

Quarterly Reliability Monitoring Results

Quarters: Q1/2023 to Q4/2024

Based on structural similarity

| Supplier                  |  | User Part Number                             |           |            |           |  |
|---------------------------|--|--|-----------|------------|-----------|--|
| Nexperia B.V.             |  | PCMF1HDMI14S                                 |           |            |           |  |
| Name of Laboratory        |  | Part Description                             |           |            |           |  |
| Assembly reliability labs |  | NXP ICN8<br>WLCSP package<br>Protection INDI |           |            |           |  |
| Test                      | Test Conditions  | Duration                                     | # Lots    | # Quantity | # Rejects |  |
| # 1                       | <b>TEST</b><br>Pre- and Post-Stress<br>Electrical Test<br>Tamb = 25 °C   | N/A  | see below | all parts  | see below |  |
| # 5                       | <b>HTRB</b><br>High Temperature Reverse<br>Bias<br>MIL-STD-750-1<br>M1038 Method A<br>Tj = Tjmax, Vr = 100% of max. datasheet<br>reverse voltage | 1000 hours                                   | 96        | 3840       | 0         |  |
| # 7                       | <b>TC</b><br>Temperature Cycling<br>JESD22-A104<br>-40 °C to 125°C   | 1000 cycles                                  | 32        | 1280       | 0         |  |
| # 8 or                    | <b>UHAST</b><br>Unbiased HAST<br>JESD22-A118<br>Tamb = 130 °C, RH = 85 %   | 96 hours                                     | n.a.      | n.a.       | n.a.      |  |
| # 8a                      | <b>AC</b><br>Autoclave<br>JESD22-A102<br>Tamb = 121 °C, RH = 100 %<br>Pressure = 205 kPa (29.7 psia)   |  |           |            |           |  |
| # 9                       | <b>HAST</b><br>Highly Accelerated Stress<br>Test<br>JESD22-A110<br>Tamb = 130 °C, RH = 85%, VR = 80 % of<br>rated reverse voltage <sup>[1]</sup> | 96 hours                                     | 32        | 1280       | 0         |  |
| # 10                      | <b>IOL</b><br>Intermittent Operating Life<br>MIL-STD-750 Method 1037<br>ton = toff, devices powered to insure ΔTj =<br>100 °C for 15000 cycles   | 1000 hours                                   | n.a.      | n.a.       | n.a.      |  |
| # 20                      | <b>RSH</b><br>Resistance to Solder Heat<br>JESD22-A111<br>260 °C ± 5 °C  | 10 s   | n.a.      | n.a.       | n.a.      |  |
| # 21                      | <b>SD</b><br>Solderability<br>J-STD-002  |  | n.a.      | n.a.       | n.a.      |  |

[1]The maximum applied voltage is limited by test chamber set up and does not exceed 115V.

Calculation of FIT and MTTF

Test considered for FIT calculation: High Temperature Reverse Bias (HTRB, Test # 5)  
Confidence level 60%, derated to 55 °C, activation energy 0.7 eV, test time 168 to 1000 hours

| Wafer Fab | Technology      | Quantity | Rejects | Failure Rate (FIT) | MTTF (hrs) |
|-----------|-----------------|----------|---------|--------------------|------------|
| NXP ICN8  | Protection INDI | 3840     | 0       | 1,1                | 9,04E+08   |