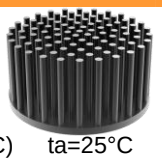
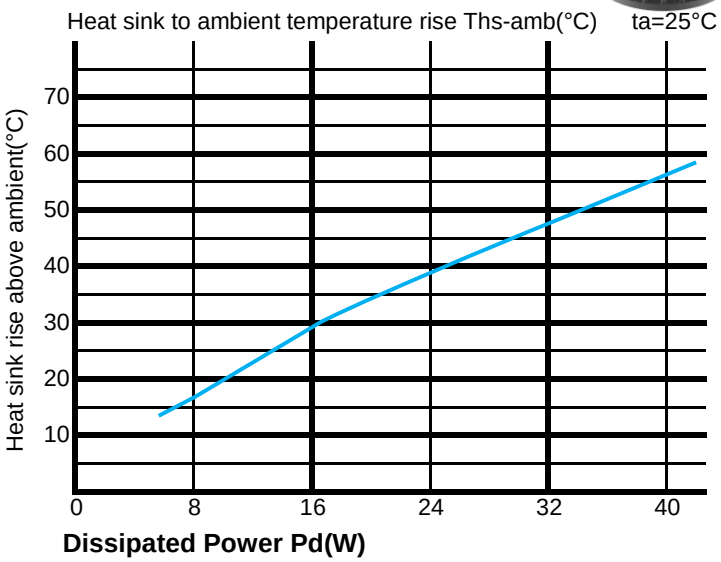

## GooLED-110 Series Φ110mm Material AL1070 Pin Fin Heat Sinks Thermal Data

### The thermal data table



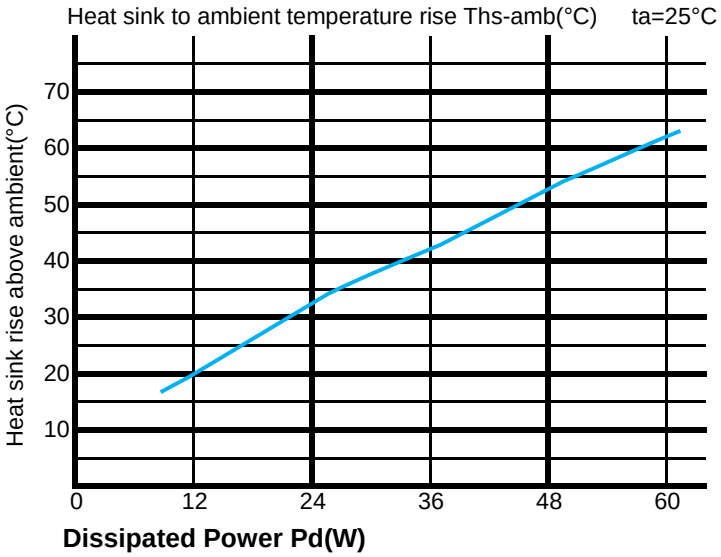
**GooLED-11050 thermal data**

| Pd = Pe x (1-ηL) | | Heat sink to ambient thermal resistance Rhs-amb (°C/W) | Heat sink to ambient temperature rise Ths-amb (°C) |
|---|---|---|---|
| | | GooLED-11050 | GooLED-11050 |
| Dissipated Power Pd(W) | 8 | 2.25 | 16 |
| | 16 | 1.81 | 29 |
| | 24 | 1.63 | 39 |
| | 32 | 1.5 | 48 |
| | 40 | 1.4 | 56 |
| | | | |




**GooLED-11080 thermal data**

| Pd = Pe x (1-ηL) | | Heat sink to ambient thermal resistance Rhs-amb (°C/W) | Heat sink to ambient temperature rise Ths-amb (°C) |
|---|---|---|---|
| | | GooLED-11080 | GooLED-11080 |
| Dissipated Power Pd(W) | 12 | 1.67 | 20 |
| | 24 | 1.36 | 33 |
| | 36 | 1.17 | 42 |
| | 48 | 1.1 | 53 |
| | 60 | 1.03 | 62 |
| | | | |

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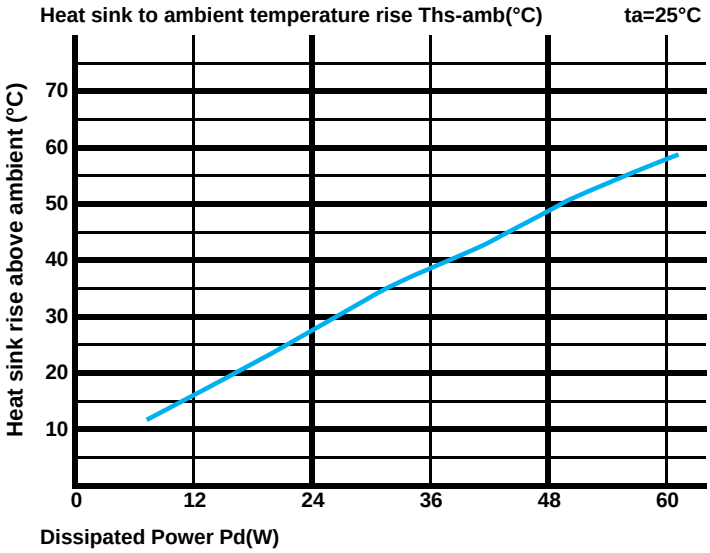
## GooLED-110 Series Φ110mm Material AL1070 Pin Fin Heat Sinks Thermal Data

### The thermal data table

**GooLED-110100 thermal data**

| Pd = Pe x (1-ηL) | | Heat sink to ambient thermal resistance Rhs-amb (°C/W) | Heat sink to ambient temperature rise Ths-amb (°C) |
|---|---|---|---|
| | | GooLED-110100 | GooLED-110100 |
| Dissipated Power Pd(W) | 12 | 1.67 | 20 |
| | 24 | 1.36 | 33 |
| | 36 | 1.17 | 42 |
| | 48 | 1.1 | 53 |
| | 60 | 1.03 | 62 |
| | | | |




* Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module.

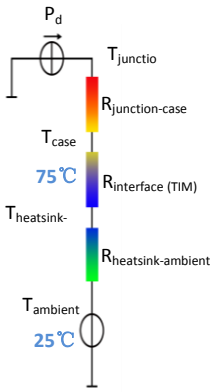
*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

Pd - Dissipated power ; Pe - Electrical power ; ηL = Light effciency of the LED module;

*The aluminum substrate side of the package outer shell is thermally connected to the heat sink via TIM (Thermal interface material).

MingFa recommends the use of a high thermal conductive interface between the LED module and the LED cooler.

Either thermal grease,A thermal pad or a phase change thermal pad thickness 0.1-0.15mm is recommended.




*Thermal resistance is a heat property and a measurement of a temperature difference by which an object or material resists a heat flow.

Geometric shapes are different, the thermal resistance is different. Formula: $\theta = (Ths - Ta)/Pd$

θ - Thermal Resistance [°C/W] ; Ths - Heatsink temperature ; Ta - Ambient temperature ;

*The thermal resistance between the junction section of the light-emitting diode and the aluminum substrate side of the package outer shell is $R_{junction-case}$, the thermal resistance of the TIM outside the package is $R_{interface\ (TIM)}$ [°C/W], the thermal resistance with the heat sink is $R_{heatsink-ambient}$ [°C/W], and the ambient temperature is $T_{ambient}$ [°C].

*Thermal resistances outside the package $R_{interface\ (TIM)}$ and $R_{heatsink-ambient}$ can be integrated into the thermal resistance $R_{case-ambient}$ at this point.Thus, the following formula is also used:

$T_{junction} = (R_{junction-case} + R_{case-ambient}) \cdot Pd + T_{ambient}$

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