eLED **eLED-70 Series Φ70mm Material AL6063-T5 COB Star Heat Sinks Thermal Data**
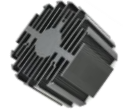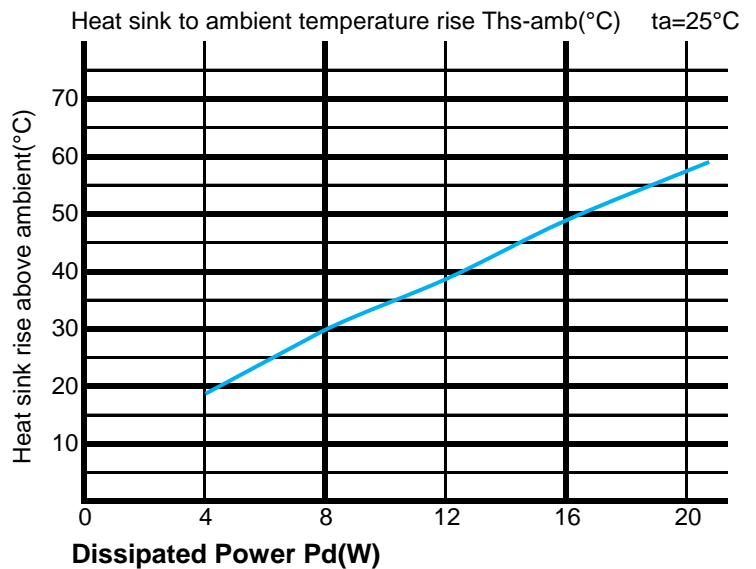
The thermal data table
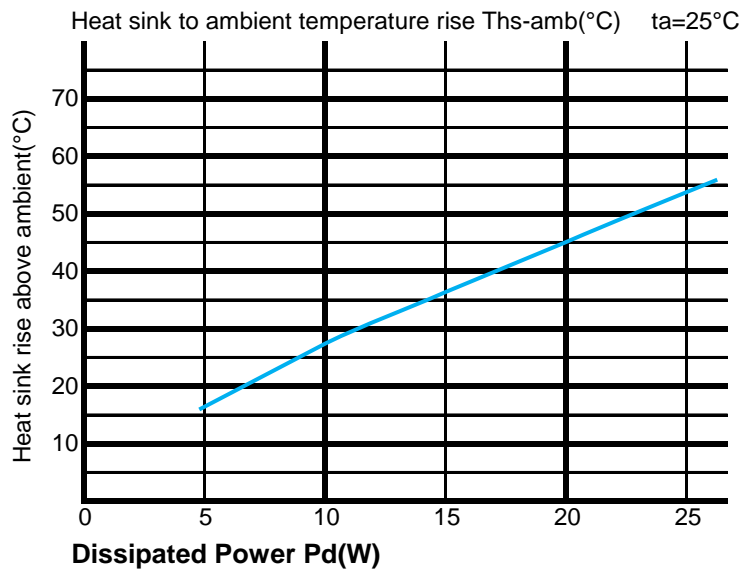
eLED-7020 thermal data

Pd = Pe x (1-ηL)		Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		eLED-7020	eLED-7020
Dissipated Power Pd(W)	4	4.75	19
	8	3.75	30
	12	2.7	38
	16	3.06	49
	20	2.9	58

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

eLED-7050 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)
		eLED-7050	eLED-7050
Dissipated Power Pd(W)	5	3.4	17
	10	2.8	28
	15	2.7	37
	20	2.25	45
	25	2.16	54

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

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The thermal data table

eLED-7080 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)
		eLED-7080	eLED-7080
Dissipated Power Pd(W)	6	2.5	15
	12	2.2	26
	18	1.9	34
	24	1.8	43
	30	1.7	51

Heat sink to ambient temperature rise Ths-amb(°C)   ta=25°C
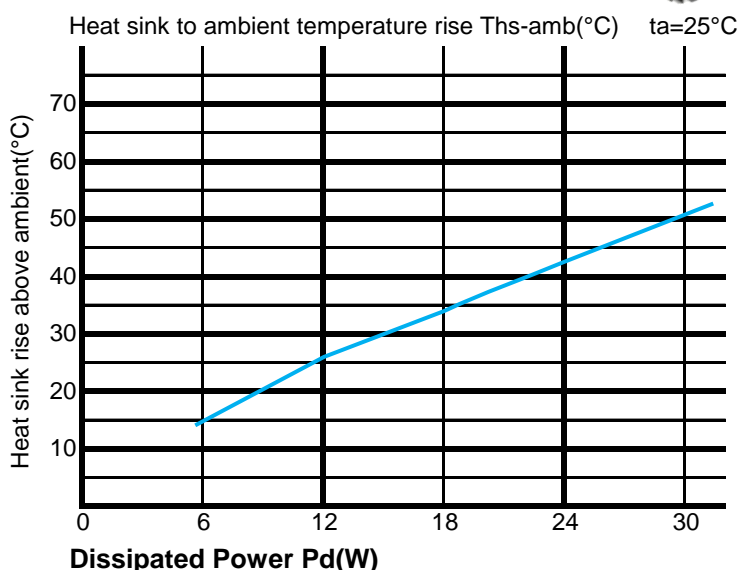
* Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module.

*To calculate the dissipated power please use the following formula: Pd = Pe 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.
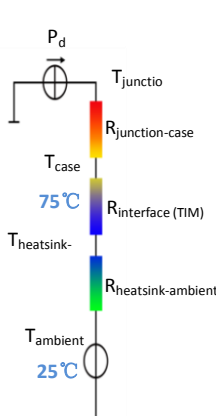
*Thermal resistance is a heat property and a measurement of a temperature difference by which an object or material resists a heat flow.

  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:

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