

## Certificate of Compliance

| DUNS            |                         | Document Date              | URL for Additional Information                                                           |
|-----------------|-------------------------|----------------------------|------------------------------------------------------------------------------------------|
| 00-489-5751     |                         | Fri, Aug 30, 2013 06:17 PM | <a href="http://Fairchildsemi.com">Fairchildsemi.com</a>                                 |
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### Material Declaration Processing Information

| FSID            | Material Declaration         | Site Owner                                                                                                                                                                     | Assembly Location  | Package Weight(g) | MSL Rating        |
|-----------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|-------------------|
| FGPF4536        | TO-220F-3<br>(DAP_CuAlBW)(G) | SUZHOU                                                                                                                                                                         | INTERNAL<br>SUZHOU | 2.1086820         | Not<br>Applicable |
| Terminal Finish | Base Alloy                   | Green Status                                                                                                                                                                   | Reflow Cycles      | Max Time at Temp  | Peak Temp         |
| Matte Tin (Sn)  | CU Alloy                     | This product is green as defined by Fairchild's Green Policy. Please use this link to access Fairchild's Green Product Definition.<br><a href="#">Fairchild's Green Policy</a> | Not Applicable     |                   |                   |

### Homogenous Material Composition Declaration

| Component      | Material                         | Weight of Component(mg) | Substance        | Weight (mg) | CAS        | PPM in FSID |
|----------------|----------------------------------|-------------------------|------------------|-------------|------------|-------------|
| Chip           | Other inorganic materials        | 13.5000                 | Silicon          | 13.5000     | 7440-21-3  | 6402        |
| Die Attach     | Other Nonferrous metals & alloys | 4.0130                  | Silver           | 0.0620      | 7440-22-4  | 29          |
|                |                                  |                         | Tin              | 0.2010      | 7440-31-5  | 95          |
|                |                                  |                         | Lead             | 3.7500      | 7439-92-1  | 1778        |
| Encapsulation  | Thermoplastics                   | 785.0000                | Carbon Black     | 15.7000     | 1333-86-4  | 7445        |
|                |                                  |                         | Phenolic Resin   | 62.8000     | 9003-35-4  | 29782       |
|                |                                  |                         | Epoxy Resin      | 78.5000     | 29690-82-2 | 37227       |
|                |                                  |                         | Silica, vitreous | 628.0000    | 60676-86-0 | 297816      |
| Lead Frame     | Copper & its alloys              | 1291.6800               | Phosphorus       | 0.3900      | 7723-14-0  | 185         |
|                |                                  |                         | Iron             | 1.2900      | 7439-89-6  | 612         |
|                |                                  |                         | Copper           | 1290.0000   | 7440-50-8  | 611757      |
| Plating        | Other Nonferrous metals & alloys | 13.2000                 | Tin              | 13.2000     | 7440-31-5  | 6260        |
| Wire Bond - Al | Aluminum & its alloys            | 1.1800                  | Aluminum         | 1.1800      | 7429-90-5  | 560         |
| Wire Bond - Cu | Copper & its alloys              | 0.1090                  | Copper           | 0.1090      | 7440-50-8  | 52          |

Note: The substance content disclosed herewith is approximate and is based on various methods including, engineering calculations, supplier surveys, Material Safety Data Sheets, analytical measurements. Fairchild may update this document without notification.

Additionally, the following should be noted:

- This statement may not include information regarding the miniscule quantities of dopant and metal materials in the electrical devices contained within the finished product.
- CAS numbers listed for Resin substances are generic and may contain alternate substances of similar composition.

## **RoHS Declaration**

The European Parliament and of the Council on the Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive restricts the concentration of Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr6+), Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) to 0.1% (1000 PPM) and restricts the concentration of Cadmium (Cd) to 0.01% (100 PPM) in homogeneous materials of electronic products.

The FSC part number listed above and the homogenous materials in the product are compliant with the Directive 2011/65/EU.

**Exemptions as declared for the directive are:** 7(a)-Lead in high melting temperature type solders (i.e. lead based solder alloys containing 85 % by weight or more lead).

## **China RoHS**

With the possible exception of lead, if applicable (refer to the RoHS Declaration statement above), this product and all homogeneous materials in the product comply with the China RoHS standard SJ/T 11363-2006.

## **REACH Compliance**

European Union Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) entered into force on June 1, 2007. Fairchild Semiconductor agrees with the purpose of REACH, which is to ensure a high level of protection of human health and the environment. Fairchild semiconductor is compliant with all applicable requirements of REACH and upon request will provide information regarding the chemical composition of our products.

Fairchild Semiconductor is neither a manufacturer nor importer of preparations into Europe and therefore the registration requirements of REACH do not apply to us. It is expected that any electronic materials manufacturer that uses preparations from Europe in their products will ensure compliance with REACH registration requirements.

Product (articles) manufacturers or importers into Europe are obligated under Article 33 of REACH to inform recipients of any articles that contain chemicals on the Substances of Very High Concern (SVHC) candidate list above a 0.1% concentration (by weight per article). Products manufactured and marketed by Fairchild Semiconductor do not contain substances on the REACH SVHC candidate list (as published by the ECHA on the following publication dates) in concentrations greater than 0.1% by weight per article:

October 28, 2008; January 13, 2010; March 30, 2010; June 18, 2010; December 15, 2010; June 20, 2011; December 19, 2011; June 18, 2012\*; December 19, 2012; June 20, 2013.

Fairchild Semiconductor will continue to monitor the developments of REACH and is committed to meeting our responsibilities as an environmentally-responsible company. Please refer to the web site below for additional information regarding SVHC:

[ECHA European Chemical Agency](http://echa.europa.eu)

\* Diboron trioxide was added to REACH Annex XIV as a Substance of Very High Concern (SVHC) on June 18, 2012. Fairchild products in glass encapsulated packages may list Diboron trioxide as a constituent material in the glass encapsulation, in a concentration greater than 0.1%; REACH classifies; glass as a substance of unknown or variable composition, complex reaction products or biological matter (UVCB) containing the elements silica, calcium, sodium, potassium, magnesium and other cautions bonded together with oxygen. In glass, these elements are bonded into a non crystalline molecular structure with completely different properties than the starting material; Therefore Diboron trioxide is not present in the finished Fairchild product and does not require notification of the presents of a SVHC.

## Joint Industry Guide (JIG) 101

With the exception of RoHS exemptions listed above (if applicable), this product does not contain any restricted substances listed in the Joint Industry Guide (JIG) 101 in concentrations greater than the threshold listed. The list of JIG substances may be viewed using this web link.

[Joint Industry Guide \(JIG\) 101](#)

The signature below is of the Company's designated personnel with delegated product ecology compliance responsibility and verifies that to the best of our knowledge the statements above are valid and accurate.

**David Lancaster**



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## Environmental Declaration

The content of this document is based upon information collected from Fairchild Semiconductor's supply chain, manufacturing facilities and affiliates worldwide. Providing for limitations below, Fairchild Semiconductor certifies that the information provided in this document is correct as of the date indicated on this page.

Fairchild has implemented systems to ensure our products are compliant to environmental regulations and laws worldwide. However, not all materials in Fairchild's products may have been independently verified regarding substance content. In the event of any issues arising from information in this document, the warranty section of Fairchild's standard terms and conditions of sale shall apply, unless alternate contracts have been agreed upon in writing by both parties.