



LED用散熱基板產品 (Taicooler)

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1、应用领域细分

散熱金屬基板可應用領域

目前最熱門應用領域



Lighting

LED



Backlight

散熱基板系列產品
Thermal Conductive Board

其他的應用



Power Electronics



Automotive



Solar Cell



Audio



Power Module



Mother Board

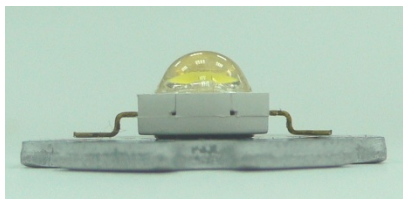
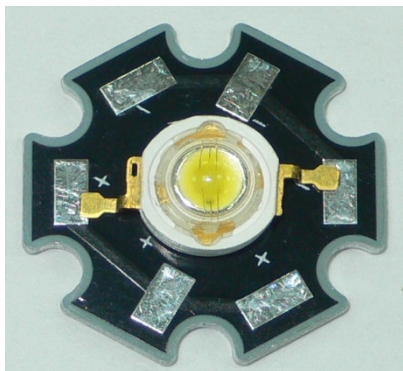


LED散熱基板主要應用

**Taiflex
Taicooler**

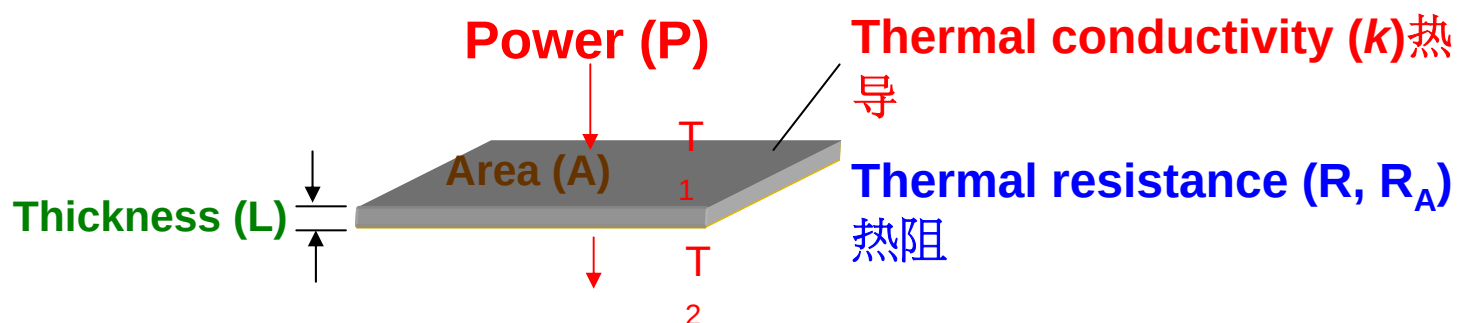
照明

LED-TV 背光模組





3、熱阻/熱傳導測量及基本觀念



• Thermal resistance $\longrightarrow$ Thermal conductivity (ASTM D 5470, Bergquist, Laird)

$$R \text{ (}^{\circ}\text{C/W)} = \frac{T_1 - T_2}{P} \longrightarrow k \text{ (W/m-K)} = \frac{L}{R \times A}$$

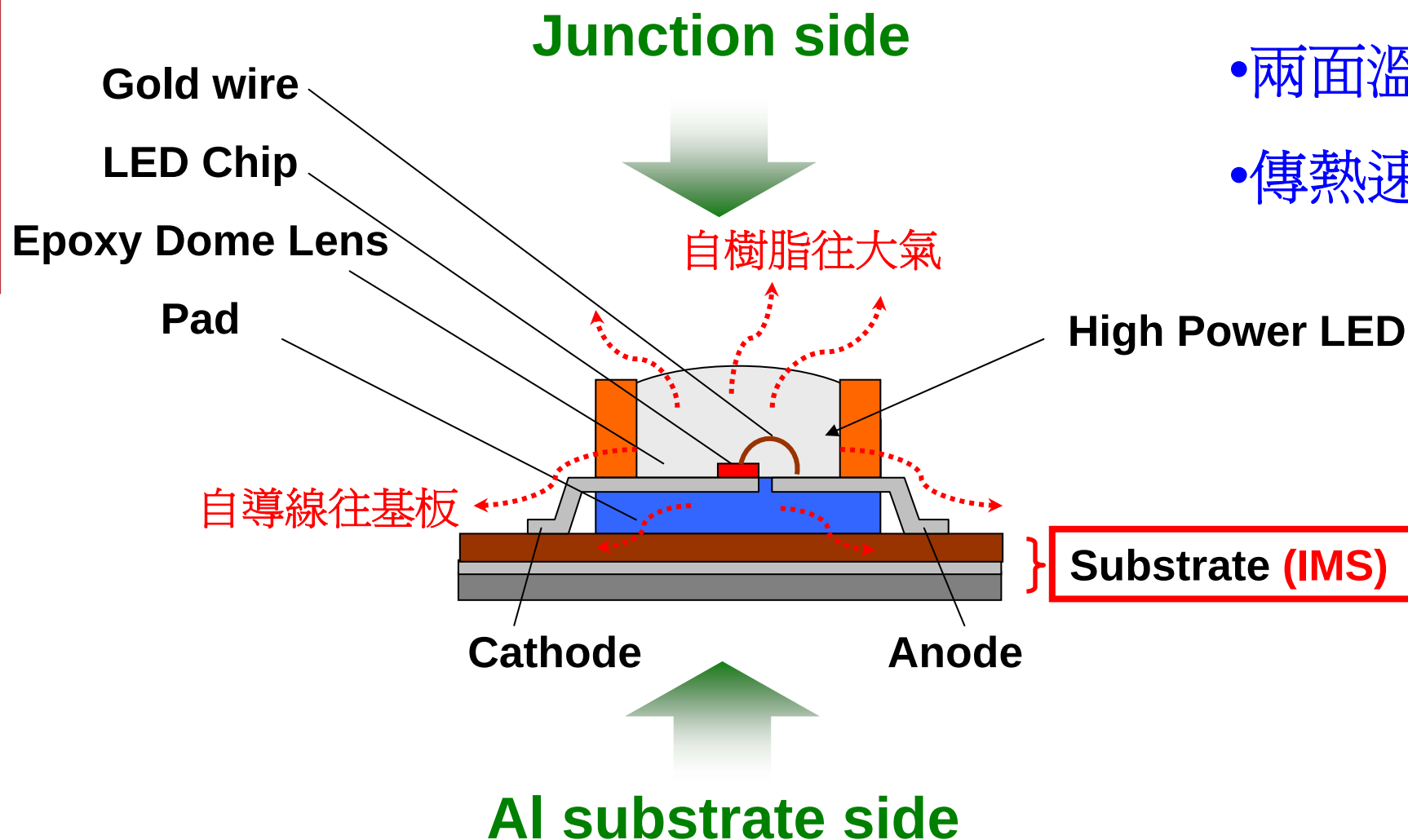
$$R_A \text{ (}^{\circ}\text{C-in}^2\text{/W)} = \frac{L}{k}$$



Thermal image 測試

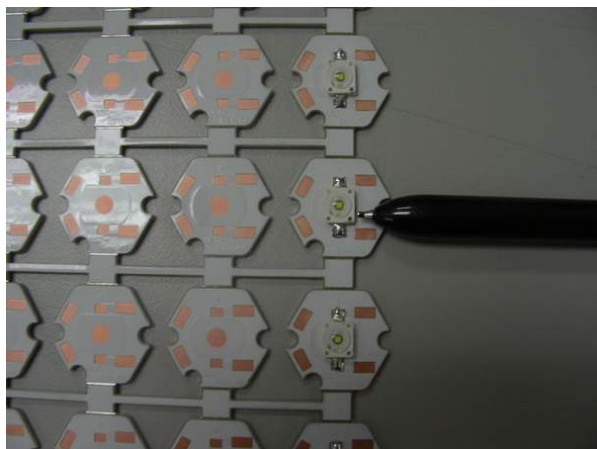
測量項目：

- 兩面溫度差
- 傳熱速率





客戶需求及材料規格測試



Osram 1W LED:
(100lm at 350mA, 225lm at 1A)
Color temp.: 6500K
基板台虹(Taicooler): Cu/PI/ad/Al
L5AE051020



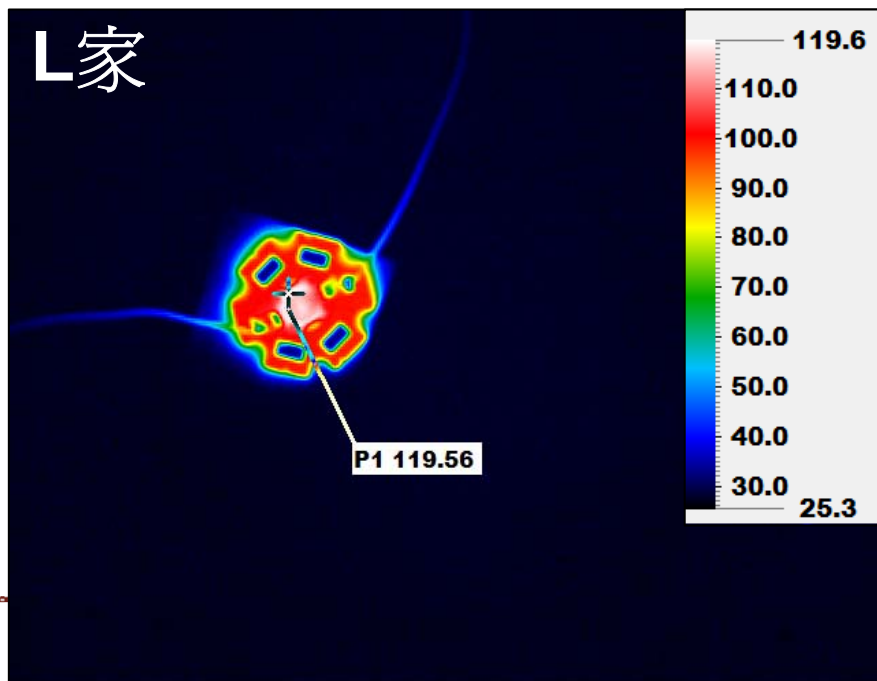
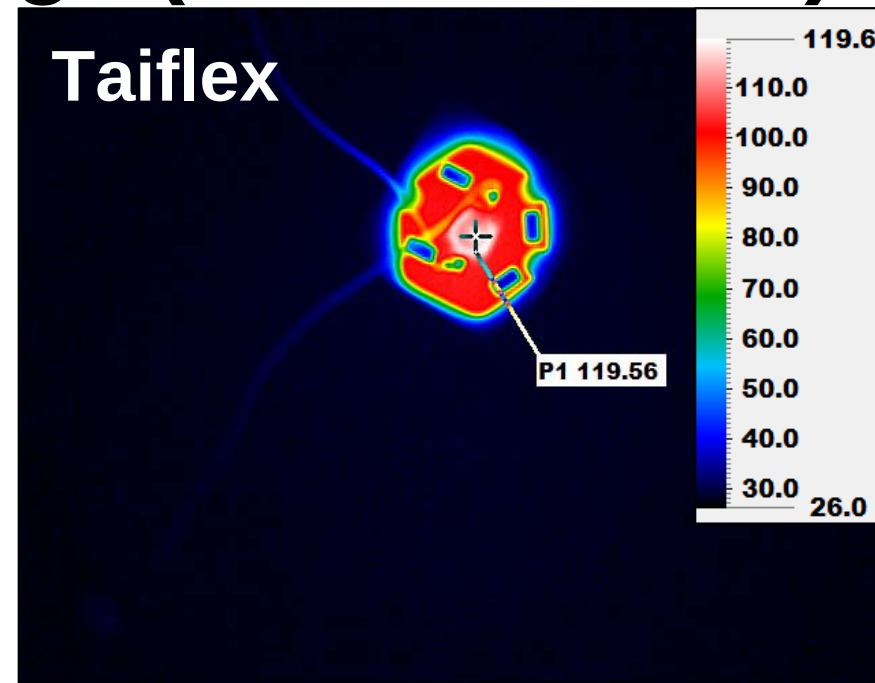
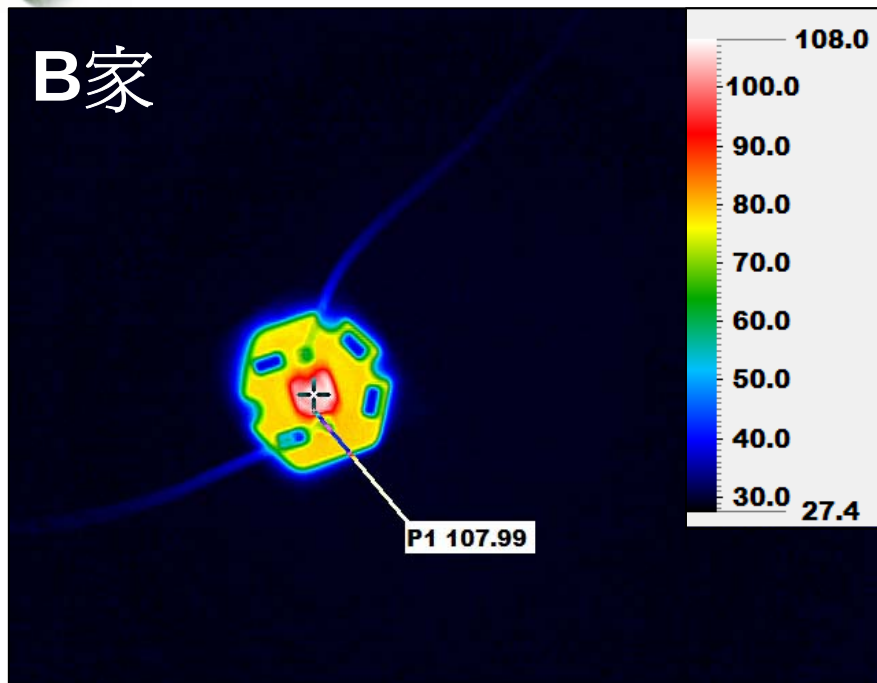
Supply: 3.5V, 0.8A



Supply: 3.0V, 0.3A



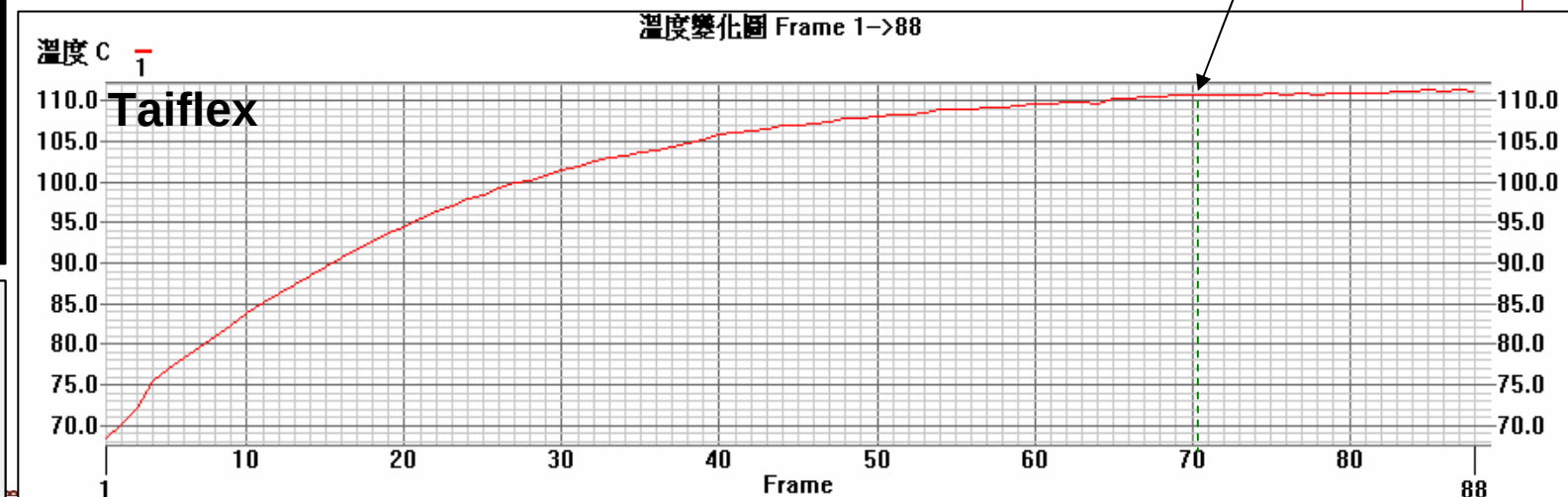
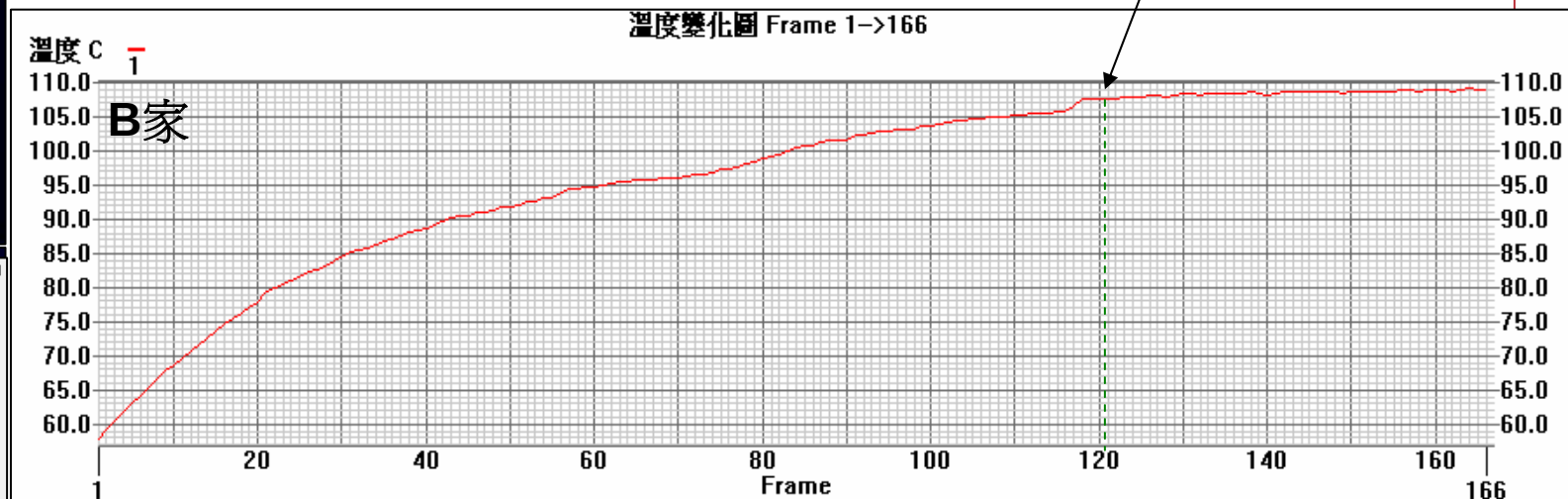
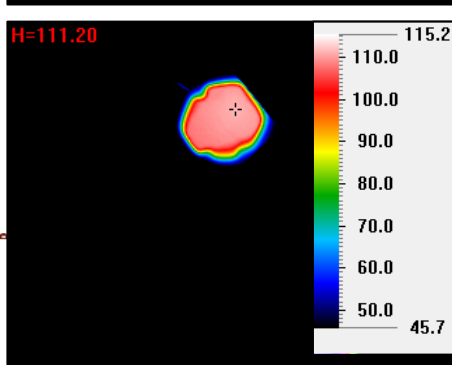
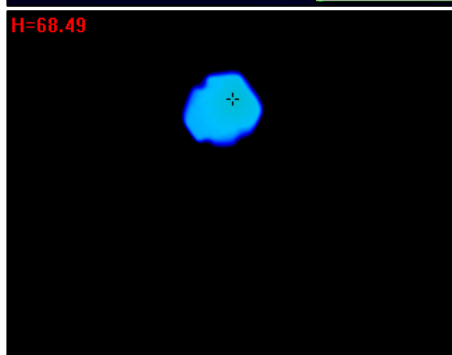
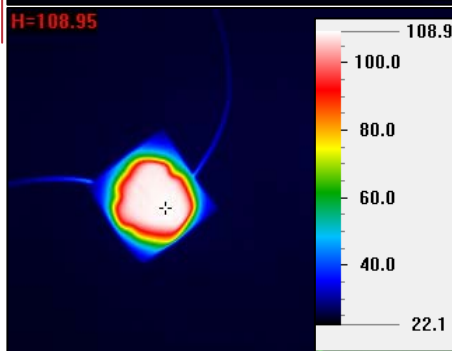
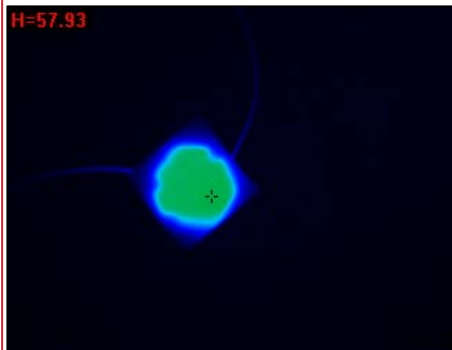
Thermal image (Junction side)



規格項目	B家 LTI-04503	L家 1KA04	Taiflex
銅厚(Oz.)	1	1	1
鋁板厚度(mm)	1.6	1.0	1.0
絕緣層厚度(μm)	75	102	26
熱傳導率(W/m*K)	2.2	3.0	2.0
熱阻抗(in ² -°C/W)	0.053	0.05	0.056

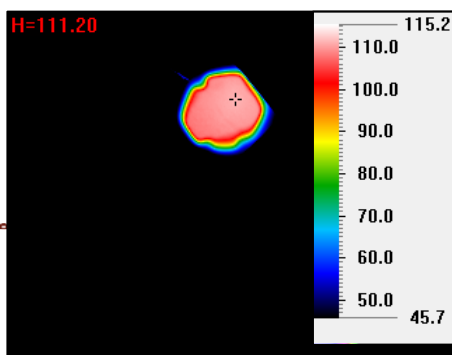
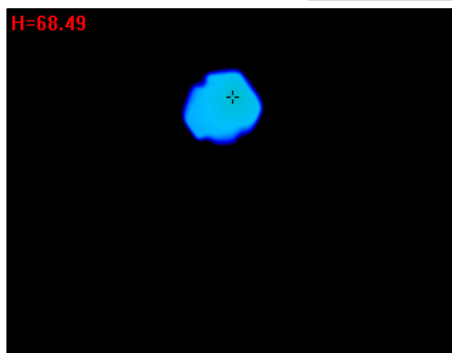
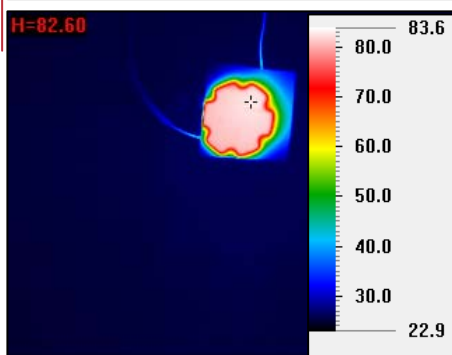
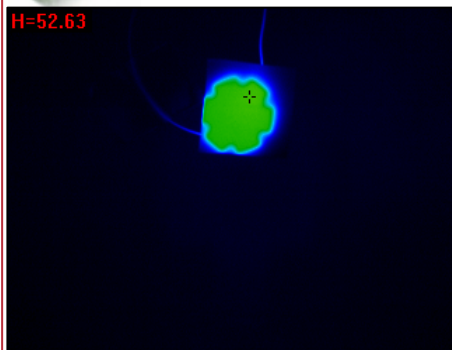


Thermal image (Al substrate side)

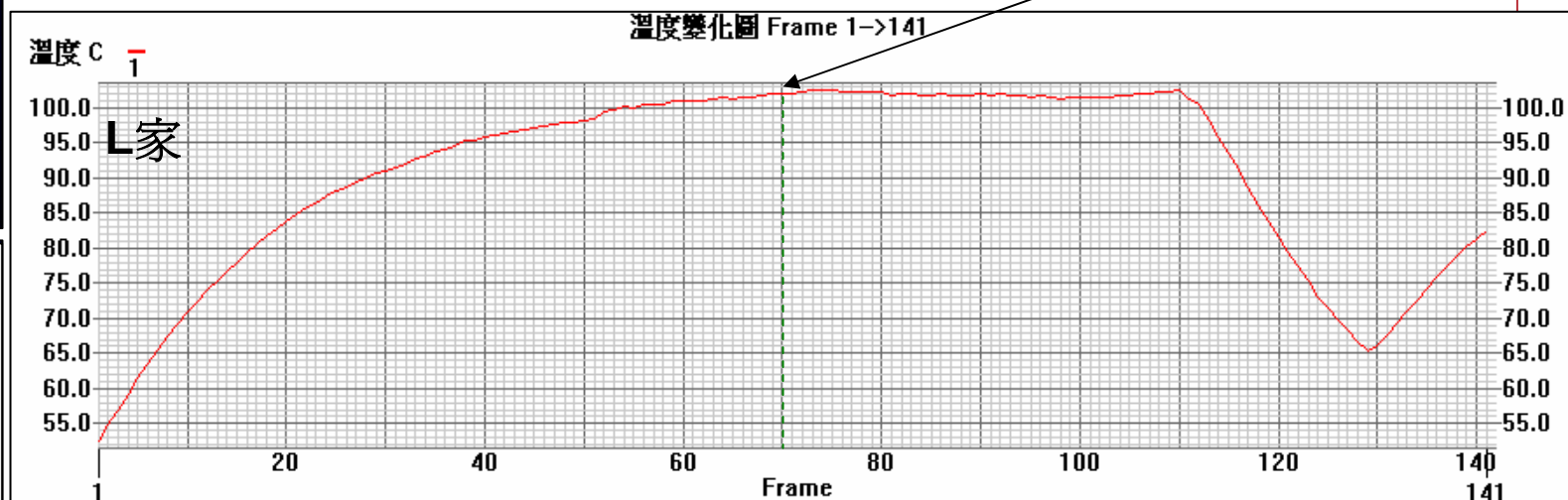




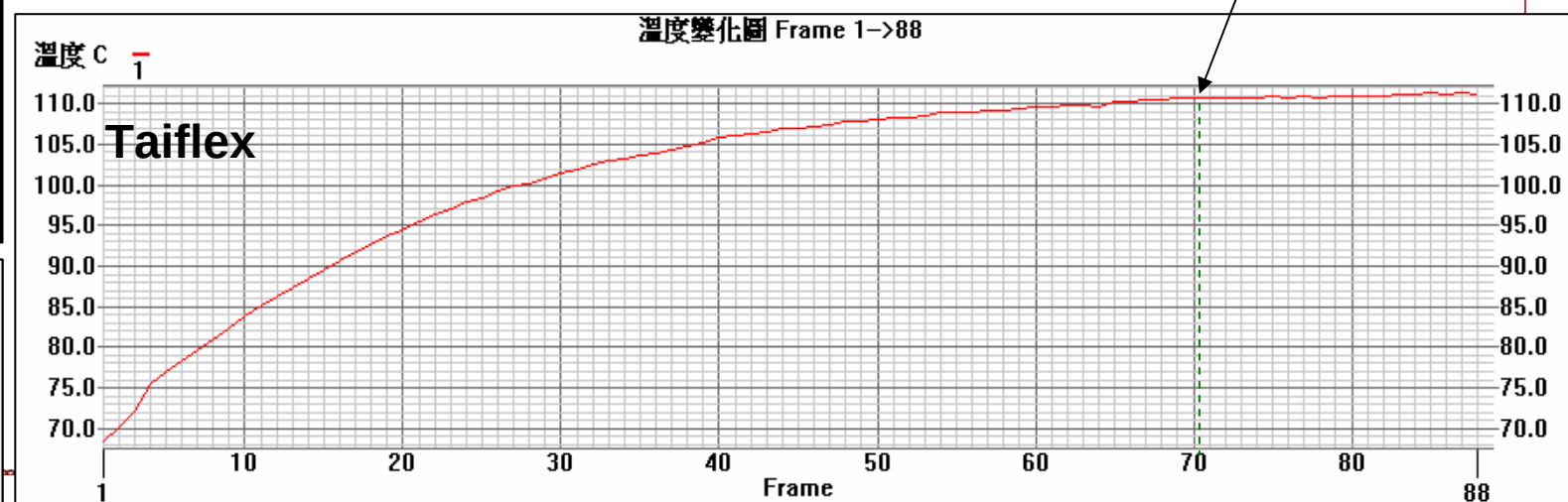
Thermal image (Al substrate side)



210sec. 102°C



210sec. 111.20°C





4、台虹散熱產品功能定位

低熱阻, $K > 3 \text{ w/mk}$
 $< 0.05 \text{ } ^\circ\text{C-in}^2/\text{W}$,
High $T_g > 150^\circ\text{C}$,
B.V. $> 2\text{KV}$

High power application

$> 3\text{W}$

$1\text{W} \sim 3\text{W}$

中熱阻, $K: 1 \sim 3 \text{ w/mk}$
 $< 0.1 \text{ } ^\circ\text{C-in}^2/\text{W}$,
High $T_g > 100^\circ\text{C}$,
B.V. $> 2\text{KV}$

普通熱阻, $k: 1 \text{ w/mk}$
 $< 0.15 \text{ } ^\circ\text{C-in}^2/\text{W}$,
High $T_g > 70^\circ\text{C}$,
B.V. $> 1.5\text{KV}$

$0.5\text{W} \sim 1\text{W}$

Low power application



台虹材料系列介绍

Taicooler

照明

导热系数	击穿电压	对应品名
1-1.5W	<1.5KV	LSAE051020
1.5-3W	>1.5KV	LSAR051060

Light-bar

导热系数	击穿电压	对应品名
1-3W	<1.5KV	LSAE001060
		LS60/LSF40



型 號	PI型號	產品品名	產品結構	幅寬 (mm)	包裝
散熱銅箔 (无胶铜)	S/S	2JPSE0810	PI=1/2mil, ED Cu=1oz	250/500mm	100M/箱
	D/S	2JPDE0810	ED Cu=1oz, PI=4/5mil, ED Cu=1oz	250/500mm	100M/箱
散熱純膠	Non PI	LS60	ad=60um	250/500mm	100M/箱
		LSF40	ad=40um	250/500mm	100M/箱
鋁基板	含PI	LSAE051020A02	PI=1/2mil, ED Cu=1oz, ad=20um, Al=0.2mm	510/610mm	Sheet
		LSAE051020A10	PI=1/2mil, ED Cu=1oz, ad=20um, Al=1mm	510/610mm	Sheet
		LSAE051020A12	PI=1/2mil, ED Cu=1oz, ad=20um, Al=1.2mm	510/610mm	Sheet
		LSAE051020A15	PI=1/2mil, ED Cu=1oz, ad=20um, Al=1.5mm	510/610mm	Sheet
		LSAE051020A20	PI=1/2mil, ED Cu=1oz, ad=20um, Al=2mm	510/610mm	Sheet
	Non PI	LSAE001060A02	ED Cu=1oz, ad=60um, Al=0.2mm	510/610mm	Sheet
		LSAE001060A10	ED Cu=1oz, ad=60um, Al=1mm	510/610mm	Sheet
		LSAE001060A12	ED Cu=1oz, ad=60um, Al=1.2mm	510/610mm	Sheet
		LSAE001060A15	ED Cu=1oz, ad=60um, Al=1.5mm	510/610mm	Sheet
		LSAE001060A20	ED Cu=1oz, ad=60um, Al=2mm	510/610mm	Sheet



报告结束！ 谢谢！

