



To : Dear Valued Customers

Product/Process Change Notice

We hereby submit PCN for your review and approval.

<p>Application or type :</p> <p>CGRM400x Series add source and internal change.</p>	
<p>Detail of the change :</p> <p>CGRM400x Series add lead frame and wafer source.</p>	
<p>Current : Current assembly house.</p> <p style="text-align: center;">Dimensions in inches and (millimeter)</p>	<p>After the change : New assembly house.</p> <p style="text-align: center;">Dimensions in inches and (millimeter)</p>
<p>Reason for the change :</p> <p>This notification is to advise our customers that we will add new assembly house and wafer source of CGRM400x Series to better support long-term demand for the affected products. The delivery time of current assembly site takes too long. It can't fully satisfy demand. Wafer source the same fabrication process. New chip size bigger than original chip, new wafer has better electrical characteristic and thermal dissipation than the original wafer. Attach new reliability reports.</p> <p>Information of Supplier : Company Name : Comchip Technology Co., Ltd. Address : No.586, Jianguo Rd., Yingge Dist., New Taipei City, Taiwan</p>	
<p>Evaluation items : Part No. affected : CGRM400x-HF Series, CGRM400x-G Series</p>	
<p>Implemented from : Effective Date : 17 Nov 2017</p>	

R&D Dept. Signature : 	QA Dept. Signature : 
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Answer To PCN

Please complete the form below duly signed and fax back to Comchip Technology Co.

Please select your answer 1. Approved this PCN 2. Approved this PCN with conditions 3. Disapproved this PCN	Date
	Responsibility By
Please specify the condition or explain the reason if you select 2 or 3.	

Unless a Comchip Technology Co., Ltd. Sales representative is contacted in writing within 30 days of the posting of this notice, all changes described in this announcement are considered approved.



Technology Co., Ltd.

Reliability Test Report

**Part NO. CGRM4004-HF Thru. CGRM4007-HF
Diodes**

Date: 2017.10.20

ComChip Technology Co., Ltd.

Add. : No. 586, Jianguo Rd., Yingge Dist.,
New Taipei City 23943, Taiwan

Tel. : 886-2-8677-6675

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Comchip Technology Co., Ltd.



Discrete Semiconductor Component Qualification Plan

User P/N : N/A
 User Spec.# : N/A
 Supplier : Comchip
 Supplier Generic P/N : N/A
 Supplier Internal P / N : CGRM4004-HF
 Reason for Qual: Annual sampling tests

User Component Engineer : Judy Lin
 General Specification : AEC-Q101 Rev-D
 Supplier Manufacturing Site : Yingge, Taiwan
 Required PPAP Submission Date : 2017/10/20
 Family Type : N/A

Item	Test	Test Conditions	Exceptions	Est. Start	Est. Comp.	# Lots	S. S.	Remarks
1	TEST	Electrical characterization @25C		2017/8/1	2017/8/1	1	525	PASS
2	Preconditioning	per AEC-Q101		2017/8/2	2017/8/11	1	308	PASS
3	External Visual	per AEC-Q101		2017/8/1	2017/8/1	1	525	PASS
4	HTRB	Reverse Biased @ 400 V Ta= 125 ± 5 °C. Test Time=1000 hrs		2017/8/11	2017/9/22	1	77	PASS
5	Temperature Cycling	Tamin = -55°C to Tamax150°C, dwelled for 5 min, Cycle = 1000		2017/8/16	2017/8/23	1	77	PASS
6	Autoclave	Ta = 121°C, P = 15psig, RH = 100% Test Time=96hrs		2017/8/25	2017/8/29	1	77	PASS
7	HAST	Reverse Biased @ 42 V Ta= 130 °C, RH= 85% Test Time=96 hrs		2017/9/8	2017/9/12	1	77	PASS
8	IOL	Io = 1 A, T on/off = 2 minutes, cycles = 15,000		2017/8/31	2017/10/12	1	77	PASS
9	ESD	per AEC-Q101	CDM: 1 KV HBM: 2 KV	2017/9/8	2017/9/8	1	60	PASS
10	Physical Dimension	per AEC-Q101		2017/9/11	2017/9/11	1	30	PASS
11	Resistance to Solder Heat	Solder Pot Temp. 260±5°C Duration 4-6 sec		2017/9/13	2017/9/22	1	30	PASS
12	Solderability	Solder Pot Temp. 245±5°C Duration 5-10 sec		2017/9/22	2017/9/22	1	10	PASS
13	Thermal Resistance	per AEC-Q101		2017/8/7	2017/8/9	1	10	PASS

Conclusion:

1. The total test had 13 item of reability test.
2. There were test result of pass.

Approval: Kevin Tseng

Prepare: Judy Lin

Reliability Test Summary

P / N : CGRM4004-HF L / N : N/A
 Criteria : VF ≤ 1100 mV @IF= 1000 mA IR ≤ 5 μA @VR= 400 V VZ ≥ 400 V @IZ= 0.005 mA

No	Test Item	Test Condition	Test Foundation	Failure qty'	S.S	Parameter	X Bar	S Dev	Max	Min	
1	Pre-conditioning	Initial Electrical Test Visual Inspection Ta= 125°C Time= 24 hrs Ta= 85 °C RH= 85% Time = 168 hrs 3 reflow cycles using profiles per IPC/JEDEC J-STD-020 Dip 10s flux DI water rinse Room ambient drying Final Electrical Test	JESD22 A-113	0	308	Before	VF (mV)	927.8831	2.9885	934.0000	921.0000
							IR (μA)	0.0588	0.0277	0.1058	0.0069
							VZ (V)	1214.3808	0.5988	1215.3885	1213.3966
				0	308	After	VF (mV)	927.8182	3.0059	934.0000	921.0000
							IR (μA)	0.0574	0.0286	0.1058	0.0069
							VZ (V)	1214.3717	0.5794	1215.3885	1213.3966
2	High Temperature Reverse Bias	VR= 400 V Ta= 125 ± 5 °C.. (depend on product) Test Time 1000 hrs.	MIL-STD-750-1 M1038	0	77	Before	VF (mV)	927.6623	2.8359	934.0000	922.0000
							IR (μA)	0.0559	0.0275	0.1058	0.0095
							VZ (V)	1214.2893	0.5796	1215.3885	1213.4263
				0	77	After	VF (mV)	927.5455	3.4775	934.0000	921.0000
							IR (μA)	0.0536	0.0282	0.1032	0.0071
							VZ (V)	1214.2653	0.5854	1215.3813	1213.3966
3	Temperature Cycle	-55°C to 150°C dwelled for 5 min and transfer time not exceed 1 min; 1000 cycles	JESD22 A-104	0	77	Before	VF (mV)	927.7662	2.9014	934.0000	922.0000
							IR (μA)	0.0595	0.0272	0.1057	0.0095
							VZ (V)	1214.4631	0.5716	1215.3885	1213.4263
				0	77	After	VF (mV)	928.0779	2.6939	934.0000	922.0000
							IR (μA)	0.0612	0.0273	0.1058	0.0108
							VZ (V)	1214.4491	0.6002	1215.3750	1213.4335
4	Autoclave	Ta= 121°C Pressure= 15 Psi Time= 96 hrs	JESD22 A-102	0	77	Before	VF (mV)	927.6104	2.8569	934.0000	922.0000
							IR (μA)	0.0548	0.0288	0.1058	0.0095
							VZ (V)	1214.2150	0.5404	1215.3813	1213.3966
				0	77	After	VF (mV)	927.9870	3.0715	934.0000	922.0000
							IR (μA)	0.0618	0.0200	0.1058	0.0272
							VZ (V)	1214.4452	0.5754	1215.3885	1213.4263
5	Highly Accelerated Stress Test	VR= 42V Ta= 130°C RH= 85% Test Time=96 hrs	JESD22 A-110	0	77	Before	VF (mV)	927.2468	3.0269	934.0000	921.0000
							IR (μA)	0.0569	0.0268	0.1056	0.0071
							VZ (V)	1214.1727	0.5650	1215.3813	1213.3966
				0	77	After	VF (mV)	928.2597	3.0967	934.0000	922.0000
							IR (μA)	0.0593	0.0285	0.1058	0.0071
							VZ (V)	1214.4465	0.6141	1215.3741	1213.4038
6	Intermittent Operational Life	Io = 1 A, T on/off = 2 minutes, cycles = 15,000	MIL-STD-750 Method 1037	0	77	Before	VF (mV)	927.6753	2.8994	934.0000	922.0000
							IR (μA)	0.0585	0.0271	0.1057	0.0108
							VZ (V)	1214.4449	0.5835	1215.3885	1213.4263
				0	77	After	VF (mV)	927.7662	2.9464	934.0000	922.0000
							IR (μA)	0.0553	0.0285	0.1058	0.0095
							VZ (V)	1214.2226	0.5364	1215.3813	1213.3966

Reliability Test Summary

P / N : CGRM4004-HF L / N : N/A
 Criteria : VF ≤ 1100 mV @IF= 1000 mA IR ≤ 5 uA @VR= 400 V VZ ≥ 400 V @IZ= 0.005 mA

No	Test Item	Test Condition	Test Foundation	Failure qty'	S.S	Parameter	X Bar	S Dev	Max	Min	
7	Resistance to Solder Heat	Ta= 125°C Time=24hrs Ta= 85 °C RH= 85% Time=168 hrs one inch above the hot solder for 15 s Temp of solder pot=260±5°C Time= 4~6 sec.	JESD22 A-111	0	30	Before	VF (mV)	926.4333	3.5104	933.0000	921.0000
							IR (uA)	0.0554	0.0249	0.1007	0.0196
							VZ (V)	1214.2534	0.6113	1215.3588	1213.4192
				0	30	After	VF (mV)	928.4333	3.1697	934.0000	923.0000
							IR (uA)	0.0465	0.0228	0.0930	0.0071
							VZ (V)	1214.2965	0.5895	1215.2850	1213.4038
8	Solderability	Ta= 85 °C, RH= 85% Time=1 hrs Ta= 100°C Time=15min~1 hrs DI water rinse Room ambient drying Temp.of solder Pot=245±5°C · Time= 5~10 sec.	JESD22 B-102	0	10	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	10	After	VF (mV)				
							IR (uA)				
							VZ (V)				
9	ESD Characterization	per AEC-Q101	AEC Q101-001 and 005	0	60	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	60	After	VF (mV)				
							IR (uA)				
							VZ (V)				
10	Physical Dimension	per AEC-Q101	JESD22 B-100	0	30	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	30	After	VF (mV)				
							IR (uA)				
							VZ (V)				
11	Thermal Resistance	per AEC-Q101	JESD24-3, 24- 4, 24-6 as appropriate	0	10	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	10	After	VF (mV)				
							IR (uA)				
							VZ (V)				

Conclusion:

- The total test had 11 item of reability test.
- There were test result of pass.

Approval: Kevin Tseng

Prepare: Judy Lin

Comchip Technology Co., Ltd.



Discrete Semiconductor Component Qualification Plan

User P/N : N/A
 User Spec.# : N/A
 Supplier : Comchip
 Supplier Generic P/N : N/A
 Supplier Internal P / N : CGRM4005-HF
 Reason for Qual: Annual sampling tests

User Component Engineer : Judy Lin
 General Specification : AEC-Q101 Rev-D
 Supplier Manufacturing Site : Yingge, Taiwan
 Required PPAP Submission Date : 2017/10/20
 Family Type : N/A

Item	Test	Test Conditions	Exceptions	Est. Start	Est. Comp.	# Lots	S. S.	Remarks
1	TEST	Electrical characterization @25C		2017/8/1	2017/8/1	1	525	PASS
2	Preconditioning	per AEC-Q101		2017/8/2	2017/8/11	1	308	PASS
3	External Visual	per AEC-Q101		2017/8/1	2017/8/1	1	525	PASS
4	HTRB	Reverse Biased @ 600 V Ta= 125 ± 5 °C. Test Time=1000 hrs		2017/8/11	2017/9/22	1	77	PASS
5	Temperature Cycling	Tamin = -55°C to Tamax150°C, dwelled for 5 min, Cycle = 1000		2017/8/16	2017/8/23	1	77	PASS
6	Autoclave	Ta = 121°C, P = 15psig, RH = 100% Test Time=96hrs		2017/8/25	2017/8/29	1	77	PASS
7	HAST	Reverse Biased @ 42 V Ta= 130 °C, RH= 85% Test Time=96 hrs		2017/9/8	2017/9/12	1	77	PASS
8	IOL	Io = 1 A, T on/off = 2 minutes, cycles = 15,000		2017/8/31	2017/10/12	1	77	PASS
9	ESD	per AEC-Q101	CDM: 1 KV HBM: 2 KV	2017/9/8	2017/9/8	1	60	PASS
10	Physical Dimension	per AEC-Q101		2017/9/11	2017/9/11	1	30	PASS
11	Resistance to Solder Heat	Solder Pot Temp. 260±5°C Duration 4-6 sec		2017/9/13	2017/9/22	1	30	PASS
12	Solderability	Solder Pot Temp. 245±5°C Duration 5-10 sec		2017/9/22	2017/9/22	1	10	PASS
13	Thermal Resistance	per AEC-Q101		2017/8/7	2017/8/9	1	10	PASS

Conclusion:

1. The total test had 13 item of reability test.
2. There were test result of pass.

Approval: Kevin Tseng

Prepare: Judy Lin

Reliability Test Summary

P / N : CGRM4007-HF L / N : N/A
 Criteria : VF ≤ 1000 mV @IF= 1000 mA IR ≤ 5 μA @VR= 600 V VZ ≥ 600 V @IZ= 0.005 mA

No	Test Item	Test Condition	Test Foundation	Failure qty'	S.S	Parameter	X Bar	S Dev	Max	Min	
1	Pre-conditioning	Initial Electrical Test Visual Inspection Ta= 125°C Time= 24 hrs Ta= 85 °C RH= 85% Time = 168 hrs 3 reflow cycles using profiles per IPC/JEDEC J-STD-020 Dip 10s flux DI water rinse Room ambient drying Final Electrical Test	JESD22 A-113	0	308	Before	VF (mV)	922.4968	3.4163	930.0000	915.0000
							IR (μA)	0.0097	0.0026	0.0145	0.0049
							VZ (V)	1278.0254	0.0125	1278.0525	1277.9967
				0	308	After	VF (mV)	922.4091	3.3154	930.0000	915.0000
							IR (μA)	0.0097	0.0026	0.0145	0.0049
							VZ (V)	1278.0255	0.0127	1278.0525	1277.9967
2	High Temperature Reverse Bias	VR= 600 V Ta= 125 ± 5 °C.. (depend on product) Test Time 1000 hrs.	MIL-STD-750-1 M1038	0	77	Before	VF (mV)	922.3377	3.0848	928.0000	916.0000
							IR (μA)	0.0095	0.0025	0.0145	0.0049
							VZ (V)	1278.0250	0.0125	1278.0513	1277.9967
				0	77	After	VF (mV)	922.5584	3.7328	930.0000	916.0000
							IR (μA)	0.0097	0.0026	0.0145	0.0052
							VZ (V)	1278.0241	0.0124	1278.0525	1277.9984
3	Temperature Cycle	-55°C to 150°C dwelled for 5 min and transfer time not exceed 1 min; 1000 cycles	JESD22 A-104	0	77	Before	VF (mV)	922.4286	3.1972	929.0000	915.0000
							IR (μA)	0.0096	0.0027	0.0145	0.0051
							VZ (V)	1278.0258	0.0134	1278.0496	1277.9967
				0	77	After	VF (mV)	922.3896	3.3370	928.0000	916.0000
							IR (μA)	0.0097	0.0027	0.0144	0.0049
							VZ (V)	1278.0260	0.0122	1278.0513	1277.9972
4	Autoclave	Ta= 121°C Pressure= 15 Psi Time= 96 hrs	JESD22 A-102	0	77	Before	VF (mV)	922.1948	3.1374	930.0000	916.0000
							IR (μA)	0.0097	0.0025	0.0145	0.0049
							VZ (V)	1278.0250	0.0122	1278.0513	1277.9996
				0	77	After	VF (mV)	922.3766	3.1666	929.0000	915.0000
							IR (μA)	0.0095	0.0027	0.0145	0.0049
							VZ (V)	1278.0260	0.0132	1278.0513	1277.9967
5	Highly Accelerated Stress Test	VR= 42 V Ta= 130°C RH= 85% Test Time=96 hrs	JESD22 A-110	0	77	Before	VF (mV)	922.7922	3.4616	930.0000	916.0000
							IR (μA)	0.0097	0.0025	0.0145	0.0052
							VZ (V)	1278.0239	0.0129	1278.0525	1277.9984
				0	77	After	VF (mV)	922.3377	3.6368	929.0000	916.0000
							IR (μA)	0.0099	0.0027	0.0144	0.0049
							VZ (V)	1278.0255	0.0119	1278.0513	1277.9972
6	Intermittent Operational Life	Io = 1 A, T on/off = 2 minutes, cycles = 15,000	MIL-STD-750 Method 1037	0	77	Before	VF (mV)	922.4416	3.1933	929.0000	915.0000
							IR (μA)	0.0096	0.0028	0.0145	0.0051
							VZ (V)	1278.0254	0.0134	1278.0496	1277.9967
				0	77	After	VF (mV)	922.2987	3.1459	930.0000	916.0000
							IR (μA)	0.0097	0.0024	0.0145	0.0049
							VZ (V)	1278.0253	0.0122	1278.0513	1277.9996

Reliability Test Summary

P / N : CGRM4007-HF L / N : N/A
 Criteria : VF ≤ 1000 mV @IF= 1000 mA IR ≤ 5 uA @VR= 600 V VZ ≥ 600 V @IZ= 0.005 mA

No	Test Item	Test Condition	Test Foundation	Failure qty'	S.S	Parameter	X Bar	S Dev	Max	Min	
7	Resistance to Solder Heat	Ta= 125°C Time=24hrs Ta= 85 °C RH= 85% Time=168 hrs one inch above the hot solder for 15 s Temp of solder pot=260±5°C Time= 4-6 sec.	JESD22 A-111	0	30	Before	VF (mV)	922.5333	3.9630	929.0000	916.0000
							IR (µA)	0.0098	0.0029	0.0143	0.0052
							VZ (V)	1278.0243	0.0131	1278.0525	1277.9984
				0	30	After	VF (mV)	922.5667	3.9189	929.0000	916.0000
							IR (µA)	0.0098	0.0026	0.0132	0.0049
							VZ (V)	1278.0248	0.0130	1278.0484	1277.9972
8	Solderability	Ta= 85 °C, RH= 85% Time=1 hrs Ta= 100°C Time=15min~1 hrs DI water rinse Room ambient drying Temp.of solder Pot=245±5°C · Time= 5~10 sec.	JESD22 B-102	0	10	Before	VF (mV)	N/A			
							IR (µA)				
							VZ (V)				
				0	10	After	VF (mV)				
							IR (µA)				
							VZ (V)				
9	ESD Characterization	per AEC-Q101	AEC Q101-001 and 005	0	60	Before	VF (mV)	N/A			
							IR (µA)				
							VZ (V)				
				0	60	After	VF (mV)				
							IR (µA)				
							VZ (V)				
10	Physical Dimension	per AEC-Q101	JESD22 B-100	0	30	Before	VF (mV)	N/A			
							IR (µA)				
							VZ (V)				
				0	30	After	VF (mV)				
							IR (µA)				
							VZ (V)				
11	Thermal Resistance	per AEC-Q101	JESD24-3, 24- 4, 24-6 as appropriate	0	10	Before	VF (mV)	N/A			
							IR (µA)				
							VZ (V)				
				0	10	After	VF (mV)				
							IR (µA)				
							VZ (V)				

Conclusion:

- The total test had 11 item of reability test.
- There were test result of pass.

Approval: Kevin Tseng

Prepare: Judy Lin

Comchip Technology Co., Ltd.



Discrete Semiconductor Component Qualification Plan

User P/N : N/A
 User Spec.# : N/A
 Supplier : Comchip
 Supplier Generic P/N : N/A
 Supplier Internal P / N : CGRM4007-HF
 Reason for Qual: Annual sampling tests

User Component Engineer : Judy Lin
 General Specification : AEC-Q101 Rev-D
 Supplier Manufacturing Site : Yingge, Taiwan
 Required PPAP Submission Date : 2017/10/20
 Family Type : N/A

Item	Test	Test Conditions	Exceptions	Est. Start	Est. Comp.	# Lots	S. S.	Remarks
1	TEST	Electrical characterization @25C		2017/8/1	2017/8/1	1	525	PASS
2	Preconditioning	per AEC-Q101		2017/8/2	2017/8/11	1	308	PASS
3	External Visual	per AEC-Q101		2017/8/1	2017/8/1	1	525	PASS
4	HTRB	Reverse Biased @ 1000 V Ta= 125 ± 5 °C. Test Time=1000 hrs		2017/8/11	2017/9/22	1	77	PASS
5	Temperature Cycling	Tamin = -55°C to Tamax150°C, dwelled for 5 min, Cycle = 1000		2017/8/16	2017/8/23	1	77	PASS
6	Autoclave	Ta = 121°C, P = 15psig, RH = 100% Test Time=96hrs		2017/8/25	2017/8/29	1	77	PASS
7	HAST	Reverse Biased @ 42 V Ta= 130 °C, RH= 85% Test Time=96 hrs		2017/9/8	2017/9/12	1	77	PASS
8	IOL	Io = 1 A, T on/off = 2 minutes, cycles = 15,000		2017/8/31	2017/10/12	1	77	PASS
9	ESD	per AEC-Q101	CDM: 1 KV HBM: 2 KV	2017/9/8	2017/9/8	1	60	PASS
10	Physical Dimension	per AEC-Q101		2017/9/11	2017/9/11	1	30	PASS
11	Resistance to Solder Heat	Solder Pot Temp. 260±5°C Duration 4-6 sec		2017/9/13	2017/9/22	1	30	PASS
12	Solderability	Solder Pot Temp. 245±5°C Duration 5-10 sec		2017/9/22	2017/9/22	1	10	PASS
13	Thermal Resistance	per AEC-Q101		2017/8/7	2017/8/9	1	10	PASS

Conclusion:

1. The total test had 13 item of reability test.
2. There were test result of pass.

Approval: Kevin Tseng

Prepare: Judy Lin

Reliability Test Summary

P / N : CGRM4007-HF L / N : N/A
 Criteria : VF ≤ 1100 mV @IF= 1000 mA IR ≤ 5 μA @VR= 1000 V VZ ≥ 1000 V @IZ= 0.005 mA

No	Test Item	Test Condition	Test Foundation	Failure qty'	S.S	Parameter	X Bar	S Dev	Max	Min	
1	Pre-conditioning	Initial Electrical Test Visual Inspection Ta= 125°C Time= 24 hrs Ta= 85 °C RH= 85% Time = 168 hrs 3 reflow cycles using profiles per IPC/JEDEC J-STD-020 Dip 10s flux DI water rinse Room ambient drying Final Electrical Test	JESD22 A-113	0	308	Before	VF (mV)	926.8279	3.0511	934.0000	920.0000
							IR (μA)	0.0367	0.0029	0.0419	0.0314
							VZ (V)	1465.5702	0.0128	1465.5982	1465.5423
				0	308	After	VF (mV)	926.7695	3.1574	934.0000	920.0000
							IR (μA)	0.0366	0.0029	0.0419	0.0314
							VZ (V)	1465.5709	0.0126	1465.5982	1465.5423
2	High Temperature Reverse Bias	VR= 1000 V Ta= 125 ± 5 °C.. (depend on product) Test Time 1000 hrs.	MIL-STD-750-1 M1038	0	77	Before	VF (mV)	927.1429	3.2433	934.0000	920.0000
							IR (μA)	0.0365	0.0031	0.0419	0.0314
							VZ (V)	1465.5705	0.0111	1465.5982	1465.5441
				0	77	After	VF (mV)	926.7143	3.1240	933.0000	920.0000
							IR (μA)	0.0365	0.0028	0.0416	0.0317
							VZ (V)	1465.5684	0.0122	1465.5953	1465.5423
3	Temperature Cycle	-55°C to 150°C dwelled for 5 min and transfer time not exceed 1 min; 1000 cycles	JESD22 A-104	0	77	Before	VF (mV)	926.4675	3.2670	933.0000	920.0000
							IR (μA)	0.0365	0.0029	0.0415	0.0315
							VZ (V)	1465.5736	0.0120	1465.5958	1465.5453
				0	77	After	VF (mV)	926.8182	2.9233	933.0000	921.0000
							IR (μA)	0.0369	0.0029	0.0417	0.0315
							VZ (V)	1465.5714	0.0140	1465.5970	1465.5429
4	Autoclave	Ta= 121°C Pressure= 15 Psi Time= 96 hrs	JESD22 A-102	0	77	Before	VF (mV)	927.2727	3.2873	934.0000	921.0000
							IR (μA)	0.0365	0.0031	0.0419	0.0314
							VZ (V)	1465.5685	0.0116	1465.5982	1465.5441
				0	77	After	VF (mV)	927.0260	3.3833	934.0000	920.0000
							IR (μA)	0.0378	0.0051	0.0525	0.0317
							VZ (V)	1465.5719	0.0108	1465.5911	1465.5453
5	Highly Accelerated Stress Test	VR= 42 V Ta= 130°C RH= 85% Test Time=96 hrs	JESD22 A-110	0	77	Before	VF (mV)	926.6494	2.9725	933.0000	921.0000
							IR (μA)	0.0363	0.0031	0.0419	0.0314
							VZ (V)	1465.5689	0.0122	1465.5982	1465.5441
				0	77	After	VF (mV)	926.8571	2.9856	933.0000	920.0000
							IR (μA)	0.0383	0.0051	0.0527	0.0323
							VZ (V)	1465.5683	0.0138	1465.5970	1465.5423
6	Intermittent Operational Life	Io = 1 A, T on/off = 2 minutes, cycles = 15,000	MIL-STD-750 Method 1037	0	77	Before	VF (mV)	926.5455	3.3855	934.0000	920.0000
							IR (μA)	0.0365	0.0029	0.0415	0.0315
							VZ (V)	1465.5744	0.0117	1465.5958	1465.5453
				0	77	After	VF (mV)	927.0390	3.1890	933.0000	921.0000
							IR (μA)	0.0365	0.0031	0.0419	0.0314
							VZ (V)	1465.5680	0.0113	1465.5982	1465.5441

Reliability Test Summary

P / N : CGRM4007-HF L / N : N/A
 Criteria : VF ≤ 1100 mV @IF= 1000 mA IR ≤ 5 uA @VR= 1000 V VZ ≥ 1000 V @IZ= 0.005 mA

No	Test Item	Test Condition	Test Foundation	Failure qty'	S.S	Parameter	X Bar	S Dev	Max	Min	
7	Resistance to Solder Heat	Ta= 125°C Time=24hrs Ta= 85 °C RH= 85% Time=168 hrs one inch above the hot solder for 15 s Temp of solder pot=260±5°C Time= 4~6 sec.	JESD22 A-111	0	30	Before	VF (mV)	927.0000	2.7916	931.0000	921.0000
							IR (uA)	0.0364	0.0028	0.0408	0.0317
							VZ (V)	1465.5707	0.0109	1465.5953	1465.5535
				0	30	After	VF (mV)	926.3333	3.1659	933.0000	920.0000
							IR (uA)	0.0371	0.0028	0.0416	0.0325
							VZ (V)	1465.5661	0.0128	1465.5882	1465.5423
8	Solderability	Ta= 85 °C, RH= 85% Time=1 hrs Ta= 100°C Time=15min~1 hrs DI water rinse Room ambient drying Temp.of solder Pot=245±5°C · Time= 5~10 sec.	JESD22 B-102	0	10	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	10	After	VF (mV)				
							IR (uA)				
							VZ (V)				
9	ESD Characterization	per AEC-Q101	AEC Q101-001 and 005	0	60	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	60	After	VF (mV)				
							IR (uA)				
							VZ (V)				
10	Physical Dimension	per AEC-Q101	JESD22 B-100	0	30	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	30	After	VF (mV)				
							IR (uA)				
							VZ (V)				
11	Thermal Resistance	per AEC-Q101	JESD24-3, 24- 4, 24-6 as appropriate	0	10	Before	VF (mV)	N/A			
							IR (uA)				
							VZ (V)				
				0	10	After	VF (mV)				
							IR (uA)				
							VZ (V)				

Conclusion:

- The total test had 11 item of reability test.
- There were test result of pass.

Approval: Kevin Tseng

Prepare: Judy Lin