

# LED Heat Dissipation Substrate Approval Specification Sheet for TAI004G

TA-I Technology Part Number: LHA01APTAI004G

**Customer Approval:** 

Valid Date	<b>Release Date</b>	Version	
Jul 12, 2012	Jul 12, 2012	TAI004G	
Approved by	Checked by	Produced by	

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# 1. Specification :

- 1.1 Substrate Dimension as shown in Table 1.
- 1.2 Per panel up to 312 pieces.

Table 1.	The	spec	of Panel	and	Single	Unit
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	Item	Spec
Panel	Length	109.2±0.1
	Width	54.6±0.1
	Thickness of substrate	$0.38 \pm 0.04$
	The total thickness	$0.55 \pm 0.06$
Single Unit	Length	3.5±0.03
	Width	3.5±0.03

Unit: mm

1.3 Specification of Panel:



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## **2.** Electrical Continuity Test:

2.1 Test point: As shown in below diagram.

2.2 Method: Use flying probe attach separately to IO1 / IO2 of front side and WB1/WB2 of back side, result shall as shown as Table 1 and all via holes plugged. Electrodes of IO1/WB1 and IO2/WB2 shall be isolated from each other.



Front Side – Bondpad Area

**Back Side – Non-Critical Area** 

2.3 Table of electrical function:

Measurement area	IO1-WB1	IO2-WB2	WB1-WB2	IO1-IO2
Function of electrical	0	0	X	X
<u> </u>				

 $\circ$ : Closed, X: Opened

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<ul> <li>3. Criteria of Visual Inspection:</li> <li>3.1 Visual inspection</li> <li>3.2 Test items are shown as below table.</li> <li>3.3 Tool: CCD OM 15X</li> <li>3.4 Panel defective control: Accept if defective <!--= 10%</li--> <li>3.5 Definition of test areas:</li> </li></ul>							
No.	Item	Examine area	Specification	S	Schematic d	iagram	
1	a)Depression b)Silver Point c)Protrusion d)Foreign Materials e)Contaminants f)Crack g)Peeling (Electroless & Electro Plating)	Single unit of front and back side	NG if >/= 0.8mm	Fre	<b>Dont Side</b>	Back Side	
2	Pattern Inspection	Pattern of front and back side	The finish pattern shall per original drawing (above 95%).	F			
3	Plating Layer / Photoresist	Gap edge of bondpad area	No metal / photoresist in indicated area.		A		
4	Over Plating / Partial Plating	Panel	Filling holes ratio > 99%	ſ			
5	Over Plating	Tooling hole	No metal inside of the tooling hole.				

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4. Coating thick	4 Coating thickness test specification						
4.1 Using tools :	Substrate thickness	: Micrometer					
C C	Cu thickness	: 3 axis microscope					
	Final finish thickness	: X-ray thickness m	ieter				
	Cavity thickness	: 3 axis microscope					
4.2 Measurement p	osition:	1					
-	Substrate thickness	: Position 1					
	Cu thickness	: Position 2					
	Final finish thickness	: Position 3					
	Cavity thickness : Position 4						
4.3 Inspect spec:	(Tree times average of r	neasurement)					
	Substrate thickness	: 0.38±0.04mm					
	Cu thickness	: 65±10 um					
	Final finish thickness	:					
	NiPdAu : 5/ 0.1/ 0.1 u	m (2-8/ 0.05-0.25/ 0	.05-0.25 um)				
	Cavity thickness	: 100±20 um					

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### 5. Reliability test

No.	Item	Parameter	Specification
1	Adhesion test	<ol> <li>Temp. : RT</li> <li>Tool : 3M-600</li> <li>Time : adhesive 30 seconds</li> <li>Angle : 180°</li> </ol>	• The exterior must be no separate
2	Solderability	<ol> <li>Temp. : 235±5°C</li> <li>Time : 5±1sec</li> <li>solder bath composition : (Ag/Sn/Cu=3/96.5/ 0.5%)</li> </ol>	• Coverage > 90%
3	Reflow	<ol> <li>Temp. ÷ 260℃</li> <li>Times ÷ 3 cycles</li> </ol>	<ul> <li>The exterior must be no separate, crack and warpage</li> <li>Maintain the electrical function.</li> </ul>

### 6. Notices

(1)When inspection, packaging and handling:

Must wear gloves and masks when inspect products.

Must wear latex gloves before unpacking products

Must avoid vibration, shock and stress etc. when carry products.

#### (2) Storage conditions:

Store under  $25^{\circ}C \pm 5^{\circ}C \rightarrow 50\% \pm 10$ RH when sealed.

The expiration date is less than 3 months when sealed.

Store under  $25^{\circ}C \pm 5^{\circ}C \cdot 50\% \pm 10$ RH when unsealed.

Please store unsealed package in airtight containers and used up within 3 days.

#### (3)Before wire bonding :

Please clean and preheat before wire bonding.