



**MICROCHIP**

**QUALIFICATION REPORT**  
RELIABILITY LABORATORY

**PCN #: JAON-13MUGT016**

**Date**  
**March 10, 2016**

**Qualification of Microchip 8 inch Fabrication site for Micrel products  
manufactured with the BCD12 Process Technology.**

| PART NUMBER           | PACKAGE TYPE | ASSEMBLY LOCATION | WAFER SIZE | PROCESS NAME |
|-----------------------|--------------|-------------------|------------|--------------|
| MIC69153YME/2A802-004 | Epad SOIC-8L | STARS, THAILAND   | 8"         | BCD 1.2      |

DIE QUALIFICATION RESULTS

| TEST DESCRIPTION                                                   | METHOD/CONDITIONS  | DATE CODE | LOT ID.            | 168 HR<br>Rej/ss | 500 HR<br>Rej/ss | 1000 HR<br>Rej/ss | COMMENTS |
|--------------------------------------------------------------------|--------------------|-----------|--------------------|------------------|------------------|-------------------|----------|
| <b>HTOL</b><br><br><b>High Temperature<br/>Operating Life Test</b> | JESD22, Method 108 | 1548H     | V216.236459.000MQB | 0/77             | 0/77             | 0/77              |          |
|                                                                    | TA= + 125°C        | 1546H     | V216.236459.100MQA | 0/77             | 0/77             | 0/77              |          |
|                                                                    | VCC = +5.5V        | 1548H     | V216.236459.200MQB | 0/77             | 0/77             | 0/77              |          |

ELECTROSTATIC DISCHARGE

| TEST DESCRIPTION                                                   | METHOD/CONDITIONS                                   | DATE CODE | LOT ID.            | STRESS           | RESULT<br>Rej/ss | COMMENTS                                                                                                                                                                                      |
|--------------------------------------------------------------------|-----------------------------------------------------|-----------|--------------------|------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ESD-HBM</b><br><br>Human Body Model<br>ATE Test @ Room +25C     | R= 1500 Ohms<br><br>C= 100 pF<br><br>1X +/- Voltage | 1546H     | V216.236459.100MQA | +/-2000V         | 0/3              | Note: ESD ratings are device specific.<br>All Products qualified on the 8" Micrel process technologies will have the same or better ESD and Latch-up performance as the 6" San Jose Products. |
| <b>ESD-CDM</b><br><br>Charged Device Model<br>ATE Test @ Room +25C | JESD22-C101<br><br>1X +/- Voltage                   | 1546H     | V216.236459.100MQA | +/-1500V         | 0/3              |                                                                                                                                                                                               |
| TEST DESCRIPTION                                                   | METHOD/CONDITIONS                                   | DATE CODE | LOT ID.            | STRESS           | RESULT<br>Rej/ss | COMMENTS                                                                                                                                                                                      |
| <b>LATCH-UP</b>                                                    | JESD-78<br><br>TA = +25°C                           | 1546H     | V216.236459.100MQA | I/O LU<br>O/V LU | 0/6<br>0/6       |                                                                                                                                                                                               |

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| PACKAGE QUALIFICATION RESULTS                                                |                                |                                                                                                                                                                                                                                                 |                    |                   |          |
|------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|----------|
| TEST DESCRIPTION                                                             | METHOD/CONDITIONS              | DATE CODE                                                                                                                                                                                                                                       | LOT ID.            | Rej/ss            | COMMENTS |
| Level 2<br>Pre-conditioning Flow                                             | JESD22-A113                    | 1548H                                                                                                                                                                                                                                           | V216.236459.000MQB | 0/145             |          |
|                                                                              |                                | 1546H                                                                                                                                                                                                                                           | V216.236459.100MQA | 0/330             |          |
|                                                                              |                                | 1548H                                                                                                                                                                                                                                           | V216.236459.200MQB | 0/143             |          |
| TEST DESCRIPTION                                                             | METHOD/CONDITIONS              | DATE CODE                                                                                                                                                                                                                                       | LOT ID.            | 96 HR<br>Rej/ss   | COMMENTS |
| PRESSURE POT<br><br>With Level 2 Pre-conditioning<br>Tpeak + 260°C 3X Reflow | JESD22-A102                    | 1548H                                                                                                                                                                                                                                           | V216.236459.000MQB | 0/45              |          |
|                                                                              | Ta = +121°C/100%RH             | 1546H                                                                                                                                                                                                                                           | V216.236459.100MQA | 0/45              |          |
|                                                                              | 15 PSIG                        | 1548H                                                                                                                                                                                                                                           | V216.236459.200MQB | 0/45              |          |
| TEST DESCRIPTION                                                             | METHOD/CONDITIONS              | DATE CODE                                                                                                                                                                                                                                       | LOT ID.            | 96 HR<br>Rej/ss   | COMMENTS |
| HAST<br><br>With Level 2 Pre-conditioning<br><br>Tpeak + 260°C 3X Reflow     | JESD22-A110 (BIASED)           | 1548H                                                                                                                                                                                                                                           | V216.236459.000MQB | 0/45              |          |
|                                                                              | Ta = +130°C/85%RH              | 1546H                                                                                                                                                                                                                                           | V216.236459.100MQA | 0/45              |          |
|                                                                              |                                | 1548H                                                                                                                                                                                                                                           | V216.236459.200MQB | 0/45              |          |
| TEST DESCRIPTION                                                             | METHOD/CONDITIONS              | DATE CODE                                                                                                                                                                                                                                       | LOT ID.            | 500 CY<br>Rej/ss  | COMMENTS |
| TEMP CYCLE<br><br>With Level 2 Pre-conditioning<br>Tpeak + 260°C 3X Reflow   | JESD22-A104                    | 1548H                                                                                                                                                                                                                                           | V216.236459.000MQB | 0/45              |          |
|                                                                              | Ta = -65°C / +150°C            | 1546H                                                                                                                                                                                                                                           | V216.236459.100MQA | 0/45              |          |
|                                                                              |                                | 1548H                                                                                                                                                                                                                                           | V216.236459.200MQB | 0/45              |          |
| TEST DESCRIPTION                                                             | METHOD/CONDITIONS              | DATE CODE                                                                                                                                                                                                                                       | LOT ID.            | 1000 HR<br>Rej/ss | COMMENTS |
| HTSL<br>High Temperature Storage Life<br>With Level 2 Pre-conditioning       | JESD22-A103<br><br>Ta = +150°C | 1546H                                                                                                                                                                                                                                           | V216.236459.100MQA | 0/76              |          |
| TEST DESCRIPTION                                                             | METHOD/CONDITIONS              | DATE CODE                                                                                                                                                                                                                                       | LOT ID.            | 500 HR<br>Rej/ss  | COMMENTS |
| HTSL<br>High Temperature Storage Life                                        | JESD22-A103<br><br>Ta = +175°C | 1546H                                                                                                                                                                                                                                           | V216.236459.100MQA | 0/76              |          |
| FLAMMABILITY                                                                 | UL-94V-0<br><br>Certified      | All mold compounds used by Micrel meet this standard. See the UL website on-line list of material flammability certifications. Micrel requires a Certificate of Compliance from the assembly house and we verify the certifications on the web. |                    |                   |          |

JAON-13MUGT016-BCD1200002 - CCB 1737.05 Final Notice: Release to production of listed Micrel Signal Processor product type manufactured with the BCD12 process technology to Microchip Fab.

Affected Catalog Part Numbers (CPN)

| PCN_JAON-13MUGT016-BCD1200002 |                                  |
|-------------------------------|----------------------------------|
| CATALOG_PART_NBR              | Estimated First Ship Date (EFSD) |
| 161-699102-4                  | June 14, 2016                    |