

# Reverse Costing analysis



## TESS T-6C007W 12W Bulb LED LAMP

Mars 2013 - Version 1

written by : Florent CRÉTET

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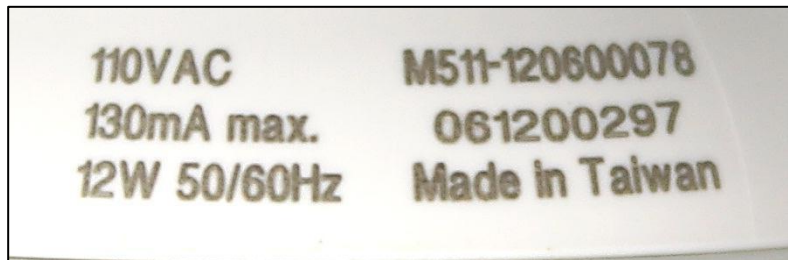
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– LED Package Analysis			
– LED Die based on Nichia Technology			
– LED Die – Cross-Section			
– Driver Board	<b>33</b>		

The reverse costing analysis is conducted in 3 phases:

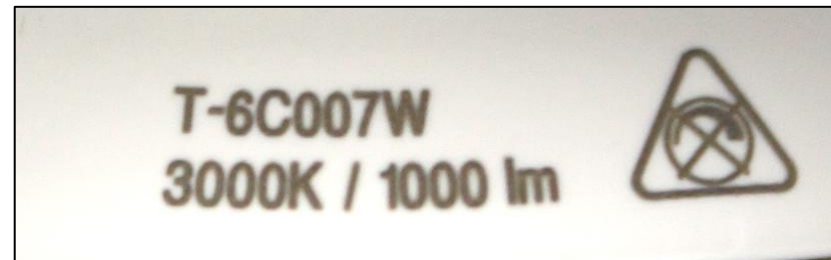
<ul style="list-style-type: none"> <li>• Package is analyzed and measured.</li> <li>• The die is extracted in order to get overall data: dimensions &amp; technology</li> <li>• Set up of the manufacturing process.</li> </ul>	<b>Teardown analysis</b>
<ul style="list-style-type: none"> <li>• Setup of the manufacturing environment</li> <li>• Cost simulation of the process steps with different scenarios</li> </ul>	<b>Costing analysis</b>
<ul style="list-style-type: none"> <li>• Supply Chain Analysis</li> <li>• Analysis of the selling price</li> </ul>	<b>Selling price analysis</b>



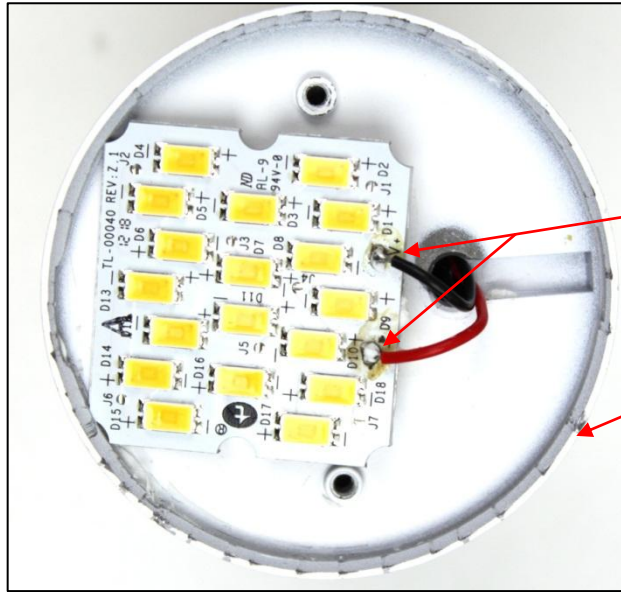
**Total Weight: 163g**



Marking on the Lamp



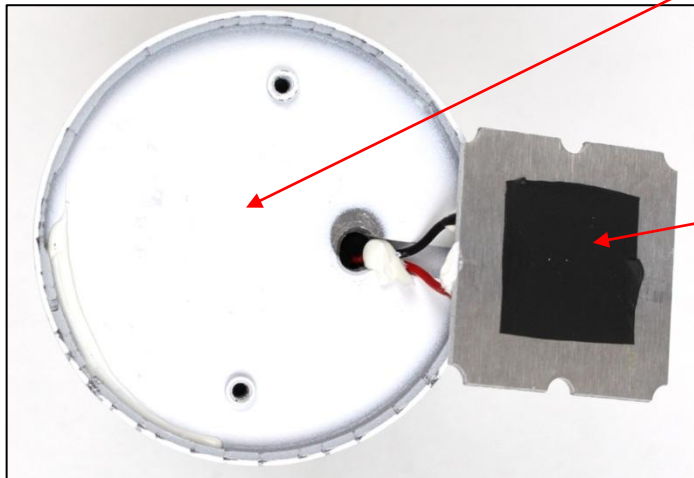
Marking on the Lamp



Soldering points

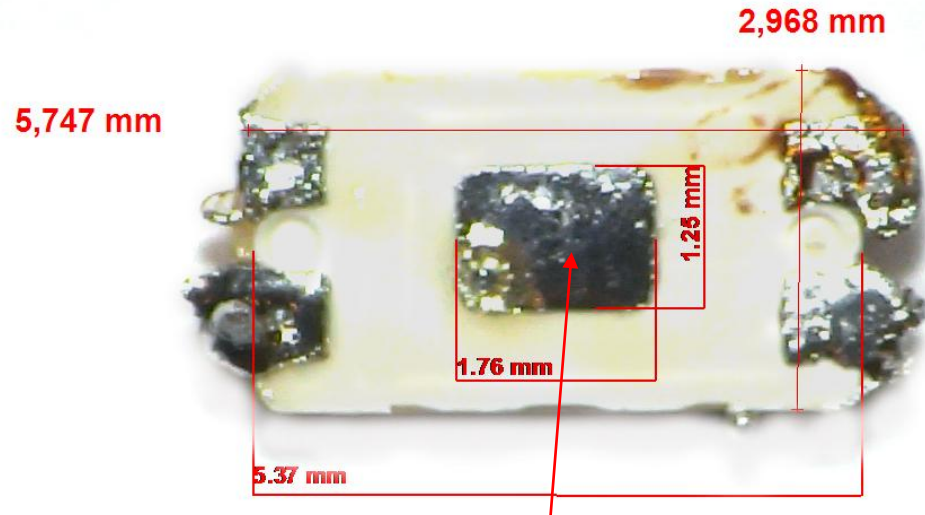
Aluminum heatsink with lateral fins.

Aluminum heatsink covered with white paint



Graphite Sheet Adhesive  
20.5x19.5mm thickness 0.12mm

Cathode and Anode

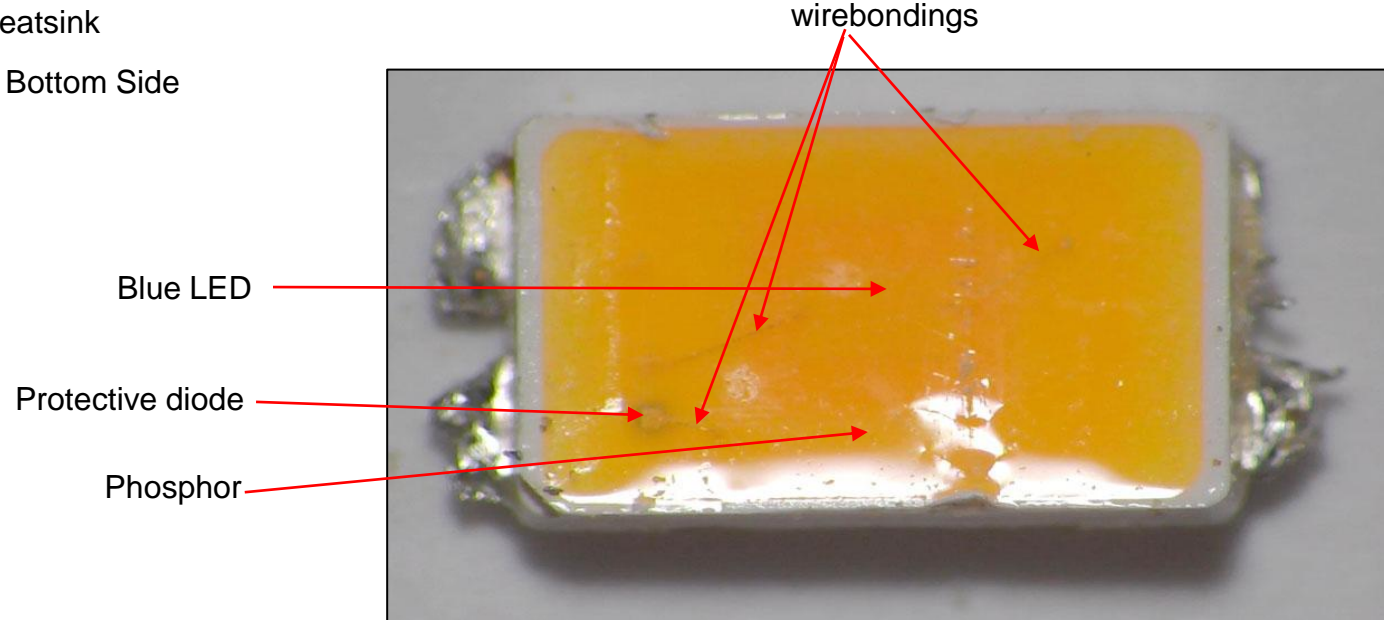


Heatsink

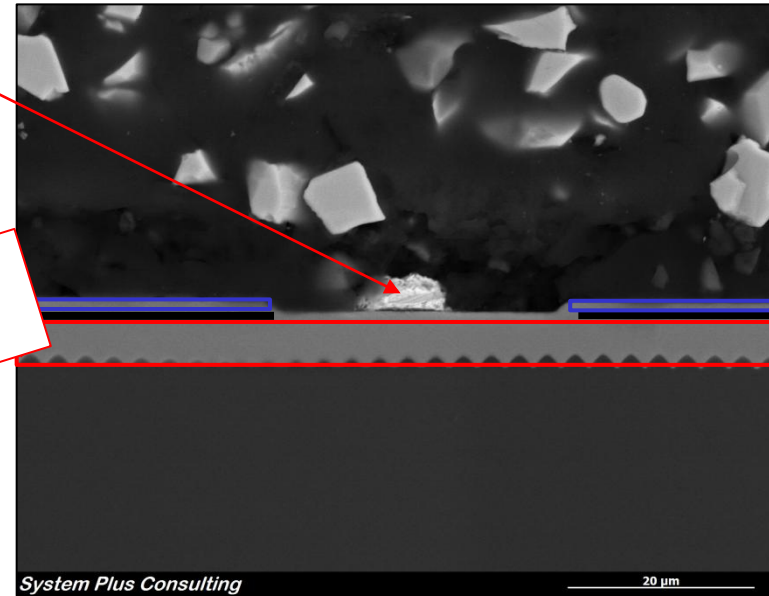
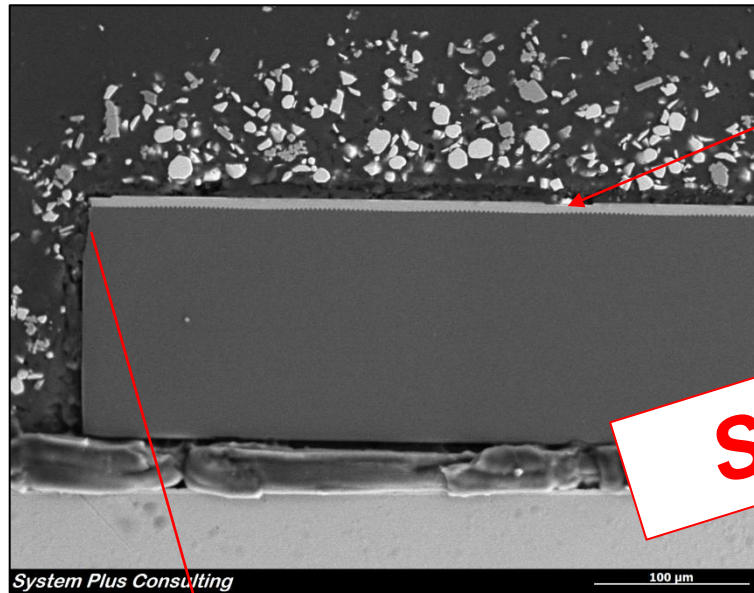
LCW JDSH.EC-FSFU-5R8T-L1N2 LED of the DURIS E5 family. The DURIS E5 combines a blue LED with a phosphor coating to convert the beam angle into a white beam (3.6 mm x 3.0 mm).

**SAMPLE**

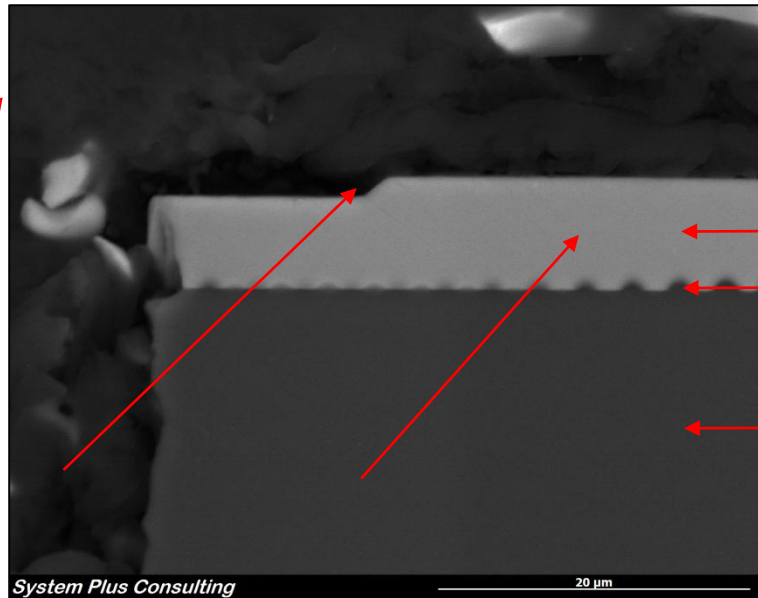
LCW JDSH.EC-FSFU-5R8T-L1N2 Bottom Side



LCW JDSH.EC-FSFU-5R8T-L1N2 Top Side



GaN LED cross-section view



GaN LED cross-section view

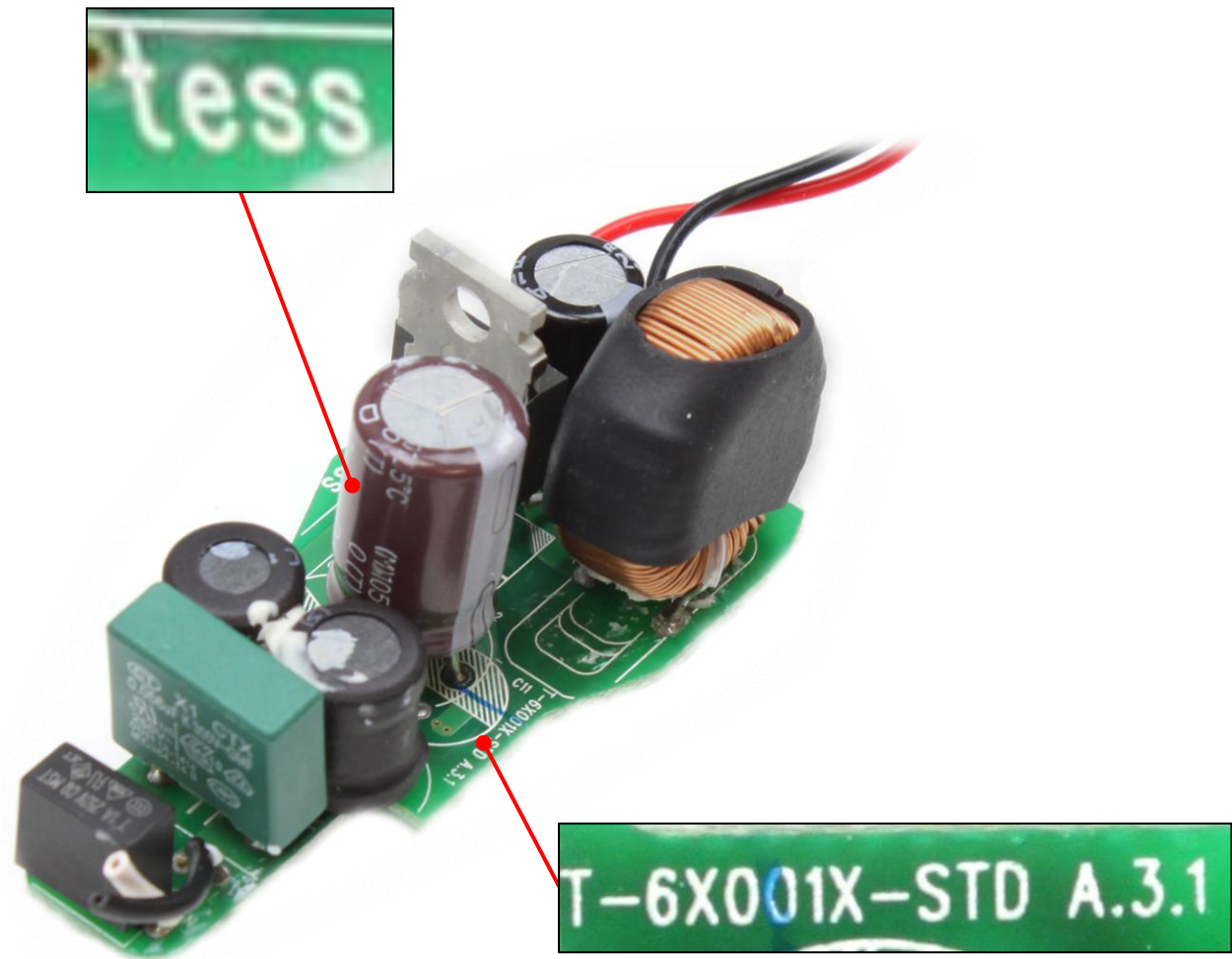
Pre-saw

GaN epitaxy layer

Patterned Sapphire substrate

Sapphire substrate

MESA isolation



Reference of the board:  
T-6X001X-STD A.3.1



# Cost Analysis

DRIVER BOARD								2013			
PART NUMBER	QTY	DESCRIPTION	Package	Pin No	MANUFACTURER	SIDE	UNIT PRICE	CURRENCY	UNIT PRICE (in USD)	TOTAL	
Driver BOARD PCB	1	PCB FR4 2 layers 53.95x25.95mm		NULL		0	0.1300	USD	0.1300	0.1300	
BAV99	2	DIODE ARRAY 70V 200mA SOT23	SOT23	3	Fairchild Semiconductor	1	0.0170	USD	0.0170	0.0340	
BRIDGE RECTIFIER SO4 5S21	1	Bridge rectifier marking code 5S21	SO4	4		1	0.0764	USD	0.0764	0.0764	
<div style="border: 2px solid red; padding: 5px; transform: rotate(-10deg); display: inline-block;"> <b>Values Blurred in report sample</b> </div>											

There is a total of 27 components on the Electronic Board, 19 components are on the top side and there are 8 components on the bottom side.

The material cost of the Electronic Board is estimated to \$XX.

Year	Yearly quantity	Manufacturing Location	Material Cost	Scrap 1%	Supplying 6.5%	Total Material Cost	Assembly Cost	Manufacturing Cost	TESS Overhead			Estimated Manufacturing Price
									R&D 5.00%	G&A 10.00%	Profit 5.00%	
2013	Great Quantity	China and Taiwan										

Values Blurred in report sample

The bill of material (BOM) cost is estimated to **\$XX** for the complete system. To this, we must add some scrap cost (\$XX) and component supplying costs (\$XX) to obtain the total material cost (\$XX). The assembly cost is estimated to \$XX, so **the manufacturing cost is \$XX**.

With estimated costs of R&D (\$XX), G&A (\$XX) and Profit (\$XX), the **average manufacturing price of TESS** can be estimated at **\$XX**.

- The Reverse Costing analysis represents the best cost/price evaluation given the publically available data, completed with industry expert estimates.
- These results are open for discussion. We can re-evaluate this circuit with your information. Please contact us:



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