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|--------------------------------------|---|-----------------------------|
| DATE : <i>January 2013</i> | QUALIFICATION REPORT | PAGE : 1/2 |
| | In accordance with PGQ 15 : GENERAL PRINCIPLES OF QUALIFICATION | |

| | |
|------------------|---|
| <i>Product :</i> | EV12AS200xZPY – 12bit 1.5GspS ADC <i>x = C or V</i> |
|------------------|---|

| | | | |
|--|---|---|--|
| <i>Qualification status :</i> | <input checked="" type="checkbox"/> Accepted | <input type="checkbox"/> Pending | <input type="checkbox"/> Rejected |
| <i>This product has met all e2v Grenoble qualification requirements.</i> | | | |

| <i>Qualified products :</i> | Package | Temperature range | Screening level |
|-----------------------------|-----------|------------------------------------|-----------------|
| EV12AS200CZPY | FpBGA 196 | “C” Grade: Tc > 0°C ; Tj < 90°C | Standard |
| EV12AS200VZPY | FpBGA 196 | “V” Grade: Tc > -40°C ; Tj < 110°C | Standard |
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|---|--|---|---|
| <i>Directive 2002/95/EC compliance status :</i> | <input checked="" type="checkbox"/> Pb free compliant | <input checked="" type="checkbox"/> RoHS compliant | <input type="checkbox"/> Fully Green compliant |
| <input type="checkbox"/> Not compliant | | | |

| | | |
|-------------------------------------|---|--------------------------------|
| <i>Die information :</i> | | |
| Die size : 4,82 x 4,82 mm | Power dissipation : 3.2 W | Mask : VN33B |
| Wafer fab. : Infineon | Process : 200GHz SiGe Bipolar | Technology : B7HF200 |

| | | |
|---|--|------------------------------------|
| <i>Package information : FpBGA 196</i> | | |
| Outline : 15 x 15 x 1.2 mm | Pitch : 1 mm | Lead finish : Pure Sn |
| Assy plant : Unisem Batam (Indonesia) | Moisture sensitivity level : 3 | Max. peak reflow : 260°C |

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|--|-------------------------------------|---------------------------------|----------------------------|
| Qualification batch information : | | | |
| Mask : VN33B | Diffusion lot : RU1177563 | Assy lot ID : 1461246 | Date Code : 1111 |

Dice qualification tests results

| | TEST <i>Acceptable criteria</i> | METHOD <i>Condition</i> | Sample | Fail | Status |
|--------------|--|--|---------------|-------------|----------------------------|
| VN33B | Construction analysis <i>Infineon B7HF200 specifications</i> | MIL-STD-883 TM2018 ESA /SCC Basic Specification N°21400 | 6 dices | 0 | Pass |
| | Operating Life test <i>ATE program</i> | JESD22-A108 <i>750Hrs / Tj 165 °C (eq. 4500Hrs / Tj 125 °C)</i> | 24 | 0 | Pass |
| | ESD HBM <i>ATE program</i> | JESD22-A114E <i>3 devices : 1000V (except pin CMI < 700V)</i> | 3 | 0 | Pass |
| | Latch Up <i>ATE program</i> | JEDEC 78B <i>Class I (Ta 25 °C) Class II (Tj 125 °C)</i> | 3 3 | 0 0 | Pass Pass |

Package qualification tests results done by similarity with UNISEM Batam qualification

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|------------------|---|---|-------------|---|-------------|
| FpBGA 196 | Moisture sensitivity | JSTD-020D.1 <i>Level 3 /30 °C 60%RH 192H peak 260 °C</i> | 50* 3 lots | 0 | Pass |
| | Temperature Cycles (A) | JESD22-A104 <i>500 cycles A/A -65 °C to 150 °C</i> | 25 * 3 lots | 0 | Pass |
| | Highly Accelerated Stress Test (A) | JESD22-A110 <i>96H 130 °C / 85%RH / 2atm Unbiased</i> | 25 * 3 lots | 0 | Pass |
| | High Temperature Storage | JESD22-A103 <i>150 °C Unbiased</i> | 25 * 3 lots | 0 | Pass |
| | Ball Shear <i>Ball Shear Measurements Visual inspection</i> | JESD22-B117 <i>10 balls / unit Min acceptable = 12gmf</i> | 5 | 0 | Pass |
| | Wire Pull strength <i>Wire Pull Measurements Shear mode</i> | MIL-STD-883 - 2011 <i>10 wires / unit Min acceptable = 4gmf</i> | 5 | 0 | Pass |

Complementary qualification tests results done by e2v on same family product

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|------------------|---|--|----|---|-------------|
| FpBGA 196 | Moisture sensitivity validation <i>ATE program Ultrasound scan & transmission</i> | JSTD-020D.1 <i>Level 3 /30 °C 60%RH 192H peak 260 °C</i> | 11 | 0 | Pass |
| | Moisture sensitivity | JSTD-020D.1 <i>Level 3 /30 °C 60%RH 192H peak 260 °C</i> | 50 | 0 | Pass |
| | Temperature Cycles (A) <i>ATE program</i> | JESD22-A104 <i>1000 cycles A/A -55 °C to 125 °C</i> | 25 | 0 | Pass |
| | Highly Accelerated Stress Test (A) <i>ATE program</i> | JESD22-A118 <i>96H 130 °C / 85%RH / 2atm Unbiased</i> | 25 | 0 | Pass |
| | Dimensional Measurement <i>ICOS program</i> | FpBGA package outline | 41 | 0 | Pass |

(A) Devices issued from Moisture sensitivity test