

Quarterly Reliability Monitoring Results

Quarters: Q1/2021 to Q4/2021

Based on structural similarity

Supplier		User Part Number				
Nexperia B.V.		BZX884S-C56				
Name of Laboratory		Part Description				
Assembly reliability labs		Nexperia DHAM		Zener		
		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	JESD22-A113	24 hours			
	Preconditioning	Bake Tamb = 125 °C Soak Tamb = 85 °C, RH = 85% Reflow soldering	168 hours 3 cycles	113	9040	0
# 5	HTRB	MIL-STD-750-1				
	High Temperature Reverse Bias	M1038 Method A Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage	1000 hours	138	11040	0
# 5c	SSOP	MIL-STD-750-1				
	Steady State Operational	M1038 Method B Tj = Tjmax, Iz = 100% of max. datasheet reverse current	1000 hours	20	1600	0
# 7	TC	JESD22-A104				
	Temperature Cycling	-65 °C to Tjmax, not to exceed 150°C	1000 cycles	28	2240	0
# 8	AC	JESD22-A102				
	Autoclave	Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)	96 hours	28	2240	0
# 9	H3TRB	JESD22-A101				
	High Humidity High Temperature Reverse Bias	Tamb = 85 °C, RH = 85%, VR = 80 % of rated reverse voltage ^[1]	1000 hours	28	2240	0
# 10	IOL	MIL-STD-750 Method 1037				
	Intermittent Operating Life	ton = toff, devices powered to insure ΔTj = 100 °C for 15000 cycles	1000 hours	29	2320	0
# 20	RSH	JESD22-A111				
	Resistance to Solder Heat	260 °C ± 5 °C	10 s	n.a.	n.a.	n.a.
# 21	SD	J-STD-002				
	Solderability			63	630	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	Zener	11040	0	0.38	2.60E+09

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