Quarterly Reliability Monitoring Results

Quarters: Q1/2022 to Q4/2023

Based on structural similarity

Supplier Nexperia B.V.		**User Part Number** BC68PA				
Name of Laboratory Assembly reliability labs		**Part Description** Nexperia DHAM MCD package	Small Signal Bipolar Transistor			
Test		**Test Conditions**	**Duration**	**# Lots**	**# Quantity**	**# Rejects**
# 1	**TEST** Pre- and Post-Stress Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below
# 2	**PC** Preconditioning	JESD22-A113 Bake Tamb = 125 °C Soak Tamb = 85 °C, RH = 85% Reflow soldering	24 hours 168 hours 3 cycles	464	20960	0
# 5	**HTRB** High Temperature Reverse Bias	MIL-STD-750-1 M1039 Method A Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage	1000 hours	415	18680	0
# 7	**TC** Temperature Cycling	JESD22-A104 -65 °C to Tjmax, not to exceed 150°C	500 cycles	116	5240	0
# 8 **or**	**UHAST** Unbiased HAST	JESD22-A118 Tamb = 130 °C, RH = 85 %	96 hours	116	5240	0
# 8a	**AC** Autoclave	JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)				
# 9	**H3TRB** High Humidity High Temperature Reverse Bias	JESD22-A101 Tamb = 85 °C, RH = 85%, VR = 80 % of rated reverse voltage[1]	1000 hours	116	5240	0
# 10	**IOL** Intermittent Operating Life	MIL-STD-750 Method 1037 ton = toff, devices powered to insure ΔTj = 100 °C	333 hours	116	5240	0
# 20	**RSH** Resistance to Solder Heat	JESD22-A111 260 °C ± 5 °C	10 s	n.a.	n.a.	n.a.
# 21	**SD** Solderability	J-STD-002		86	2580	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	Small Signal Bipolar Transistor	18680	0	0,23	4,40E+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.