



■ Features

- Slim width and low profile(20mm)
- Fanless design for no noise environment
- Withstand 300VAC surge input for 5 seconds
- DC OK active signal function
- Semi-Potting for high moisture environment
- Protections: Short circuit / Over load / Over voltage / Over temperature
- Current sharing for redundant function(5V/4.2V/3.3V only)
- Operating altitude up to 5000 meter (Note.5)
- LED indicator for power on
- 3 years warranty

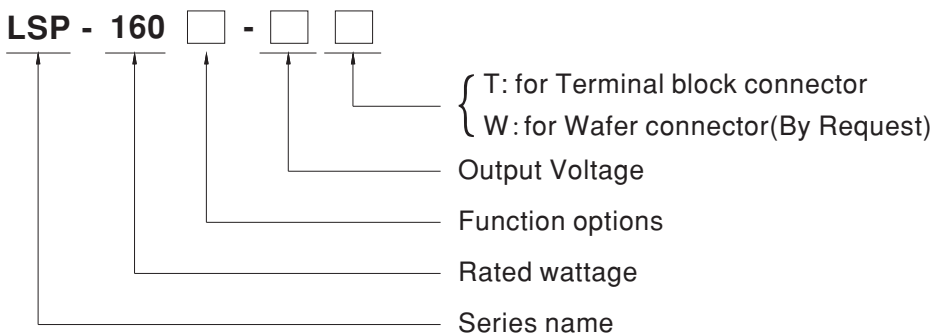
■ Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Household appliances
- LED display application

■ Description

LSP-160 series is a 160W single-output slim type power supply with 20mm of low profile design. Adopting the full range 100~264VAC input, the entire series provides an output voltage line of 3.3V,4.2V,5V, 12V, 24V, 36V and 48V. In addition to the high efficiency up to 93.5%, that the whole series operates from -30℃ ~ 70℃ under air convection without fan. LSP-160 has the complete protection functions and 5G anti-vibration capability; It is complied with the international safety regulations such as TUV EN62368, UL62368 and GB4943. LSP-160 series serves as a high performance power supply solution for various industrial applications.

■ Model Encoding



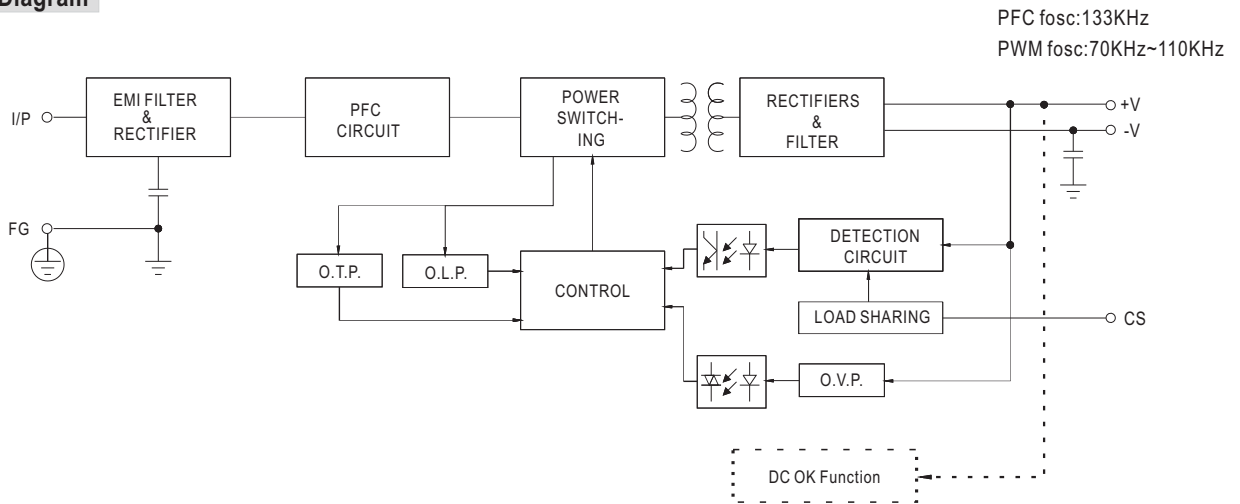
| Type | Function | Note |
|-------|--|----------|
| Blank | Enclosed(DC voltage output)& Built-in DC OK active signal. | In Stock |
| R | Built-in DC OK active signal and current sharing function(3.3/4.2/5V). | In Stock |



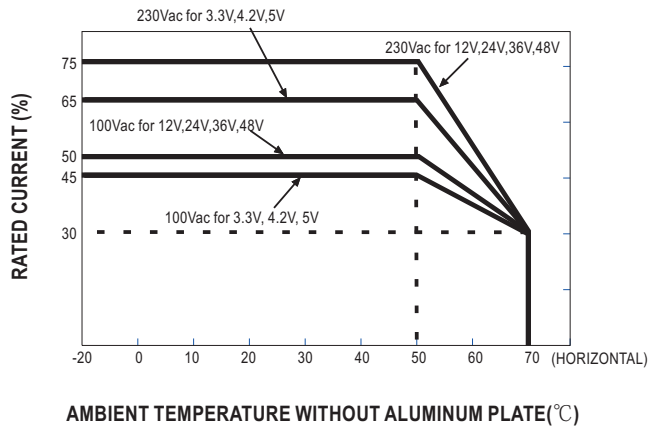
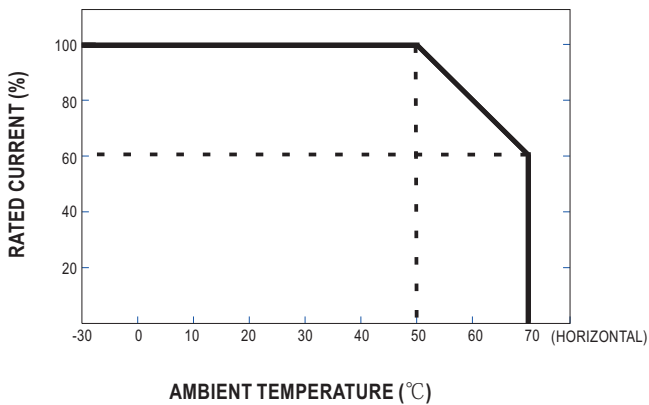
SPECIFICATION

| MODEL | | LSP-160□-3.3□ | LSP-160□-4.2□ | LSP-160□-5□ | LSP-160-12□ | LSP-160-24□ | LSP-160-36□ | LSP-160-48□ |
|-----------------------|---|---|---------------|--------------|--------------|--------------|-------------|--------------|
| OUTPUT | DC VOLTAGE | 3.3V | 4.2V | 5V | 12V | 24V | 36V | 48V |
| | RATED CURRENT | 32A | 32A | 32A | 13.5A | 6.75A | 4.5A | 3.4A |
| | RATED POWER(convection) | 105.6W | 134.4W | 160W | 162W | 162W | 162W | 163.2W |
| | RIPPLE & NOISE (max.) Note.2 | 200mVp-p | 200mVp-p | 200mVp-p | 240mVp-p | 240mVp-p | 240mVp-p | 300mVp-p |
| | VOLTAGE ADJ. RANGE | 3.2~3.5V | 4~4.5V | 4.7~5.3V | 11.4~12.6V | 22.8~25.2V | 34.2~37.8V | 45.6~50.4V |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±2.0% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.3% | ±0.3% | ±0.3% | ±0.3% |
| | LOAD REGULATION | ±1.0% | ±1.0% | ±1.0% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 2000ms, 80ms/230VAC 3000ms, 80ms/115VAC at full load | | | | | | |
| | HOLD UP TIME (Typ.) | 10ms/230VAC 10ms/115VAC | | | | | | |
| INPUT | VOLTAGE RANGE Note.4 | 100 ~ 264VAC 141 ~ 370VDC | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | |
| | POWER FACTOR (Typ.) | PF≥0.94/230VAC PF≥0.98/115VAC at full load | | | | | | |
| | EFFICIENCY (Typ.) | 87.5% | 88.5% | 89.5% | 92.5% | 93.5% | 93.5% | 93.5% |
| | AC CURRENT (Typ.) | 2.2A/115VAC 1.1A/230VAC | | | | | | |
| | INRUSH CURRENT (Typ.) | Cold start 45A/115VAC 85A/230VAC | | | | | | |
| | LEAKAGE CURRENT | <0.75mA / 240VAC | | | | | | |
| PROTECTION | SHORT CIRCUIT | Hiccup protection, recovers automatically after fault condition is removed | | | | | | |
| | OVERLOAD | 110~140% rated output power | | | | | | |
| | | Protection type : Constant current limiting, continuous increase of load will be hiccup protection, recovers automatically after fault condition is removed | | | | | | |
| | OVER VOLTAGE | 3.8~ 4.6V | 4.62 ~ 5.46V | 5.75 ~ 6.75V | 13.2 ~ 15.6V | 26.4 ~ 31.2V | 39.6 ~46.8V | 52.8 ~ 62.4V |
| | | Protection type : Shut down O/P voltage, re-power on to recover | | | | | | |
| OVER TEMPERATURE | Shut down O/P voltage, re-power on to recover after temperature goes down | | | | | | | |
| FUNCTION | CURRENT SHARING | Please refer to the Function Manual | | | | | | |
| | DC OK SIGNAL | Contact rating(max.):15Vdc/10mA resistive load | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +70°C (Refer to "Derating Curve") | | | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH non-condensing | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 50°C) | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes | | | | | | |
| SAFETY & EMC (Note.6) | SAFETY STANDARDS | UL62368, TUV EN62368, CCC GB4943, EAC TP TC 004, BSMI CNS14336-1 approved, Design refer to EN60335-1 | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25°C / 70%RH | | | | | | |
| | EMC EMISSION | Compliance to EN55032, GB9254, Class B, EN55014, EN61000-3-2, -3, EAC TP TC 020, BSMI CNS13438 | | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; EN61000-6-2 (EN50082-2), heavy industry level, criteria A, EAC TP TC 020 | | | | | | |
| OTHERS | MTBF | 699.54K hrs min. Telcordia TR/SR-332(Bellcore) ;282.71K hrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | DIMENSION | 194*55*20mm (L*W*H) | | | | | | |
| | PACKING | 0.356kg;30pcs/11.68kg/0.6CUFT | | | | | | |
| NOTE | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance: includes set up tolerance, line regulation and load regulation.</p> <p>4. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>5. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m(6500ft)</p> <p>6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com)</p> | | | | | | | |

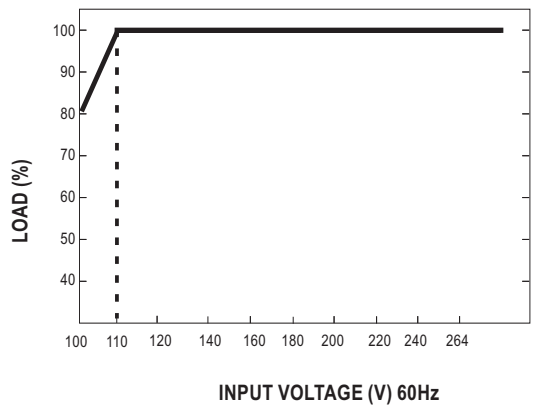
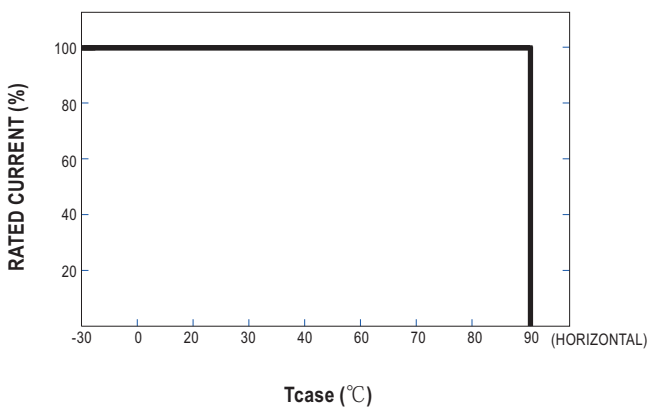
■ Block Diagram



■ Derating Curve



■ STATIC CHARACTERISTIC

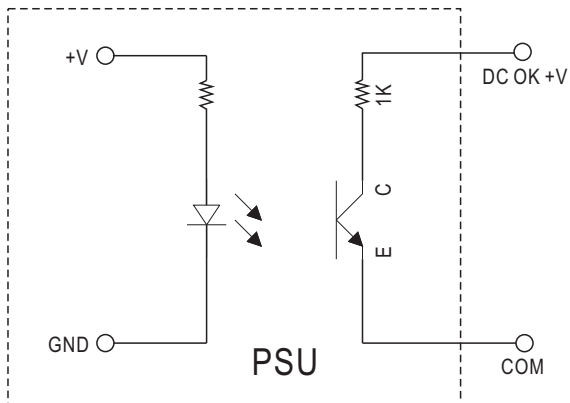


NOTE: Tc measurement point ,please refer page 5 mechanical specification.

■ **Function Manual**

1.DC_OK Signal

DC_OK is a collector shorted signal. It is used by an optocoupler in the power supply which indicates the output status of the power supply as exhibited below.



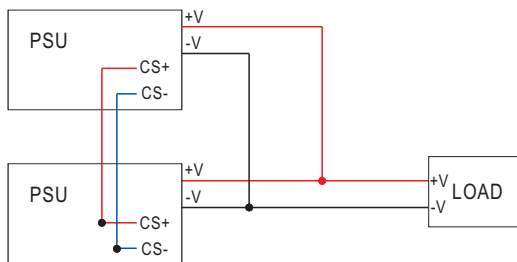
| | | |
|--------------------------------|---------------------------|---------|
| Optocoupler C-E Pin Conduction | PSU turns on | DC ok |
| Optocoupler C-E Pin Open | PSU turns off | DC fail |
| Optocoupler Rating(max.) | 15Vdc/10mA resistive load | |

| Power Status | DC_OK signal |
|----------------------|--------------|
| Normal | Low |
| Short circuit/OLP | Hiccup |
| OVP/OTP/Breakingdown | High |

2.Redundant function (Current sharing):

LSP-160 has the built-in active current sharing function and can be connected in parallel, up to 2 units, to provide higher output power as exhibited below :

- ※ The power supplies should be paralleled using short and large diameter wiring and then connected to the load.
 - ※ Difference of output voltages among parallel units should be less than 40mV(Can Fine tune by SVR1).
 - ※ When in parallel operation the maximum load should not be greater than the rated power of any PSU.
 - ※ When out current<(30% rate current) × (Number of unit),the current shared among units may not be fully balanced.
- And the LED indicator maybe flash of one of them,but not effacting normal working.



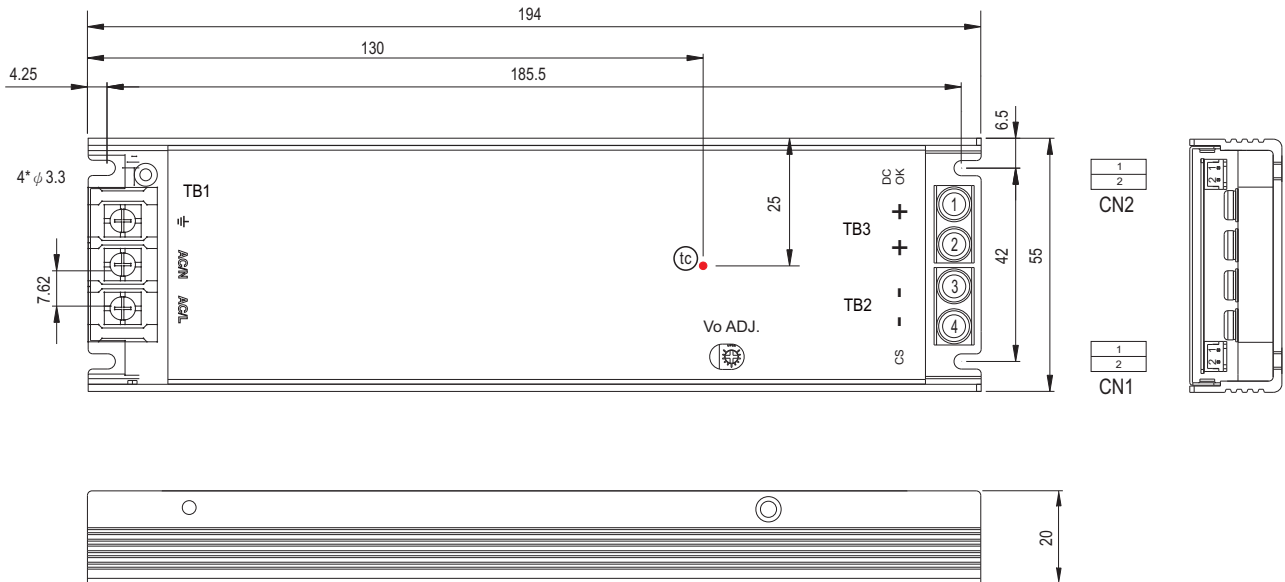
◎ CS+/CS- on CN1 are connected mutually in parallel(Note:CS+/CS- do not reverse connection).

■ Mechanical Specification

CASE NO.:279

Unit:mm

※ T-type(Terminal block)



AC Input Connector(TB1) pin NO. Assignment

| Pin No. | Assignment | Terminal | Max mounting torque |
|---------|------------|-------------------------|---------------------|
| 1 | AC/L | (DEGSON) DG28C-B-03P | 5Kgf-cm |
| 3 | AC/N | | |
| 5 | ⏏ | | |

DC Output Connector(TB2/TB3)pin NO. Assignment

| Pin No. | Assignment | Terminal | Max mounting torque |
|---------|------------|------------------------|---------------------|
| 1,2 | +V | (MW) TB-HTP-200-40A | 8Kgf-cm |
| 3,4 | -V | | |

DC OK Connector(CN2):JST B2B-PH-K-S or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|-------------------------------------|----------------------------|
| 1 | DC OK +V | JST SPH-002T-P0.5S or equivalent | JST PHR-2 or equivalent |
| 2 | DC COM | | |



CS+/CS- Connector(CN1):JST B2B-PH-K-S or equivalent

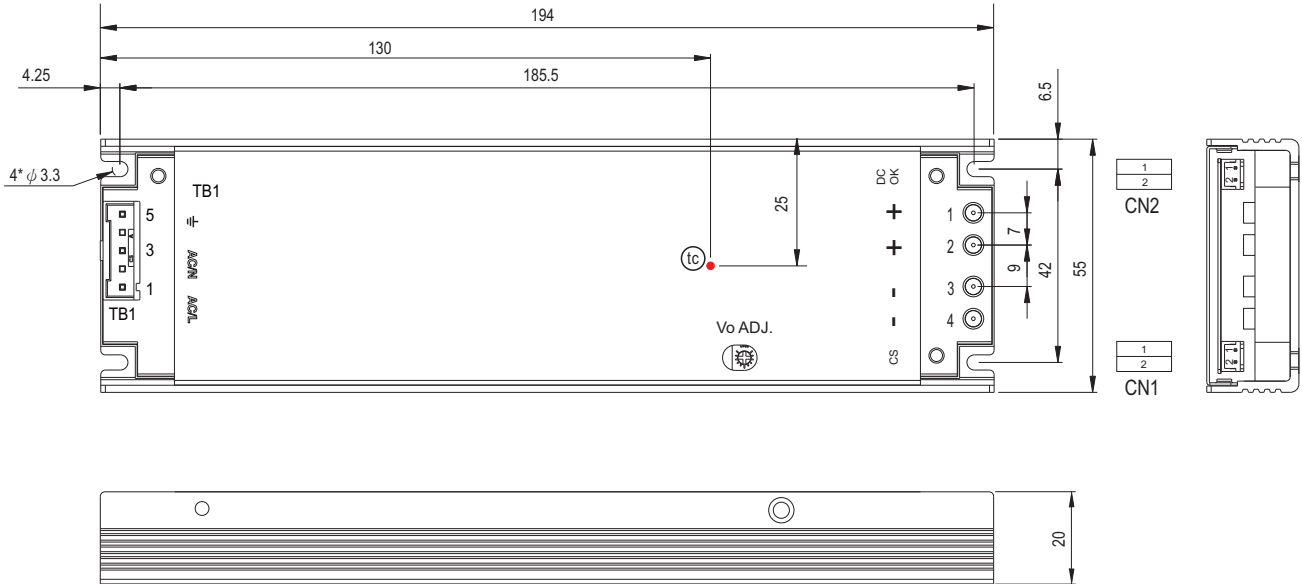
| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|----------------------------|-------------------------------------|
| 1 | CS+ | JST PHR-2 or equivalent | JST SPH-002T-P0.5S or equivalent |
| 2 | CS- | | |

CN mating cable: 1FF5LSP-160-CS

© CN1 and CN2 mating cable by request, please consult MEANWELL for details

CASE NO.:279 Unit:mm

※ W-Type(Wafer connector type optional)



AC Input Connector(TB1) pin NO. Assignment

| Pin No. | Assignment | Mating housing | Terminal |
|---------|------------|----------------|---------------------------|
| 1 | AC/L | JS-1391-05 | JS-1390-05 and JS-2420-TL |
| 3 | AC/N | | |
| 5 | ⏏ | | |

DC Output Connector(+V/-V)pin NO. Assignment

| Pin No. | Assignment | Mating housing | Terminal |
|---------|------------|----------------|--------------|
| 1,2 | +V | 1EE4LSP-160F | 1EE4LSP-160M |
| 3,4 | -V | | |

DC OK Connector(CN2):JST B2B-PH-K-S or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|-------------------------------------|----------------------------|
| 1 | DC OK +V | JST SPH-002T-P0.5S or equivalent | JST PHR-2 or equivalent |
| 2 | DC COM | | |



CS+/CS- Connector(CN1):JST B2B-PH-K-S or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|----------------------------|-------------------------------------|
| 1 | CS+ | JST PHR-2 or equivalent | JST SPH-002T-P0.5S or equivalent |
| 2 | CS- | | |

CN mating cable: 1FF5LSP-160-CS

© CN1 and CN2 mating cable by request, please consult MEANWELL for details

■ Installation**1. Operate with additional aluminum plate**

In order to meet the "Derating Curve" and the "Static Characteristics", LSP-160 series must be installed onto an aluminum plate (or the cabinet of the same size) on the bottom. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and LSP-160 series must be firmly mounted at the center of the aluminum plate.

unit:mm

