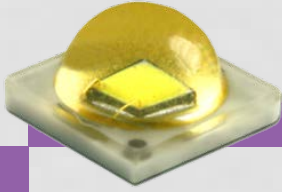


SEOUL Semiconductor – Z-Power Z5 LED Reverse Costing Report



System Plus Consulting - November 2010

Physical Analysis of the Device Step by Step Reconstruction of the Process Flow Cost of Manufacturing and Estimation of Selling Price

System Plus Consulting is proud to publish the reverse costing report of the Z-Power Z5 Pure White LED supplied by SEOUL Semiconductor. Based on a complete teardown process, the report provides an estimation of the production cost as well as the selling price of the component.

- The Z-Power Z5 pure white series have a typical brightness of 105lm with a consumption of 1.15W at 350mA
- The component is provided in a specific 2-pins package, compatible with SMT process.
- It can be used in a wide range of lighting applications such as mobile phone flash, Automotive lighting, Architectural lighting, large size LCD Backlight, Traffic signals...
- This report provides complete teardown of the LED with:
 - Detailed photos
 - Material analysis
 - Schematic assembly description
 - Manufacturing Process Flow
 - In-depth economical analysis
 - Manufacturing cost breakdown
 - Selling price estimation

Package Opening

Active Layers

Front-End : Epitaxy Cost per Steps

GaN Epitaxy	Cost	Breakdown
Epitaxy GaN - Bake-Out		
Epitaxy GaN - Temperature Ramp		
Epitaxy GaN - Nucleation layer		
Epitaxy GaN - Buffer + n layer (3.92µm)		
Epitaxy GaN - Active layer MQW (36nm)		
Epitaxy GaN - p layer (240nm)		
TOTAL		

Epitaxy Step Cost Breakdown

Bar chart showing the relative costs of the epitaxy steps. The 'Buffer + n layer' step is the most expensive, followed by the 'Active layer MQW'.

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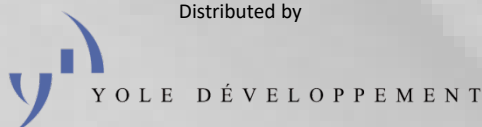
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