nexperia

Reliability Monitoring Results

Quarters: Q1/2022 to Q4/2022

Based on structural similarity

Suppl		User Part Number							
Nexperia B.V. Part Description: Dual D-type flip-flo			74AUP2G80GN						
Part	escription: Dual D-type Inp	-nop; positive-edge trigger							
Fur	nction Family: AUP								
	cess family: C075								
Pac	ckage family: XSON								
						#			
JESD4	7 Test	Test Conditions	Duration	# Lots	# Quantity	Rejects			
	TEST					see			
#1	Pre- and Post-Stress	Tamb = 25 °C	N/A	see below	all parts	below			
	Electrical Test	150000 4110							
# 2	PC Preconditioning	JESD22-A113 MSL 1	N/A	1125	29955	0			
	HTOL EFR	JESD22-A108	48 hours						
# 5a	High Temperature	$T_i = 150^{\circ}C$	or	240	41981	0			
<i>"</i> 34	Operating Life Extrinsic	$V_{CCMAX} \le V \le 1.2^* V_{CCMAX}$	168 hours	_	11901	0			
# 5b	HTOL IFR	JESD22-A108							
	High Temperature	Tj = 150°C	≥500 hours	99	7448	0			
	Operating Life Intrinsic	$V_{CCMAX} \le V \le 1.2^* V_{CCMAX}$							
# 7	тс	JESD22-A104	≥500 cycles	589	16980	0			
	Temperature Cycling	-65 °C to 150°C	1000 0,000		20000				
# 0	uHAST / HAST	JESD22-A101	96 hours	536	12975	0			
# 9	unbiased or biased High	Tamb = $130 ^{\circ}\text{C}$, PH = 85% V = Vecany	90 nours	220	12975	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	7448	0	22	0.6	1.83 E+09

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