Product Change Notification

ENP-PCN-2011-01
September 12, 2011

PCN Overview

PCN Original Issue Date: September 12, 2011
Type of Change Notification: Assembly material change
Qualification: Complete
Sample Availability: October 3, 2011
Expected First Ship Date: November 7, 2011
Last Date to Buy Pre-Change Product: N/A
Products Affected: EN5335QI, EN5336QI, EN5365QI, EN5366QI, EN5364QI, EN5394QI, EN5395QI, EN5396QI, EA100BCM, EA108BCM, EN104INT, EN110INT

Reference Documents:
JEDEC Standard JESD46C
Prod Mark Spec OP-L01a

PCN Revision History:
Revision Date: September 12, 2011  Revision Number: 00  Reason: initial issue

Description of Change

Enpirion is converting to copper wire as a qualified wire bond material for QFN devices.

Enpirion reserves the right to ship devices with either gold or copper wire bonds.

Customer Impact of Change and Recommended Action

There is no customer impact since there is no change in form, fit, function, reliability, quality and safety of the products.

Reason for Change

Copper wire is increasingly becoming the material of choice for wire bonding in the semi-conductor industry due to the spiraling cost of gold. Addition of copper wire as a qualified material for assembly is an integral part of Enpirion’s cost containment strategy while enabling manufacturing flexibility and ensuring long term continuity of supply.

Product Identification

Products with copper wire will be easily identifiable by the letter C at the end of the Lot Number on the second row of the device marking.

Copper Wire
- EN5335QI
- XXXXXC
- XYWW

Gold Wire
- EN5335QI
- XXXX
- XYWW
Product Qualification Data (Copper Wire)

Over the past one year, Enpirion has manufactured over 3 million devices with copper wire bonds with excellent results. Enpirion also has extensive amount of reliability qualification data as summarized in the table below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Reliability Test</th>
<th>Test Condition &amp; Standard</th>
<th>Test Results (Qty: Pass/Fail)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>4x4x0.75mm OFN</td>
</tr>
<tr>
<td>1</td>
<td>High Temperature Operating Life (HTOL) JESD22-A108 (125°C, Vin max, 1000 hours)</td>
<td>80 / 0</td>
<td>240 / 0</td>
</tr>
<tr>
<td>2</td>
<td>High Temperature Storage (HTS) JESD22-A103-C (150°C, 1000 hours, Condition B)</td>
<td>80 / 0</td>
<td>240 / 0</td>
</tr>
<tr>
<td>3</td>
<td>Pre-Conditioning JESD22-A113 and J.STD.020</td>
<td>240 / 0</td>
<td>520 / 0</td>
</tr>
<tr>
<td>4</td>
<td>Temperature Humidity Bias with Pre-Conditioned Devices from Item 3 JESD22-A101 (85°C/85%RH, Vin max, 1000 hours)</td>
<td>80 / 0</td>
<td>40 / 0</td>
</tr>
<tr>
<td>5</td>
<td>Autocycle with Pre-Conditioned Devices from Item 3 JESD22-A102C (100%RH, 121°C, 96 hours, Condition C)</td>
<td>80 / 0</td>
<td>240 / 0</td>
</tr>
<tr>
<td>6</td>
<td>Temperature Cycle with Pre-Conditioned Devices from Item 3 JESD22-A104, Condition C, Soak Mode 5</td>
<td>80 / 0</td>
<td>240 / 0</td>
</tr>
</tbody>
</table>

Customer Acknowledgement

Customers are requested to acknowledge this notification within 30 days of its issue date. Lack of response within 30 days of PCN release will constitute an acceptance of the change.

Please contact Enpirion at customerservice@enpirion.com, your manufacturers' representative, or distributor if you have any issues with this PCN or require additional information.

Customer: _________________________   Name: ____________________________
Title: ____________________ Phone: _______________ Email: ________________
Customer Comments: _________________________________________________________
Customer Signature: ___________________  Date: _______________________

Contact Information

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To locate your area Representative or Distributor visit the Enpirion Website: www.enpirion.com

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