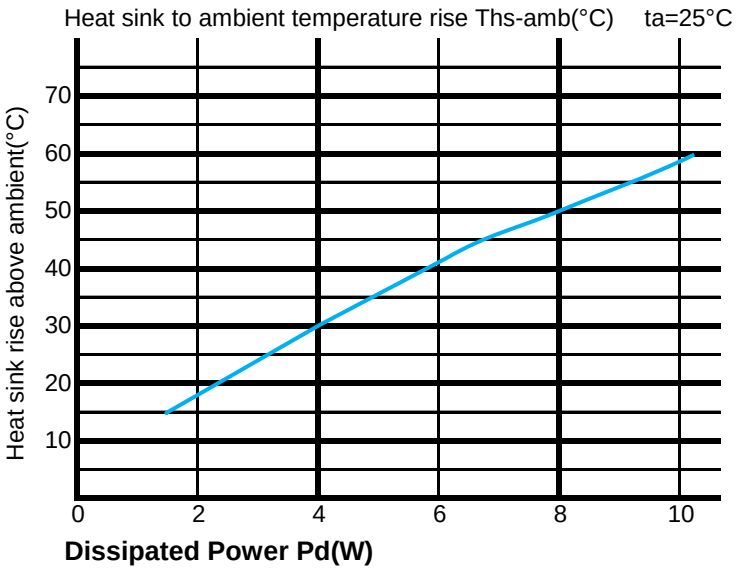
The thermal data table

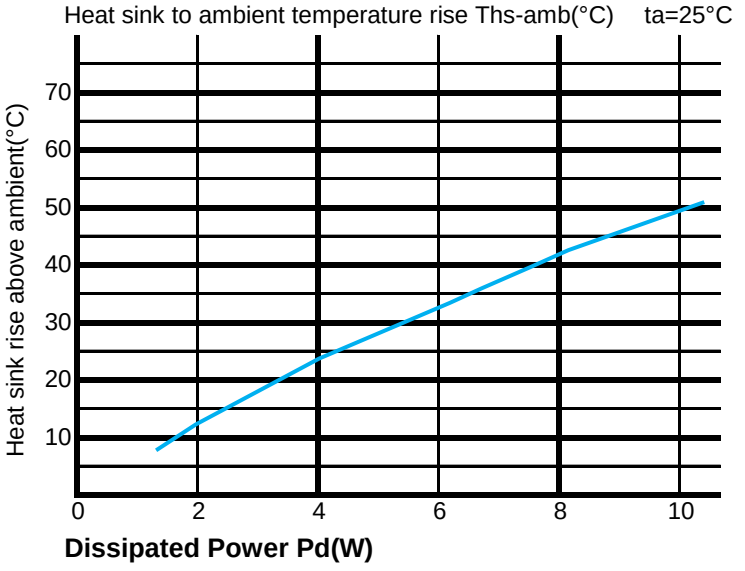
xLED-4530 thermal data

Pd = Pe x (1-ηL)		Heat sink to ambient thermal resistance Rhs-amb (°C/W)	Heat sink to ambient temperature rise Ths-amb (°C)
		xLED-4530	xLED-4530
Dissipated Power Pd(W)	2	9	18
	4	7.5	30
	6	7	42
	8	6.25	50
	10	5.9	59



xLED-4550 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)
		xLED-4550	xLED-4550
Dissipated Power Pd(W)	2	7	14
	4	6.25	25
	6	5.67	34
	8	5.38	43
	10	5	50



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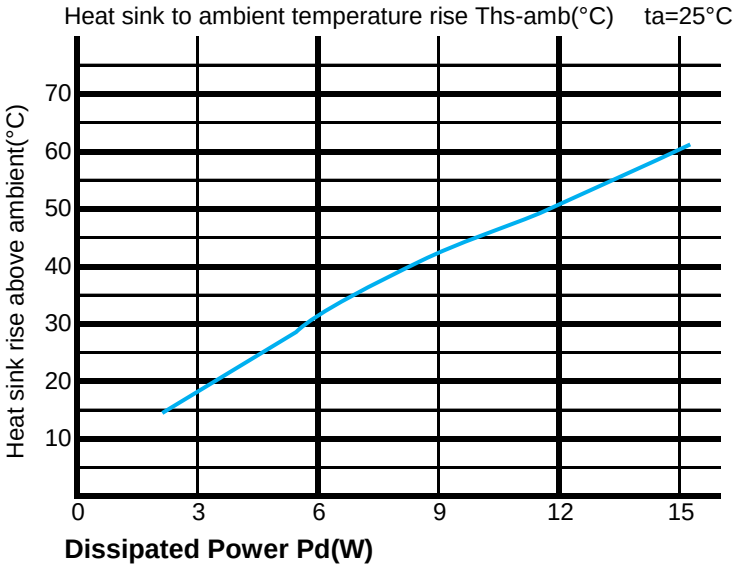
xLED-45 Series Φ45mm Material AL1070 Pin Fin Heat Sinks Thermal Data

The thermal data table

xLED-4568 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)
		xLED-4568	xLED-4568
Dissipated Power Pd(W)	3.0	6.00	18
	6.0	4.83	29
	9.0	4.56	41
	12.0	4.33	52
	15.0	4.13	62



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

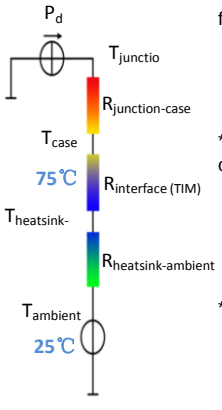
*To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).

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: 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 $R_{junction-case}$, 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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