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

SMA (HER GPP) 1A series surface mount rectifiers(HS1G) comparison report

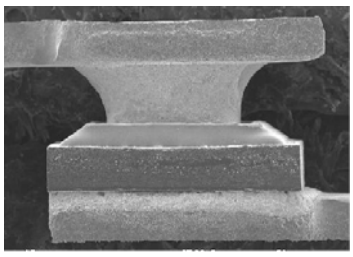
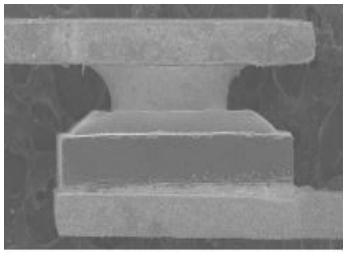
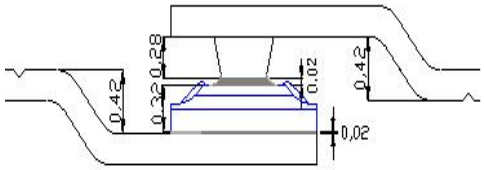
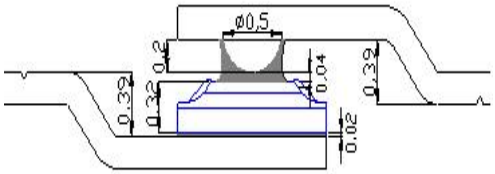
Prepared by Owen Wang
Checked by Owen Wang
Approved by Quayer Chen
Issued date at 4th Sep, 2012
Reversion for A

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
231
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.
Tel:886-2-8913-1588 Fax:886-2-8913-1788

Comparison report (HS1G)

Inner construction picture/diagram:

	Old	New	Result
X-ray			Dimple shape has changed.
Diagram			

Inner construction dimension:

Item		Old	New	Result
Lead-frame	Down set(mm)	0.42	0.39	Dimple dimension has changed.
	Dimple diameter(mm)	Φ0.38	Φ0.50	
	Dimple height(mm)	0.28	0.20	
Free gap between dimple and die surface(mm)		0.02	0.04	

Material information summary:

	Old	New	Result
Solder wafer(mm)	1.2 x 0.05	1.2 x 0.05	No change

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
231
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.
Tel:886-2-8913-1588 Fax:886-2-8913-1788

Comparison report (HS1G)

Electrical characteristics summary:

Typical data	Old	New	Result
Maximum Instantaneous Forward Voltage VF < 1.3V @ 1.0A	0.921	0.928	Electrical characteristics are complying with TSC specification.
Maximum Recurrent Peak Reverse Voltage VRRM > 400V @ 5.0uA	545	535	
Maximum DC Reverse Current IR < 5.0uA @ 400V	0.008	0.002	
Maximum Forward Surge Current, 8.3ms sigle half sine-wave IFSM > 30A	50	50	
Typical Thermal Resistance Rth j-A = 70.0℃/W (Note)	70	70	

Note:
Mounted on P.C.Board with 0.2" x 0.2" (5mm x 5mm) copper pad area.

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 Taipen City, Taiwan, R.O.C. 231
Tel:886-2-8913-1588 Fax:886-2-8913-1788

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

Customer P/N：	HS1G	Product Engineer：	Meifang
Customer Spec. #：	N/A	General Specification：	
Supplier Name：	Taiwan Semiconductor Corp.	Supplier Manufacturing Site：	YEW
Supplier Generic P/N：	SMA 1Amps surface mount rectifiers	Required PPAP Submission Date：	14-Sep-11
Supplier Internal P/N：	HS1A thru HS1M	Family Type：	HER GPP
Reason for Qual.：	Dimple shape/dimension change		

Item	Test	Test Condition	Exceptions	Est. Start	Est. Comp.	# Lots	S.S.	Remarks
1	Electrical Test	Electrical characterization	@25℃	2011/9/4	2011/9/4	ALL	260	ACC
2	External Visual	Inspect device construction, marking and workmanship	N/A	2011/9/4	2011/9/4	ALL	260	ACC
3	Parameter Verification	Electrical characterization	@25/150℃	2011/9/4	2011/9/4	1	10	ACC
4	Pre-conditioning	Per specification	N/A	2011/9/4	2011/9/14	1	308	ACC
5	H.3T.R.B	Ta = 85 ± 2℃, R.H = 85 ± 5% VR = 80%	168hrs	2011/9/15	2011/9/23	1	77	ACC
6	H.T.R.B.	80% Rated VR (T=150℃)	168hrs	2011/9/4	2011/9/12	1	77	ACC
7	Soldering Heat	Ta = 260 ± 5℃	10secs	2011/9/4	2011/9/4	1	30	ACC
8	Temperature Cycle	-55°C/15Min, 150°C/15Min, 25°C/5Min (Transfer)	100cycles	2011/9/15	2011/9/23	1	77	ACC
9	Autoclave	Ta = 121 ± 2℃ 15Psig	96hrs	2011/9/15	2011/9/23	1	77	ACC
10	Intermittent Operating Life	On/5min, Off/5min	2520cycles	2011/9/15	2011/9/23	1	77	ACC
11	Humidity	Ta = 85 ± 2℃, R.H = 85 ± 5%	168hrs	2011/9/15	2011/9/23	1	77	ACC
12	Low Temperature Storage	Ta = -55 ± 3℃	168hrs	2011/9/15	2011/9/23	1	77	ACC
13	High Temperature Storage	Ta = 150(+10/-0)℃	168hrs	2011/9/15	2011/9/23	1	77	ACC
14	Solderability	Ta = 245 ± 5℃	5secs	2011/9/15	2011/9/16	1	10	ACC
15	DPA	Per specification	N/A	2011/9/15	2011/9/16	1	2	ACC
16								
17								

Comment：

Prepared by：	Haiyen Liu	Approved by：	Cuihejun
Date：	23-Sep-11	Date：	25-Sep-11
Title：	Hi-rel supervisor	Title：	QA leader