

Quarterly Reliability Monitoring Results

Quarters: Q1/2022 to Q4/2023

Based on structural similarity

# E1 E	lity labs	BZT52-C6V2-Q Part Description Nexperia DHAM SMD package Test Conditions	Zener Duration	# Lots	# Quantity	# Poinch
Assembly reliabil Based on AEC-(T P # E1 E	ility labs Q101 Test Per - and Post-Stress	Nexperia DHAM SMD package Test Conditions		# Lots	# Quantity	# Doingt-
Based on AEC-C T P # E1 E	Q101 Test TEST Pre- and Post-Stress	SMD package Test Conditions		# Lots	# Quantity	# Doingts
Based on AEC-C T P # E1 E	Q101 Test TEST Pre- and Post-Stress	Test Conditions	Duration	# Lots	# Quantity	# Doingto
T P # E1 E	rEST Pre- and Post-Stress		Duration	# Lots	# Quantity	# Doingto
P: # E1 E	Pre- and Post-Stress	Tamb			# Quantity	# Rejects
# E1 E		Tomb 35.00				
,,	Electrical Test	Tamb 2F 0C				
.		Tamb = 25 °C	N/A	see below	all parts	see below
		JESD22-A113				
-		Bake Tamb = 125 °C	24 hours			
	PC	Soak Tamb = 85 °C, RH = 85%	168 hours			
# A1 P	reconditioning	Reflow soldering	3 cycles	1514	64430	0
		MIL-STD-750-1				
	ITRB	M1038 Method A				
Н	ligh Temperature Reverse	Tj = Tjmax, VR = 80 % of rated reverse				
# B1 B	Bias	voltage	1000 hours	250	11400	0
		MIL-STD-750-1				
		M1038 Method B				
S	SSOP	Tj = Tjmax, Iz = 100% of max. datasheet				
# B1b S	Steady State Operational	reverse current	1000 hours	44	1920	0
-	rc	JESD22-A104				
# A4 T	emperature Cycling	-65 °C to Tjmax, not to exceed 150°C	1000 cycles	311	14080	0
	JHAST	JESD22-A118				
# A3 or U	Inbiased HAST	Tamb = 130 °C, RH = 85 %	96 hours	311	14080	0
	_	JESD22-A102				
	NC .	Tamb = 121 °C, RH = 100 %				
# A3 alt A	Autoclave	Pressure = 205 kPa (29.7 psia)				
		JESD22-A101				
	I3TRB	Tamb = 85 °C, RH = 85%, VR = 80 % of				
	ligh Humidity High	rated reverse voltage ^[1]	10001	244	4.4000	
# A2 alt T	emperature Reverse Bias		1000 hours	311	14080	0
-	.01	MIL-STD-750 Method 1037				
	OL	ton = toff, devices powered to insure ΔT_j =	1000	212	14120	0
# A5 Ir	ntermittent Operating Life	100 °C for 15000 cycles	1000 hours	312	14120	0
	RSH	JESD22-A111				
	Resistance to Solder Heat		10 s	269	8070	0
	SD	200 0 - 0 0	10.5	203	0070	U
_	Solderability	J-STD-002		19	6660	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 #B1) 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	Zener	11400	0	0,37	2,68E+09

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