nexperia

Quarterly Reliability Monitoring Results

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

Supplier		User Part Number						
Nexperia B.V. Name of Laboratory Assembly reliability labs Based on AEC-Q101 Test		HPZR-C10-Q Part Description						
							Nexperia DHAM Zener 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		
		JESD22-A113						
		Bake Tamb = 125 °C	24 hours					
	PC	Soak Tamb = 85 °C, RH = 85%	168 hours					
# A1	Preconditioning	Reflow soldering	3 cycles	1514	64430	0		
		MIL-STD-750-1						
	HTRB	M1038 Method A						
	High Temperature Reverse	Tj = Tjmax, VR = 80 % of rated reverse						
# B1	Bias	voltage	1000 hours	250	11400	0		
		MIL-STD-750-1						
		M1038 Method B						
	SSOP	Tj = Tjmax, Iz = 100% of max. datasheet						
# B1b	Steady State Operational	reverse current	1000 hours	44	1920	0		
	тс	JESD22-A104						
# A4	Temperature Cycling	-65 °C to Tjmax, not to exceed 150°C	1000 cycles	311	14080	0		
# A3 or	UHAST Unbiased HAST	JESD22-A118						
# A3 OF	Unbiased HAST	Tamb = 130 °C, RH = 85 %	96 hours	311	14080	0		
		JESD22-A102						
" • • • ·	AC Autoclave	Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)						
# A3 alt	Autociave	Pressure = 205 kPa (29.7 psia)						
		JESD22-A101						
	H3TRB High Humidity High	Tamb = $85 ^{\circ}$ C, RH = 85% , VR = 80% of						
# A2 alt	Temperature Reverse Bias		1000 hours	311	14080	0		
# AZ dit	remperature Reverse blas	MIL-STD-750 Method 1037	1000 Hours	211	14000	U		
	IOL	MIL-STD-750 Method 1037 ton = toff, devices powered to insure ΔT_j =						
# A5	Intermittent Operating Life		1000 hours	312	14120	0		
πAJ	Internitient Operating Life		1000 110015	512	14120	U		
	RSH	JESD22-A111						
# C8	Resistance to Solder Heat	$260 \circ C \pm 5 \circ C$	10 s	269	8070	0		
<i>π</i> C0	SD	200 0 - 5 0	10.2	209	5070	U		
# C10	Solderability	J-STD-002		19	6660	0		
# CIU	Soluciobility	5 510 002		13	0000	U		

[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

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