

# LEA50F

LEA 50 F -5 -□

① ② ③ ④ ⑤

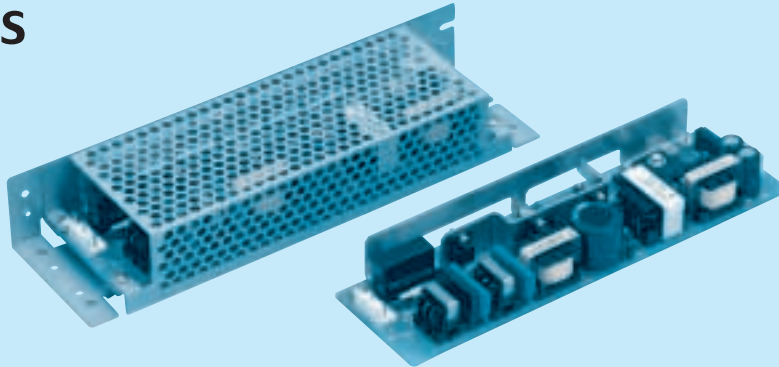


Recommended EMI/EMC Filter  
NAC-06-472



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

- ① Series name
- ② Output wattage
- ③ Universal input
- ④ Output voltage
- ⑤ Optional \*6
- C :with Coating
- G :Low leakage current
- J2:Mini terminal block
- R :with Remote ON/OFF
- S :with Chassis
- SN:with Chassis & cover
- Y :with Potentiometer



LEA

| MODEL                 | LEA50F-3R3-Y | LEA50F-5 | LEA50F-9 | LEA50F-12 | LEA50F-15 | LEA50F-18 | LEA50F-24 | LEA50F-24-H   | LEA50F-30 | LEA50F-48 |
|-----------------------|--------------|----------|----------|-----------|-----------|-----------|-----------|---------------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 33           | 50       | 50.4     | 51.6      | 52.5      | 50.4      | 50.4      | 50.4          | 51        | 52.8      |
| DC OUTPUT             | *5 3.3V 10A  | 5V 10A   | 9V 5.6A  | 12V 4.3A  | 15V 3.5A  | 18V 2.8A  | 24V 2.1A  | 24V 2.1(2.6)A | 30V 1.7A  | 48V 1.1A  |

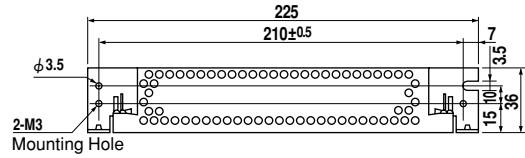
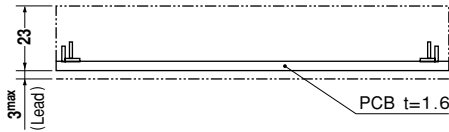
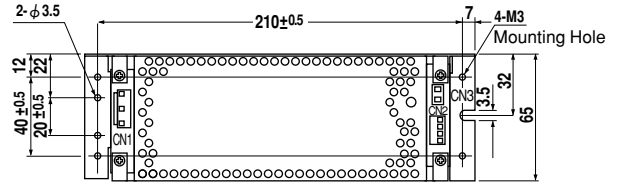
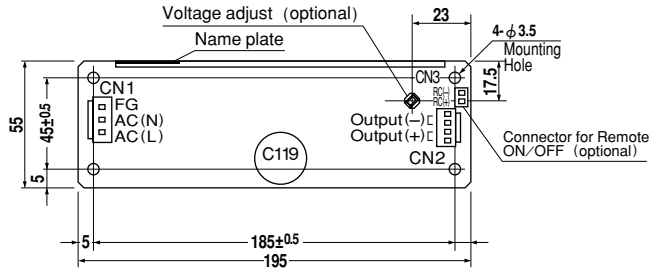
## SPECIFICATIONS

|                                    | MODEL  | LEA50F-3R3-Y  | LEA50F-5  | LEA50F-9    | LEA50F-12   | LEA50F-15   | LEA50F-18   | LEA50F-24   | LEA50F-24-H    | LEA50F-30   | LEA50F-48 |        |
|------------------------------------|--|---|-----------|-------------|-------------|-------------|-------------|-------------|----------------|-------------|-----------|--------|
| INPUT                              | VOLTAGE[V]                                       | AC85 - 264 1φ or DC120 - 370  |           |             |             |             |             |             |                |             |           |        |
|                                    | CURRENT[A]                                       | ACIN 100V   | 0.6       | 0.7typ      |             |             |             |             |                |             |           |        |
|                                    |  | ACIN 200V   | 0.3       | 0.35typ     |             |             |             |             |                |             |           |        |
|                                    | FREQUENCY[Hz]                                    | 50/60 (47 - 63) or DC   |           |             |             |             |             |             |                |             |           |        |
|                                    | EFFICIENCY[%]                                    | ACIN 100V   | 70typ     | 75typ       | 78typ       | 78typ       | 79typ       | 80typ       | 81typ          | 81typ       | 82typ     | 83typ  |
|                                    |  | ACIN 200V   | 71typ     | 77typ       | 80typ       | 80typ       | 81typ       | 82typ       | 83typ          | 83typ       | 84typ     | 85typ  |
|                                    | POWER FACTOR                                     | ACIN 100V   | 0.98typ   | 0.99typ     |             |             |             |             |                |             |           |        |
| ACIN 200V                          |  | 0.91typ   | 0.93typ   |             |             |             |             |             |                |             |           |        |
| 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]                | 0.75max (60Hz, According to IEC60950 and DEN-AN) |   |           |             |             |             |             |             |                |             |           |        |
| OUTPUT                             | VOLTAGE[V]                                       | 3.3   | 5         | 9           | 12          | 15          | 18          | 24          | 24             | 30          | 48        |        |
|                                    | CURRENT[A]                                       | *1 10   | 10        | 5.6         | 4.3         | 3.5         | 2.8         | 2.1         | 2.1 (Peak 2.6) | 1.7         | 1.1       |        |
|                                    | LINE REGULATION[mV]                              | 20max   | 20max     | 36max       | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max    |        |
|                                    | LOAD REGULATION[mV]                              | 40max   | 40max     | 100max      | 100max      | 120max      | 120max      | 150max      | 150max         | 180max      | 300max    |        |
|                                    | RIPPLE[mVp-p]                                    | 0 to +50°C *2   | 80max     | 80max       | 120max      | 120max      | 120max      | 120max      | 150max         | 150max      | 180max    | 300max |
|                                    |  | -10 - 0°C *2  | 140max    | 140max      | 160max      | 160max      | 160max      | 160max      | 160max         | 160max      | 160max    | 200max |
|                                    | RIPPLE NOISE[mVp-p]                              | 0 to +50°C *2   | 120max    | 120max      | 150max      | 150max      | 150max      | 150max      | 150max         | 150max      | 150max    | 350max |
|                                    |  | -10 - 0°C *2  | 160max    | 160max      | 180max      | 180max      | 180max      | 180max      | 180max         | 180max      | 180max    | 400max |
|                                    | TEMPERATURE REGULATION[mV]                       | 0 to +50°C  | 50max     | 50max       | 90max       | 120max      | 150max      | 180max      | 240max         | 240max      | 300max    | 480max |
|                                    |  | -10 to +50°C  | 60max     | 60max       | 120max      | 150max      | 180max      | 200max      | 290max         | 290max      | 360max    | 600max |
|                                    | DRIFT[mV]  | *3 20max  | 20max     | 36max       | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max    |        |
|                                    | START-UP TIME[ms]                                | 500max (ACIN 100V, Io=100%)   |           |             |             |             |             |             |                |             |           |        |
|                                    | HOLD-UP TIME[ms]                                 | 20typ (Io=100%)   |           |             |             |             |             |             |                |             |           |        |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 2.85 - 3.6                                       | Fixed (*Y which can be adjusted the output is available as optional: ±10%)                          |           |             |             |             |             |             |                |             |           |        |
| OUTPUT VOLTAGE SETTING[V]          | 3.25 - 3.35                                      | 4.9 - 5.3   | 8.6 - 9.4 | 11.5 - 12.5 | 14.4 - 15.6 | 17.3 - 18.7 | 23.0 - 25.0 | 23.0 - 25.0 | 28.5 - 31.5    | 46.0 - 50.0 |           |        |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION                           | Works over 105% of rating (works over 105% of peak current at option -H) and recovers automatically |           |             |             |             |             |             |                |             |           |        |
|                                    | OVERVOLTAGE PROTECTION                           | 4.00 - 5.25V   Works at 115 - 140% of rating  |           |             |             |             |             |             |                |             |           |        |
|                                    | OPERATING INDICATION                             | Not provided  |           |             |             |             |             |             |                |             |           |        |
|                                    | REMOTE SENSING                                   | Not provided  |           |             |             |             |             |             |                |             |           |        |
| REMOTE ON/OFF                      | Option (Refer to Instruction Manual)             |   |           |             |             |             |             |             |                |             |           |        |
| ISOLATION                          | INPUT-OUTPUT · RC                                | *4 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 · RC-FG                                   | *4 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                    |           |             |             |             |             |             |                |             |           |        |
|                                    | OUTPUT-RC  | *4 AC100V 1minute, Cutoff current = 100mA, DC100V 10MΩ 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        |           |             |             |             |             |             |                |             |           |        |
|                                    | 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  |           |             |             |             |             |             |                |             |           |        |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS                                 | UL60950-1, C-UL, EN60950-1, EN60065, EN50178 Complies with DEN-AN and IEC60950-1 (At only AC input) |           |             |             |             |             |             |                |             |           |        |
|                                    | CONDUCTED NOISE                                  | Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B   |           |             |             |             |             |             |                |             |           |        |
|                                    | HARMONIC ATTENUATOR                              | Complies with IEC61000-3-2  |           |             |             |             |             |             |                |             |           |        |
| OTHERS                             | CASE SIZE/WEIGHT                                 | 55×26×195mm (W×H×D) /210g max (without chassis and cover)   |           |             |             |             |             |             |                |             |           |        |
|                                    | COOLING METHOD                                   | Convection  |           |             |             |             |             |             |                |             |           |        |

\*1 Peak load for 10sec. or less is acceptable if the total wattage is less than the rated wattage.  
 \*2 This is the value that measured on measuring board with capacitor of 22 μF within 150mm from output terminal.  
 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).  
 \*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C,

with the input voltage held constant at the rated input/output.  
 \*4 Applicable when remote control (optional) is added.  
 \*5 ( ):peak current.  
 \*6 Please contact us about safety approvals for the model with option.  
 \* Parallel operation with other model is not possible.  
 \* Derating is required when operated with chassis and cover.

External view



LEA

| I / O Connector | Mating Connector | Terminal             |
|-----------------|------------------|----------------------|
| <b>CN1</b>      | B3P5-VH          | VHR-5N               |
|                 |                  | Chain: SVH-21T-P1.1  |
|                 |                  | Loose: BVH-21T-P1.1  |
| <b>CN2</b>      | B4P-VH           | VHR-4N               |
|                 |                  | Chain: SVH-21T-P1.1  |
|                 |                  | Loose: BVH-21T-P1.1  |
| <b>CN3</b>      | B2B-XH-A         | XHP-2                |
|                 |                  | Chain: SXH-001T-P0.6 |
|                 |                  | Loose: BXH-001T-P0.6 |

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

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

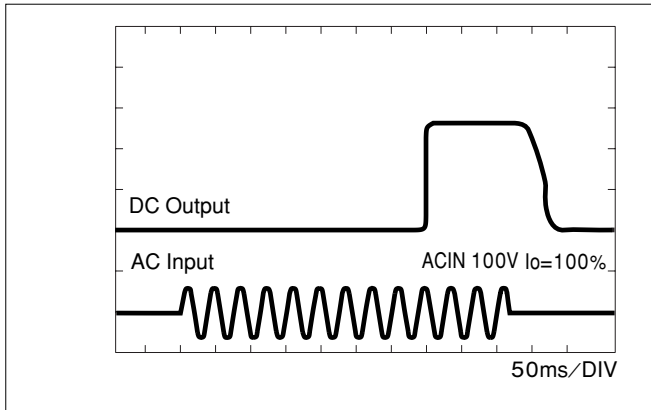
  

| Pin No. | Remote ON/OFF |
|---------|---------------|
| 1       | RC(+)         |
| 2       | RC(-)         |

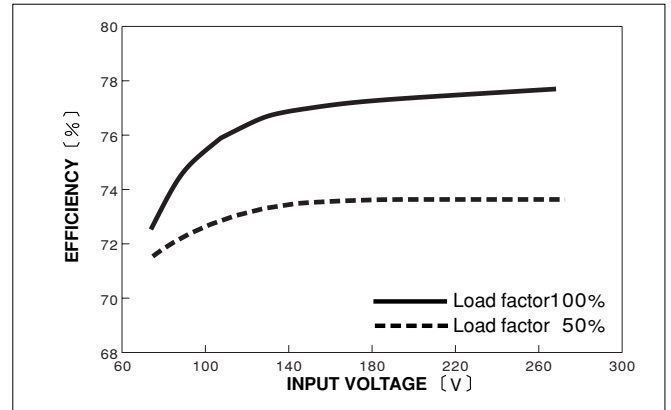
※Weight: 210g or less (Without chassis and cover)  
 ※Tolerance: ±1  
 ※Dimensions in mm.  
 ※PCB Material: Glass composite (CEM3)  
 ※Chassis and cover is optional.  
 ※Mounting torque: 0.6N·m(6.3kgf·cm)max

Performance data

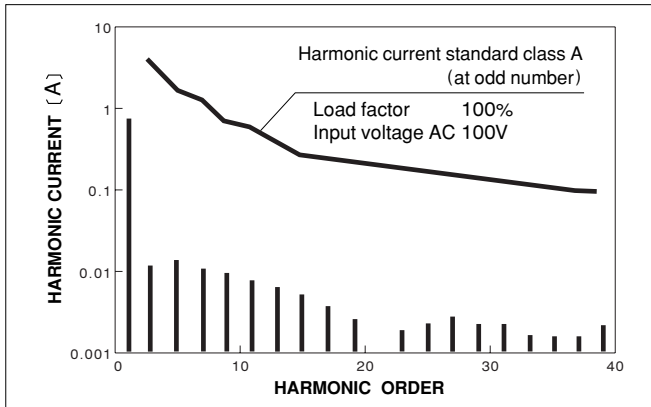
RISE TIME & FALL TIME (LEA50F-5)



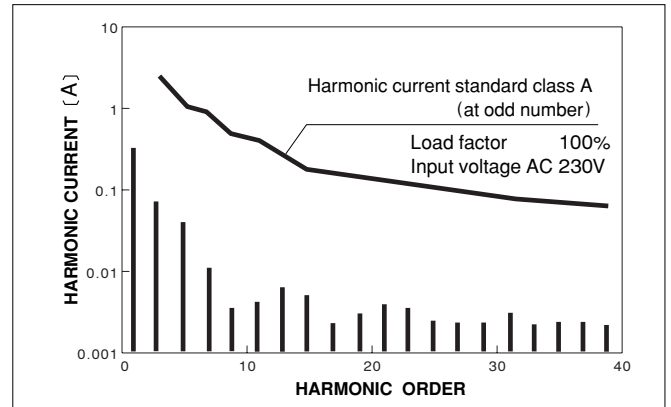
EFFICIENCY (LEA50F-5)



INPUT HARMONIC CURRENT (LEA50F-5)



INPUT HARMONIC CURRENT (LEA50F-5)



# LEA75F

LEA 75 F -5 -□

① ② ③ ④ ⑤

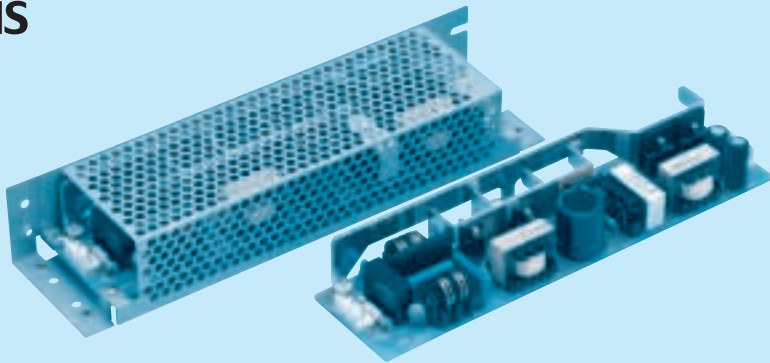


Recommended EMI/EMC Filter  
NAC-06-472



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

- ① Series name
- ② Output wattage
- ③ Universal input
- ④ Output voltage
- ⑤ Optional \*6
- C : with Coating
- G : Low leakage current
- J2 : Mini terminal block
- R : with Remote ON/OFF
- S : with Chassis
- SN : with Chassis & cover
- Y : with Potentiometer



LEA

| MODEL                 | LEA75F-3R3-Y | LEA75F-5 | LEA75F-9 | LEA75F-12 | LEA75F-15 | LEA75F-18 | LEA75F-24 | LEA75F-24-H   | LEA75F-30 | LEA75F-48 |
|-----------------------|--------------|----------|----------|-----------|-----------|-----------|-----------|---------------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 49.5         | 75       | 76.5     | 75.6      | 75        | 75.6      | 76.8      | 76.8          | 75        | 76.8      |
| DC OUTPUT             | *5 3.3V 15A  | 5V 15A   | 9V 8.5A  | 12V 6.3A  | 15V 5A    | 18V 4.2A  | 24V 3.2A  | 24V 3.2(3.8)A | 30V 2.5A  | 48V 1.6A  |

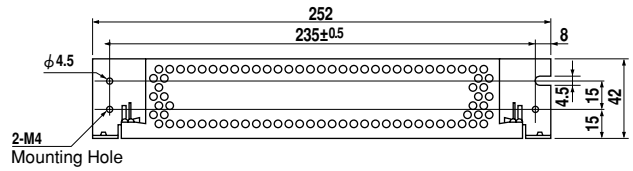
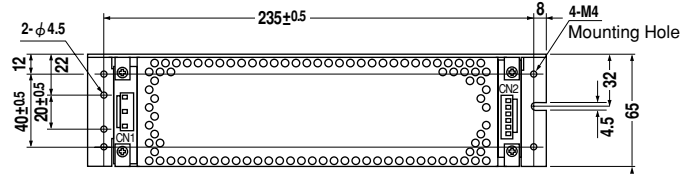
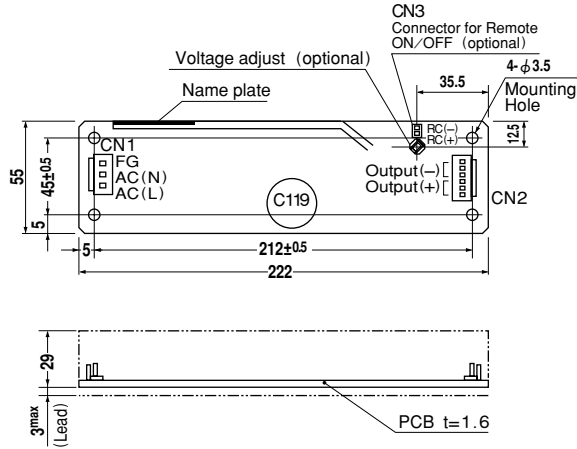
## SPECIFICATIONS

| MODEL                                | LEA75F-3R3-Y   | LEA75F-5   | LEA75F-9  | LEA75F-12   | LEA75F-15   | LEA75F-18   | LEA75F-24   | LEA75F-24-H    | LEA75F-30   | LEA75F-48   |
|--------------------------------------|--|--|-----------|-------------|-------------|-------------|-------------|----------------|-------------|-------------|
| <b>INPUT</b>                         | AC85 - 264 1φ or DC120 - 370   |  |           |             |             |             |             |                |             |             |
| VOLTAGE[V]                           | ACIN 100V 0.8 / ACIN 200V 1.1typ   |  |           |             |             |             |             |                |             |             |
| CURRENT[A]                           | ACIN 100V 0.4 / ACIN 200V 0.55typ  |  |           |             |             |             |             |                |             |             |
| FREQUENCY[Hz]                        | 50/60 (47 - 63) or DC  |  |           |             |             |             |             |                |             |             |
| EFFICIENCY[%]                        | ACIN 100V 70typ  | 75typ  | 78typ     | 78typ       | 79typ       | 81typ       | 82typ       | 82typ          | 82typ       | 84typ       |
|                                      | ACIN 200V 71typ  | 77typ  | 80typ     | 80typ       | 81typ       | 83typ       | 84typ       | 84typ          | 84typ       | 86typ       |
| POWER FACTOR                         | ACIN 100V 0.98typ  | 0.99typ  |           |             |             |             |             |                |             |             |
|                                      | ACIN 200V 0.92typ  | 0.94typ  |           |             |             |             |             |                |             |             |
| 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]                  | 0.75max (60Hz, According to IEC60950 and DEN-AN)   |  |           |             |             |             |             |                |             |             |
| VOLTAGE[V]                           | 3.3  | 5  | 9         | 12          | 15          | 18          | 24          | 24             | 30          | 48          |
| CURRENT[A]                           | *1 15  | 15   | 8.5       | 6.3         | 5           | 4.2         | 3.2         | 3.2 (Peak 3.8) | 2.5         | 1.6         |
| LINE REGULATION[mV]                  | 20max  | 20max  | 36max     | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max      |
| LOAD REGULATION[mV]                  | 40max  | 40max  | 100max    | 100max      | 120max      | 120max      | 150max      | 150max         | 180max      | 300max      |
| RIPPLE[mVp-p]                        | 0 to +50°C *2 80max  | 80max  | 120max    | 120max      | 120max      | 120max      | 150max      | 150max         | 180max      | 300max      |
|                                      | -10 - 0°C *2 140max  | 140max   | 160max    | 160max      | 160max      | 160max      | 160max      | 160max         | 160max      | 200max      |
| RIPPLE NOISE[mVp-p]                  | 0 to +50°C *2 120max   | 120max   | 150max    | 150max      | 150max      | 150max      | 150max      | 150max         | 150max      | 350max      |
|                                      | -10 - 0°C *2 160max  | 160max   | 180max    | 180max      | 180max      | 180max      | 180max      | 180max         | 180max      | 400max      |
| TEMPERATURE REGULATION[mV]           | 0 to +50°C 50max   | 50max  | 90max     | 120max      | 150max      | 180max      | 240max      | 240max         | 300max      | 480max      |
|                                      | -10 to +50°C 60max   | 60max  | 120max    | 150max      | 180max      | 200max      | 290max      | 290max         | 360max      | 600max      |
| DRIFT[mV]                            | *3 20max   | 20max  | 36max     | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max      |
| START-UP TIME[ms]                    | 500max (ACIN 100V, Io=100%)  |  |           |             |             |             |             |                |             |             |
| HOLD-UP TIME[ms]                     | 20typ (Io=100%)  |  |           |             |             |             |             |                |             |             |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V]   | 2.85 - 3.6   | Fixed (*Y which can be adjusted the output is available as optional: ±10%) |           |             |             |             |             |                |             |             |
| OUTPUT VOLTAGE SETTING[V]            | 3.25 - 3.35  | 4.9 - 5.3  | 8.6 - 9.4 | 11.5 - 12.5 | 14.4 - 15.6 | 17.3 - 18.7 | 23.0 - 25.0 | 23.0 - 25.0    | 28.5 - 31.5 | 46.0 - 50.0 |
| <b>PROTECTION CIRCUIT AND OTHERS</b> | <b>OVERCURRENT PROTECTION</b> Works over 105% of rating (works over 105% of peak current at option -H) and recovers automatically        |  |           |             |             |             |             |                |             |             |
|                                      | <b>OVERVOLTAGE PROTECTION</b> 4.00 - 5.25V Works at 115 - 140% of rating   |  |           |             |             |             |             |                |             |             |
|                                      | <b>OPERATING INDICATION</b> Not provided   |  |           |             |             |             |             |                |             |             |
|                                      | <b>REMOTE SENSING</b> Not provided   |  |           |             |             |             |             |                |             |             |
|                                      | <b>REMOTE ON/OFF</b> Option (Refer to Instruction Manual)  |  |           |             |             |             |             |                |             |             |
| <b>ISOLATION</b>                     | <b>INPUT-OUTPUT · RC</b> *4 AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                               |  |           |             |             |             |             |                |             |             |
|                                      | <b>INPUT-FG</b> AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)   |  |           |             |             |             |             |                |             |             |
|                                      | <b>OUTPUT · RC-FG</b> *4 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                                   |  |           |             |             |             |             |                |             |             |
|                                      | <b>OUTPUT-RC</b> *4 AC100V 1minute, Cutoff current = 100mA, DC100V 10MΩ min (At Room Temperature)  |  |           |             |             |             |             |                |             |             |
| <b>ENVIRONMENT</b>                   | <b>OPERATING TEMP., HUMID. AND ALTITUDE</b> -10 to +70°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3.000m (10.000feet) max |  |           |             |             |             |             |                |             |             |
|                                      | <b>STORAGE TEMP., HUMID. AND ALTITUDE</b> -20 to +75°C, 20 - 90%RH (Non condensing), 9.000m (30.000feet) max                             |  |           |             |             |             |             |                |             |             |
|                                      | <b>VIBRATION</b> 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis                             |  |           |             |             |             |             |                |             |             |
|                                      | <b>IMPACT</b> 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis   |  |           |             |             |             |             |                |             |             |
| <b>SAFETY AND NOISE REGULATIONS</b>  | <b>AGENCY APPROVALS</b> UL60950-1, C-UL, EN60950-1, EN60065, EN50178 Complies with DEN-AN and IEC60950-1 (At only AC input)              |  |           |             |             |             |             |                |             |             |
|                                      | <b>CONDUCTED NOISE</b> Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B   |  |           |             |             |             |             |                |             |             |
|                                      | <b>HARMONIC ATTENUATOR</b> Complies with IEC61000-3-2  |  |           |             |             |             |             |                |             |             |
| <b>OTHERS</b>                        | <b>CASE SIZE/WEIGHT</b> 55 x 32 x 222mm (W x H x D) /290g max (without chassis and cover)  |  |           |             |             |             |             |                |             |             |
|                                      | <b>COOLING METHOD</b> Convection   |  |           |             |             |             |             |                |             |             |

\*1 Peak load for 10 sec. or less is acceptable if the total wattage is less than the rated wattage.  
\*2 This is the value that measured on measuring board with capacitor of 22 μF within 150mm from output terminal.  
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).  
\*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C,

with the input voltage held constant at the rated input/output.  
\*4 Applicable when remote control (optional) is added.  
\*5 ( ): peak current.  
\*6 Please contact us about safety approvals for the model with option.  
\* Parallel operation with other model is not possible.  
\* Derating is required when operated with chassis and cover.

External view



LEA

| I / O Connector | Mating Connector | Terminal |
|-----------------|------------------|----------|
| CN1             | B3P5-VH          | VHR-5N   |
| CN2             | B6P-VH           | VHR-6N   |
| CN3             | B2B-XH-A         | XHP-2    |

<PIN CONNECTION>

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

| Pin No. | Output |
|---------|--------|
| 1~3     | -V     |
| 4~6     | +V     |

<Optional>

| Pin No. | Remote ON/OFF |
|---------|---------------|
| 1       | RC(+)         |
| 2       | RC(-)         |

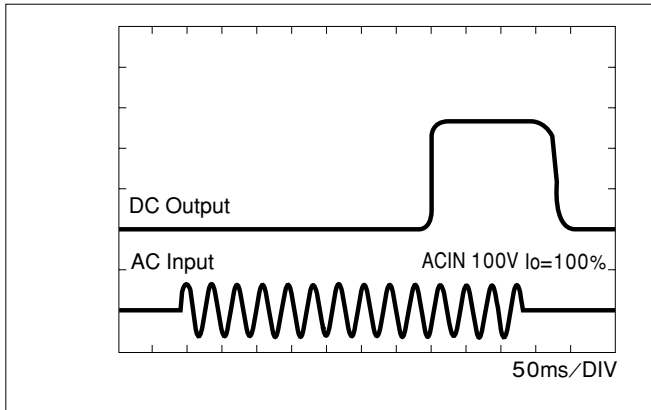
- ※Weight: 290g or less (Without chassis and cover)
- ※Tolerance: ±1
- ※Dimensions in mm.
- ※PCB Material: Glass composite (CEM3)
- ※Chassis and cover is optional.
- ※Chassis and cover is not available to remote ON/OFF unit.
- ※Mounting torque: 1.5N·m(16kgf·cm)max

(Mfr: J.S.T.)

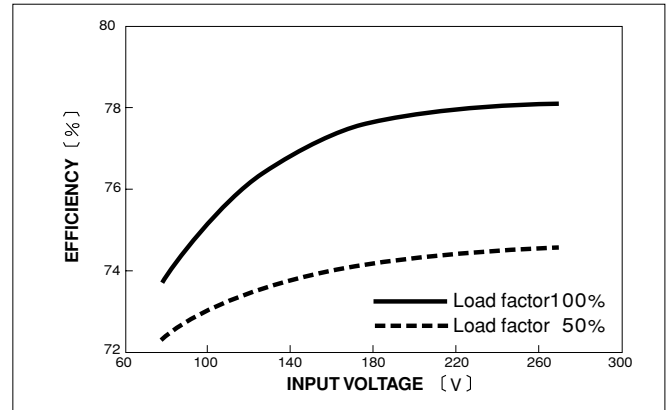
※Keep drawing current per pin below 5A for CN2

Performance data

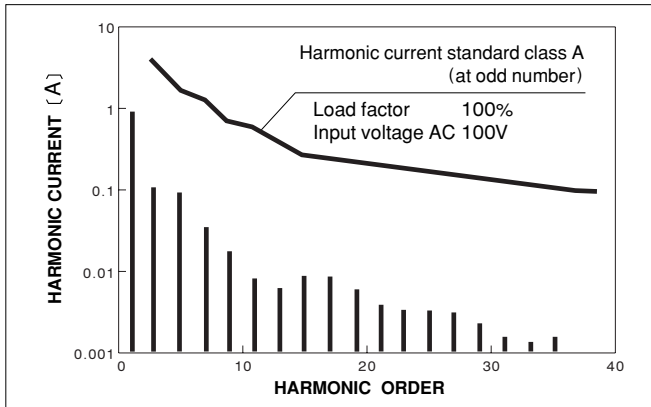
RISE TIME & FALL TIME (LEA75F-5)



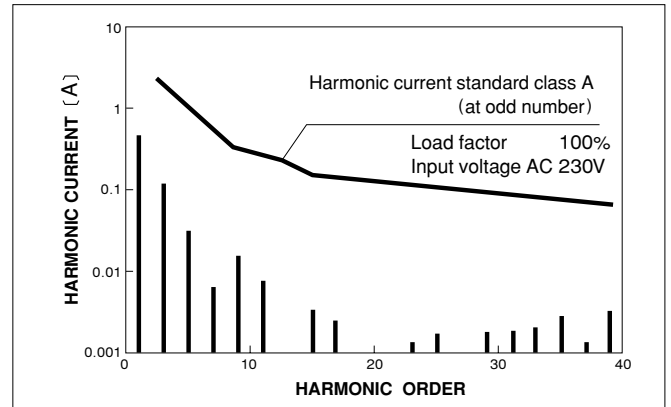
EFFICIENCY (LEA75F-5)



INPUT HARMONIC CURRENT (LEA75F-5)



INPUT HARMONIC CURRENT (LEA75F-5)



# LEA100F

LEA 100 F -5 -□

① ② ③ ④ ⑤

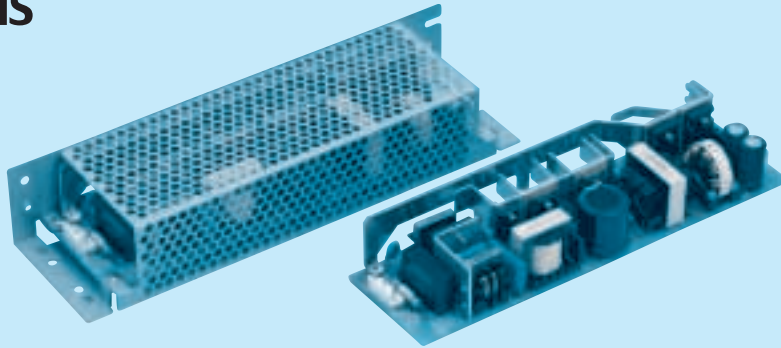


Recommended EMI/EMC Filter  
NAC-06-472



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

- ① Series name
- ② Output wattage
- ③ Universal input
- ④ Output voltage
- ⑤ Optional \*6
- C :with Coating
- G :Low leakage current
- J2:Mini terminal block
- R :with Remote ON/OFF
- S :with Chassis
- SN:with Chassis & cover
- Y :with Potentiometer



LEA

| MODEL                 | LEA100F-3R3-Y | LEA100F-5 | LEA100F-9 | LEA100F-12 | LEA100F-15 | LEA100F-18 | LEA100F-24 | LEA100F-24-H  | LEA100F-30 | LEA100F-48 |
|-----------------------|---------------|-----------|-----------|------------|------------|------------|------------|---------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 66            | 100       | 103.5     | 102        | 100.5      | 100.8      | 103.2      | 103.2         | 105        | 105.6      |
| DC OUTPUT             | *5 3.3V 20A   | 5V 20A    | 9V 11.5A  | 12V 8.5A   | 15V 6.7A   | 18V 5.6A   | 24V 4.3A   | 24V 4.3(5.0)A | 30V 3.5A   | 48V 2.2A   |

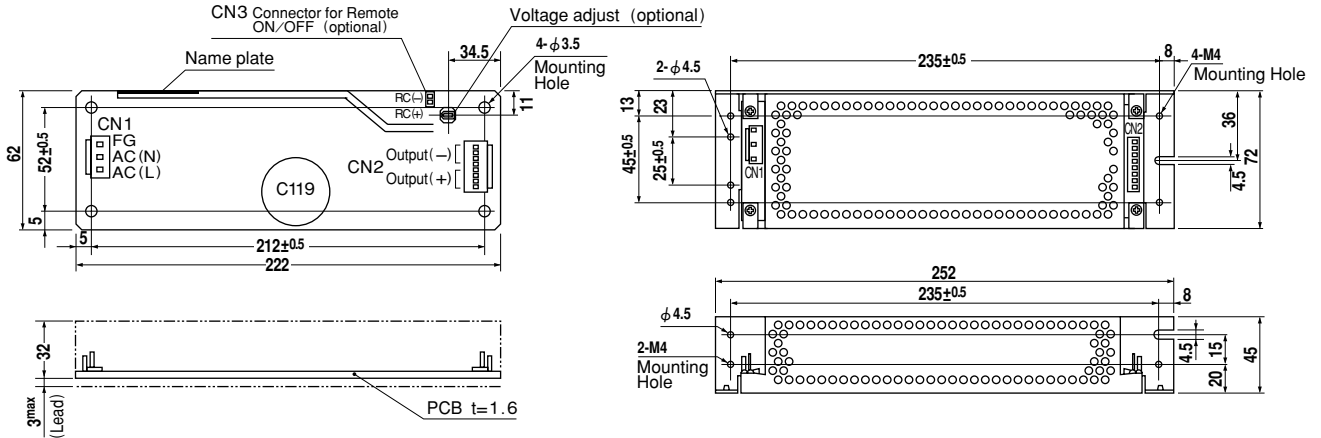
## SPECIFICATIONS

|                               | MODEL  | LEA100F-3R3-Y   | LEA100F-5  | LEA100F-9   | LEA100F-12  | LEA100F-15  | LEA100F-18  | LEA100F-24  | LEA100F-24-H   | LEA100F-30  | LEA100F-48 |        |
|-------------------------------|--|---|--|-------------|-------------|-------------|-------------|-------------|----------------|-------------|------------|--------|
| INPUT                         | VOLTAGE[V]                                       | AC85 - 264 1 φ or DC120 - 370   |  |             |             |             |             |             |                |             |            |        |
|                               | CURRENT[A]                                       | ACIN 100V   | 1.0  | 1.4typ      |             |             |             |             |                |             |            |        |
|                               |  | ACIN 200V   | 0.5  | 0.7typ      |             |             |             |             |                |             |            |        |
|                               | FREQUENCY[Hz]                                    | 50/60 (47 - 63) or DC   |  |             |             |             |             |             |                |             |            |        |
|                               | EFFICIENCY[%]                                    | ACIN 100V   | 71typ  | 75typ       | 79typ       | 79typ       | 79typ       | 81typ       | 81typ          | 81typ       | 82typ      | 83typ  |
|                               |  | ACIN 200V   | 73typ  | 78typ       | 81typ       | 81typ       | 82typ       | 83typ       | 84typ          | 84typ       | 85typ      | 85typ  |
|                               | POWER FACTOR                                     | ACIN 100V   | 0.98typ  | 0.99typ     |             |             |             |             |                |             |            |        |
| ACIN 200V                     |  | 0.92typ   | 0.94typ  |             |             |             |             |             |                |             |            |        |
| 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]           | 0.75max (60Hz, According to IEC60950 and DEN-AN) |   |  |             |             |             |             |             |                |             |            |        |
| OUTPUT                        | VOLTAGE[V]                                       | 3.3   | 5  | 9           | 12          | 15          | 18          | 24          | 24             | 30          | 48         |        |
|                               | CURRENT[A]                                       | *1 20   | 20   | 11.5        | 8.5         | 6.7         | 5.6         | 4.3         | 4.3 (Peak 5.0) | 3.5         | 2.2        |        |
|                               | LINE REGULATION[mV]                              | 20max   | 20max  | 36max       | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max     |        |
|                               | LOAD REGULATION[mV]                              | 40max   | 40max  | 100max      | 100max      | 120max      | 120max      | 150max      | 150max         | 180max      | 300max     |        |
|                               | RIPPLE[mVp-p]                                    | 0 to +50°C *2   | 80max  | 80max       | 120max      | 120max      | 120max      | 120max      | 150max         | 150max      | 180max     | 300max |
|                               |  | -10 - 0°C *2  | 140max   | 140max      | 160max      | 160max      | 160max      | 160max      | 160max         | 160max      | 160max     | 200max |
|                               | RIPPLE NOISE[mVp-p]                              | 0 to +50°C *2   | 120max   | 120max      | 150max      | 150max      | 150max      | 150max      | 150max         | 150max      | 150max     | 350max |
|                               |  | -10 - 0°C *2  | 160max   | 160max      | 180max      | 180max      | 180max      | 180max      | 180max         | 180max      | 180max     | 400max |
|                               | TEMPERATURE REGULATION[mV]                       | 0 to +50°C  | 50max  | 50max       | 90max       | 120max      | 150max      | 180max      | 240max         | 240max      | 300max     | 480max |
|                               |  | -10 to +50°C  | 60max  | 60max       | 120max      | 150max      | 180max      | 200max      | 290max         | 290max      | 360max     | 600max |
|                               | DRIFT[mV]  | *3 20max  | 20max  | 36max       | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max     |        |
|                               | START-UP TIME[ms]                                | 500max (ACIN 100V, Io=100%)   |  |             |             |             |             |             |                |             |            |        |
|                               | HOLD-UP TIME[ms]                                 | 20typ (Io=100%)   |  |             |             |             |             |             |                |             |            |        |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V]               | 2.85 - 3.6  | Fixed (*Y which can be adjusted the output is available as optional: ±10%) |             |             |             |             |             |                |             |            |        |
| OUTPUT VOLTAGE SETTING[V]     | 3.25 - 3.35                                      | 4.9 - 5.3   | 8.6 - 9.4  | 11.5 - 12.5 | 14.4 - 15.6 | 17.3 - 18.7 | 23.0 - 25.0 | 23.0 - 25.0 | 28.5 - 31.5    | 46.0 - 50.0 |            |        |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION                           | Works over 105% of rating (works over 105% of peak current at option -H) and recovers automatically |  |             |             |             |             |             |                |             |            |        |
|                               | OVERVOLTAGE PROTECTION                           | 4.00 - 5.25V   Works at 115 - 140% of rating  |  |             |             |             |             |             |                |             |            |        |
|                               | OPERATING INDICATION                             | Not provided  |  |             |             |             |             |             |                |             |            |        |
|                               | REMOTE SENSING                                   | Not provided  |  |             |             |             |             |             |                |             |            |        |
| REMOTE ON/OFF                 | Option (Refer to Instruction Manual)             |   |  |             |             |             |             |             |                |             |            |        |
| ISOLATION                     | INPUT-OUTPUT · RC                                | *4 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 · RC-FG                                   | *4 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                    |  |             |             |             |             |             |                |             |            |        |
|                               | OUTPUT-RC  | *4 AC100V 1minute, Cutoff current = 100mA, DC100V 10MΩ 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        |  |             |             |             |             |             |                |             |            |        |
|                               | 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  |  |             |             |             |             |             |                |             |            |        |
| SAFETY AND NOISE REGULATIONS  | AGENCY APPROVALS                                 | UL60950-1, C-UL, EN60950-1, EN60065, EN50178 Complies with DEN-AN and IEC60950-1 (At only AC input) |  |             |             |             |             |             |                |             |            |        |
|                               | CONDUCTED NOISE                                  | Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B   |  |             |             |             |             |             |                |             |            |        |
|                               | HARMONIC ATTENUATOR                              | Complies with IEC61000-3-2  |  |             |             |             |             |             |                |             |            |        |
| OTHERS                        | CASE SIZE/WEIGHT                                 | 62 X 35 X 222mm (W X H X D) /380g max (without chassis and cover)                                   |  |             |             |             |             |             |                |             |            |        |
|                               | COOLING METHOD                                   | Convection  |  |             |             |             |             |             |                |             |            |        |

\*1 Peak load for 10 sec. or less is acceptable if the total wattage is less than the rated wattage.  
 \*2 This is the value that measured on measuring board with capacitor of 22 μF within 150mm from output terminal.  
 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).  
 \*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C,

with the input voltage held constant at the rated input/output.  
 \*4 Applicable when remote control (optional) is added.  
 \*5 ( ) : peak current.  
 \*6 Please contact us about safety approvals for the model with option.  
 \* Parallel operation with other model is not possible.  
 \* Derating is required when operated with chassis and cover.

## External view



LEA

| I / O Connector | Mating Connector | Terminal |                      |
|-----------------|------------------|----------|----------------------|
| CN1             | B3P5-VH          | VHR-5N   | Chain: SVH-21T-P1.1  |
|                 |                  |          | Loose: BVH-21T-P1.1  |
| CN2             | B8P-VH           | VHR-8N   | Chain: SVH-21T-P1.1  |
|                 |                  |          | Loose: BVH-21T-P1.1  |
| CN3             | B2B-XH-A         | XHP-2    | Chain: SXH-001T-P0.6 |
|                 |                  |          | Loose: BXH-001T-P0.6 |

### (PIN CONNECTION)

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

| Pin No. | Output |
|---------|--------|
| 1~4     | -V     |
| 5~8     | +V     |

### (Optional)

| Pin No. | Remote ON/OFF |
|---------|---------------|
| 1       | RC(+)         |
| 2       | RC(-)         |

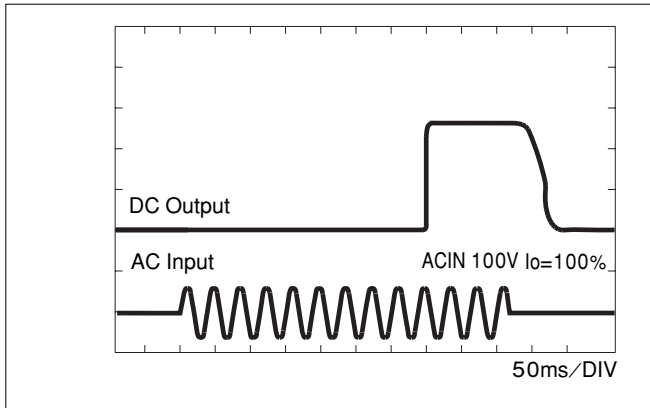
- ※Weight: 380g or less (Without chassis and cover)
- ※Tolerance: ±1
- ※Dimensions in mm.
- ※PCB Material: Glass composite (CEM3)
- ※Chassis and cover is optional.
- ※Chassis and cover is not available to remote ON/OFF unit.
- ※Mounting torque: 1.5N·m(16kgf·cm)max

(Mfr: J.S.T.)

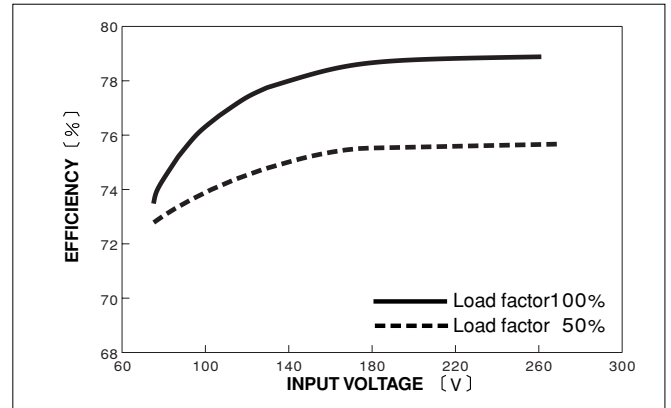
※Keep drawing current per pin below 5A for CN2

## Performance data

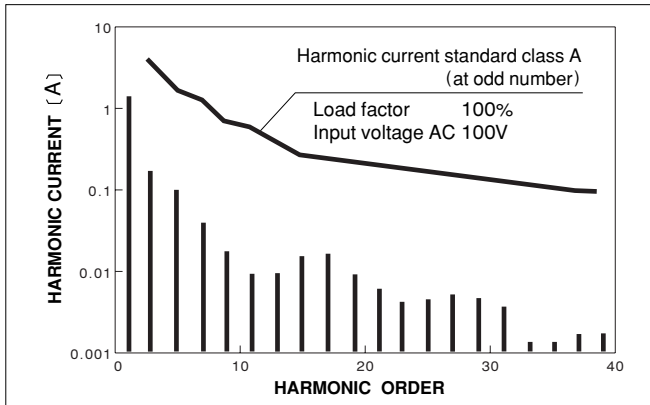
### RISE TIME & FALL TIME (LEA100F-5)



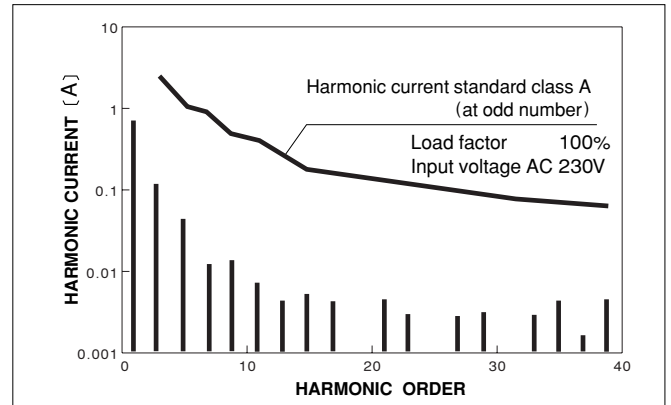
### EFFICIENCY (LEA100F-5)



### INPUT HARMONIC CURRENT (LEA100F-5)



### INPUT HARMONIC CURRENT (LEA100F-5)



# LEA150F

LEA 150 F -5 -□

① ② ③ ④ ⑤

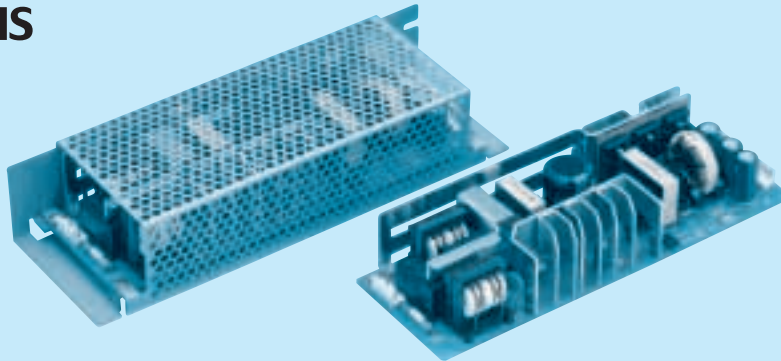


Recommended EMI/EMC Filter  
NAC-06-472



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

- ① Series name
- ② Output wattage
- ③ Universal input
- ④ Output voltage
- ⑤ Optional \*6
- C : with Coating
- G : Low leakage current
- J2 : Mini terminal block
- R : with Remote ON/OFF
- S : with Chassis
- SN : with Chassis & cover
- Y : with Potentiometer



| MODEL                 | LEA150F-3R3-Y | LEA150F-5 | LEA150F-9 | LEA150F-12 | LEA150F-15 | LEA150F-18 | LEA150F-24 | LEA150F-24-H  | LEA150F-30 | LEA150F-48 |
|-----------------------|---------------|-----------|-----------|------------|------------|------------|------------|---------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 99            | 150       | 153       | 150        | 150        | 153        | 151.2      | 151.2         | 150        | 153.6      |
| DC OUTPUT             | *5 3.3V 30A   | 5V 30A    | 9V 17A    | 12V 12.5A  | 15V 10A    | 18V 8.5A   | 24V 6.3A   | 24V 6.3(7.5)A | 30V 5A     | 48V 3.2A   |

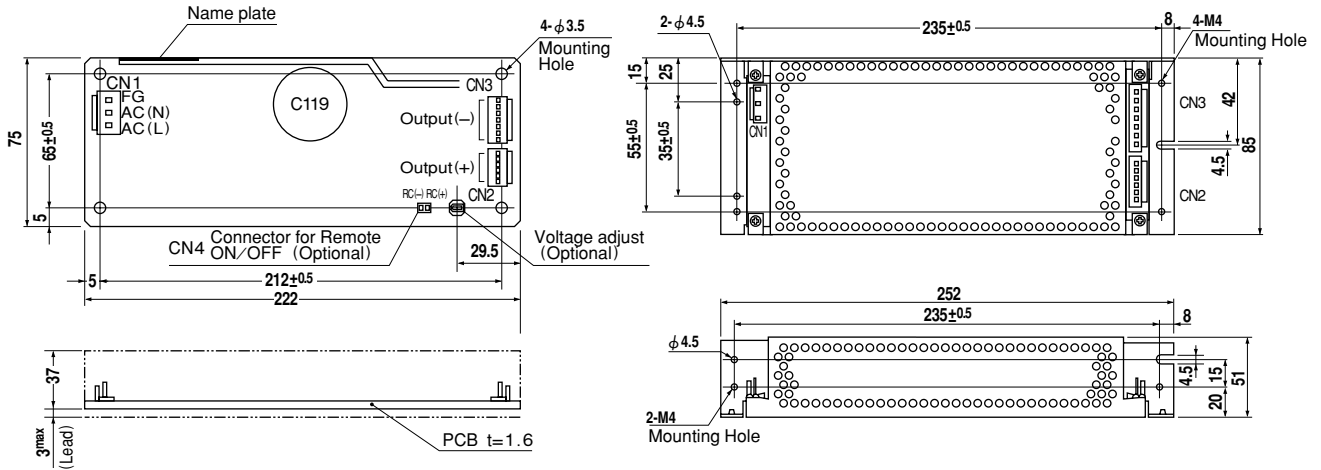
## SPECIFICATIONS

|                               | MODEL  | LEA150F-3R3-Y   | LEA150F-5  | LEA150F-9   | LEA150F-12  | LEA150F-15  | LEA150F-18  | LEA150F-24  | LEA150F-24-H   | LEA150F-30  | LEA150F-48 |        |
|-------------------------------|--|---|--|-------------|-------------|-------------|-------------|-------------|----------------|-------------|------------|--------|
| INPUT                         | VOLTAGE[V]                                       | AC85 - 264 1φ or DC120 - 370  |  |             |             |             |             |             |                |             |            |        |
|                               | CURRENT[A]                                       | ACIN 100V   | 1.4  | 2.0typ      |             |             |             |             |                |             |            |        |
|                               |  | ACIN 200V   | 0.7  | 1.0typ      |             |             |             |             |                |             |            |        |
|                               | FREQUENCY[Hz]                                    | 50/60 (47 - 63) or DC   |  |             |             |             |             |             |                |             |            |        |
|                               | EFFICIENCY[%]                                    | ACIN 100V   | 71typ  | 76typ       | 79typ       | 78typ       | 80typ       | 81typ       | 81typ          | 81typ       | 84typ      | 84typ  |
|                               |  | ACIN 200V   | 74typ  | 79typ       | 82typ       | 81typ       | 83typ       | 84typ       | 84typ          | 84typ       | 87typ      | 87typ  |
|                               | POWER FACTOR                                     | ACIN 100V   | 0.98typ  | 0.99typ     |             |             |             |             |                |             |            |        |
| ACIN 200V                     |  | 0.91typ   | 0.94typ  |             |             |             |             |             |                |             |            |        |
| 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]           | 0.75max (60Hz, According to IEC60950 and DEN-AN) |   |  |             |             |             |             |             |                |             |            |        |
| OUTPUT                        | VOLTAGE[V]                                       | 3.3   | 5  | 9           | 12          | 15          | 18          | 24          | 24             | 30          | 48         |        |
|                               | CURRENT[A]                                       | *1 30   | 30   | 17          | 12.5        | 10          | 8.5         | 6.3         | 6.3 (Peak 7.5) | 5           | 3.2        |        |
|                               | LINE REGULATION[mV]                              | 20max   | 20max  | 36max       | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max     |        |
|                               | LOAD REGULATION[mV]                              | 40max   | 40max  | 100max      | 100max      | 120max      | 120max      | 150max      | 150max         | 180max      | 300max     |        |
|                               | RIPPLE[mVp-p]                                    | 0 to +50°C *2   | 80max  | 80max       | 120max      | 120max      | 120max      | 120max      | 150max         | 150max      | 180max     | 300max |
|                               |  | -10 - 0°C *2  | 140max   | 140max      | 160max      | 160max      | 160max      | 160max      | 160max         | 160max      | 160max     | 200max |
|                               | RIPPLE NOISE[mVp-p]                              | 0 to +50°C *2   | 120max   | 120max      | 150max      | 150max      | 150max      | 150max      | 150max         | 150max      | 150max     | 350max |
|                               |  | -10 - 0°C *2  | 160max   | 160max      | 180max      | 180max      | 180max      | 180max      | 180max         | 180max      | 180max     | 400max |
|                               | TEMPERATURE REGULATION[mV]                       | 0 to +50°C  | 50max  | 50max       | 90max       | 120max      | 150max      | 180max      | 240max         | 240max      | 300max     | 480max |
|                               |  | -10 to +50°C  | 60max  | 60max       | 120max      | 150max      | 180max      | 200max      | 290max         | 290max      | 360max     | 600max |
|                               | DRIFT[mV]  | *3 20max  | 20max  | 36max       | 48max       | 60max       | 72max       | 96max       | 96max          | 120max      | 192max     |        |
|                               | START-UP TIME[ms]                                | 500max (ACIN 100V, Io=100%)   |  |             |             |             |             |             |                |             |            |        |
|                               | HOLD-UP TIME[ms]                                 | 20typ (Io=100%)   |  |             |             |             |             |             |                |             |            |        |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V]               | 2.85 - 3.6  | Fixed (*Y which can be adjusted the output is available as optional: ±10%) |             |             |             |             |             |                |             |            |        |
| OUTPUT VOLTAGE SETTING[V]     | 3.25 - 3.35                                      | 4.9 - 5.3   | 8.6 - 9.4  | 11.5 - 12.5 | 14.4 - 15.6 | 17.3 - 18.7 | 23.0 - 25.0 | 23.0 - 25.0 | 28.5 - 31.5    | 46.0 - 50.0 |            |        |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION                           | Works over 105% of rating (works over 105% of peak current at option -H) and recovers automatically |  |             |             |             |             |             |                |             |            |        |
|                               | OVERVOLTAGE PROTECTION                           | 4.00 - 5.25V   Works at 115 - 140% of rating  |  |             |             |             |             |             |                |             |            |        |
|                               | OPERATING INDICATION                             | Not provided  |  |             |             |             |             |             |                |             |            |        |
|                               | REMOTE SENSING                                   | Not provided  |  |             |             |             |             |             |                |             |            |        |
| REMOTE ON/OFF                 | Option (Refer to Instruction Manual)             |   |  |             |             |             |             |             |                |             |            |        |
| ISOLATION                     | INPUT-OUTPUT · RC                                | *4 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 · RC-FG                                   | *4 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                    |  |             |             |             |             |             |                |             |            |        |
|                               | OUTPUT-RC  | *4 AC100V 1minute, Cutoff current = 100mA, DC100V 10MΩ min (At Room Temperature)                    |  |             |             |             |             |             |                |             |            |        |
| ENVIRONMENT                   | OPERATING TEMP., HUMID. AND ALTITUDE             | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3.000m (10.000feet) max        |  |             |             |             |             |             |                |             |            |        |
|                               | 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  |  |             |             |             |             |             |                |             |            |        |
| SAFETY AND NOISE REGULATIONS  | AGENCY APPROVALS                                 | UL60950-1, C-UL, EN60950-1, EN60065, EN50178 Complies with DEN-AN and IEC60950-1 (At only AC input) |  |             |             |             |             |             |                |             |            |        |
|                               | CONDUCTED NOISE                                  | Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B   |  |             |             |             |             |             |                |             |            |        |
|                               | HARMONIC ATTENUATOR                              | Complies with IEC61000-3-2  |  |             |             |             |             |             |                |             |            |        |
| OTHERS                        | CASE SIZE/WEIGHT                                 | 75 × 40 × 222mm (W × H × D) /500g max (without chassis and cover)                                   |  |             |             |             |             |             |                |             |            |        |
|                               | COOLING METHOD                                   | Convection  |  |             |             |             |             |             |                |             |            |        |

\*1 Peak load for 10 sec. or less is acceptable if the total wattage is less than the rated wattage.  
 \*2 This is the value that measured on measuring board with capacitor of 22 μF within 150mm from output terminal.  
 Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).  
 \*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C,

with the input voltage held constant at the rated input/output.  
 \*4 Applicable when remote control (optional) is added.  
 \*5 ( ): peak current.  
 \*6 Please contact us about safety approvals for the model with option.  
 \* Parallel operation with other model is not possible.  
 \* Derating is required when operated with chassis and cover.

## External view



LEA

| I / O Connector | Mating Connector | Terminal             |
|-----------------|------------------|----------------------|
| CN1             | B3P5-VH          | VHR-5N               |
|                 |                  | Chain: SVH-21T-P1.1  |
|                 |                  | Loose: BVH-21T-P1.1  |
| CN2             | B6P-VH           | VHR-6N               |
|                 |                  | Chain: SVH-21T-P1.1  |
|                 |                  | Loose: BVH-21T-P1.1  |
| CN3             | B7P-VH           | VHR-7N               |
|                 |                  | Chain: SVH-21T-P1.1  |
|                 |                  | Loose: BVH-21T-P1.1  |
| CN4             | B2B-XH-A         | XHP-2                |
|                 |                  | Chain: SXH-001T-P0.6 |
|                 |                  | Loose: BXH-001T-P0.6 |

(Mfr: J.S.T.)

### (PIN CONNECTION)

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

| Pin No. | Output |
|---------|--------|
| CN2 1~6 | +V     |
| CN3 1~7 | -V     |

### (Optional)

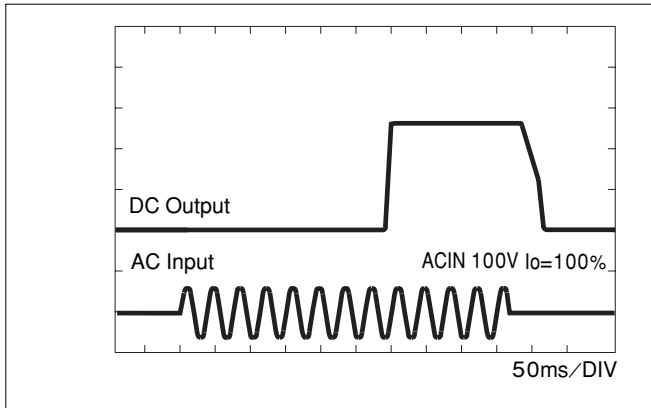
| Pin No. | Remote ON/OFF |
|---------|---------------|
| CN4 1   | RC(+)         |
| CN4 2   | RC(-)         |

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

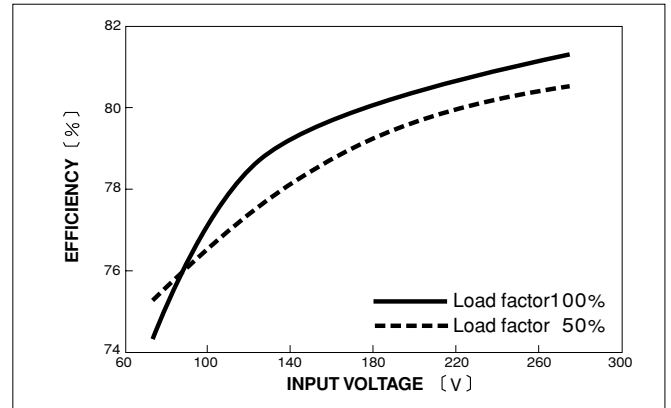
- ※Weight: 500g or less (Without chassis and cover)
- ※Tolerance: ±1
- ※Dimensions in mm.
- ※PCB Material: Glass composite (CEM3)
- ※Chassis and cover is optional.
- ※Chassis and cover is not available to remote ON/OFF unit.
- ※Mounting torque: 1.5N·m(16kgf·cm)max

## Performance data

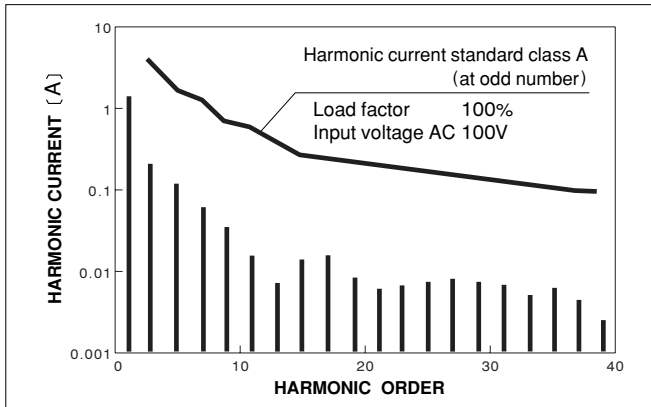
### RISE TIME & FALL TIME (LEA150F-5)



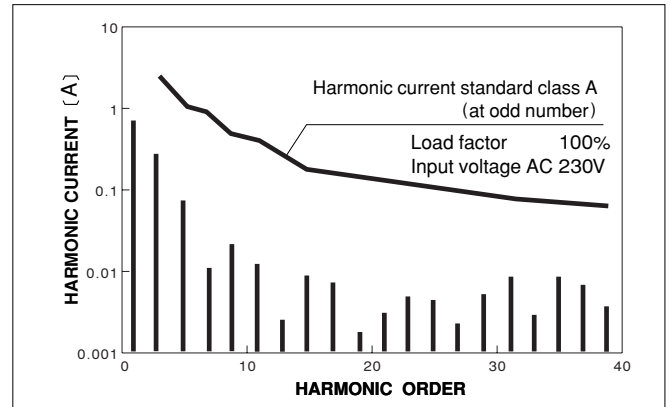
### EFFICIENCY (LEA150F-5)



### INPUT HARMONIC CURRENT (LEA150F-5)



### INPUT HARMONIC CURRENT (LEA150F-5)





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