

# LGA50A

LG A 50 A -5 -

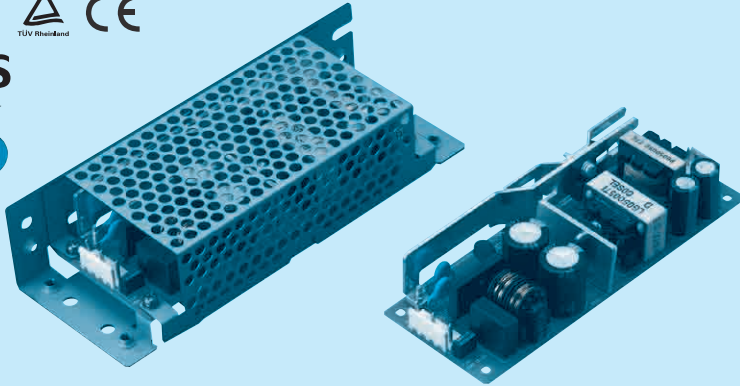
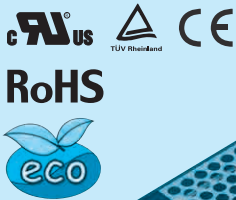
① ② ③ ④ ⑤ ⑥

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 Single output
- ③ Output wattage
- ④ 100/120V input
- ⑤ Output voltage
- ⑥ Optional
- C :with Coating
- G :Low leakage current
- H :with the function to be acceptable to output peak current (only 24V)
- J1:VH(J.S.T.)connector type
- S :with Chassis
- SN:with Chassis & cover
- Y :with Potentiometer



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

| MODEL                 | LGA50A-3R3-Y | LGA50A-5 | LGA50A-12 | LGA50A-15 | LGA50A-24 | LGA50A-24-H          | LGA50A-48 |
|-----------------------|--------------|----------|-----------|-----------|-----------|----------------------|-----------|
| MAX OUTPUT WATTAGE[W] | 33           | 50       | 51.6      | 52.5      | 60        | 60                   | 62.4      |
| DC OUTPUT             | 3.3V 10A     | 5V 10A   | 12V 4.3A  | 15V 3.5A  | 24V 2.5A  | 24V 2.5 (Peak 3.2) A | 48V 1.3A  |

## SPECIFICATIONS

|                               | MODEL                                | LGA50A-3R3-Y                                                                                          | LGA50A-5                                                                    | LGA50A-12         | LGA50A-15         | LGA50A-24         | LGA50A-24-H       | LGA50A-48         |
|-------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| INPUT                         | VOLTAGE[V]                           | AC85 - 132 1 φ (Refer to Instruction Manual 1.1, and 3.2 Derating)                                    |                                                                             |                   |                   |                   |                   |                   |
|                               | CURRENT[A]                           | ACIN 100V 0.8typ (Io=100%)                                                                            | 1.3typ (Io=100%)                                                            |                   |                   |                   |                   |                   |
|                               | FREQUENCY[Hz]                        | 47 - 440 (Refer to Instruction Manual 1.1)                                                            |                                                                             |                   |                   |                   |                   |                   |
|                               | EFFICIENCY[%]                        | ACIN 100V 74.0typ (Io=100%)                                                                           | 79.0typ (Io=100%)                                                           | 82.0typ (Io=100%) | 83.0typ (Io=100%) | 85.0typ (Io=100%) | 85.0typ (Io=100%) | 85.0typ (Io=100%) |
|                               | INRUSH CURRENT[A]                    | ACIN 100V 30typ (Io=100%), (At cold start), (Ta= 25°C)                                                |                                                                             |                   |                   |                   |                   |                   |
| OUTPUT                        | LEAKAGE CURRENT[ma]                  | 0.5max (ACIN 100V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)                                 |                                                                             |                   |                   |                   |                   |                   |
|                               | VOLTAGE[V]                           | 3.3                                                                                                   | 5                                                                           | 12                | 15                | 24                | 24                | 48                |
|                               | CURRENT[A]                           | *3 10.0                                                                                               | 10.0                                                                        | 4.3               | 3.5               | 2.5               | 2.5 (Peak 3.2)    | 1.3               |
|                               | LINE REGULATION[mV]                  | 20max                                                                                                 | 20max                                                                       | 48max             | 60max             | 96max             | 96max             | 192max            |
|                               | LOAD REGULATION[mV]                  | 40max                                                                                                 | 40max                                                                       | 100max            | 120max            | 150max            | 150max            | 300max            |
|                               | RIPPLE[mVp-p]                        | 0 to +50°C *1 80max                                                                                   | 80max                                                                       | 120max            | 120max            | 120max            | 240max            | 150max            |
|                               |                                      | -10 - 0°C *1 140max                                                                                   | 140max                                                                      | 160max            | 160max            | 160max            | 320max            | 200max            |
|                               | RIPPLE NOISE[mVp-p]                  | 0 to +50°C *1 120max                                                                                  | 120max                                                                      | 150max            | 150max            | 150max            | 300max            | 350max            |
|                               |                                      | -10 - 0°C *1 160max                                                                                   | 160max                                                                      | 180max            | 180max            | 180max            | 360max            | 400max            |
|                               | TEMPERATURE REGULATION[mV]           | 0 to +50°C *4 50max                                                                                   | 50max                                                                       | 120max            | 150max            | 240max            | 240max            | 480max            |
|                               |                                      | -10 to +50°C *4 60max                                                                                 | 60max                                                                       | 150max            | 180max            | 290max            | 290max            | 600max            |
|                               | DRIFT[mV]                            | *2 20max                                                                                              | 20max                                                                       | 48max             | 60max             | 96max             | 96max             | 192max            |
| PROTECTION CIRCUIT AND OTHERS | START-UP TIME[ms]                    | 200max (ACIN 100V, Io=100%)                                                                           |                                                                             |                   |                   |                   |                   |                   |
|                               | HOLD-UP TIME[ms]                     | 20typ (ACIN 100V, Io=100%)                                                                            |                                                                             |                   |                   |                   |                   |                   |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V]   | 2.85 - 3.63                                                                                           | Fixed ("Y" which can be adjusted the output is available as optional ± 10%) |                   |                   |                   |                   |                   |
|                               | OUTPUT VOLTAGE SETTING[V]            | 3.30 - 3.40                                                                                           | 4.90 - 5.30                                                                 | 11.50 - 12.50     | 14.40 - 15.60     | 23.00 - 25.00     | 23.00 - 25.00     | 46.00 - 50.00     |
|                               | OVERCURRENT PROTECTION               | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically   |                                                                             |                   |                   |                   |                   |                   |
| ISOLATION                     | OVERVOLTAGE PROTECTION               | 4.00 - 5.25                                                                                           | 5.75 - 7.00                                                                 | 13.80 - 16.80     | 17.30 - 21.00     | 27.60 - 35.00     | 27.60 - 35.00     | 55.20 - 67.20     |
|                               | OPERATING INDICATION                 | Not provided                                                                                          |                                                                             |                   |                   |                   |                   |                   |
|                               | REMOTE SENSING                       | Not provided                                                                                          |                                                                             |                   |                   |                   |                   |                   |
|                               | REMOTE ON/OFF                        | Not provided                                                                                          |                                                                             |                   |                   |                   |                   |                   |
| ENVIRONMENT                   | INPUT-OUTPUT                         | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                        |                                                                             |                   |                   |                   |                   |                   |
|                               | INPUT-FG                             | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                        |                                                                             |                   |                   |                   |                   |                   |
|                               | OUTPUT-FG                            | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)                          |                                                                             |                   |                   |                   |                   |                   |
| SAFETY AND NOISE REGULATIONS  | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 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                                          |                                                                             |                   |                   |                   |                   |                   |
| OTHERS                        | AGENCY APPROVALS                     | UL60950-1, C-UL (CSA60950-1), EN60950-1 Complies with DEN-AN                                          |                                                                             |                   |                   |                   |                   |                   |
|                               | CONDUCTED NOISE                      | Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B                                            |                                                                             |                   |                   |                   |                   |                   |
|                               | CASE SIZE/WEIGHT                     | 50 x 28.5 x 132mm [1.97 x 1.12 x 5.2 inches] (W x H x D) / 160g max (with chassis & cover : 320g max) |                                                                             |                   |                   |                   |                   |                   |
|                               | COOLING METHOD                       | Convection (Refer to Instruction Manual 3.2)                                                          |                                                                             |                   |                   |                   |                   |                   |

\*1 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.  
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM-103).

\*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 Peak loading for 10sec. And Duty 35% max. or less is acceptable if the total wattage is less than the rated wattage (24V:60W).  
Refer to instruction Manual 5. In detail.

\*4 Only output 24V and 48V DC models are applied that the upper temperature limit is 45°C.

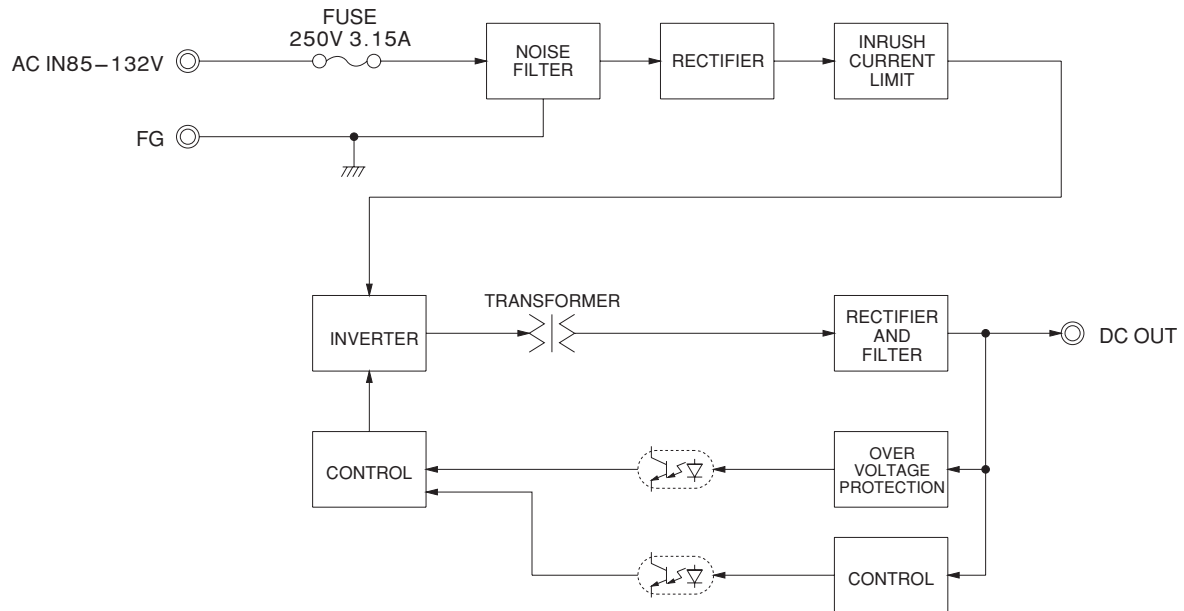
\* Avoid prolonged use under over - load.

\* Parallel operation with other model is not possible.

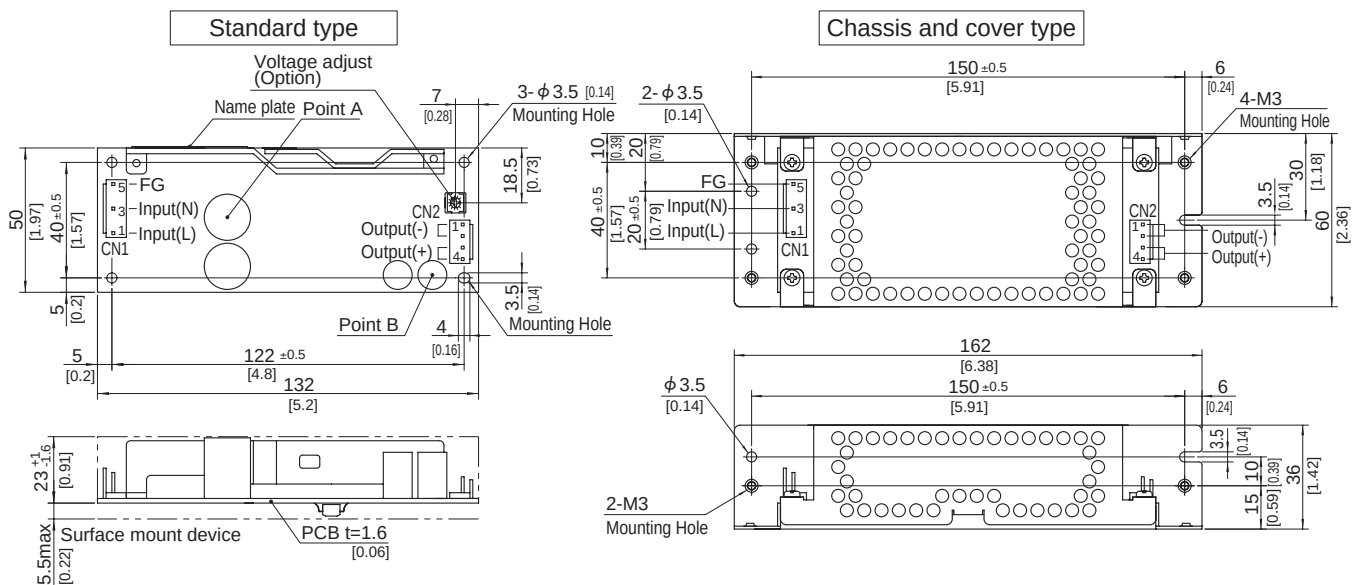
\* Derating is required when operated with chassis and cover.

\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



- ※ 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. Take care for SMD parts on the back to come in contact because of the vibration and not to break down.
- ※ Use the spacer of 8mm length or more.
- ※ 4 Mounting holes are existing.

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

(Mfr: Tyco Electronics AMP)

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

※ Mounting torque: 0.6N.m (6.3kgf.cm) max

## &lt;PIN CONNECTION&gt;

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

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

- ※ Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- ※ Weight : 160g max (with chassis & cover : 320g max)
- ※ PCB material / thickness : CEM3 / 1.6mm [0.06]
- ※ Optional chassis and cover material : Electric galvanizing steel board.
- ※ Dimensions in mm, [ ] = inches

# LGA75A

LG A 75 A -5 -

① ② ③ ④ ⑤ ⑥

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 Single output
- ③ Output wattage
- ④ 100/120V input
- ⑤ Output voltage
- ⑥ Optional
- C :with Coating
- G :Low leakage current
- H :with the function to be acceptable to output peak current (only 24V)
- J1:VH(J.S.T.)connector type
- S :with Chassis
- SN:with Chassis & cover
- Y :with Potentiometer

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

| MODEL                 | LGA75A-3R3-Y | LGA75A-5 | LGA75A-12 | LGA75A-15 | LGA75A-24 | LGA75A-24-H          | LGA75A-48 |
|-----------------------|--------------|----------|-----------|-----------|-----------|----------------------|-----------|
| MAX OUTPUT WATTAGE[W] | 49.5         | 75       | 75.6      | 75        | 76.8      | 76.8                 | 76.8      |
| DC OUTPUT             | 3.3V 15A     | 5V 15A   | 12V 6.3A  | 15V 5A    | 24V 3.2A  | 24V 3.2 (Peak 4.2) A | 48V 1.6A  |

## SPECIFICATIONS

|                               | MODEL                                | LGA75A-3R3-Y                                                                                           | LGA75A-5                                                                        | LGA75A-12         | LGA75A-15         | LGA75A-24         | LGA75A-24-H       | LGA75A-48         |
|-------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| INPUT                         | VOLTAGE[V]                           | AC85 - 132 1 $\phi$ (Refer to Instruction Manual 1.1, and 3.2 Derating)                                |                                                                                 |                   |                   |                   |                   |                   |
|                               | CURRENT[A]                           | ACIN 100V 1.3typ (Io=100%)                                                                             | 1.7typ (Io=100%)                                                                |                   |                   |                   |                   |                   |
|                               | FREQUENCY[Hz]                        | 47 - 440 (Refer to Instruction Manual 1.1)                                                             |                                                                                 |                   |                   |                   |                   |                   |
|                               | EFFICIENCY[%]                        | ACIN 100V 75.0typ (Io=100%)                                                                            | 79.0typ (Io=100%)                                                               | 83.0typ (Io=100%) | 84.0typ (Io=100%) | 86.0typ (Io=100%) | 86.0typ (Io=100%) | 86.0typ (Io=100%) |
|                               | INRUSH CURRENT[A]                    | ACIN 100V 30typ (Io=100%), (At cold start), (Ta= 25°C)                                                 |                                                                                 |                   |                   |                   |                   |                   |
|                               | LEAKAGE CURRENT[ma]                  | 0.5max (ACIN 100V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)                                  |                                                                                 |                   |                   |                   |                   |                   |
| OUTPUT                        | VOLTAGE[V]                           | 3.3                                                                                                    | 5                                                                               | 12                | 15                | 24                | 24                | 48                |
|                               | CURRENT[A]                           | *3 15.0                                                                                                | 15.0                                                                            | 6.3               | 5.0               | 3.2               | 3.2 (Peak 4.2)    | 1.6               |
|                               | LINE REGULATION[mV]                  | 20max                                                                                                  | 20max                                                                           | 48max             | 60max             | 96max             | 96max             | 192max            |
|                               | LOAD REGULATION[mV]                  | 40max                                                                                                  | 40max                                                                           | 100max            | 120max            | 150max            | 150max            | 300max            |
|                               | RIPPLE[mVp-p]                        | 0 to +50°C *1                                                                                          | 80max                                                                           | 80max             | 120max            | 120max            | 120max            | 150max            |
|                               |                                      | -10 - 0°C *1                                                                                           | 140max                                                                          | 140max            | 160max            | 160max            | 160max            | 200max            |
|                               | RIPPLE NOISE[mVp-p]                  | 0 to +50°C *1                                                                                          | 120max                                                                          | 120max            | 150max            | 150max            | 150max            | 300max            |
|                               |                                      | -10 - 0°C *1                                                                                           | 160max                                                                          | 160max            | 180max            | 180max            | 180max            | 400max            |
|                               | TEMPERATURE REGULATION[mV]           | 0 to +50°C                                                                                             | 50max                                                                           | 50max             | 120max            | 150max            | 240max            | 480max            |
|                               |                                      | -10 to +50°C                                                                                           | 60max                                                                           | 60max             | 150max            | 180max            | 290max            | 600max            |
|                               | DRIFT[mV]                            | *2 20max                                                                                               | 20max                                                                           | 48max             | 60max             | 96max             | 96max             | 192max            |
|                               | START-UP TIME[ms]                    | 200max (ACIN 100V, Io=100%)                                                                            |                                                                                 |                   |                   |                   |                   |                   |
| PROTECTION CIRCUIT AND OTHERS | HOLD-UP TIME[ms]                     | 20typ (ACIN 100V, Io=100%)                                                                             |                                                                                 |                   |                   |                   |                   |                   |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V]   | 2.85 - 3.63                                                                                            | Fixed ("Y" which can be adjusted the output is available as optional $\pm$ 10%) |                   |                   |                   |                   |                   |
|                               | OUTPUT VOLTAGE SETTING[V]            | 3.30 - 3.40                                                                                            | 4.90 - 5.30                                                                     | 11.50 - 12.50     | 14.40 - 15.60     | 23.00 - 25.00     | 23.00 - 25.00     | 46.00 - 50.00     |
|                               | OVERCURRENT PROTECTION               | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically    |                                                                                 |                   |                   |                   |                   |                   |
|                               | OVERVOLTAGE PROTECTION               | 4.00 - 5.25                                                                                            | 5.75 - 7.00                                                                     | 13.80 - 16.80     | 17.30 - 21.00     | 27.60 - 35.00     | 27.60 - 35.00     | 55.20 - 67.20     |
|                               | OPERATING INDICATION                 | Not provided                                                                                           |                                                                                 |                   |                   |                   |                   |                   |
| ISOLATION                     | REMOTE SENSING                       | Not provided                                                                                           |                                                                                 |                   |                   |                   |                   |                   |
|                               | REMOTE ON/OFF                        | Not provided                                                                                           |                                                                                 |                   |                   |                   |                   |                   |
|                               | INPUT-OUTPUT                         | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)                 |                                                                                 |                   |                   |                   |                   |                   |
|                               | INPUT-FG                             | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)                 |                                                                                 |                   |                   |                   |                   |                   |
| ENVIRONMENT                   | OUTPUT-FG                            | AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)                   |                                                                                 |                   |                   |                   |                   |                   |
|                               | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +60°C, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 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            |                                                                                 |                   |                   |                   |                   |                   |
| SAFETY AND NOISE REGULATIONS  | IMPACT                               | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis                                           |                                                                                 |                   |                   |                   |                   |                   |
|                               | AGENCY APPROVALS                     | UL60950-1, C-UL (CSA60950-1), EN60950-1 Complies with DEN-AN                                           |                                                                                 |                   |                   |                   |                   |                   |
|                               | CONDUCTED NOISE                      | Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B                                             |                                                                                 |                   |                   |                   |                   |                   |
| OTHERS                        | CASE SIZE/WEIGHT                     | 50 x 34.5 x 150mm [1.97 x 1.36 x 5.91 inches] (W x H x D) / 200g max (with chassis & cover : 410g max) |                                                                                 |                   |                   |                   |                   |                   |
|                               | COOLING METHOD                       | Convection (Refer to Instruction Manual 3.2)                                                           |                                                                                 |                   |                   |                   |                   |                   |

\*1 This is the value that measured on measuring board with capacitor of 22  $\mu$ F at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM-103).

\*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 Peak loading for 10sec. And Duty 35% max. or less is acceptable if the total wattage is less than the rated wattage.

Refer to instruction Manual 5. In detail.

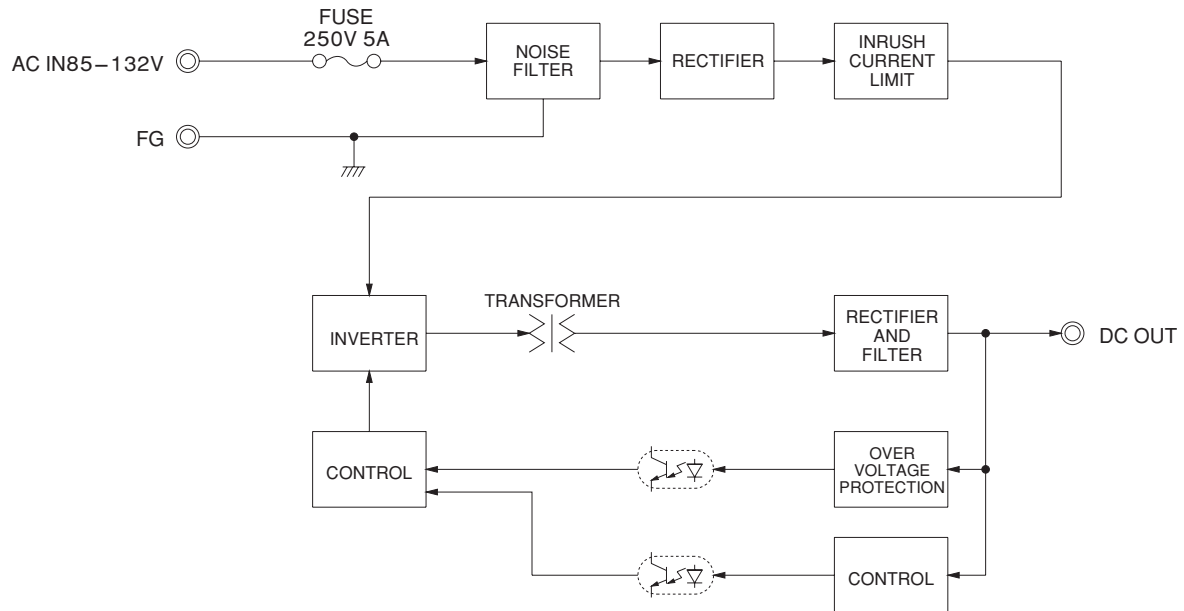
\* Avoid prolonged use under over - load.

\* Parallel operation with other model is not possible.

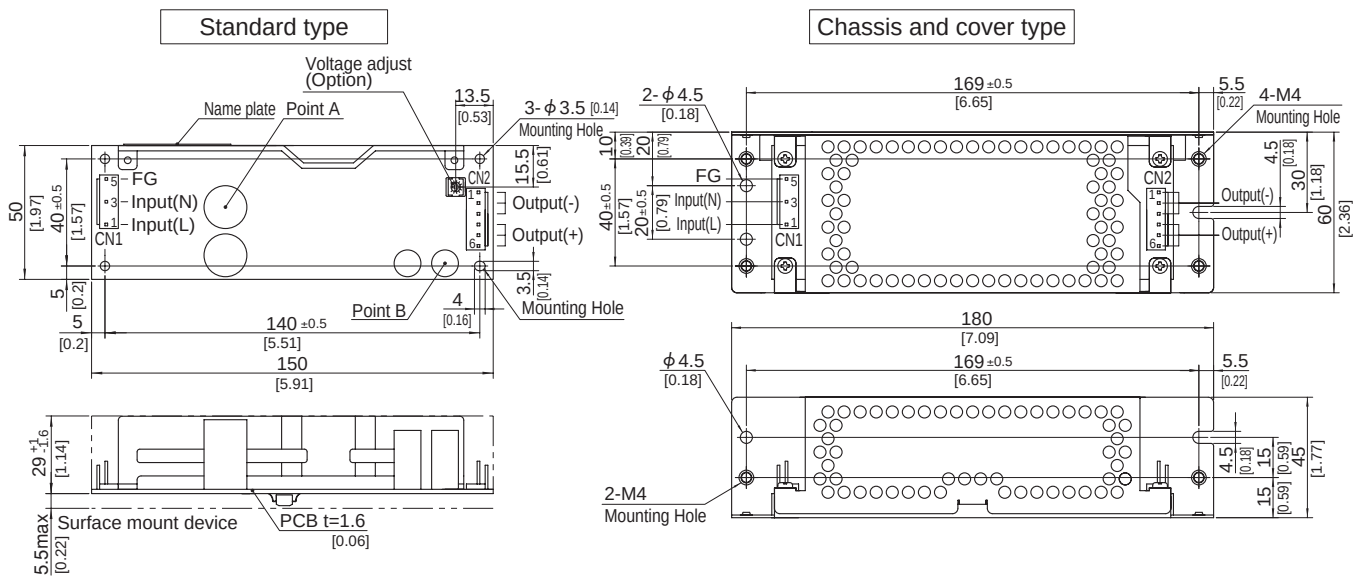
\* Derating is required when operated with chassis and cover.

\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



※ 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.  
Take care for SMD parts on the back to come in contact because of the vibration and not to break down.

※ Use the spacer of 8mm length or more.

※ 4 Mounting holes are existing.

| I/O Connector | Mating connector | Terminal    |                 |
|---------------|------------------|-------------|-----------------|
| CN1           | 1-1123724-3      | 1-1123722-5 | Chain 1123721-1 |
|               |                  |             | Loose 1318912-1 |
| CN2           | 1-1123723-6      | 1-1123722-6 | Chain 1123721-1 |
|               |                  |             | Loose 1318912-1 |

(Mfr:Tyco Electronics AMP)

※I/O Connector is Mfr Tyco Electronics AMP

※Option:-J1:VH(J,S,T) connector type.

Refer to instruction Manual 5.

## <PIN CONNECTION>

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

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

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

※Mounting torque:1.5N・m(16kgf・cm)max

※Tolerance :  $\pm 1$  [ $\pm 0.04$ ]

※Weight : 200g max (with chassis & cover : 410g max)

※PCB material / thickness : CEM3 / 1.6mm [0.06]

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

※Dimensions in mm, [ ]=inches

# LGA100A

LG A 100 A -5 -

① ② ③ ④ ⑤ ⑥

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 Single output
- ③ Output wattage
- ④ 100/120V input
- ⑤ Output voltage
- ⑥ Optional
- C :with Coating
- G :Low leakage current
- H :with the function to be acceptable to output peak current (only 24V)
- J1:VH(J.S.T.)connector type
- S :with Chassis
- SN:with Chassis & cover
- Y :with Potentiometer



RoHS



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

| MODEL                 | LGA100A-3R3-Y | LGA100A-5-Y | LGA100A-12 | LGA100A-15 | LGA100A-24 | LGA100A-24-H         | LGA100A-48 |
|-----------------------|---------------|-------------|------------|------------|------------|----------------------|------------|
| MAX OUTPUT WATTAGE[W] | 66            | 100         | 102        | 105        | 103.2      | 103.2                | 100.8      |
| DC OUTPUT             | 3.3V 20A      | 5V 20A      | 12V 8.5A   | 15V 7A     | 24V 4.3A   | 24V 4.3 (Peak 5.4) A | 48V 2.1A   |

## SPECIFICATIONS

|                               | MODEL                                | LGA100A-3R3-Y                                                                                        | LGA100A-5-Y       | LGA100A-12                                                                 | LGA100A-15        | LGA100A-24        | LGA100A-24-H      | LGA100A-48        |
|-------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|
| INPUT                         | VOLTAGE[V]                           | AC85 - 132 1 φ (Refer to Instruction Manual 1.1, and 3.2 Derating)                                   |                   |                                                                            |                   |                   |                   |                   |
|                               | CURRENT[A]                           | ACIN 100V 1.6typ (Io=100%)                                                                           | 2.4typ (Io=100%)  |                                                                            |                   |                   |                   |                   |
|                               | FREQUENCY[Hz]                        | 47 - 440 (Refer to Instruction Manual 1.1)                                                           |                   |                                                                            |                   |                   |                   |                   |
|                               | EFFICIENCY[%]                        | ACIN 100V 76.0typ (Io=100%)                                                                          | 80.0typ (Io=100%) | 83.0typ (Io=100%)                                                          | 84.0typ (Io=100%) | 85.5typ (Io=100%) | 85.5typ (Io=100%) | 85.5typ (Io=100%) |
|                               | INRUSH CURRENT[A]                    | ACIN 100V 15typ (Io=100%, More than 10sec. to re-start)                                              |                   |                                                                            |                   |                   |                   |                   |
|                               | LEAKAGE CURRENT[ma]                  | 0.5max (ACIN 100V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)                                |                   |                                                                            |                   |                   |                   |                   |
| OUTPUT                        | VOLTAGE[V]                           | 3.3                                                                                                  | 5                 | 12                                                                         | 15                | 24                | 24                | 48                |
|                               | CURRENT[A]                           | *3 20.0                                                                                              | 20.0              | 8.5                                                                        | 7.0               | 4.3               | 4.3 (Peak 5.4)    | 2.1               |
|                               | LINE REGULATION[mV]                  | 20max                                                                                                | 20max             | 48max                                                                      | 60max             | 96max             | 96max             | 192max            |
|                               | LOAD REGULATION[mV]                  | 40max                                                                                                | 40max             | 100max                                                                     | 120max            | 150max            | 150max            | 300max            |
|                               | RIPPLE[mVp-p]                        | 0 to +50℃ *1 80max                                                                                   | 80max             | 120max                                                                     | 120max            | 120max            | 240max            | 150max            |
|                               |                                      | -10 - 0℃ *1 140max                                                                                   | 140max            | 160max                                                                     | 160max            | 160max            | 320max            | 200max            |
|                               | RIPPLE NOISE[mVp-p]                  | 0 to +50℃ *1 120max                                                                                  | 120max            | 150max                                                                     | 150max            | 150max            | 300max            | 350max            |
|                               |                                      | -10 - 0℃ *1 160max                                                                                   | 160max            | 180max                                                                     | 180max            | 180max            | 360max            | 400max            |
|                               | TEMPERATURE REGULATION[mV]           | 0 to +50℃ 50max                                                                                      | 50max             | 120max                                                                     | 150max            | 240max            | 240max            | 480max            |
|                               |                                      | -10 to +50℃ 60max                                                                                    | 60max             | 150max                                                                     | 180max            | 290max            | 290max            | 600max            |
|                               | DRIFT[mV]                            | *2 20max                                                                                             | 20max             | 48max                                                                      | 60max             | 96max             | 96max             | 192max            |
| PROTECTION CIRCUIT AND OTHERS | START-UP TIME[ms]                    | 200max (ACIN 100V, Io=100%)                                                                          |                   |                                                                            |                   |                   |                   |                   |
|                               | HOLD-UP TIME[ms]                     | 20typ (ACIN 100V, Io=100%)                                                                           |                   |                                                                            |                   |                   |                   |                   |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V]   | 2.85 - 3.63                                                                                          | 4.50 - 5.50       | Fixed ("Y" which can be adjusted the output is available as optional ±10%) |                   |                   |                   |                   |
|                               | OUTPUT VOLTAGE SETTING[V]            | 3.30 - 3.40                                                                                          | 5.00 - 5.15       | 11.50 - 12.50                                                              | 14.40 - 15.60     | 23.00 - 25.00     | 23.00 - 25.00     | 46.00 - 50.00     |
|                               | OVERCURRENT PROTECTION               | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically  |                   |                                                                            |                   |                   |                   |                   |
|                               | OVERVOLTAGE PROTECTION               | 4.00 - 5.25                                                                                          | 5.75 - 7.00       | 13.80 - 16.80                                                              | 17.30 - 21.00     | 27.60 - 35.00     | 27.60 - 35.00     | 55.20 - 67.20     |
| ISOLATION                     | OPERATING INDICATION                 | Not provided                                                                                         |                   |                                                                            |                   |                   |                   |                   |
|                               | REMOTE SENSING                       | Not provided                                                                                         |                   |                                                                            |                   |                   |                   |                   |
|                               | REMOTE ON/OFF                        | Not provided                                                                                         |                   |                                                                            |                   |                   |                   |                   |
|                               | INPUT-OUTPUT                         | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                       |                   |                                                                            |                   |                   |                   |                   |
| ENVIRONMENT                   | INPUT-FG                             | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                       |                   |                                                                            |                   |                   |                   |                   |
|                               | OUTPUT-FG                            | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)                         |                   |                                                                            |                   |                   |                   |                   |
|                               | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +60℃, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max  |                   |                                                                            |                   |                   |                   |                   |
|                               | STORAGE TEMP., HUMID. AND ALTITUDE   | -20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max                                    |                   |                                                                            |                   |                   |                   |                   |
| SAFETY AND NOISE REGULATIONS  | 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                                         |                   |                                                                            |                   |                   |                   |                   |
|                               | AGENCY APPROVALS                     | UL60950-1, C-UL (CSA60950-1), EN60950-1 Complies with DEN-AN                                         |                   |                                                                            |                   |                   |                   |                   |
|                               | CONDUCTED NOISE                      | Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B                                           |                   |                                                                            |                   |                   |                   |                   |
| OTHERS                        | CASE SIZE/WEIGHT                     | 62 x 35.5 x 155mm [2.44 x 1.4 x 6.1 inches] (W x H x D) / 300g max (with chassis & cover : 530g max) |                   |                                                                            |                   |                   |                   |                   |
|                               | COOLING METHOD                       | Convection (Refer to Instruction Manual 3.2)                                                         |                   |                                                                            |                   |                   |                   |                   |

\*1 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM-103).

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

\*3 Peak loading for 10sec. And Duty 35% max or less is acceptable if the total wattage is less than the rated wattage.

Refer to instruction Manual 5. In detail.

\* Avoid prolonged use under over - load.

\* Parallel operation with other model is not possible.

\* Derating is required when operated with chassis and cover.

\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



※ 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.  
Take care for SMD parts on the back to come in contact because of the vibration and not to break down.

※ Use the spacer of 8mm length or more.

※ 4 Mounting holes are existing.

| I/O Connector | Mating connector | Terminal        |
|---------------|------------------|-----------------|
| CN1           | 1-1123724-3      | Chain 1123721-1 |
|               |                  | Loose 1318912-1 |
| CN2           | 1-1123723-8      | Chain 1123721-1 |
|               |                  | Loose 1318912-1 |

(Mfr: Tyco Electronics AMP)

※ I/O Connector is Mfr Tyco Electronics AMP

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

Refer to instruction Manual 5.

## &lt;PIN CONNECTION&gt;

| CN1     |       | CN2     |        |
|---------|-------|---------|--------|
| Pin No. | Input | Pin No. | Output |
| 1       | AC(L) | 1 to 4  | -V     |
| 2       | AC(N) | 5 to 8  | +V     |
| 3       |       |         |        |
| 4       | FG    |         |        |
| 5       |       |         |        |

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

※ Mounting torque: 1.5N·m (16kgf·cm) max

※ Tolerance : ±1 [±0.04]

※ Weight : 300g max (with chassis & cover : 530g max)

※ PCB material / thickness : CEM3 / 1.6mm [0.06]

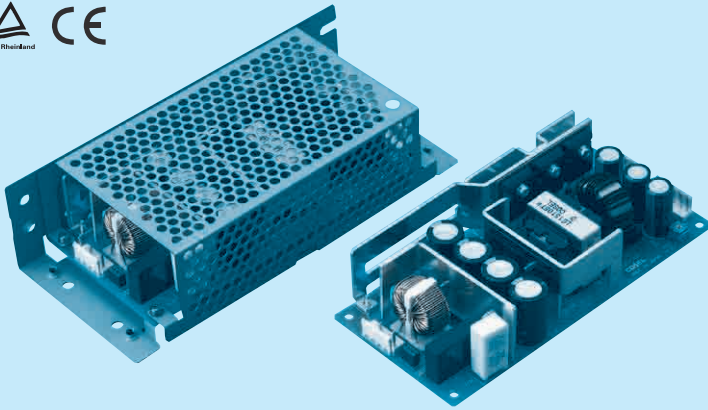
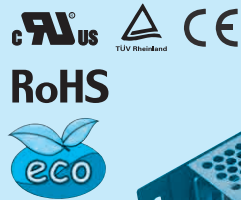
※ Optional chassis and cover material : Electric galvanizing steel board.

※ Dimensions in mm, [ ] = inches

# LGA150A

LG A 150 A -5 -□

① ② ③ ④ ⑤ ⑥



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 Single output
- ③ Output wattage
- ④ 100/120V input
- ⑤ Output voltage
- ⑥ Optional
- C :with Coating
- G :Low leakage current
- H :with the function to be acceptable to output peak current (only 24V)
- J1:VH(J.S.T.)connector type
- S :with Chassis
- SN:with Chassis & cover
- Y :with Potentiometer

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

| MODEL                 | LGA150A-3R3-Y | LGA150A-5-Y | LGA150A-12 | LGA150A-15 | LGA150A-24 | LGA150A-24-H         | LGA150A-48 |
|-----------------------|---------------|-------------|------------|------------|------------|----------------------|------------|
| MAX OUTPUT WATTAGE[W] | 99            | 150         | 150        | 150        | 151.2      | 151.2                | 153.6      |
| DC OUTPUT             | 3.3V 30A      | 5V 30A      | 12V 12.5A  | 15V 10A    | 24V 6.3A   | 24V 6.3 (Peak 7.9) A | 48V 3.2A   |

## SPECIFICATIONS

|                                    | MODEL                              | LGA150A-3R3-Y                                                                                       | LGA150A-5-Y                                                                           | LGA150A-12        | LGA150A-15                                                                     | LGA150A-24        | LGA150A-24-H      | LGA150A-48        |               |               |               |               |               |               |  |
|------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|-------------------|-------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|--|
| INPUT                              | VOLTAGE[V]                         | AC85 - 132 1 $\phi$ (Refer to Instruction Manual 1.1, and 3.2 Derating)                             |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | CURRENT[A]                         | ACIN 100V                                                                                           | 2.6typ (Io=100%)                                                                      | 3.6typ (Io=100%)  |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | FREQUENCY[Hz]                      | 47 - 440 (Refer to Instruction Manual 1.1)                                                          |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | EFFICIENCY[%]                      | ACIN 100V                                                                                           | 76.0typ (Io=100%)                                                                     | 82.0typ (Io=100%) | 84.5typ (Io=100%)                                                              | 85.5typ (Io=100%) | 87.0typ (Io=100%) | 87.0typ (Io=100%) |               |               |               |               |               |               |  |
|                                    | INRUSH CURRENT[A]                  | ACIN 100V                                                                                           | 15 /15 typ (Primary / Secondary Surge Current, Io=100%, More than 10sec. to re-start) |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | LEAKAGE CURRENT[ma]                | 0.5max (ACIN 100V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)                               |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
| OUTPUT                             | VOLTAGE[V]                         | 3.3                                                                                                 | 5                                                                                     | 12                | 15                                                                             | 24                | 24                | 48                |               |               |               |               |               |               |  |
|                                    | CURRENT[A]                         | *3                                                                                                  | 30.0                                                                                  | 30.0              | 12.5                                                                           | 10.0              | 6.3               | 6.3 (Peak 7.9)    | 3.2           |               |               |               |               |               |  |
|                                    | LINE REGULATION[mV]                | 20max                                                                                               |                                                                                       | 20max             | 48max                                                                          | 60max             | 96max             | 96max             | 192max        |               |               |               |               |               |  |
|                                    | LOAD REGULATION[mV]                | 40max                                                                                               |                                                                                       | 40max             | 100max                                                                         | 120max            | 150max            | 150max            | 300max        |               |               |               |               |               |  |
|                                    | RIPPLE[mVp-p]                      | 0 to +40℃ *1                                                                                        | 80max                                                                                 | 80max             | 120max                                                                         | 120max            | 120max            | 240max            | 150max        |               |               |               |               |               |  |
|                                    |                                    | -10 - 0℃ *1                                                                                         | 140max                                                                                | 140max            | 160max                                                                         | 160max            | 160max            | 320max            | 200max        |               |               |               |               |               |  |
|                                    | RIPPLE NOISE[mVp-p]                | 0 to +40℃ *1                                                                                        | 120max                                                                                | 120max            | 150max                                                                         | 150max            | 150max            | 300max            | 350max        |               |               |               |               |               |  |
|                                    |                                    | -10 - 0℃ *1                                                                                         | 160max                                                                                | 160max            | 180max                                                                         | 180max            | 180max            | 360max            | 400max        |               |               |               |               |               |  |
|                                    | TEMPERATURE REGULATION[mV]         | 0 to +40℃                                                                                           | 50max                                                                                 | 50max             | 120max                                                                         | 150max            | 240max            | 240max            | 480max        |               |               |               |               |               |  |
|                                    |                                    | -10 to +40℃                                                                                         | 60max                                                                                 | 60max             | 150max                                                                         | 180max            | 290max            | 290max            | 600max        |               |               |               |               |               |  |
|                                    | DRIFT[mV]                          | *2                                                                                                  | 20max                                                                                 | 20max             | 48max                                                                          | 60max             | 96max             | 96max             | 192max        |               |               |               |               |               |  |
| START-UP TIME[ms]                  | 200max (ACIN 100V, Io=100%)        |                                                                                                     |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
| HOLD-UP TIME[ms]                   | 20typ (ACIN 100V, Io=100%)         |                                                                                                     |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 2.85 - 3.63                        |                                                                                                     | 4.50 - 5.50                                                                           |                   | Fixed ("Y"which can be adjusted the output is available as optional $\pm$ 10%) |                   |                   |                   |               |               |               |               |               |               |  |
| OUTPUT VOLTAGE SETTING[V]          | 3.30 - 3.40                        |                                                                                                     | 5.00 - 5.15                                                                           |                   | 11.50 - 12.50                                                                  |                   | 14.40 - 15.60     |                   | 23.00 - 25.00 |               | 23.00 - 25.00 |               | 46.00 - 50.00 |               |  |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION             | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | OVERVOLTAGE PROTECTION             | 4.00 - 5.25                                                                                         |                                                                                       | 5.75 - 7.00       |                                                                                | 13.80 - 16.80     |                   | 17.30 - 21.00     |               | 27.60 - 35.00 |               | 27.60 - 35.00 |               | 55.20 - 67.20 |  |
|                                    | OPERATING INDICATION               | Not provided                                                                                        |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | REMOTE SENSING                     | Not provided                                                                                        |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | REMOTE ON/OFF                      | Not provided                                                                                        |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
| ISOLATION                          | INPUT-OUTPUT                       | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)              |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | INPUT-FG                           | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature)              |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | OUTPUT-FG                          | AC500V 1minute, Cutoff current = 25mA, DC500V 50M $\Omega$ min (At Room Temperature)                |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
| ENVIRONMENT                        | OPERATING TEMP.,HUMID.AND ALTITUDE | -10 to +60℃, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | STORAGE TEMP.,HUMID.AND ALTITUDE   | -20 to +75℃, 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 (CSA60950-1), EN60950-1 Complies with DEN-AN                                        |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | CONDUCTED NOISE                    | Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B                                          |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
| OTHERS                             | CASE SIZE/WEIGHT                   | 75 x 39 x 160mm [2.95 x 1.54 x 6.3 inches] (W x H x D) / 420g max (with chassis & cover : 650g max) |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |
|                                    | COOLING METHOD                     | Convection (Refer to Instruction Manual 3.2)                                                        |                                                                                       |                   |                                                                                |                   |                   |                   |               |               |               |               |               |               |  |

\*1 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM-103).

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

\*3 Peak loading for 10sec. And Duty 35% max or less is acceptable if the total wattage is less than the rated wattage.

Refer to instruction Manual 5. In detail.

\* Avoid prolonged use under over - load.

\* Parallel operation with other model is not possible.

\* Derating is required when operated with chassis and cover.

\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



- ※ 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. Take care for SMD parts on the back to come in contact because of the vibration and not to break down.
- ※ Use the spacer of 8mm length or more.
- ※ 4 Mounting holes are existing.

| I/O Connector | Mating connector | Terminal |           |
|---------------|------------------|----------|-----------|
| CN1           | 1-1123724-3      | Chain    | 1123721-1 |
|               |                  | Loose    | 1318912-1 |
| CN2           | 1-1123723-6      | Chain    | 1123721-1 |
|               |                  | Loose    | 1318912-1 |
| CN3           | 1-1123723-7      | Chain    | 1123721-1 |
|               |                  | Loose    | 1318912-1 |

(Mfr: Tyco Electronics AMP)

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

※ Mounting torque: 1.5N·m (16kgf·cm) max  
 <PIN CONNECTION>

| CN1     |       | CN2     |        | CN3     |        |
|---------|-------|---------|--------|---------|--------|
| Pin No. | Input | Pin No. | Output | Pin No. | Output |
| 1       | AC(L) | 1 to 6  | +V     | 1 to 7  | -V     |
| 2       |       |         |        |         |        |
| 3       | AC(N) |         |        |         |        |
| 4       |       |         |        |         |        |
| 5       | FG    |         |        |         |        |

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

※ Tolerance :  $\pm 1$  [%0.04]

※ Weight : 420g max (with chassis & cover : 650g max)

※ PCB material / thickness : CEM3 / 1.6mm [0.06]

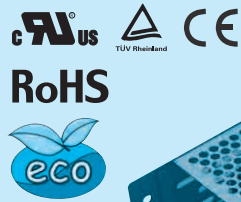
※ Optional chassis and cover material : Electric galvanizing steel board.

※ Dimensions in mm, [ ]=inches

# LGA240A

LG A 240 A -5 -

① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter  
NAC-16-472



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 Single output
- ③ Output wattage
- ④ 100/120V input
- ⑤ Output voltage
- ⑥ Optional
- C :with Coating
- G :Low leakage current
- H :with the function to be acceptable to output peak current (only 24V)
- J1:VH(J.S.T.)connector type
- S :with Chassis
- SN:with Chassis & cover
- T :Vertical terminal block
- Y :with Potentiometer

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

| MODEL                 | LGA240A-24 | LGA240A-24-H         |
|-----------------------|------------|----------------------|
| MAX OUTPUT WATTAGE[W] | 240        | 240                  |
| DC OUTPUT             | 24V 10A    | 24V 10 (Peak 12.5) A |

## SPECIFICATIONS

|                               | MODEL                              | LGA240A-24                                                                                             | LGA240A-24-H      |
|-------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------|
| INPUT                         | VOLTAGE[V]                         | AC85 - 132 1 φ (Refer to Instruction Manual 1.1, and 3.2 Derating)                                     |                   |
|                               | CURRENT[A]                         | ACIN 100V 5.0typ (Io=100%)                                                                             |                   |
|                               | FREQUENCY[Hz]                      | 47 - 440 (Refer to Instruction Manual 1.1)                                                             |                   |
|                               | EFFICIENCY[%]                      | ACIN 100V 86.5typ (Io=100%)                                                                            | 86.5typ (Io=100%) |
|                               | INRUSH CURRENT[A]                  | ACIN 100V 15 / 20 typ (Primary / Secondary Surge Current, Io=100%, More than 10sec. to re-start)       |                   |
|                               | LEAKAGE CURRENT[ma]                | 0.5max (ACIN 100V, 60Hz, Io=100%, According to IEC60950-1 and DEN-AN)                                  |                   |
| OUTPUT                        | VOLTAGE[V]                         | 24                                                                                                     | 24                |
|                               | CURRENT[A]                         | *3 10.0                                                                                                | 10.0 (Peak 12.5)  |
|                               | LINE REGULATION[mV]                | 96max                                                                                                  | 96max             |
|                               | LOAD REGULATION[mV]                | 150max                                                                                                 | 150max            |
|                               | RIPPLE[mVp-p]                      | 0 to +40℃ *1 120max<br>-10 - 0℃ *1 160max                                                              | 240max<br>320max  |
|                               | RIPPLE NOISE[mVp-p]                | 0 to +40℃ *1 150max<br>-10 - 0℃ *1 180max                                                              | 300max<br>360max  |
|                               | TEMPERATURE REGULATION[mV]         | 0 to +40℃ 240max<br>-10 to +40℃ 290max                                                                 | 240max<br>290max  |
|                               | DRIFT[mV]                          | *2 96max                                                                                               | 96max             |
|                               | START-UP TIME[ms]                  | 200max (ACIN 100V, Io=100%)                                                                            |                   |
|                               | HOLD-UP TIME[ms]                   | 20typ (ACIN 100V, Io=100%)                                                                             |                   |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed ("Y"which can be adjusted the output is available as optional ±10%)                              |                   |
|                               | OUTPUT VOLTAGE SETTING[V]          | 23.00 - 25.00                                                                                          | 23.00 - 25.00     |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION             | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically    |                   |
|                               | OVERVOLTAGE PROTECTION             | 27.60 - 35.00                                                                                          | 27.60 - 35.00     |
|                               | OPERATING INDICATION               | Not provided                                                                                           |                   |
|                               | REMOTE SENSING                     | Not provided                                                                                           |                   |
|                               | REMOTE ON/OFF                      | Not provided                                                                                           |                   |
| ISOLATION                     | INPUT-OUTPUT                       | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                         |                   |
|                               | INPUT-FG                           | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                         |                   |
|                               | OUTPUT-FG                          | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)                           |                   |
| ENVIRONMENT                   | OPERATING TEMP.,HUMID.AND ALTITUDE | -10 to +60℃, 20 - 90%RH (Non condensing) (Refer to Instruction Manual 3.2), 3,000m (10,000feet) max    |                   |
|                               | STORAGE TEMP.,HUMID.AND ALTITUDE   | -20 to +75℃, 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 (CSA60950-1), EN60950-1 Complies with DEN-AN                                           |                   |
|                               | CONDUCTED NOISE                    | Complies with FCC-B, VCCI-B, CISPR-B, EN55011-B, EN55022-B                                             |                   |
| OTHERS                        | CASE SIZE/WEIGHT                   | 84 x 48.5 x 180mm [3.31 x 1.91 x 7.09 inches] (W x H x D) / 590g max (with chassis & cover : 880g max) |                   |
|                               | COOLING METHOD                     | Convection (Refer to Instruction Manual 3.2)                                                           |                   |

\*1 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM-103).

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

\*3 Peak loading for 10sec.And Duty 35% max.or less is acceptable if the total wattage is less than the rated wattage.

Refer to instruction Manual 5. In detail.

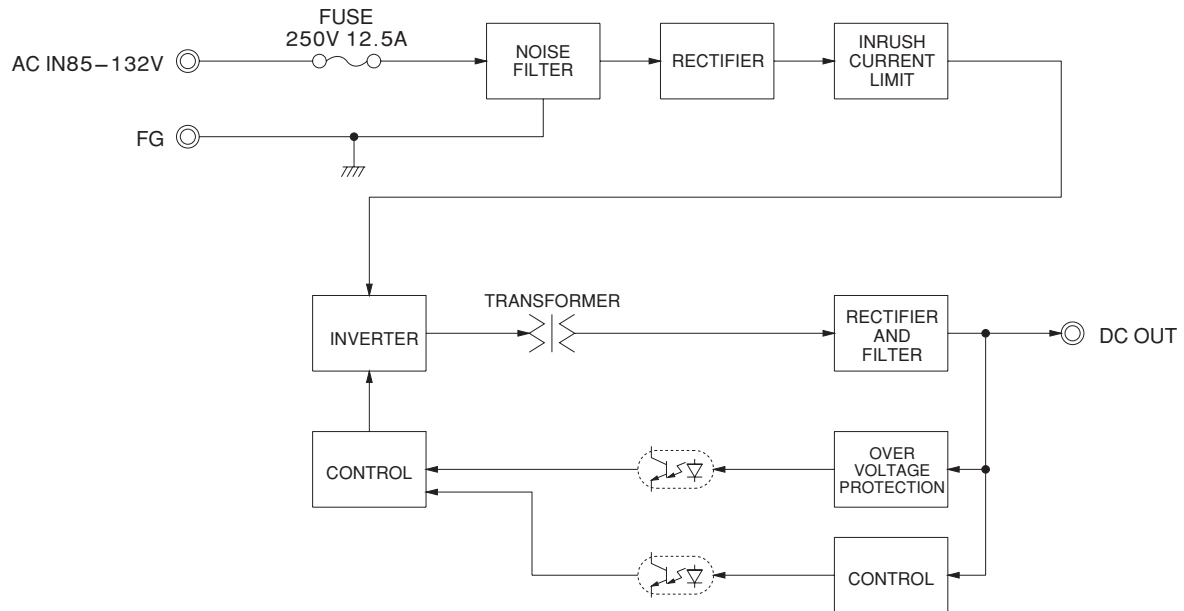
\* Avoid prolonged use under over - load.

\* Parallel operation with other model is not possible.

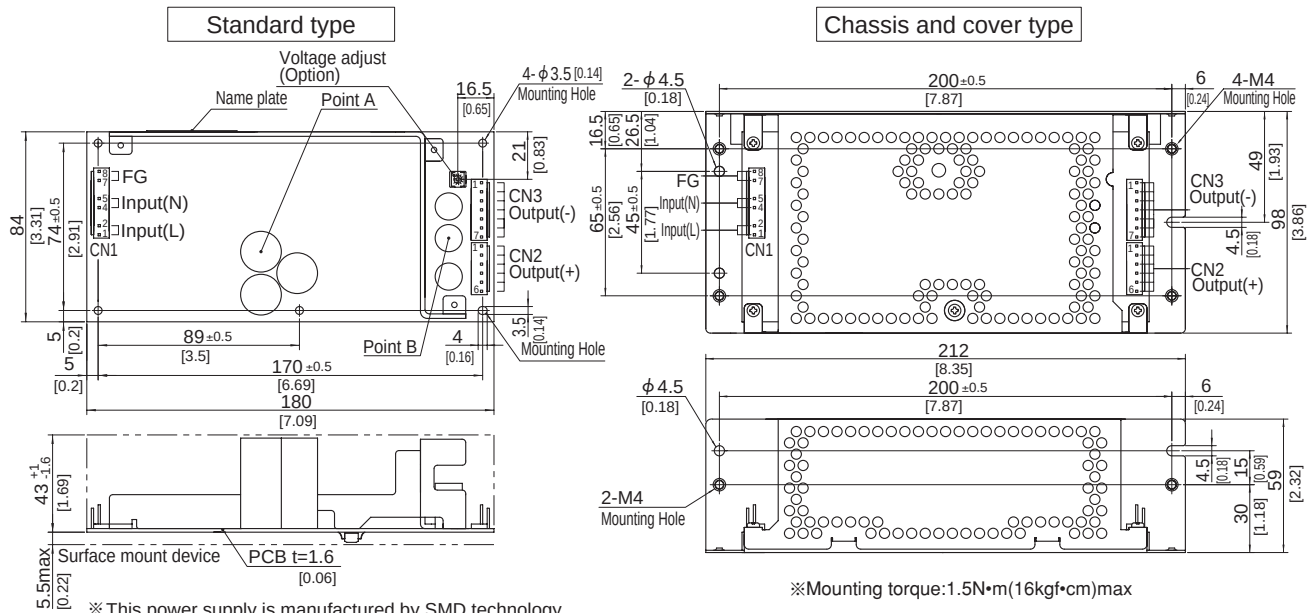
\* Derating is required when operated with chassis and cover.

\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



※ 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.

Take care for SMD parts on the back to come in contact because of the vibration and not to break down.

※ Use the spacer of 8mm length or more.

※ 5 Mounting holes are existing.

| I/O Connector | Mating connector | Terminal        |
|---------------|------------------|-----------------|
| CN1           | 7-1565036-6      | 1-1123722-8     |
|               |                  | Chain 1123721-1 |
|               |                  | Loose 1318912-1 |
| CN2           | 1-1123723-6      | 1-1123722-6     |
|               |                  | Chain 1123721-1 |
|               |                  | Loose 1318912-1 |
| CN3           | 1-1123722-7      | 1-1123722-7     |
|               |                  | Chain 1123721-1 |
|               |                  | Loose 1318912-1 |

(Mfr: Tyco Electronics AMP)

※ I/O Connector is Mfr Tyco Electronics AMP

※ Option: -J1: VH(J.S.T) connector type.  
Refer to instruction Manual 5.

※ Mounting torque: 1.5N·m (16kgf·cm) max

## &lt;PIN CONNECTION&gt;

| Pin No. | Input | Pin No. | Output | Pin No. | Output |
|---------|-------|---------|--------|---------|--------|
| 1, 2    | AC(L) | 1 to 6  | +V     | 1 to 7  | -V     |
| 3       |       |         |        |         |        |
| 4, 5    | AC(N) |         |        |         |        |
| 6       |       |         |        |         |        |
| 7, 8    | FG    |         |        |         |        |

※ Keep drawing current per pin below 5A for CN1, CN2 and CN3.

※ Tolerance : ±1 [%±0.04]

※ Weight : 590g max (with chassis & cover : 880g max)

※ PCB material / thickness : CEM3 / 1.6mm [0.06]

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

※ Dimensions in mm, [ ] = inches

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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

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