## nexperia

## **Quarterly Reliability Monitoring Results**

Quarters: Q1/2022 to Q4/2023 Based on structural similarity

Supplier Nexperia B.V. Name of Laboratory Assembly reliability labs Based on AEC-0101 Test		User Part Number PMEG6030EXE-Q Part Description										
								Nexperia DHAM Schottky				
								SMD package				
		Test Conditions Duration # Lots # Quantity # Re										
		TEST					<b>.</b> ,					
			Pre- and Post-Stress									
# E1	Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below						
		JESD22-A113	,									
		Bake Tamb = $125 ^{\circ}\text{C}$	24 hours									
	PC	Soak Tamb = 85 °C, RH = 85%	168 hours									
# A1	Preconditioning	Reflow soldering	3 cycles	1514	64430	0						
	5	MIL-STD-750-1	•									
	HTRB	M1038 Method A										
		Tj = Tjmax, Vr = 100% of max. datasheet										
# B1	Bias	reverse voltage <sup>[1]</sup>	1000 hours	206	9320	0						
						-						
	тс	JESD22-A104										
# A4	Temperature Cycling	-65 °C to Timax, not to exceed 150°C	1000 cycles	311	14080	0						
	, , ,											
	UHAST	JESD22-A118										
# A3 <b>or</b>	Unbiased HAST	Tamb = 130 °C, RH = 85 %										
		JESD22-A102	— 96 hours	311	14080	0						
	AC	Tamb = $121 ^{\circ}C$ , RH = $100 ^{\circ}M$										
# A3 alt	Autoclave	Pressure = $205 \text{ kPa} (29.7 \text{ psia})$										
+ AJ dit	Autoclave											
	H3TRB	JESD22-A101										
	High Humidity High	Tamb = 85 °C, RH = 85%, VR = 80 % of										
# A2 alt	Temperature Reverse Bias		1000 hours	311	14080	0						
# AZ dit	Temperature Reverse Blas	MIL-STD-750 Method 1037	1000 110015	511	14080	0						
	IOL	ton = toff, devices powered to insure $\Delta T_j$ =										
# A5	Intermittent Operating Life		1000 hours	312	14120	0						
4 A5	Internittent Operating Life		1000 nours	512	14120	0						
	RSH	JESD22-A111										
# C8	Resistance to Solder Heat	$260 ^{\circ}\text{C} \pm 5 ^{\circ}\text{C}$	10 s	269	8070	0						
+ 0	SD		10.5	209	6070	U						
# C10		1 570 002		222	6660	0						
# C10	Solderability	J-STD-002 des have to be considered (thermal runaway).		222	6660	0						

The physical limitations of Schottky diodes have to be considered (thermal runaway).
 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	Schottky	9320	0	0.46	2 19E+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