

Report Date: April 10, 2025

Product Details:

Supplier:	Taiwan Semiconductor Co., Ltd.		
Test Vehicle/s:	BAW56WH&1N4148WTH&BAV23CH&BAV21WH&1N4148WSH		
Reason for Rel:	Qualification		
Part Description:	High Speed Switching Diode		
Package Type:	SOT-323&SOD-523F&SOT-23&SOD-123&SOD-323		
Assembly Site:	4793	General Specification:	AEC-Q101 Rev. E

Product Series Covered:

1N4148WH&1N4148WSH&1N4148WTH&BAS16H&BAS21H&BAV21WH&BAV23CH&BAV23SH&BAV70H&BAV70WH&BAV99H&BAV99WH&BAW56H&BAW56WH

Reliability Test Results Summary:

Stress Test	Abbrev	Test Methods	Test Conditions	Final Readpoint	Requirements		Results	
					SS	# Lots	Rej/SS	Remarks
Environmental and Lifetime Stress Tests								
Pre- and Post-Stress Electrical Test	TEST	Product Datasheet	Test at room temp	-	All	5	0 Fails*5	Passed
Preconditioning	PC	J-STD-020	MSL-1 (3x reflow at 260°C)	-	320	5	0/320*5	Passed
Temperature Cycle	TC	JESD22-A104	-55°C to +150°C; 15 mins dwell	1000 cycs	80	5	0/80*5	Passed
Unbiased HAST	UHAST	JESD22-A118	130°C/85% RH; unbiased	96 hrs	80	5	0/80*5	Passed
Autoclave	AC	JESD22-A102	121°C/100% RH; 15 psig	96 hrs				Performed UHAST
Highly Accelerated Stress Test	HAST	JESD22-A110	130°C/85% RH; V=80% VR; 42V max	96 hrs	80	5	0/80*5	
High Humidity High Temp Reverse Bias	H3TRB	JESD22-A101	85°C/85% RH; Vin=80% rated V (100V max)	1000 hrs				Performed HAST
High Temperature Reverse Bias	HTRB	MIL-STD-750-1	Tj=Tjmax; V=100% rated V	1000 hrs	80	5	0/80*5	Passed
Resistance to Solder Heat	RSH	JESD22-A111	per reference standard	10 secs	10	5	0/10*5	Passed
Intermittent Operating Life	IOL	MIL-STD-750	Ta=25°C; ΔTj=100°C; 2.0 min on/off	15000 cycs	80	5	0/80*5	Passed
Package Assembly Integrity Tests								
C-SAM		J-STD-035, AEC-Q006	T0 & Post -PC	results	11	5	0/11*5	Passed
Destructive Physical Analysis	DPA	AEC-Q101-004	Post-TC	results	2	5	0/2*5	Passed
Destructive Physical Analysis	DPA	AEC-Q101-004	Post-HAST	results	2	5	0/2*5	Passed
Solderability	SD	J-STD-002	245°C	results	10	5	0/10*5	Passed
Wire Bond Shear	WBS	MIL-STD-750	per assembly spec	results	30	5	0/30*5	Passed
Wire Bond Pull	WBP	MIL-STD-750	per assembly spec	results	30	5	0/30*5	Passed
Die Shear	DS	MIL-STD-750-2	per assembly spec	results	30	5	0/30*5	Passed
Electrical Verification Tests								
ESD - Human Body Model	ESD - HBM	AEC-Q101-001	per product spec	results	30	5	0/30*5	Cap:±4KV
ESD - Human Body Model	ESD - CDM	AEC-Q101-001	per product spec	results	30	5	0/30*5	Cap:±1KV
Parametric Verification	PV	Product Datasheet	-55°C/25°C/150°C		25	5	0/25*5	Passed

Conclusion:

PN BAW56WH&1N4148WTH&BAV23CH&BAV21WH&1N4148WSH covered
1N4148WH&1N4148WSH&1N4148WTH&BAS16H&BAS21H&BAV21WH&BAV23CH&BAV23SH&BAV70H&BAV70WH&BAV99H&BAV99WH&BAW56H&BAW56WH successfully passed Automotive-grade qualification