

Quarterly Reliability Monitoring Results

Quarters: Q1/2023 to Q4/2024

Based on structural similarity

Supplier		User Part Number				
Nexperia B.V.		PESD30VF1BBL				
Name of Laboratory		Part Description				
Assembly reliability labs		Nexperia DHAM Protection Bipolar MCD package				
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	
# 2	PC Preconditioning JESD22-A113 Bake Tamb = 125 °C Soak Tamb = 85 °C, RH = 85% Reflow soldering	24 hours 168 hours 3 cycles	227	9080	0	
# 5	HTRB High Temperature Reverse Bias MIL-STD-750-1 M1038 Method A Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage	1000 hours	45	1800	0	
# 7	TC Temperature Cycling JESD22-A104 -65 °C to Tjmax, not to exceed 150°C	1000 cycles	84	3360	0	
# 8 or	UHAST Unbiased HAST JESD22-A118 Tamb = 130 °C, RH = 85 %	96 hours	59	2360	0	
# 8a	AC Autoclave JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)					
# 9	H3TRB High Humidity High Temperature Reverse Bias JESD22-A101 Tamb = 85 °C, RH = 85%, VR = 80 % of rated reverse voltage ^[1]	1000 hours	84	3360	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		31	930	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)
Nexperia DHAM	Protection Bipolar	1800	0	2,36	4,24E+08

© 2025 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.

[nexperia.com](https://www.nexperia.com)