nexperia

Reliability Monitoring Results

Quarters: Q1/2021 to Q4/2021

Based on structural similarity

Supplier		User Part Number							
Nexper	ia B.V. Description: Single 3-input (74AUP1G332GS						
Part	escription: Single S-input (JR yale							
	nction Family: AUP								
	ocess family: C075								
Pac	ckage family: XSON								
						#			
JESD4	17 Test	Test Conditions	Duration	# Lots	# Quantity	Rejects			
#1	TEST Pre- and Post-Stress	Tamb = 25 °C	N/A	see below	all parts	see			
# 1	Electrical Test		N/A	See Delow	all parts	below			
# 2	PC	JESD22-A113	N/A	1007	27163	0			
# Z	Preconditioning	MSL 1	N/A	1007	27105	0			
	HTOL EFR	JESD22-A108	48 hours						
# 5a	High Temperature	Tj = 150°C	or	219	38230	0			
	Operating Life Extrinsic	$V_{CCMAX} \le V \le 1.2^*V_{CCMAX}$	168 hours						
		JESD22-A108		0.4	6077	0			
# 5b	High Temperature Operating Life Intrinsic	$Tj = 150^{\circ}C$ $V_{CCMAX} \le V \le 1.2^*V_{CCMAX}$	≥500 hours	84	6277	0			
		JESD22-A104							
# 7	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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