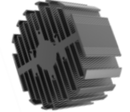
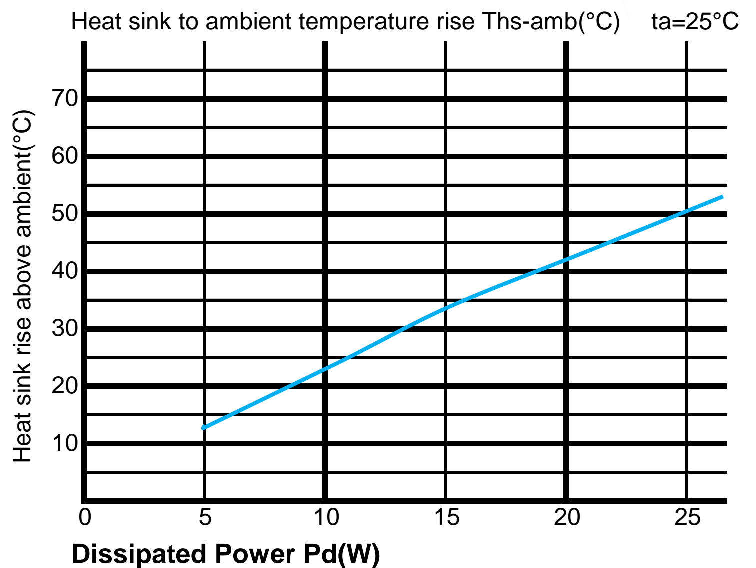
eLED eLED-95 Series Φ95mm Material AL6063-T5 COB Star Heat Sinks Thermal Data

The thermal data table



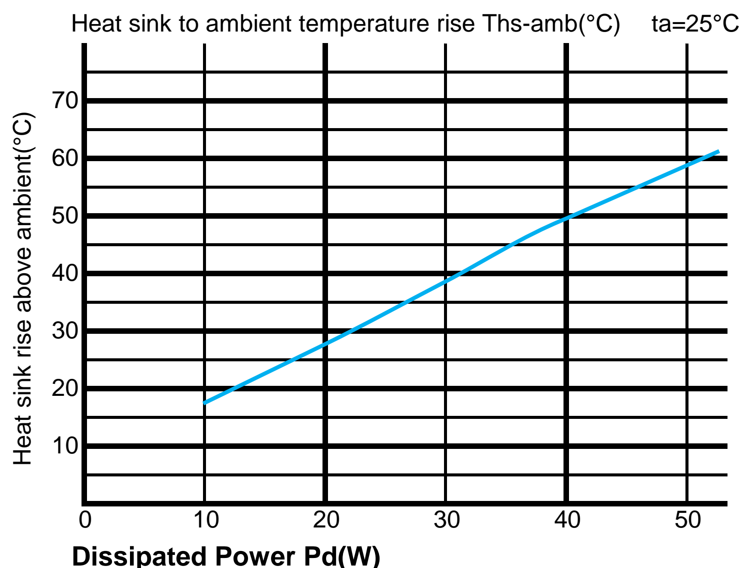
eLED-9520 thermal data

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-9520	eLED-9520
Dissipated Power Pd(W)	5	2.8	15
	10	2.3	25
	15	2.13	35
	20	1.95	43
	25	1.9	52



eLED-9550 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-9550	eLED-9550
Dissipated Power Pd(W)	10	1.8	18
	20	1.4	28
	30	1.3	39
	40	1.25	50
	50	1.18	59



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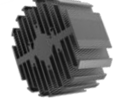
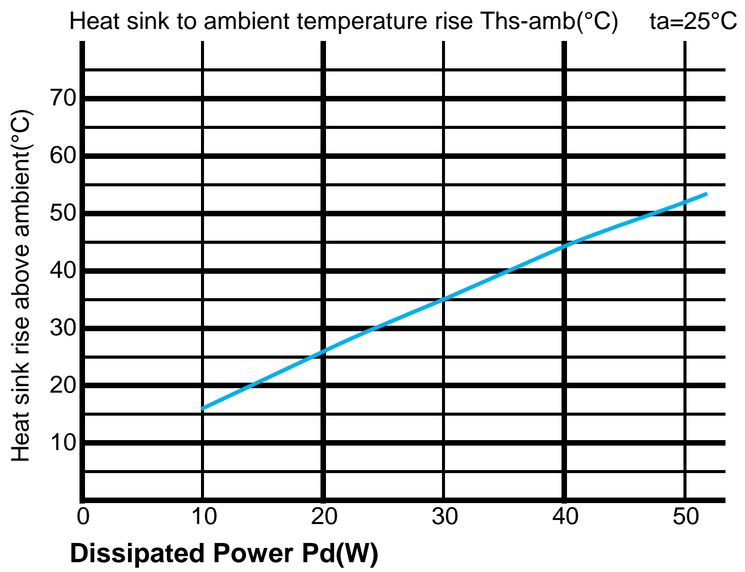
The thermal data table



Eled-9580 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-9580	eLED-9580
Dissipated Power Pd(W)	10	1.6	16
	20	1.3	26
	30	1.2	35
	40	1.1	44
	50	1	52



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

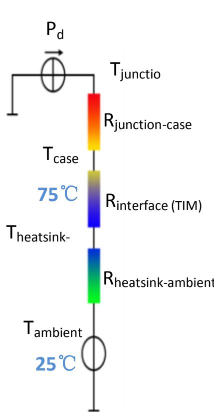
*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

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: θ ＝(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 $R_{junction\text{-}case}$, the thermal resistance of the TIM outside the package is $R_{interface\ (TIM)}$ [°C/W], the thermal resistance with the

heat sink is $R_{heatsink\text{-}ambient}$ [°C/W], and the ambient temperature is $T_{ambient}$ [°C].

*Thermal resistances outside the package $R_{interface\ (TIM)}$ and $R_{heatsink\text{-}ambient}$ can be integrated

into the thermal resistance $R_{case\text{-}ambient}$ at this point.Thus, the following formula is also used:

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

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