ (lo=100%)	1.3typ (lo=10	00%)					-		
	CURRENT[A]	ACIN 200V	0.5typ (lo=100%)	0.7typ (lo=10	0%)							
	FREQUENCY[Hz]		50 / 60 (47 - 0	63)								
		ACIN 100V	77.0typ	82.0typ	82.0typ	83.0typ	84.0typ	84.0typ	84.0typ	84.5typ		
INPUT	EFFICIENCY[%]	ACIN 200V	79.0typ	84.0typ	84.5typ	85.5typ	87.0typ	87.0typ	87.0typ	87.0typ		
		ACIN 100V	0.98typ	0.99typ								
	POWER FACTOR (lo=100%)	ACIN 200V	0.92typ	0.95typ								
		ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)									
	INRUSH CURRENT[A]	ACIN 200V		0%) (At cold sta								
	LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	ax (ACIN 100V	/ 240V 60Hz,	lo=100%, Acc	ording to IEC6	2368-1 and D	EN-AN)			
	VOLTAGE[V]		3.3	5	12	15	24	24	36	48		
	CURRENT[A]	*5	20	20	8.5	6.7	4.3	4.3 (Peak 5.4)	2.8	2.1		
	LINE REGULATION	mV] *7	20max	20max	48max	60max	96max	96max	144max	192max		
	LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max		
		0 to +50℃*2	80max	80max	120max	120max	120max	240max	150max	150max		
	RIPPLE[mVp-p]	-10-0°C *2	140max	140max	160max	160max	160max	320max	200max	200max		
		0 to +50℃*2	120max	120max	150max	150max	150max	300max	250max	250max		
OUTPUT	RIPPLE NOISE[mVp-p]	-10-0°C *2	160max	160max	180max	180max	180max	360max	300max	300max		
		0 to +50℃	50max	50max	120max	150max	240max	240max	360max	480max		
	TEMPERATURE REGULATION[mV]	-10 to +50℃	60max	60max	150max	180max	290max	290max	450max	600max		
	DRIFT[mV] *3		20max	20max	48max	60max	96max	96max	144max	192max		
	START-UP TIME[ms]		350typ (ACIN 100V, lo=100%)									
	HOLD-UP TIME[ms]		20typ (ACIN	100V, lo=100%	6)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63	4.50 to 5.50	Fixed ("Y"opt	ion is available	for adjusting	output voltage)	)			
	OUTPUT VOLTAGE SETTING[V]			5.00 to 5.15	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00		
	OVERCURRENT PROT	ECTION	Works over 1	05% of rating (	(works over 10	1% of peak cur	rrent at option	-H) and recove	ers automatical	ly		
PROTECTION	OVERVOLTAGE PROTE			5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20		
CIRCUIT AND			Not provided		1			1	1			
OTHERS	REMOTE SENSING		Not provided									
	REMOTE ON/OFF		Option (Refer to Instruction Manual)									
	INPUT-OUTPUT-RC	*6	AC3,000V 1n	ninute, Cutoff c	current = 10mA	, DC500V 50N	$1\Omega$ min (At Ro	om Temperatu	re)			
	INPUT-FG		AC2,000V 1n	ninute, Cutoff c	current = 10mA	, DC500V 50N	1Ω min (At Ro	om Temperatu	re)			
ISOLATION	OUTPUT·RC-FG	*6	AC500V 1mir	nute, Cutoff cu	rrent = 25mA, I	DC500V 50M	2 min (At Roor	n Temperature	)			
	OUTPUT-RC	*6										
	OPERATING TEMP., HUMID. AND	ALTITUDE *4	-10 to +70℃,	20 - 90%RH (	Non condensin	ng) (Refer to "D	erating", Instru	uction Manual	3), 3,000m (10,	,000feet) max		
	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max									
ENVIRONMENT	VIBRATION		10 - 55Hz, 19	9.6m/s² (2G), 3	minutes period	, 60minutes ea	ch along X, Y	and Z axis				
	IMPACT		196.1m/s² (20	)G), 11ms, ond	ce each X, Y ar	nd Z axis						
SAFETY AND	AGENCY APPROVA	LS	UL60950-1, 0	C-UL (CSA609	50-1), EN6236	8-1 Complies v	with DEN-AN					
NOISE	CONDUCTED NOISE		Complies with	h FCC-B, VCC	I-B, CISPR-B,	EN55011-B, E	N55022-B					
REGULATIONS	HARMONIC ATTENU	JATOR	Complies with	h IEC61000-3-	2 (Class A) *8							
OTHERS	CASE SIZE/WEIGHT	•	62×33.5×1	55mm [2.44×1	1.32×6.10 inch	nes] (W×H×D	) / 280g max (	with chassis &	cover : 480g n	nax)		
OTHERS	COOLING METHOD		Convection (I	Refer to "Deratin	ng", Instruction I	Manual 3) *4						
	on is changed at option, refer t			at the rated input/o				se contact us about a				
	e value that measured on i of 22µF at 150mm from output			Derating is require	ed. eurrent. There is a p	ossibility that an ir		neet the specific lition.	ations. Do not op	erate over-loade		
Measured	d by 20MHz oscilloscope o	r Ripple-No		device is damage	d when the specific			llel operation is not	possible.			
	t to KEISOKU-GIKEN: RM103		1. J. M	contact us about th			* Dera	ting is required whe	en operated with cha			
	e change in DC output for an e warm-up at 25°C, with the inpu				Remote ON/OFF (opt about dynamic load			nd noise may be g e load.	generated by powe	supply in case		
IEA 19							Paid					

LFA-12

Please refer to Instruction

manual 6.

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- % 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	T	erminal						
CN14	1-1123724-3	1-1123722-5	Chain	1123721-1						
CN1	1-1123724-3	1-1123722-5	Loose	1318912-1						
010 4 440	1-1123723-8	1-1123722-8	Chain	1123721-1						
CINZ	1-1123723-0	1-1123722-0	Loose	1318912-1						

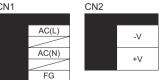
(Mfr:Tyco Electronics)

% I/O Connector is Mfr. Tyco Electronics

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

```
<PIN CONNECTION>
```

CN1



% 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.

X Dimensions in mm, []=inches

% Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max

Connector type

RC(+)

RC(-)

Barrier strip type

Model B2B-XH-A Mating Connector (Terminal)

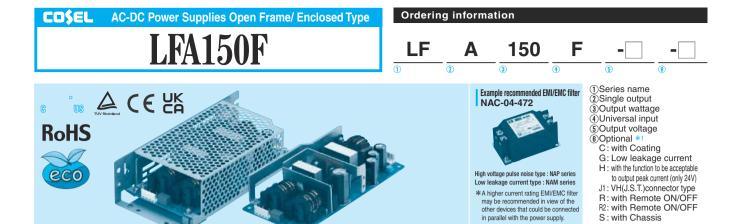
BXH-001T-P0.6

or SXH-001T-P0.6

XHP-2

CN4 Option (Mfr:J.S.T)

### December 27, 2022



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

	MODEL		LFA150F-3R3-Y	LFA150F-5-Y	LFA150F-12	LFA150F-15	LFA150F-24	LFA150F-24-H	LFA150F-36	LFA150F-48
	VOLTAGE[V]		AC85 - 264 1	φ (Refer to "D	erating", Instru	ction Manual 1	and 3) *4			
		ACIN 100V	1.4typ (lo=100%)	2.0typ (lo=10	0%)					
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%)	1.0typ (lo=10	0%)					
	FREQUENCY[Hz]		50 / 60 (47 - 6	63)						
		ACIN 100V	80.0typ	82.5typ	82.5typ	84.0typ	85.0typ	85.0typ	85.0typ	85.5typ
INPUT	EFFICIENCY[%]	ACIN 200V	82.0typ	85.5typ	85.0typ	86.5typ	87.5typ	87.5typ	87.5typ	88.0typ
		ACIN 100V	0.98typ	0.99typ	•			•		
	POWER FACTOR (Io=100%)	ACIN 200V	0.92typ	0.95typ						
		ACIN 100V	15typ (lo=100	)%) (At cold sta	art) (Ta=25℃)					
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100	%) (At cold sta	art) (Ta=25℃)					
	LEAKAGE CURREN	T[mA]	0.40 / 0.75ma	x (ACIN 100V	/240V 60Hz,	lo=100%, Acc	ording to IEC6	2368-1 and DE	EN-AN)	
	VOLTAGE[V]		3.3	5	12	15	24	24	36	48
	CURRENT[A]	*5	30	30	12.5	10	6.3	6.3 (Peak 7.9)	4.2	3.2
	LINE REGULATION[	mV] *7	20max	20max	48max	60max	96max	96max	144max	192max
	LOAD REGULATION	[mV] *7	40max	40max	100max	120max	150max	150max	240max	240max
		0 to +40℃ *2	80max	80max	120max	120max	120max	240max	150max	150max
	RIPPLE[mVp-p]	-10-0°C *2	140max	140max	160max	160max	160max	320max	200max	200max
		0 to +40℃*2	120max	120max	150max	150max	150max	300max	250max	250max
OUTPUT	RIPPLE NOISE[mVp-p]	-10-0°C *2	160max	160max	180max	180max	180max	360max	300max	300max
		0 to +40℃	50max	50max	120max	150max	240max	240max	360max	480max
	TEMPERATURE REGULATION[mV]	-10 to +40℃	60max	60max	150max	180max	290max	290max	450max	600max
	DRIFT[mV]	*3	20max	20max	48max	60max	96max	96max	144max	192max
	START-UP TIME[ms]		350typ (ACIN	100V, lo=100	%)	^	^			·
	HOLD-UP TIME[ms]		20typ (ACIN 1	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 c	output voltage)		
	OUTPUT VOLTAGE SETTING[V]		3.30 to 3.40	5.00 to 5.15	11.50 to 12.50	14.40 to 15.60	23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00
	OVERCURRENT PROT	ECTION	Works over 10	05% of rating (	works over 10	1% of peak cur	rent at option	-H) and recove	rs automaticall	у
PROTECTION	OVERVOLTAGE PROTE	ECTION	4.00 to 5.25	5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20
CIRCUIT AND	OPERATING INDICA	TION	Not provided							
OTHERS	REMOTE SENSING		Not provided							
	REMOTE ON/OFF		Option (Refer to Instruction Manual)							
	INPUT-OUTPUT-RC	*6	AC3,000V 1m	ninute, Cutoff c	current = 10mA	, DC500V 50M	IΩ min (At Ro	om Temperatur	e)	
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
ISOLATION	OUTPUT·RC-FG	*6	AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)							
	OUTPUT-RC	*6			rrent = 25mA, [					
	OPERATING TEMP., HUMID.AND					0, (		-	3), 3,000m (10,	000feet) max
ENVIRONMENT	STORAGE TEMP., HUMID.AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max							
	VIBRATION				minutes period		ch along X, Y	and Z axis		
	IMPACT		<u> </u>		e each X, Y an					
SAFETY AND	AGENCY APPROVAL				50-1), EN6236					
NOISE	CONDUCTED NOISE		· · · · · · · · · · · · · · · · · · ·		I-B, CISPR-B, I	EN55011-B, El	N55022-B			
REGULATIONS	HARMONIC ATTENU		<u> </u>	1EC61000-3-2	. ,					
OTHERS	CASE SIZE/WEIGHT		75×37.0×16	60mm [2.95×1	.46×6.30 inche	es] (W×H×D)	/ 390g max (w	vith chassis & c	over : 650g ma	ax)
	COOLING METHOD		· · ·		ing", Instructior	Manual 3) *4				
*2 This is th capacitor of Measured	on is changeed at option, refer e value that measured on r of 22 µ F at 150mm from output I by 20MHz oscilloscope o t to KEISOKU-GIKEN: RM103)	measuring b t terminal. r Ripple-No	ooard with *4 *5	oard with *4 Derating is required. * To meet the specifications. Do not operate over-loaded *5 () means peak current. There is a possibility that an internal condition.						
	change in DC output for an e varm-up at 25℃, with the inpu				emote control (optior about dynamic load		* Sour	nd noise may be g e load.		

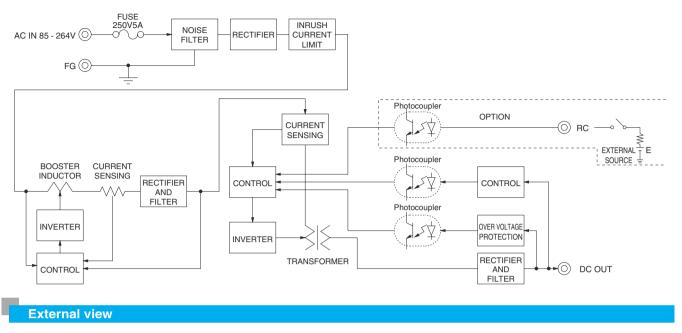
LFA-14

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

manual 6.

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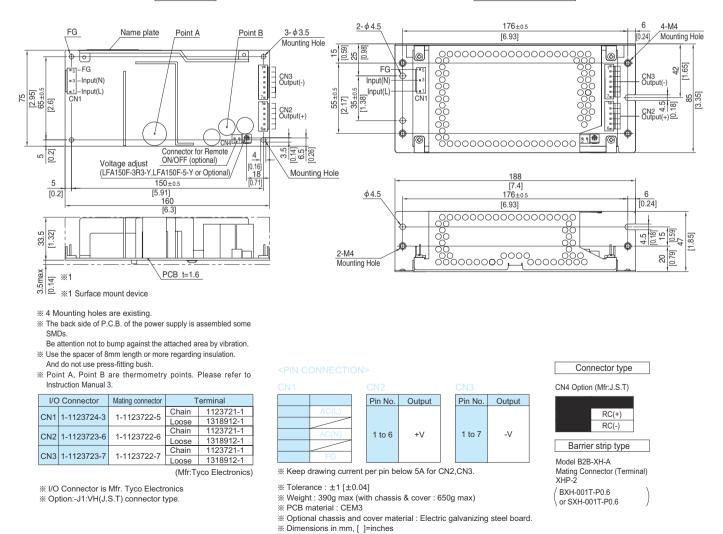




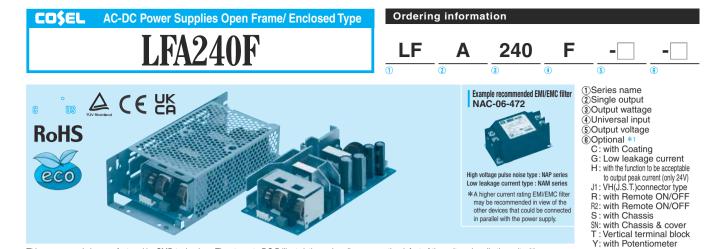
% External size of option is different from standard model.

Standard type

Chassis and cover type



% Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max December 27, 2022



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**

			LFA240F-24	LFA240F-24-H	LFA240F-36	LFA240F-48						
VOLTAGE[V]			AC85 - 264 1 φ	AC85 - 264 1 ¢ (Refer to "Derating", Instruction Manual 1 and 3) *4								
ACIN 100V												
CURRENT[A]		ACIN 2										
EN	ENCY[Hz		50 / 60 (47 - 63)	·								
EFFICIENCY[%] POWER FACTOR (Io=100%)		ACIN 1										
		ACIN 2		87.5typ	87.5typ	87.5typ						
		ACIN 1	71	0.1003								
		0%) ACIN 2										
		ACIN 1		00%) (Primary inrush current /S	econdary inrush current) (Mor	e than 3 sec. to re-start)						
			21.1	00%) (Primary inrush current /S		· · · · · · · · · · · · · · · · · · ·						
	GE CURR			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
	GE CORR		24	0.40 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN)								
			*5 10	10 (Peak12.5)	6.7	5						
	NT[A]		-	· · · · ·								
			*7 96max	96max	144max	192max						
iEC	REGULAT			150max	240max	240max						
[m	[mVp-p]	0 to +4		240max	150max	150max						
		-10 - 00		320max	200max	200max						
	OISE[mVp-	o1 0 to +4		300max	250max	250max						
	h	-10 - 0°		360max	300max	300max						
RE RE	RE REGULATION	mV1 0 to +		240max	360max	480max						
		-10 to -	40°C 290max	290max	450max	600max						
V]	IV]		*3 96max	96max	144max	192max						
UP	UP TIME[	ns]	350typ (ACIN 10	350typ (ACIN 100V, Io=100%)								
HOLD-UP TIME[ms]			20typ (ACIN 100	20typ (ACIN 100V, lo=100%)								
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]			[V] Fixed ("Y"option	Fixed ("Y"option is available for adjusting output voltage)								
OUTPUT VOLTAGE SETTING[V]			/] 23.00 to 25.00	23.00 to 25.00	34.50 to 37.50	46.00 to 50.00						
OVERCURRENT PROTECTION			ON Works over 105	Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically								
OVERVOLTAGE PROTECTION			N 27.60 to 33.60									
TIN	TING IND	CATION	Not provided									
ES	E SENSI	IG	Not provided	Not provided								
REMOTE ON/OFF			Option (Refer to	Option (Refer to Instruction Manual)								
DU.		RC 31	*6 AC3,000V 1min	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)								
INPUT-FG				AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)								
T·F	T-RC-FG			AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)								
				AC100V 1minute, Cutoff current = 25mA, DC100V 10M $\Omega$ min (At Room Temperature)								
	TEMP., HUMID.	AND ALTITUD										
	TEMP.,HUMID		,	$-20$ to $+75^{\circ}$ C, $20 - 90^{\circ}$ RH (Non condensing), 9,000m (30,000feet) max								
	ION		· · · · ·	10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis								
-	-			196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis								
IMPACT AGENCY APPROVALS				UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN								
			,	Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B								
CONDUCTED NOISE				Complies with IEC61000-3-2 (Class A) *8								
HARMONIC ATTENUATOR CASE SIZE/WEIGHT				84×46.5×180mm [3.31×1.83×7.09 inches] (W×H×D) / 550g max (with chassis & cover : 880g max)								
					/ 0 (	143515 4 60VEL . 6009 Max/						
COOLING METHOD					/	t us about another class						
<ul> <li>\$1 Specification is changeed at option, refer to Instructi</li> <li>This is the value that measured on measuring capacitor of 22 µF at 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-N (Equivalent to KEISOKU-GIKEN: RM103).</li> <li>\$3 Drift is the change in DC output for an eight hour p</li> </ul>			ing board with *4 De al. *5 () e-Noise meter de co	board with *4 Derating is required. * To meet the specifications. Do not operate over-loade *5 () means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail. * Derating is required when operated with chassis and cover.								
eed a st m 50m z os U-G DC o	eed at option, at measured 150mm from c z oscillosco (U-GIKEN: RM DC output for	refer to Inst on measur utput termin de or Rippl 1103). an eight ho	uction Manual. at ing board with *4 De al. *5 () e-Noise meter de co ur period after a *6 Ap	means peak current. There is a possibili evice is damaged when the specification is	*8 Please cont * To meet th condition. exceeded. Please * Parallel oper * Derating is r dded. * Sound nois:	ra						

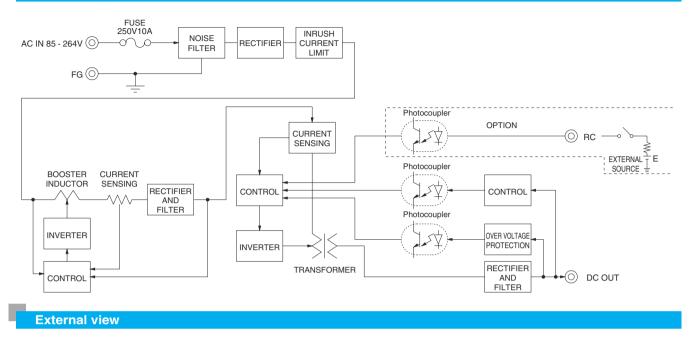
LFA-16

Please refer to Instruction

manual 6.

LFA240F | CO\$EL

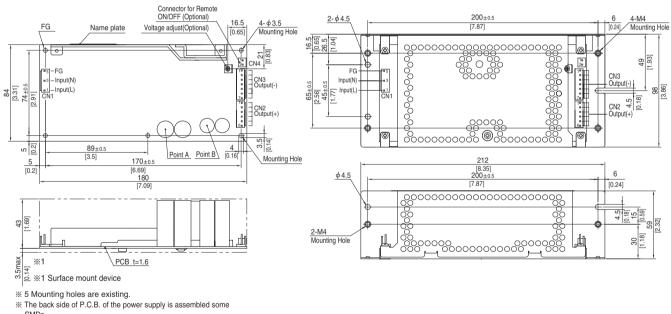
### **Block diagram**



% External size of option is different from standard model.

### Standard type

Chassis and cover type



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			
	CN1	1-1123724-3	1-1123722-5	Chain	1123721-1		
		1-1123724-3	1-1123/22-5	Loose	1318912-1		
	CN2	4 4400700 0	1-1123722-6	Chain	1123721-1		
		1-1123723-6		Loose	1318912-1		
	СN3	4 4400700 7	1-1123722-7	Chain	1123721-1		
		1-1123723-7	1-1123/22-7	Loose	1318912-1		

(Mfr:Tyco Electronics)

% I/O Connector is Mfr. Tyco Electronics

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

% Keep drawing current per pin below 5A for CN2, CN3.

% Tolerance : ±1 [±0.04]

Pin No.

1 to 6

- % Weight : 550g max (with chassis & cover : 880g max)
- \* PCB material : CEM3

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

Output

+V

Pin No.

1 to 7

Output

-V

\* Dimensions in mm, [ ]=inches

% Mounting torque (Mounting hole of chassis) :1.5N • m (16kgf • cm) max

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Connector type

RC(+) RC(-)

CN4 Option (Mfr:J.S.T)

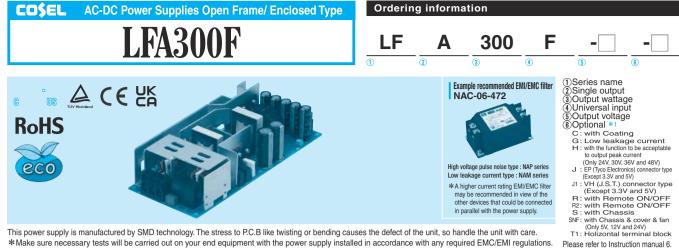
Barrier strip type Model B2B-XH-A

Mating Connector (Terminal) XHP-2

BXH-001T-P0.6

or SXH-001T-P0.6

www.cosel.co.jp/en/



* Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations. Please refer to Instruction manual 6.									
MODEL	LFA300F-3R3-TY	LFA300F-5-TY	LFA300F-12-TY	LFA300F-15-TY	LFA300F-24-TY	LFA300F-24-HTY	LFA300F-30-TY	LFA300F-36-TY	LFA300F-48-TY
MAX OUTPUT WATTAGE[W] *5	198	300	324	330	336	336 (456)	330	338.4	336
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

12V 27A

15V 22A

24V 14A

24V 14 (19)A 30V 11A

36V 9.4A

48V 7A

3.3V 60A

5V 60A

### SPECIFICATIONS

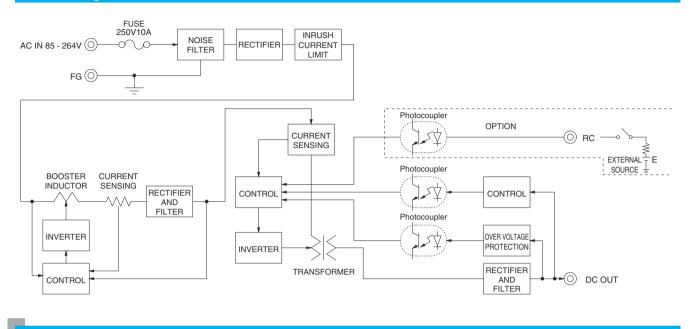
DC OUTPUT

	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	AC85 - 264 1 ¢ (Refer to "Derating", Instruction Manual 1 and 3) *4								
INPUT	ACIN 100		2.7typ (lo=100%) 4.1typ (lo=100%)									
	CURRENT[A]	ACIN 200V	1.4typ (lo=100%) 2.0typ (lo=100%)									
	FREQUENCY[Hz]		50 / 60 (47 -									
		ACIN 100V	75.0typ	79.0typ	80.0typ	81.5typ	85.0typ	85.0typ	85.5typ	85.5typ	85.5typ	
	EFFICIENCY[%]	ACIN 200V	77.0typ	82.5typ	83.0typ	84.5typ	88.0typ	88.0typ	88.0typ	88.0typ	88.0typ	
		ACIN 100V	0.98typ	0.99typ		1 71	1 71		1 71	1 71	1 71	
	POWER FACTOR (lo=100%)	ACIN 200V	0.92typ	0.95typ								
		ACIN 100V			imary inrush	current /Secor	ndary inrush c	urrent) (More	than 3 sec. to	re-start)		
	INRUSH CURRENT[A]	ACIN 200V		, (				, ,		,		
	LEAKAGE CURREN		30 / 30typ (lo=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start) 0.45 / 0.75max (ACIN 100V / 240V 60Hz, lo=100%, According to IEC62368-1 and DEN-AN)									
	VOLTAGE[V]	.[]	3.3	5	12	15	24	24	30	36	48	
	TO LINGL[1]	Convection		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		20max	20max	48max	60max	96max	96max	144max	144max	192max	
	LOAD REGULATION	-	40max	40max	100max	120max	150max	150max	240max	240max	240max	
	LOAD REGULATION	0 to +40°C *2		40max	120max	120max	120max	240max	150max	150max	150max	
	RIPPLE[mVp-p]	-10-0°C *2	140max	140max	120max 160max	120max 160max	120max 160max	320max	200max	200max	200max	
DUTPUT	RIPPLE NOISE[mVp-p]	0 to +40℃*2		120max	150max	150max	150max	300max	250max	250max	250max	
		-10-0°C *2	160max	160max	180max	180max	180max	360max	300max	300max	300max	
	TEMPERATURE REGULATION[mV]	0 to +40°C		50max	120max	150max	240max	240max	360max	360max	480max	
	10 to +40			60max	150max	180max	290max	290max	450max	450max	600max	
	DRIFT[mV] *3											
	START-UP TIME[ms]		350typ (ACIN 100V, Io=100%)									
	HOLD-UP TIME[ms]			100V, lo=10	· · ·							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 to 3.63	4.50 to 5.50	10.80 to 13.20		21.60 to 27.50			32.40 to 39.60		
	OUTPUT VOLTAGE SETTING[V]		3.30 to 3.40	5.00 to 5.15	12.00 to 12.48		24.00 to 24.96			36.00 to 37.44	48.00 to 49.	
	OVERCURRENT PROTECTION		Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically									
ROTECTION	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 67.20									
IRCUIT AND			Not provided									
THERS	REMOTE SENSING		Not provided									
	REMOTE ON/OFF		Option (Refer to Instruction Manual)									
	INPUT-OUTPUT-RC *6											
SOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)									
DOLAHON	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											
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/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis									
	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis										
AFETY AND	AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN											
IOISE												
EGULATIONS	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) *8									
THERS	CASE SIZE/WEIGHT	•	95×52.5×222mm [3.74×2.07×8.74 inches] (W×H×D) (without terminal block) / 810g max (with chassis & cover : 1,270g max									
THERS	COOLING METHOD		Convection	/ Forced air	(Refer to "De	rating", Instru	uction Manua	3) *4				
*2 This is th capacitor of Measured (Equivalen	on is changeed at option, refer e value that measured on r of 22 µ F at 150mm from output d by 20MHz oscilloscope o t to KEISOKU-GIKEN: RM103) change in DC output for an e	measuring   t terminal. r Ripple-No ).	on Manual. board with ** bise meter	at the rated in Derating is rec () means pea device is dam contact us abo	put/output. quired. ak current. There aged when the s put the detail.	is a possibility t	hat an internal ceeded. Please	<ul> <li>*8 Please cont</li> <li>* To meet th condition.</li> <li>* Parallel ope</li> <li>* Derating is</li> </ul>	tact us about anot ne specification eration is not poss required when op se may be gener	is. Do not oper ible. erated with chass	is and cover.	

\*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
 \*6 Applicable when remote control (optional) is added.
 \*7 Please contact us about dynamic load and input response.

December 27, 2022

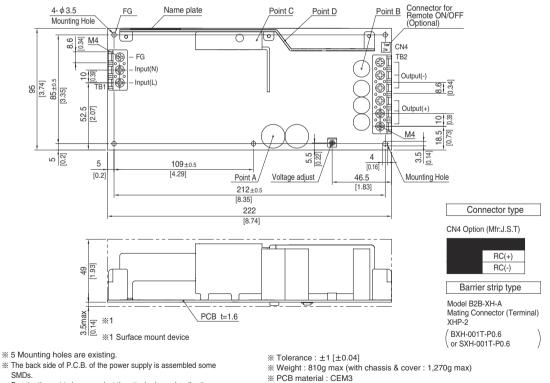




External view

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

Standard type



- % 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.
- % Screw tightening torque : M4 1.6N \* m (16.9kgf \* cm) max

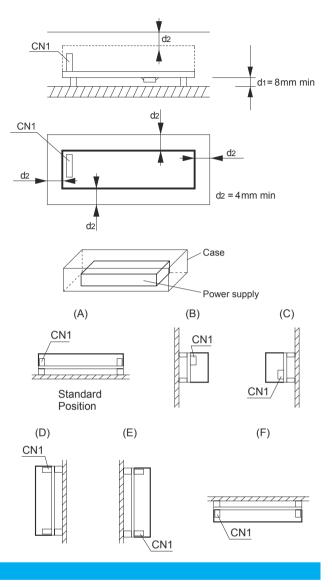
% Dimensions in mm, [ ]=inches

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### Assembling and Installation Method

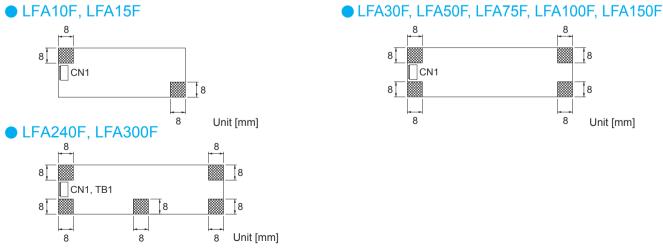
### Installation method

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



### Mounting screw

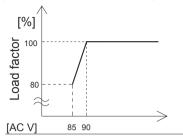
The mounting screw should be M3. The hatched area shows the allowance of metal parts for mounting.



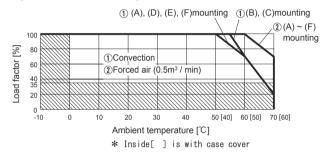
- If metallic fi ttings are used on the component side of the board, ensure there is no contact with surface mounted components.
- This product uses SMD technology.Please avoid the PCB installation method which includes the twisting stress or the bending stress. \*Recommendation to electrically connect FG to metal chassis for reducing noise.

### Derating

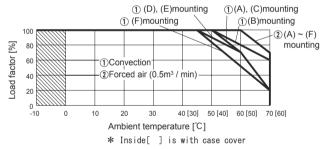




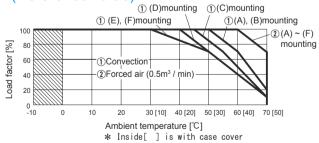
### LFA10F Ambient temperature derating curve (Reference value)



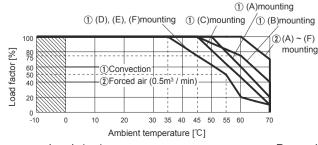
### LFA30F Ambient temperature derating curve (Reference value)



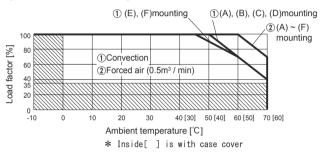
### LFA75F Ambient temperature derating curve (Reference value)



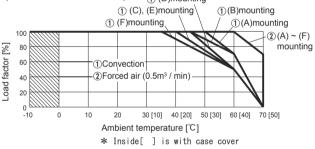
### LFA100F Ambient temperature derating curve (Reference value)



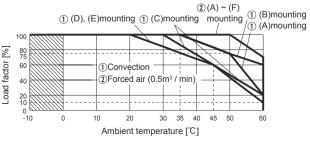
### LFA15F Ambient temperature derating curve (Reference value)



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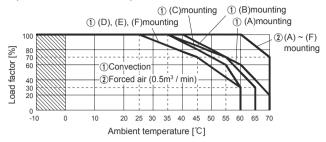
### ●LFA100F-□-SN Ambient temperature derating curve (Reference value)



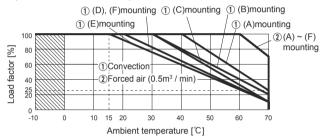
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### Derating

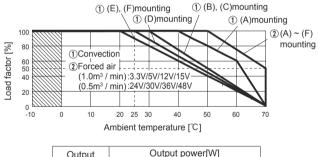
### LFA150F Ambient temperature derating curve (Reference value)



### LFA240F Ambient temperature derating curve (Reference value)



### LFA300F Ambient temperature derating curve (Reference value)



Output p	Ower[vv]				
<ol> <li>Convection</li> </ol>	②Forced air				
132.0	198.0				
200.0	300.0 324.0				
204.0					
210.0	330.0				
300.0	336.0				
300.0	330.0				
302.4	338.4				
302.4	336.0				
	①Convection           132.0           200.0           204.0           210.0           300.0           300.0           302.4				

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

Note: In the hatched area, the specification of Ripple, Ripple Noise is different from other area.

Make sure the temperature at point A and point B is less than the temperatures shown in Instruction Manual 3.

The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.

#### **Instruction Manual**

◆ It is neccessary to read the "Instruction Manual" and "Before using our product" before you use our product.

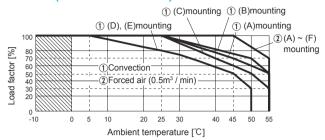
Instruction Manual http Before using our produc http

https://www.cosel.co.jp/redirect/catalog/en/LFA/ https://en.cosel.co.jp/technical/caution/index.html

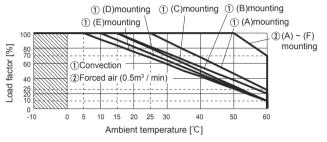


## 

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



### LFA240F--SN Ambient temperature derating curve (Reference value)



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Basic	<b>Characteristics Da</b>	ata							
Madal	Circuit method	Switching frequency [kHz]	Input current <b>*1</b> [A]	Inrush	PCB/Pattern			Series/Parallel operation availability *2	
Model	Circuit method			current protection	Material	Single sided	Double sided	Series operation	Parallel operation
LFA10F	Flyback converter	100	0.26	LF	CEM-3	Yes		Yes	No
LFA15F	Flyback converter	100	0.35	Thermistor	CEM-3	Yes		Yes	No
LFA30F	Flyback converter	130	0.65	Thermistor	CEM-3	Yes		Yes	No
	Active filter	60-440	0.67	Thermistor	CEM-3	Yes		Yes	No
LFA50F	Flyback converter	130	0.67					tes	INO
LFA75F	Active filter	60-440	1.0	Thermistor	CEM-3	Yes		Yes	No
LIA/JI	Flyback converter	130	1.0					165	INO
LFA100F	Active filter	60	1.3	Thermistor	CEM-3		Yes	Yes	No
LFATUUF	Forward converter	140	1.5		CEIVI-3				
LFA150F	Active filter	60	2.0	Thermistor	CEM-3		Yes	Yes	No
LFAISUF	Forward converter	140	2.0		CEIM-3		res	res	No
1 54 6 4 6 5	Active filter	60		SCR	CEM-3		Vee	Yes	No
LFA240F	Forward converter	140	3.3		GEIVI-3		Yes	res	No
	Active filter	60	4.4	SCR	CEM-3		Yes	Yes	
LFA300F	Forward converter	140	4.1						No

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