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**PCN# : P185A**
**Issue Date : Jun. 18, 2012**

## DESIGN/PROCESS CHANGE NOTIFICATION

This is to inform you that a change is being made to the products listed below.

Unless otherwise indicated in the details of this notification, the identified change will have no impact on product quality, reliability, electrical, visual or mechanical performance and affected products will remain fully compliant to all published specifications. Products incorporating this change may be shipped interchangeably with existing unchanged products.

This change is planned to take effect in 90 calendar days from the date of this notification. Please work with your local Fairchild Sales Representative to manage your inventory of unchanged product if your evaluation of this change will require more than 90 calendar days.

Please contact your local Customer Quality Engineer within 30 days of receipt of this notification if you require any additional data or samples. Alternatively, you may send an email request for data, samples or other information to PCNSupport@fairchildsemi.com.

**Implementation of change:**

Expected First Shipment Date for Changed Product : Sep. 16, 2012

Expected First Date Code of Changed Product :1228

Description of Change (From) :

KA33V Product assembled in TO92 package using the current qualified copper(Cu) leadframe.

Description of Change (To) :

KA33V Product assembled in TO92 package using the alternate Iron(Fe) leadframe.

> Bill of material

| Material | Current | Future |
|---|---|---|
| Lead frame Material | Copper | Fe + Cu plating |
| Die attach adhesive | Eutectic | Eutectic |
| Bond wire | Au | Au |
| Epoxy Monding Compound | LMC300TKL<br>EME2500D3 | LMC300TKL<br>EME2500D3 |
| Plating | Pure Tin | Pure Tin |

## > LF pad size Comparison (Changed internal & external dimension)

| Package | Part | PAD Size | |
|---|---|---|---|
| | | Current(Cu LF) | Future (Fe LF) |
| TO92 | Center | 3.00 X 1.19 | 3.56 x 2.11 |
| | | 3.96 x 1.40 | 3.96 x 1.40 |
| | Side | 3.20 x 1.33 | 2.97 x 1.33 |
| | | 3.80 x 1.50 | 3.80 x 1.50 |

Note > This dimension change is not affected Package outline drawing (SB-T-2487-B)

## > LF Composition Comparison

| Part | C | Fe | Si | Mn | Ni | Cu | P | S | Ag |
|---|---|---|---|---|---|---|---|---|---|
| SPCC (Fe base) | 0.05 | Re | 0.044 | 0.213 | 0.65 | 0.78 | 0.16 | 0.16 | |
| PMC90-1/2H (Cu base) | Re | 0.05~0.15 | | | | | 0.025~ 0.040 | | |

## > LF properties comparison

| Unit | Properties | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Melting point | Density | Thermal conductivity | Thermal expansion | Coefficient of elastic | Tensile strength | Elongation | Hardness |
| | ℃ | g/㎤ | Cal/cm/ ℃/sec | X10-6/ ℃(25~300) | Kg/㎟ | Kgf/㎟ | % | Hv |
| PMC90-1/2H | 1082 | 8.94 | 0.870 | 16.9 | 12800 | 36~44 | Min. 6 | 100~125 |
| SPCC | 1539 | 7.87 | 0.143 | 12 | 21000 | 60 | 15 | 190 |

Reason for Change:

To improve product availability and manufacturing flexibility.

**Affected Product(s):**

| | | |
|---|---|---|
| KA33VBU | KA33VTA | |

| Qualification Plan | Device | Package | Process | No. of Lots |
|---|---|---|---|---|
| Q20070371 | KSB564CYTU | TO-92 | PNP | 2 |

| Test Description: | Condition: | Standard : | Duration: | Results: |
|---|---|---|---|---|
| Autoclave | 121C, 100%RH | JESD22-A102 | 96hrs | 0/154 |
| Temperature Humidity Bias Test | 85C, 85%RH, -24V | JESD22-A101 | 168, 500,1000 hrs | 0/154 |
| Temperature Cycle | -65C, 150C | JESD22-A104 | 200, 500 cycles | 0/154 |
| Power Cycle | Delta Tj of 100 C, On/off = 2 min | JESD22-A105 | 1000, 5000 | 0/154 |

| Qualification Plan | Device | Package | Process | No. of Lots |
|---|---|---|---|---|
| Q20070371 | KSP44BU | TO-92 | NPN | 1 |

| Test Description: | Condition: | Standard : | Duration: | Results: |
|---|---|---|---|---|
| Autoclave | 121C, 100%RH | JESD22-A102 | 96hrs | 0/77 |
| Temperature Humidity Bias Test | 85C, 85%RH, 100V | JESD22-A101 | 168, 500,1000 hrs | 0/77 |
| Temperature Cycle | -65C, 150C | JESD22-A104 | 200, 500 cycles | 0/77 |
| Power Cycle | Delta Tj of 100 C, On/off = 2 min | JESD22-A105 | 1000, 5000 | 0/77 |