nexperia

Quarterly Reliability Monitoring Results

Quarters: Q1/2021 to Q4/2021
Based on structural similarity

Supplier	User Part Number				
Nexperia B.V.	BZX884S-B4V3				
Name of Laboratory	**Part Description**				
Nexperia DHAM	Zener				
Assembly reliability labs	MCD package				
Test	**Test Conditions**	**Duration**	**# Lots**	**# Quantity**	**# Rejects**
TEST **# 1** Pre- and Post-Stress Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below
PC **# 2** Preconditioning	JESD22-A113 Bake Tamb = 125 °C Soak Tamb = 85 °C, RH = 85% Reflow soldering	24 hours 168 hours 3 cycles	113	9040	0
HTRB **# 5** High Temperature Reverse Bias	MIL-STD-750-1 M1038 Method A Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage	1000 hours	138	11040	0
SSOP **# 5c** Steady State Operational	MIL-STD-750-1 M1038 Method B Tj = Tjmax, Iz = 100% of max. datasheet reverse current	1000 hours	20	1600	0
TC **# 7** Temperature Cycling	JESD22-A104 -65 °C to Tjmax, not to exceed 150°C	1000 cycles	28	2240	0
AC **# 8** Autoclave	JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)	96 hours	28	2240	0
H3TRB **# 9** High Humidity High Temperature Reverse Bias	JESD22-A101 Tamb = 85 °C, RH = 85%, VR = 80 % of rated reverse voltage[1]	1000 hours	28	2240	0
IOL **# 10** Intermittent Operating Life	MIL-STD-750 Method 1037 ton = toff, devices powered to insure ΔTj = 100 °C for 15000 cycles	1000 hours	29	2320	0
RSH **# 20** Resistance to Solder Heat	JESD22-A111 260 °C ± 5 °C	10 s	n.a.	n.a.	n.a.
SD **# 21** Solderability	J-STD-002		63	630	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

Wafer Fab	Technology	Quantity	Rejects	Failure Rate (FIT)	MTTF (hrs)
Nexperia DHAM	Zener	11040	0	0.38	2.60E+09

© 2022 Nexperia B.V.

nexperia.com