

Quarterly Reliability Monitoring Results

Quarters: Q1/2022 to Q4/2023

Based on structural similarity

Supplier		User Part Number				
Nexperia B.V.		BZT52H-C8V2-Q				
Name of Laboratory		Part Description				
Assembly reliability labs		Nexperia DHAM Zener				
SMD package						
Based on AEC-Q101 Test		Test Conditions	Duration	# Lots	# Quantity	# Rejects
TEST						
# E1	Pre- and Post-Stress Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below
# A1	PC Preconditioning	JESD22-A113				
		Bake Tamb = 125 °C	24 hours			
		Soak Tamb = 85 °C, RH = 85%	168 hours			
# B1	HTRB High Temperature Reverse Bias	Reflow soldering	3 cycles	1514	64430	0
		MIL-STD-750-1				
		M1038 Method A				
# B1b	SSOP Steady State Operational	Tj = Tjmax, VR = 80 % of rated reverse voltage	1000 hours	250	11400	0
		MIL-STD-750-1				
		M1038 Method B				
# A4	TC Temperature Cycling	Tj = Tjmax, Iz = 100% of max. datasheet reverse current	1000 hours	44	1920	0
		JESD22-A104				
		-65 °C to Tjmax, not to exceed 150°C	1000 cycles	311	14080	0
# A3 or	UHAST Unbiased HAST					
		JESD22-A118				
		Tamb = 130 °C, RH = 85 %	96 hours	311	14080	0
# A3 alt	AC Autoclave	JESD22-A102				
		Tamb = 121 °C, RH = 100 %				
		Pressure = 205 kPa (29.7 psia)				
# A2 alt	H3TRB High Humidity High Temperature Reverse Bias					
		JESD22-A101				
		Tamb = 85 °C, RH = 85%, VR = 80 % of rated reverse voltage ^[1]	1000 hours	311	14080	0
# A5	IOL Intermittent Operating Life	MIL-STD-750 Method 1037				
		ton = toff, devices powered to insure ΔTj =				
		100 °C for 15000 cycles	1000 hours	312	14120	0
# C8	RSH Resistance to Solder Heat					
		JESD22-A111				
		260 °C ± 5 °C	10 s	269	8070	0
# C10	SD Solderability					
		J-STD-002				
				19	6660	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 #B1)

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	Zener	11400	0	0,37	2,68E+09

© 2024 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)