Quarterly Reliability Monitoring Results

Quarters: Q3/2021 to Q4/2022

Based on structural similarity

Supplier Nexperia B.V.		**User Part Number** PESD3V3R1BBSF				
Name of Laboratory Assembly reliability labs		**Part Description** NXP ICN8 BD package	Protection INDI			
Test		**Test Conditions**	**Duration**	**# Lots**	**# Quantity**	**# Rejects**
# 1	**TEST** Pre- and Post-Stress Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below
# 5	**HTRB** High Temperature Reverse Bias	MIL-STD-750-1 M1038 Method A Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage	1000 hours	68	4040	0
# 7	**TC** Temperature Cycling	JESD22-A104 -40 °C to 125°C	1000 cycles	109	6440	0
# 8 **or**	**UHAST** Unbiased HAST	JESD22-A118 Tamb = 130 °C, RH = 85 %	96 hours	n.a.	n.a.	n.a.
# 8a	**AC** Autoclave	JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)				
# 9	**HAST** Highly Accelerated Stress Test	JESD22-A110 Tamb = 130 °C, RH = 85%, VR = 80 % of rated reverse voltage[1]	1000 hours	108	6400	0
# 10	**IOL** Intermittent Operating Life	MIL-STD-750 Method 1037 ton = toff, devices powered to insure ΔTj = 100 °C for 15000 cycles	1000 hours	n.a.	n.a.	n.a.
# 20	**RSH** Resistance to Solder Heat	JESD22-A111 260 °C ± 5 °C	10 s	n.a.	n.a.	n.a.
# 21	**SD** Solderability	J-STD-002		18	180	0

[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	4040	0	1,1	9,51E+08

© 2023 Nexperia B.V.

All information hereunder is per Nexperia's best knowledge. This document does not provide for any representation or warranty express or implied by Nexperia. In case Nexperia has tested the product, this documentation reflects the outcome of the analysis of the actually tested parts only.