

## **Quarterly Reliability Monitoring Results**

## Quarters: Q3/2021 to Q4/2022

Based on structural similarity

Supplier Nexperia B.V. Name of Laboratory Assembly reliability labs Based on AEC-Q101 Test		User Part Number						
		BZX84W-C10						
		Part Description						
		Nexperia DHAM						
		SMD package						
		Test Conditions	Duration	# Lots	# Quantity	# Rejects		
	TEST							
	Pre- and Post-Stress							
# E1	Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below		
ı		JESD22-A113						
	BC	Bake Tamb = 125 °C	24 hours					
# A1	PC Preconditioning	Soak Tamb = 85 °C, RH = 85% Reflow soldering	168 hours 3 cycles	1168	66640	0		
# A1	Trecondicioning	MIL-STD-750-1	5 Cycles	1100	00040	0		
	HTRB	M1038 Method A						
		Tj = Tjmax, VR = 80 % of rated reverse						
# B1	Bias	voltage	1000 hours	198	11960	0		
		MIL-STD-750-1						
		M1038 Method B						
	SSOP	Tj = Tjmax, $Iz = 100%$ of max. datasheet						
# B1b	Steady State Operational	reverse current	1000 hours	24	1760	0		
	TC	JESD22-A104				_		
# A4	Temperature Cycling	-65 °C to Tjmax, not to exceed 150°C	1000 cycles	240	14800	0		
	UHAST	JESD22-A118						
# A3 or	Unbiased HAST	Tamb = 130 °C, RH = 85 %						
" 713 <b>G.</b>	Chibladea Fin Ci	JESD22-A102	- 96 hours	240	14800	0		
	AC	Tamb = 121 °C, RH = 100 %						
# A3 alt	Autoclave	Pressure = 205 kPa (29.7 psia)						
	H3TRB	JESD22-A101						
	High Humidity High	Tamb = 85 °C, RH = 85%, VR = 80 % of						
# A2 alt	Temperature Reverse Bias	rated reverse voltage <sup>[1]</sup>	1000 hours	240	14800	0		
		MIL-STD-750 Method 1037						
	IOL	ton = toff, devices powered to insure $\Delta Tj$ =						
# A5	Intermittent Operating Life	100 °C for 15000 cycles	1000 hours	264	16720	0		
		750000 4444						
# 60	RSH Desistance to Solder Heat	JESD22-A111	10 -	104	FF20	0		
# C8	Resistance to Solder Heat	260 °C ± 5 °C	10 s	184	5520	0		
# C10	<b>SD</b> Solderability	J-STD-002		501	5010	0		
# CIU	Joiderability	J J1D 002		201	2010	U		

<sup>[1]</sup> 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	11960	0	0,36	2,82E+09

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