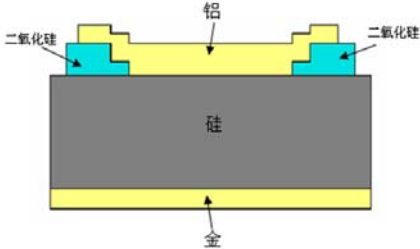
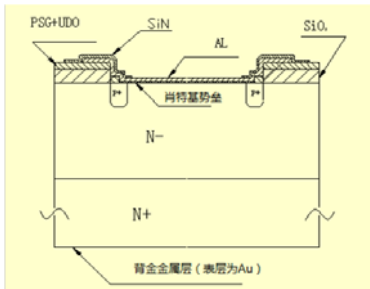
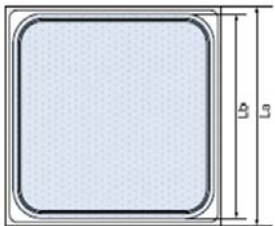
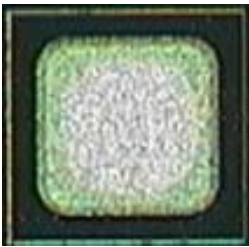


**PCN17022 【 Add second source of die for BAT42W &
BAT43W Series 】**
ComparisonReport

Prepared by Aiping Zhang
Approved by Lijing
Issue date at 2017.5.19
Reversion for A

Comparison Report

Dice & structure compared:

ITEM	Old dice	New dice	Result
Die Cross-section Drawing			
Dice photo			
Chip Size	13.78*13.78*6.1mil	12.99*12.99*6.5mil	Have difference in chip size
Metallization:			
- Top Metal	Al	Al	
- Back Metal	Au	Au	



台灣半導體股份有限公司
231 台北縣新店市北新路三段205號11樓
電話:886-2-8913-1588
傳真:886-2-8913-1788

TAIWAN SEMICONDUCTOR CO., LTD.
11F, No. 205 Sec. 3, Beishin RD.
Shindian Dist., New Taipei City, Taiwan, R.O.C. 231
Tel:886-2-8913-1588 Fax:886-2-8913-1788

Comparison Report

Pull test report

Sample	Old dice 13.78MIL			New Dice 12.99MIL		
	Die Shear	Wire Bond Strength	Bond Shear	Die Shear	Wire Bond Strength	Bond Shear
	≥0.16kg	≥19g	≥85g	≥0.16kg	≥19g	≥85g
#1	0.81886	52.6816	233.63	0.82365	50.6574	210.39
#2	0.8545	54.037	244.55	0.83126	55.3169	195.63
#3	0.87547	53.5968	259.55	0.83157	57.6821	216.37
#4	0.74975	60.8605	239.78	0.81239	48.3571	233.64
#5	0.81236	56.3926	210.47	0.79862	46.3982	199.67
#6	0.85167	54.4012	214.58	0.82657	55.3471	220.69
#7	0.86218	57.6844	215.34	0.78165	53.9513	213.82
#8	0.79681	57.4869	233.19	0.83128	55.3873	202.69
#9	0.83287	63.4177	240.16	0.77912	62.3915	197.64
#10	0.76916	60.0717	243.52	0.76137	58.9641	193.68
Min	0.74975	52.6816	210.47	0.76137	46.3982	193.68
Max	0.87547	63.4177	259.55	0.83157	62.3915	233.64
Avg.	0.82236	57.0630	233.48	0.80775	54.4453	208.42

Result : No different , all can meet spec.

Comparison Report

Electrical parametric comparison:

Items	Test Condition	BAT42W					Remark
		VF1≤1V IF1=200mA	VF2≤0.4V IF2=10mA	VF3≤0.65V IF3=50mA	VZ≥30V IZ=10uA	IR≤0.5uA VR=25V	
Old dice	Min	0.563	0.321	0.401	48.720	0.230	
	Max	0.592	0.324	0.409	50.840	0.470	
	Avg.	0.584	0.322	0.407	50.581	0.369	
New dice	Min	0.563	0.332	0.408	41.221	0.190	
	Max	0.600	0.346	0.425	41.881	0.280	
	Avg.	0.589	0.341	0.420	41.581	0.223	
Result		No different , all can meet spec.					

Thermal Resistance Test Comparison

P/N:BAT42W/43W

D/S Spec.	Old Dice 13.78MIL	New Dice 12.99MIL
Rthj-A:625 °C/W	Rthj-A= 290.78 °C/W	Rthj-A= 301.58 °C/W

Result :
 All can meet spec.

Comparison Report

MSDS comparison:

BAT42W/43W	Chemical Name	CAS No.	Composition (in % by weight)	Remark
Old dice	Si	7440-21-3	90.02%	
	Ag	7440-22-4	4.32%	
	Au	7440-57-5	5.66%	
New dice	Si	7440-21-3	98.00%	
	SiO ₂	7631-86-9	0.05%	
	Al	7429-90-5	0.90%	
	Au	7440-57-5	0.90%	
	Others	7440-42-8 7723-14-0	0.15%	

Reliability Test Report

TSC P/N : BAT42W

Prepared by : Benny Yeh

Approved by : Brian Bie

Environment Test Summary

TSC P/N :		BAT42W							
General Specification :		TSC Data sheet		Supplier Manufacturing Site :		ShenZhen, China			
				Family Type :		SOD-123 SKY Series			
Reason for Qual. :		Qualification		According to :		JESD22			
Item	Test	Test Conditions			# Lots	S.Size	Failed	Result	
1	Solderability Test	Ta=245°C±5°C ; T=3-6sec			1	50	0	Pass	
2	HTSL (High Temperature Storage)	Temperature is 150°C T=168hrs			1	50	0	Pass	
3	HTRB (High Temperature Reverse Bias)	Ta =125°C, Vbias =80% VR Duration =168 Hours			1	50	0	Pass	
4	HT-HU (High Temperature High Humidity)	Ta=85°C RH=85% T=168hrs			1	50	0	Pass	
5	RSH (Resistance to soldering heat)	Ta=260°C±5°C;T=10s±1s; Dipped up to a place 1-1.5mm apart from its body			1	50	0	Pass	
6	TC (Temperature Cycling Test)	TL=-55°C,30minute;+25°C,15minutes TH=+150°C,30minute;+25°C,15minutes 100cycle			1	50	0	Pass	
7	HPC (Pressure Cooker Test)	Pressure=15psig Ta=121°C,RH=100%,T=96hrs			1	50	0	Pass	
8	IOL Intermittent Operational Life	5mins ON, 5mins OFF 6000cycle			1	50	0	Pass	
9	H3TRB High Humidity High Temp. Reverse Bias	TA=85°C ,RH=85%,VR=80%VR(max)(VR<100V) VR=100V(VR>100V) T=96hrs			1	50	0	Pass	
10	ESD Characterization	HBM:2KV/ 5 Pulses			1	22	0	Pass	
Comment :									
Prepared by :		Xuguihong		Approved by :		Panhaiying			
Title :		Rel Lab Supervisor		Title :		QRA Manager			

Customer Feedback/Approval Form

Form provided by ZVEI - Revision 3.0.0

Title of PCN:			
Add second source of die for BAT42W & BAT43W Series			
Customer PCN No.		Supplier PCN No.	PCN17022
Please check the appropriate box below:			

<input type="checkbox"/>	1. Feedback	date:	
<input type="checkbox"/>	We agree with this proposed change for the parts as listed in chapter '11. Affected parts'. Approval letter will be sent in written form.		
<input type="checkbox"/>	We agree with this proposed change schedule and will start with the PCN process. Approval letter will be sent in written form after evaluation.		
<input type="checkbox"/>	We disapprove because:		
<input type="checkbox"/>			
<input type="checkbox"/>	Remark:		
<input type="checkbox"/>			

<input type="checkbox"/>	2. Feedback	date:	
<input type="checkbox"/>	We acknowledge qualification / validation as assigned in chapter 8 of the PCN.		
<input type="checkbox"/>	We need more information:		
<input type="checkbox"/>			
<input type="checkbox"/>	We need the following samples:		
<input type="checkbox"/>			
<input type="checkbox"/>	Estimated closing date for PCN:		
<input type="checkbox"/>			

<input type="checkbox"/>	Final Feedback/Approval	date:	
<input type="checkbox"/>			

Sender:	
Company:	

Name:	
Address/Location:	
Signature:	
Date:	

Please return to: [your Sales partner]	
Name:	
Address/Location:	
Phone:	
Fax:	
Email:	

