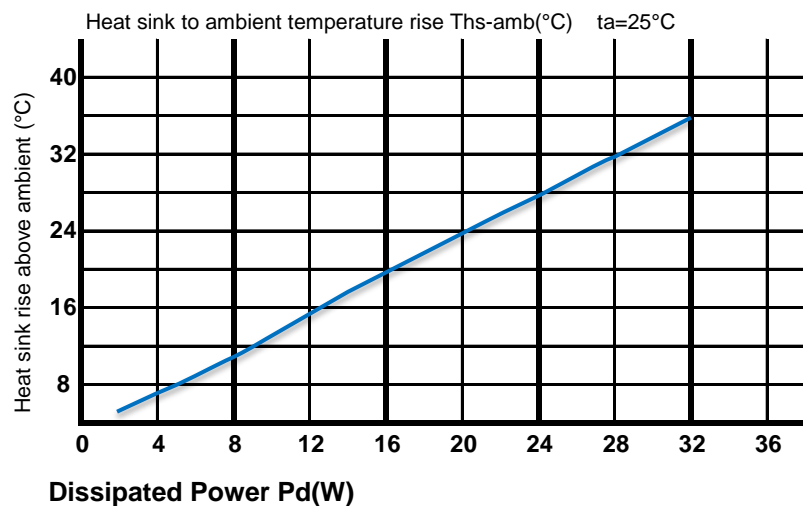


The thermal data table

$P_d = P_e \times (1 - \eta_L)$		Heat sink to ambient thermal resistance $R_{hs-amb} (^{\circ}C/W)$	Heat sink to ambient temperature rise $\Delta T_{hs-amb} (^{\circ}C)$
		Quartet-4001F	
Dissipated Power $P_d(W)$	2	1.15	2.7
	5	1.10	6.5
	10	1.05	12.5
	15	1.00	18
	20	0.95	23
	25	0.92	28
	30	0.90	33



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

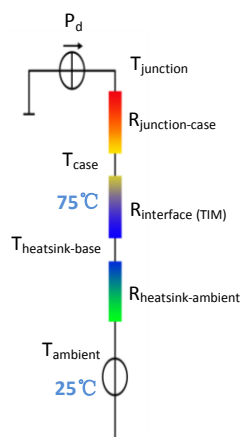
*To calculate the dissipated power please use the following formula: $P_d = P_e \times (1 - \eta_L)$.

P_d - Dissipated power ; P_e - Electrical power ; η_L = Light efficiency 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: $\theta = (T_{hs} - T_a) / P_d$

θ - Thermal Resistance [$^{\circ}C/W$]; T_{hs} - Heatsink temperature ; T_a - 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 $R_{interface (TIM)}$ [$^{\circ}C/W$], the thermal resistance with the

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

*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:

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