Reliability Monitoring Results

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

Supplier	**User Part Number**
Nexperia B.V.	NXS0506UP

Part Description: SD 3.0-compatible memory card integrated auto-direction control and level translator with EMI filter and ESD protection

Function Family: NXS
Process family: C075
Package family: WLCSP

JESD47	**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 MSL 1	N/A	25	2069	0
# 5a	**HTOL EFR** High Temperature Operating Life Extrinsic	JESD22-A108 Tj = 150°C $V_{CCMAX} \leq V \leq 1.2{*}V_{CCMAX}$	48 hours or 168 hours	234	41489	0
# 5b	**HTOL IFR** High Temperature Operating Life Intrinsic	JESD22-A108 Tj = 150°C $V_{CCMAX} \leq V \leq 1.2{*}V_{CCMAX}$	≥500 hours	95	7116	0
# 7	**TC** Temperature Cycling	JESD22-A104 -65 °C to 150°C	≥500 cycles	12	1041	0
# 9	**uHAST / HAST** unbiased or biased High Accelerated Stress Test	JESD22-A101 Tamb = 130 °C, RH = 85%, $V = V_{CCMAX}$	96 hours	13	1028	0

Calculation of PPM, FIT and MTTF

Test considered for PPM calculation: High Temperature Operating LifeTest Extrinsic (HTOL EFR, Test # 5a above)
Test considered for FIT and MTTF calculations: High Temperature Operating LifeTest Intrinsic(HTOL IFR, Test # 5b above)
Confidence level 60%, derated to 55 °C, activation energy 0.7 eV, test time 168 to 1000 hours

Product Family	**Package Family**	**Quantity**	**Rejects**	**Extrinsic Failure Rate (PPM)**	**Intrinsic Failure Rate (FIT)**	**MTTF (hrs)**
NXS	WLCSP	7116	0	23	0.6	1.69 E+09