## nexperia

## **Reliability Monitoring Results**

## Quarters: Q1/2021 to Q4/2021

Based on structural similarity

Suppl		User Part Number						
Nexper			74AUP1G374GS					
Part	Description: Single D-type f	ip-nop; positive-edge triggi	er (S-state)					
Fu	nction Family: AUP							
	ocess family: C075							
Pa	ckage family: XSON							
						#		
JESD4	17 Test	Test Conditions	Duration	# Lots	# Quantity	Rejects		
<i>щ</i> 1	TEST Pre- and Post-Stress	Tamb = 25 °C	NI / A	see below	all navta	see		
# 1	Electrical Test	Tamb = 25 °C	N/A	see below	all parts	below		
	PC	JESD22-A113						
# 2	Preconditioning	MSL 1	N/A	1007	27163	0		
	HTOL EFR	JESD22-A108	48 hours					
# 5a	High Temperature	Tj = 150°C	or	219	38230	0		
	Operating Life Extrinsic	$V_{CCMAX} \leq V \leq 1.2^* V_{CCMAX}$	168 hours					
# <b>F</b> b		JESD22-A108	≥500 hours	84	6277	0		
# 5b	High Temperature Operating Life Intrinsic	$Tj = 150^{\circ}C$ $V_{CCMAX} \le V \le 1.2^*V_{CCMAX}$	≥500 nours	84	6277	0		
# 7	TC	JESD22-A104						
	Temperature Cycling	-65 °C to 150°C	≥500 cycles	548	15036	0		
	uHAST / HAST	JESD22-A101						
# 9	unbiased or biased High	Tamb = 130 °C,	96 hours	520	12127	0		
	Accelerated Stress Test	$RH = 85\%, V = V_{CCMAX}$						

## **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)
AUP	XSON	6277	0	24	0.7	1.5 E+09

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