



Standard Product Flows – Monolithic Products

Maxwell Technologies offers four different self-defined product-testing flows: Maxwell class S, Maxwell class B, industrial grade and engineering grade. The table below exhibits the test that will be performed to the RAD-PAK[®] products on a 100% basis. Qualification testing is available by purchase order.

Screening Test	MIL-STD-883 Method	Product Flow							
		Monolithic Products							
		Maxwell Self-Defined Class S	Condition	Maxwell Self-Defined Class B	Condition	Industrial	Condition	Engineering	Condition
Die Lot Acceptance	Maxwell Spec	Yes		No		No		No	
Glassivation Thickness	5007	Yes		No		No		No	
Metallization Thickness	5007	Yes		No		No		No	
SEM Inspection	2018	Yes		No		No		No	
Wire Bond Monitor	2011	Yes		Yes		No		No	
100% Wire Bond Pull	2023	Yes		No		No		No	
Die Shear/Stud Pull Monitor	2019/2027	Yes		Yes		No		No	
Pre-Cap Visual Inspection	2010	Yes	A	Yes	B	No		No	
QA Inspection	2010	Yes	A	Yes	B	No		No	
Temperature Cycling	1010	Yes	C	Yes	C	No		No	
Constant Acceleration	2001	Yes		Yes		No		No	
PIND Test	2020	Yes	A	Yes	A	No		No	
Serialization	NA	Yes		No		No		No	
Pre Burn-in Electrical Test	Detail DWG	Yes		Yes ¹		No		No	
Static Burn-in	1015	Yes	A, 72 hrs	No		No		No	
Interim Electrical Test	Detail DWG	Yes		No		No		No	
Deltas ⁴		Yes		No		No		No	
Dynamic Burn-in II	1015	Yes	D, 240 hrs	Yes	D, 160 hrs	No		No	
Final Electrical Test	Detail DWG	Yes		Yes ¹		Yes ¹		Yes ¹	
Deltas ⁴		Yes		No		No		No	
PDA		3% (5%) ³		5% ³		No		No	
Data Retention Testing	Maxwell Spec.	Yes ⁵		Yes ⁵		Yes ⁵		Yes ⁵	
High Temp Electrical Test		Yes ¹		Yes ¹		Yes ¹		No	
Low Temp Electrical Test		Yes ¹		Yes ¹		Yes ¹		No	
Fine Leak Test	1014	Yes	A2	Yes	A2	No		No	
Gross Leak Test	1014	Yes	C1	Yes	C1	No		No	
Radiographic Inspection	2012	Yes ²	2 views	No		No		No	
External Visual	2009	Yes		Yes		No		No	
Final QA Review	NA	Yes		Yes		Yes		Yes	
Groups A, B, C, D and E QCI	5005	by P.O.	Class S	by P.O.	Class B	NA		NA	

1. GO / NO-GO (Read and record by P.O.).
2. Radiograph not performed on RAD-PAK[®] products (shield x-rays).
3. Class S PDA is 3% for Subgroup 7 failures only, and 5% for Subgroup 1 failures + delta failures. Class B PDA is 5% for subgroup 1 failures.
4. Delta parameter values measured after burn-in will be compared with the Delta parameter values measured prior to 1ST burn-in.
5. Data Retention Testing is performed only on non-volatile memory products.

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