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		PESD3V3L1BSF						
		Part Description						
		NXP ICN8 Protection INDI						
		BD package						
Test		Test Conditions	Duration	# Lots	# Quantity	# Rejects		
	TEST Pre- and Post-Stress							
# 1	Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below		
# 5	HTRB High Temperature Reverse Bias	MIL-STD-750-1 M1038 Method A Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage	1000 hours	92	4040	0		
# 5	5.00		1000 110013	92	4040	0		
# 7	TC Temperature Cycling	JESD22-A104 -40 °C to 125°C	1000 cycles	157	6880	0		
# 8 or	UHAST Unbiased HAST	JESD22-A118 Tamb = 130 °C, RH = 85 %	— 96 hours	n.a.	n.a.	n.a.		
# 8a	AC Autoclave	JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)						
# 9	HAST Highly Accelerated Stress Test	JESD22-A110 Tamb = 130 °C, RH = 85%, VR = 80 % of rated reverse voltage ^[1]	1000 hours	156	6840	0		
	IOL	MIL-STD-750 Method 1037 ton = toff, devices powered to insure ΔTj =	1000 110010	100				
# 10	Intermittent Operating Life	100 °C for 15000 cycles	1000 hours	n.a.	n.a.	n.a.		
	RSH	JESD22-A111						
# 20	Resistance to Solder Heat	260 °C ± 5 °C	10 s	n.a.	n.a.	n.a.		
# 21	SD Solderability	J-STD-002		8	240	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

NXP ICN8 Protection INDI 4040 0 1 1 951E+00	Wafer Fab	Technology	Quantity	Rejects	Failure Rate (FIT)	MTTF (hrs)
······································	NXP ICN8	Protection INDI	4040	0	1,1	9,51E+08

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