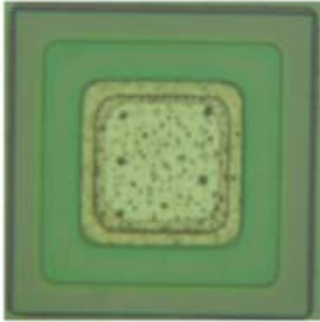
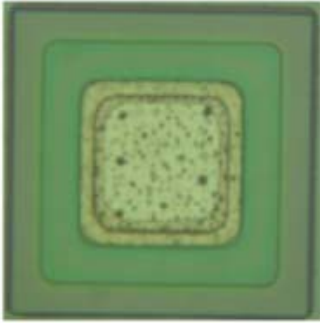
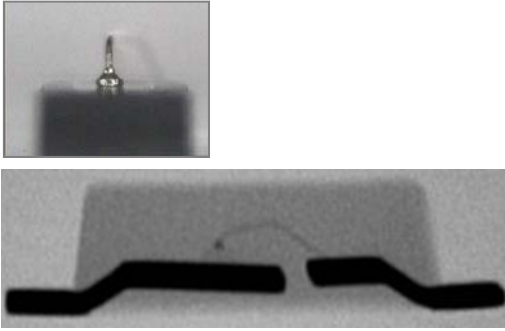
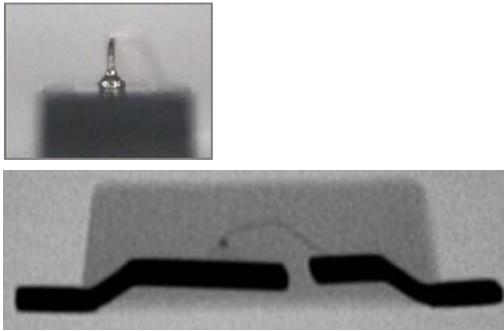
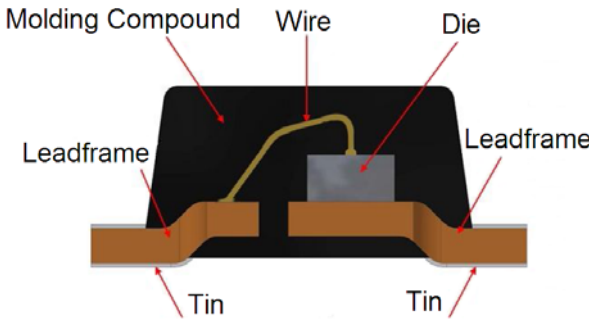




SOD-323(Switching) surface mount device(1N4148WS), bond material change comparison report

Prepared by Owen Wang
Checked by Jack Leu
Approved by Quayer Chen
Issued date at 16th Nov., 2012
Reversion for A

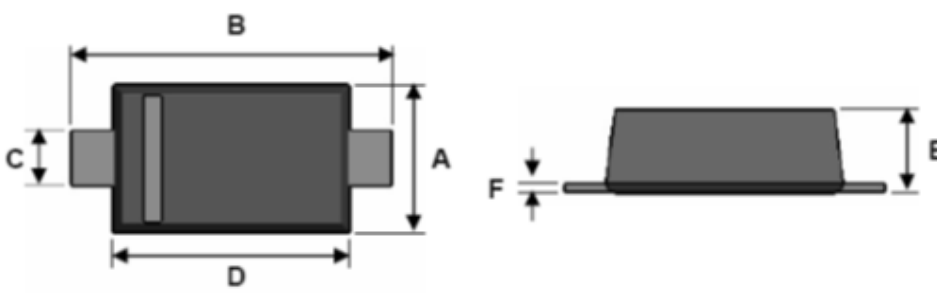
Comparison report (1N4148WS)

Construction Photo/Drawing compared:

	Old	New	Result
Structure	Switching Diode & Array	Switching Diode & Array	
Photo of die			
Photo of x-ray			
Drawing			
Photo of external			

Comparison report (1N4148WS)

Dimension compared:

	Old		New		Result
Die	0.26 x 0.26mil		0.26 x 0.26mil		
Bond Diameter	0.8mil		0.8mil		
External					
	A(mm)	B(mm)	C(mm)	D(mm)	
Old	1.15 ~ 1.35	2.30 ~ 2.70	0.25 ~ 0.40	1.60 ~ 1.80	
New	1.15 ~ 1.35	2.30 ~ 2.70	0.25 ~ 0.40	1.60 ~ 1.80	
	E(mm)	F(mm)			
Old	0.80 ~ 1.00	0.05 ~ 0.20			
New	0.80 ~ 1.00	0.05 ~ 0.20			

Comparison report (1N4148WS)

Raw material composition compared:

	Old	New	Result
Die	Silicon	Silicon	Au wire change to Cu wire.
Bond	Au wire	Cu wire	
Compound	ELER-8-500C(Green) SG-8300CS(Green)	ELER-8-500C(Green) SG-8300CS(Green)	

Electrocal characteristics compared:

Test condition/Specification	Old	New	Result
Forward Voltage $V_F < 1.00V @ 10mA$	0.730	0.720	Electrical characteristics meets with TSC specification.
Reverse Breakdown Voltage $V_{BR} > 100V @ 100uA$	119.000	120.000	
Reverse Breakdown Voltage $V_{BR} > 75V @ 5uA$	170	169	
Reverse Leakage Current $I_R < 25nA @ 20V$	0.011	0.011	
Reverse Leakage Current $I_R < 5.0uA @ 75V$	7.220	7.100	

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Production Part Approval - Material, Performance Test Results Discrete Semiconductor Component Qualification Plan

Customer P/N :	1N4148WS	Product Engineer :	Pinky Zhang
Customer Spec. # :	N/A	General Specification :	
Supplier Name :	Taiwan Semiconductor Corp.	Supplier Manufacturing Site :	Subcontractor
Supplier Generic P/N :	SOD-323 150mAmps SMD rectifiers	Required PPAP Submission Date :	
Supplier Internal P/N :	1N4148WS	Family Type :	Switching Diode & Array
Reason for Qual. :	Wire material change		

Item	Test	Test Condition	Exceptions	Est. Start	Est. Comp.	# Lots	S.S.	Remarks
1	Electrical Test	Electrical characterization	@25°C	10-May-11	10-May-11	ALL	ALL	ACC
2	External Visual	Inspect device construction, marking and workmanship	N/A	10-May-11	10-May-11	ALL	ALL	ACC
3	Autoclave	Ta = 121 ± 2°C, R.H. = 100%, 15psig	96hrs	11-May-11	16-May-11	1	77	ACC
4	High Temperature Storage	Ta = 150(+10/-0)°C	1000hrs	11-May-11	7-Jul-11	1	77	ACC
5	Soldering Heat	Ta = 260 ± 5°C, 10secs	1cycle	11-May-11	7-Jul-11	1	30	ACC
6	Temperature Cycle	-65°C/15min, 150°C/15min, zone, air to air (Transfer)	1000cycles	11-May-11	7-Jul-11	1	77	ACC
7	H.3T.R.B.	Ta = 85 ± 2°C, R.H = 85 ± 5%, VR = 80V	1000hrs	11-May-11	7-Jul-11	1	77	ACC
8	H.T.R.B.	VR = 80V DC(Ta = 150°C)	1000hrs	11-May-11	7-Jul-11	1	77	ACC
9	Direct Current Operating Life	TA = 25°C, Max. power rating	1000hrs	11-May-11	7-Jul-11	1	77	ACC
10	Intermittent Operating Life	Ta = 25°C, ΔTj ≥ 100°C, On/2min, Off/2min	15000cycles	11-May-11	7-Jul-11	1	77	ACC
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Comment :

Prepared by :	Lielie Chen	Approved by :	Gary Zhao
Date :	1-Aug-11	Date :	2-Aug-11
Title :	Assistant Reliability Engineer	Title :	QA Manager