

Report Date: April 25, 2023

Product Details:

Supplier:	Taiwan Semiconductor Co., Ltd.		
Test Vehicle/s:	TBS410		
Reason for Rel:	Qualification		
Part Description:	4A, 600V - 1000V Standard Bridge Rectifier		
Package Type:	TBS		
Assembly Site:		General Specification:	JESD22

Product Series Covered:

TBS406 – TBS410

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	3	0 Fails	Passed
Extrenal Visual	EV	JESD22-B101	per reference standard	-	All	3	0 Fails	Passed
Preconditioning	PC	J-STD-020	MSL-1 (3x reflow at 260°C)	-	308	3	0/308*3	Passed
Temperature Cycle	TC	JESD22-A104	-55°C to +150°C; 15 mins dwell	1000 cycs	77	3	0/231	Passed
Unbiased HAST	UHAST	JESD22-A118	130°C/85% RH; unbiased	96 hrs	77	3	0/231	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				Performed H3TRB
High Humidity High Temp Reverse Bias	H3TRB	JESD22-A101	85°C/85% RH; Vin=80% rated V (100V max)	1000 hrs	77	3	0/231	Passed
Resistance to Solder Heat	RSH	JESD22-B106	PTH (Pb free): 270°C; 7 sec	10 secs	30	3	0/90	Passed
High Temperature Reverse Bias	HTRB	MIL-STD-750-1	Tj=Tjmax; V=80% rated V	1000 hrs	77	3	0/231	Passed
Intermittent Operating Life	IOL	MIL-STD-750	Ta=25°C; ΔTj=100°C; 5.0 min on/off	6000 cycs	77	3	0/231	Passed
Forward Surge	FWS	/	1Pulse 8.3mS, IFSM=110A	8.3mS	10	3	0/30	Passed
High Temperature & Humidity test	Humidity	JESD22-A101	Ta: 85°C R.H:85%	1000 hrs	77	3	0/231	Passed
Package Assembly Integrity Tests								
Physical Dimension	PD	JESD22-B100	per assembly spec	results	30	3	0/90	Passed
Solderability	SD	J-STD-002	245°C	results	10	3	0/30	Passed
Electrical Verification Tests								
ESD - Human Body Model	ESD - HBM	AEC-Q101-001	per product spec	results	30	3	0/90	Cap:±8KV
ESD - Charged Device Model	ESD - CDM	AEC-Q101-005	per product spec	results	30	3	0/90	Cap:±1KV

Conclusion:

PN TBS406 – TBS410 successfully passed Consumer-grade qualification