nexperia

Quarterly Reliability Monitoring Results

Quarters: Q1/2021 to Q4/2021

Based on structural	similarity
---------------------	------------

Supplier		User Part Number						
Nexperia B.V.		PMEG60T50ELP						
Name of Laboratory		Part Description						
		Nexperia DHAM	Schottky					
Assembly reliability labs		SMD package						
Based on AEC-Q101 Test		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	810	58300	0		
		MIL-STD-750-1						
	HTRB	M1038 Method A						
	High Temperature Reverse	Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage ^[1]						
# B1	Bias	reverse voltage	1000 hours	116	9280	0		
	тс	155522 4104						
# A4	Temperature Cycling	JESD22-A104 -65 °C to Tjmax, not to exceed 150°C	1000	170	12600	0		
7 A4	Temperature Cycling		1000 cycles	170	13600	0		
	AC	JESD22-A102 Tamb = 121 °C, RH = 100 %						
# A3 alt	Autoclave	Pressure = $205 \text{ kPa} (29.7 \text{ psia})$	96 hours	170	13600	0		
F A3 alt	Autociave	riessure – 203 kra (23.7 psia)	96 nours	170	13600	0		
	H3TRB	JESD22-A101						
	High Humidity High	Tamb = $85 ^{\circ}$ C, RH = 85% , VR = 80% of						
# A2 alt	Temperature Reverse Bias		1000 hours	170	13600	0		
		MIL-STD-750 Method 1037	1000 110013	170	15000	0		
	IOL	ton = toff, devices powered to insure ΔT_j =						
# A5	Intermittent Operating Life		1000 hours	170	13600	0		
# AJ	International Operating Life		1000 110015	170	13000	U		
	RSH	JESD22-A111						
# C8	Resistance to Solder Heat		10 s	130	3900	0		
# C8	SD		10.3	130	5500	0		
	Solderability	J-STD-002		363	3630	0		
	•	des have to be considered (thermal runaway).		202	0000	U		

[1] The physical limitations of Schottky diodes have to be considered (thermal runaway).

[2] 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	9280	0	0.46	2.19E+09
	Beneticity	200			21152.05

© 2022 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