GooLED-68 Series Φ68mm Material AL1070 Pin Fin Heat Sinks Thermal Data
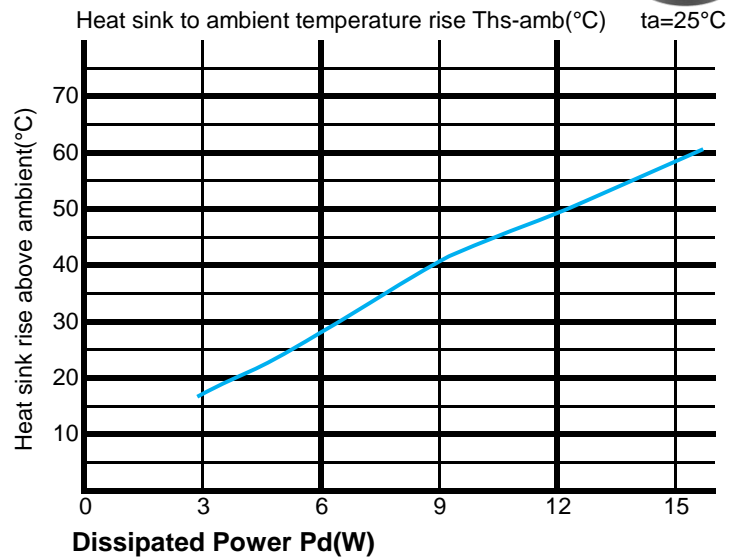
The thermal data table

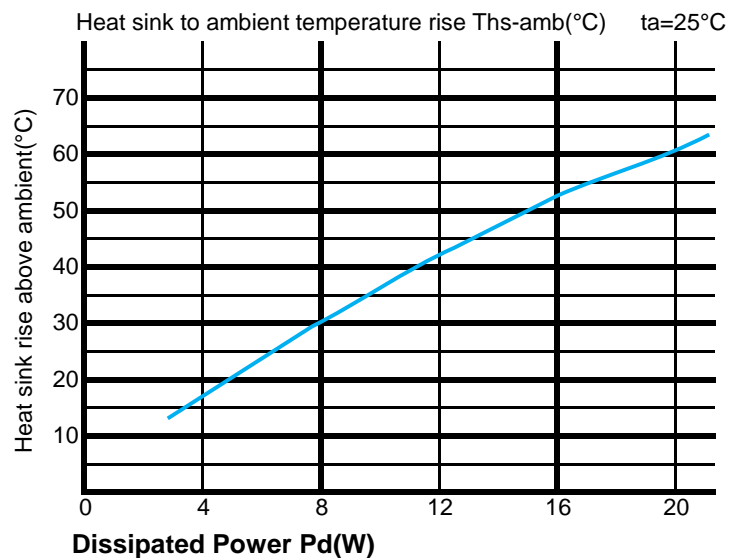#### GooLED-6830 thermal data

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-6830	GooLED-6830
Dissipated Power Pd(W)	3	5.67	17
	6	4.67	28
	9	4.44	40
	12	4.08	49
	15	3.87	58

Heat sink to ambient temperature rise Ths-amb(°C)   ta=25°C

GooLED-6850 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-6850	GooLED-6850
Dissipated Power Pd(W)	4	4.25	17
	8	3.75	30
	12	3.42	41
	16	3.25	52
	20	3	60

Heat sink to ambient temperature rise Ths-amb(°C)   ta=25°C

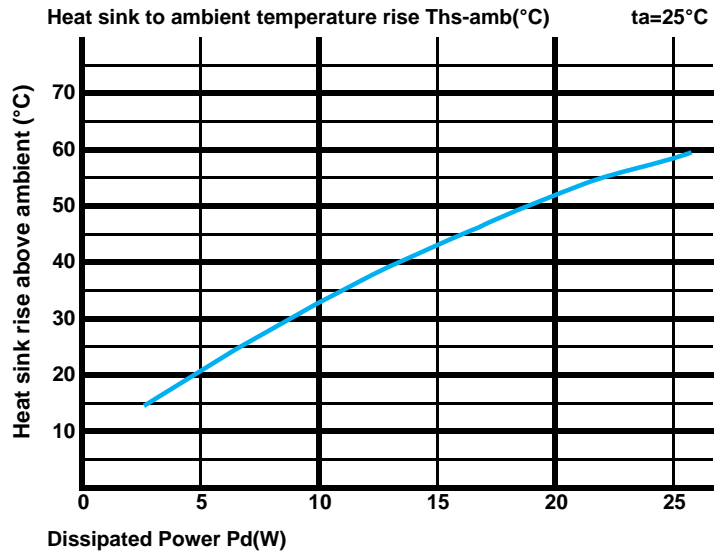## GooLED-68 Series Φ68mm Material AL1070 Pin Fin Heat Sinks Thermal Data

The thermal data table

GooLED-6880 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-6880	GooLED-6880
Dissipated Power Pd(W)	5.0	4.00	20.0
	10.0	3.20	32.0
	15.0	2.87	43.0
	20.0	2.55	51.0
	25.0	2.32	58.0

Heat sink to ambient temperature rise Ths-amb(°C)   ta=25°C

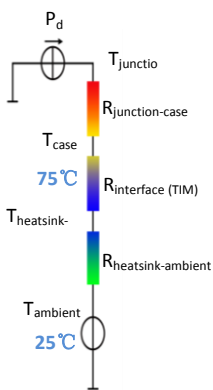* Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module.

*To calculate the dissipated power please use the following formula: $Pd = Pe \times (1-\eta L)$.

  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:

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