

Transceiver Reliability **TEST Report**

Model name : SFP-10GSR-85-I

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1. Introduction

This report presents the reliability test results for 10 Gb/s SFP+ 850nm transceiver.

2. Purpose

The purpose of the test is to determine whether the O/E characteristics, mechanical integrity and endurance of 10 Gb/s SFP+ 850nm transceiver meet the requirement of reliability.

3. Sample Description

The sample is 10 Gb/s SFP+ 850nm transceiver. The type is 10G SR-85-I. The modules specification should fit the data in the Table 1.

Table 1: Specification

Parameter	Symbol	Specification			Unit
		Min.	Typ.	Max.	
Operating Voltage	VCC	3.14	3.3	3.46	V
Output light Center Wavelength Range	λ_C	840	850	860	nm
Launch Optical Power	PO	-7.3	-	-1.3	dBm
Extinction ratio	EX	3	-	-	dB
Receiver Sensitivity	S	-	-	-11.1	dBm
Receive light Center Wavelength Range	λ_C	840	-	860	nm
Operating temperature Range	TC	-40	-	+85	°C
Storage temperature Range	TS	-40	-	+85	°C

4. Procedure

4.1 Sampling

All the samples are selected randomly from storeroom.

4.2 Sample Grouping and Test Sequence

Table 2: Sample Grouping and Test Sequence

Test Sequence	Grouping		Start Date / Finish Date	Failure Criterion
	Group 1			Units must be passing
		ESD Immunity	2019.09.09-2019.09.12	Traffic during test And not lose data during
				Test
	Group 2			1.While $S=(S_{th}+0.5 \text{ dB})$
				LOS and/or bit errors is
		Straight Pull Test	2019.09.10-2019.09.17	Detected.
				2. $ \Delta P >0.5\text{dB}$
				3. $ \Delta ER >0.5\text{dB}$
	Group 3	Mechanical Shock and Vibration	2019.09.10-2019.09.17	1. $ \Delta S >0.5\text{dB}$ 2. $ \Delta P >0.5 \text{ dB}$
	Group 4	Low Temp Storage	2019.09.10-2019.09.20	3. $ \Delta ER >0.5\text{dB}$
	Group 5	Thermal Shock	2019.09.10-2019-09.17	
	Group 6	Cyc. Moist Res	2019.09.10-2019.09.21	
	Group 7	High Temp Storage	2019.06.10-2019.09.13	
	Group 8	Damp Heat	2019.08.09-2019.09.25	
	Group 9	Damp Heat Operating	2019.08.09-2019.11.12	
	Group 10	Temperature Cycling	2019.08.10-2019.09.08	
	Group 11	Accel. Aging	2019.04.10-2019.11.15	

4.3 Test Plan and Conclusion

Test	Reference	Condition	SS/C	Conclusion
ESD Immunity	IEC61000-4-2	DIRECT:Contact discharge 8KV, Air Discharge 15KV; INDIRECT:Horizontal and vertical coupling planes 15KV.	6	Pass
Straight Pull Test	GR-326 GR-1435	4.5 kgf for 5 sec (loss and refl measured after load removed for 10 sec;	11	Pass
Vibration	GR-468	20G, 20-2,000 Hz, 4 min/cyc, 4cyc/axis	11	Pass
Mechanical Shock	GR-468	5 times/axis, 6 axes; 1500g, 0.5ms	11	Pass
Low Temp Storage	GR-468	-40°C, 168 hrs	11	Pass
Thermal Shock	GR-468	0°C -100 °C, Dwell time >= 5 min at temp extremes, transfer time <= 10 sec, the device or module shall reach specified temperature within 5minutes.	11 (2mate)	Pass
Cyc. Moist Res	MIL-STD-883	Operating(3.3V),20 cycles, w/5 subcycles.Specific experimental conditions are shown in Figure 1.	11 (2mate)	Pass
High Temp Storage	GR-468	85°C,2000 hrs	11 (2mate)	Pass
Damp Heat	GR-468	85°C/85% RH,1000 hrs	11 (2mate)	Pass
Damp Heat Operating	GR-468	Operating(3.3V),85°C/85% RH,2000 hrs	11 (2mate)	Pass
Temperature Cycling	GR-468	-40°C to 85°C,10°C/min,500 Cycle	11 (5mate)	Pass
Accel. Aging	GR-468	Operating(3.3V),85°C,5000 hrs	11 (5mate)	Pass

5. Test Results

5.1 ESD Immunity

No.	Direct				Indirect			
	Con		Air		H plane		V plane	
	+8KV	-8KV	+15KV	-15KV	+15KV	-15KV	+15KV	-15KV
27	OK	OK	OK	OK	OK	OK	OK	OK
28	OK	OK	OK	OK	OK	OK	OK	OK
29	OK	OK	OK	OK	OK	OK	OK	OK
2A	OK	OK	OK	OK	OK	OK	OK	OK
2B	OK	OK	OK	OK	OK	OK	OK	OK
2C	OK	OK	OK	OK	OK	OK	OK	OK

NOTE: OK means Units must be passing traffic during test, And will not lose data and BER during the test.

5.2 Straight Pull Test

Table 4: Test Environment

Test	Temperature	Voltage	Ibias
Environment	25°C ($\pm 2^\circ\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

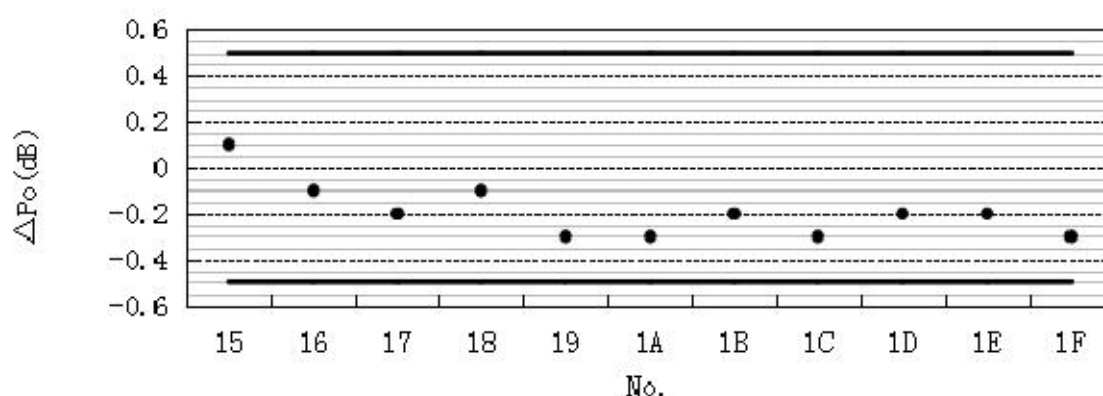


Figure 1: Optical Power Variation in Straight Pull Test

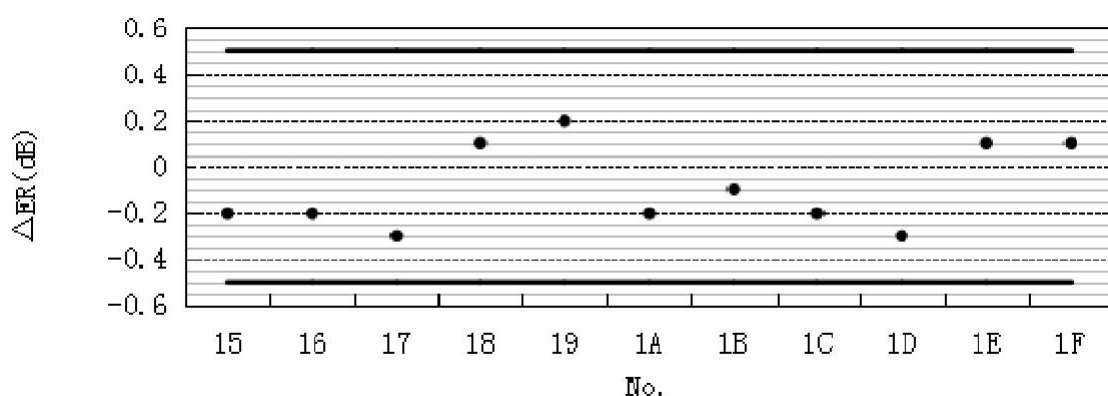


Figure 2: Receiver Sensitivity Variation in Straight Pull Test

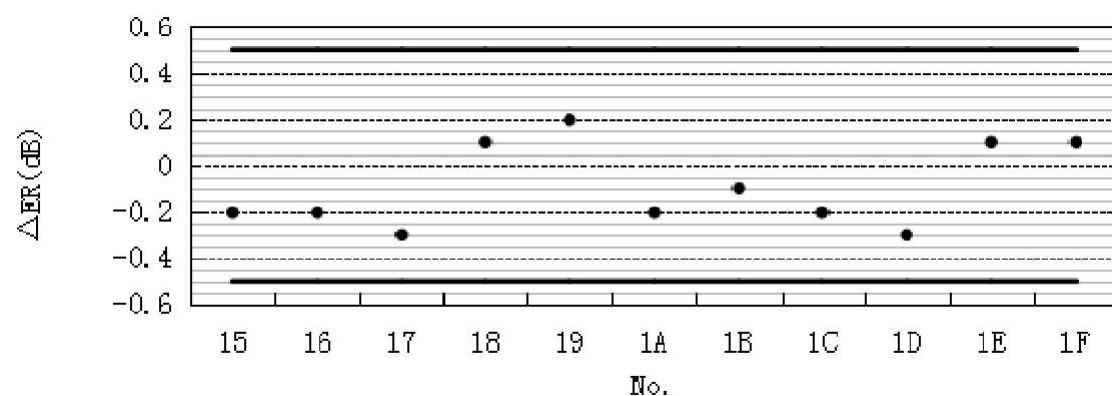


Figure 3: ER Variation in Straight Pull Test

Table 5: Receiver Sensitivity Test Result

No.		S(dBm)
15	Initial test	-14.8
	load	pass
16	Initial test	-14.9
	load	pass
17	Initial test	-15.0
	load	Pass
18	Initial test	-14.8
	load	pass
	Initial test	-14.3

19	load	pass
1A	Initial test	-15.0
	load	pass
1B	Initial test	-14.6
	load	pass
1C	Initial test	-14.4
	load	pass
1D	Initial test	-14.6
	load	pass
1E	Initial test	-14.1
	load	pass
1F	Initial test	-14.6
	load	pass

Table 6: Data of Straight Pull Test

No.	Before Test			After Test			Before and after test Variation		
	Po	S	ER	Po	S	ER	ΔP_o	ΔS	ΔER
	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
15	-3.3	-14.5	5.2	-3.2	-14.8	5.0	0.1	-0.3	-0.2
16	-3.0	-14.7	5.3	-3.1	-14.9	5.1	-0.1	-0.2	-0.2
17	-3.0	-14.8	5.3	-3.2	-15.0	5.0	-0.2	-0.2	-0.3
18	-3.0	-14.5	5.2	-3.1	-14.8	5.3	-0.1	-0.3	0.1
19	-2.3	-14.6	5.2	-2.6	-14.3	5.4	-0.3	0.3	0.2
1A	-2.4	-14.9	5.4	-2.7	-15.0	5.2	-0.3	-0.1	-0.2
1B	-2.6	-14.5	5.4	-2.8	-14.6	5.3	-0.2	-0.1	-0.1
1C	-2.2	-14.6	5.3	-2.5	-14.4	5.1	-0.3	0.2	-0.2
1D	-2.7	-14.7	5.3	-2.9	-14.6	5.0	-0.2	0.1	-0.3
1E	-2.8	-14.4	5.2	-3.0	-14.1	5.3	-0.2	0.3	0.1
1F	-2.9	-14.8	5.1	-3.2	-14.6	5.2	-0.3	0.2	0.1

5.3 Mechanical Shock/Vibration

Table 7: Test Environment

Test Environment	Temperature	Voltage	Ibias
	25°C ($\pm 2^{\circ}\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

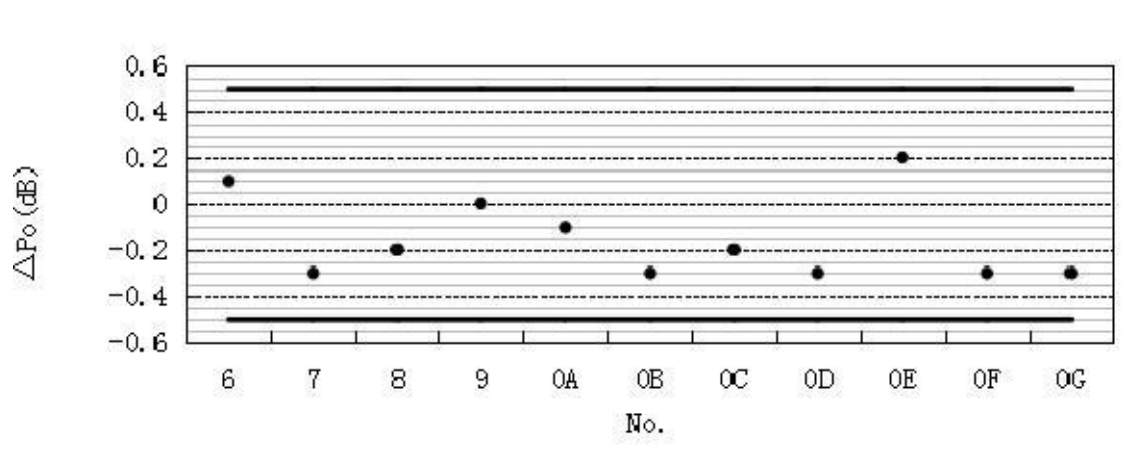


Figure 4: Optical Power Variation in Mechanical Shock/Vibration Test

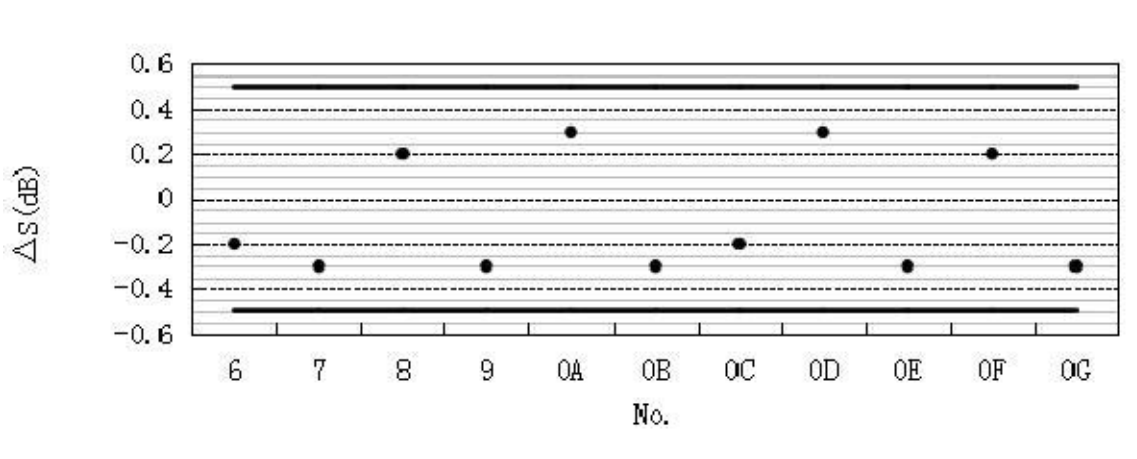


Figure 5: Receiver Sensitivity Variation in Mechanical Shock/Vibration Test

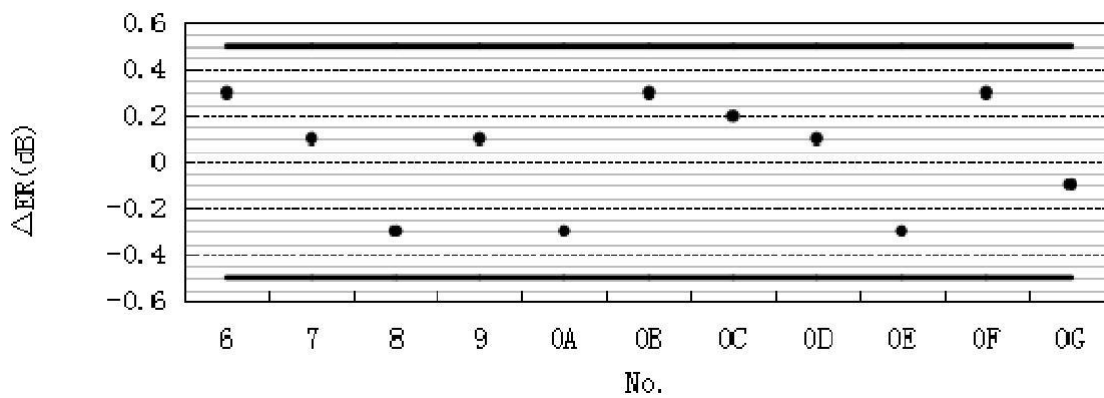


Figure 6: ER Variation in Mechanical Shock/Vibration Test

Table 8: Data of Mechanical Shock/Vibration Test (CH1)

No.	Before Test			After Test			Before and after test Variation		
	Po	S	ER	Po	S	ER	ΔP_o	ΔS	ΔER
	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
06	-3.1	-14.2	4.9	-3.0	-14.4	5.2	0.1	-0.2	0.3
07	-2.8	-14.3	5.0	-3.1	-14.6	5.1	-0.3	-0.3	0.1
08	-3.1	-14.5	5.2	-3.3	-14.3	4.9	-0.2	0.2	-0.3
09	-3.1	-14.5	5.1	-3.1	-14.8	5.2	0.0	-0.3	0.1
0A	-2.4	-14.9	5.3	-2.5	-14.6	5.0	-0.1	0.3	-0.3
0B	-2.4	-14.7	5.0	-2.7	-15.0	5.3	-0.3	-0.3	0.3
0C	-2.6	-14.6	4.9	-2.8	-14.8	5.1	-0.2	-0.2	0.2
0D	-2.2	-14.8	5.1	-2.5	-14.5	5.2	-0.3	0.3	0.1
0E	-2.8	-14.3	5.3	-2.6	-14.6	5.0	0.2	-0.3	-0.3
0F	-2.8	-14.9	4.9	-3.1	-14.7	5.2	-0.3	0.2	0.3
0G	-3.0	-14.5	5.2	-3.3	-14.8	5.1	-0.3	-0.3	-0.1

5.4 Low Temp Storage

Table 9: Test Environment

Test	Temperature	Voltage	Ibias
Environment	25°C ($\pm 2^{\circ}\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

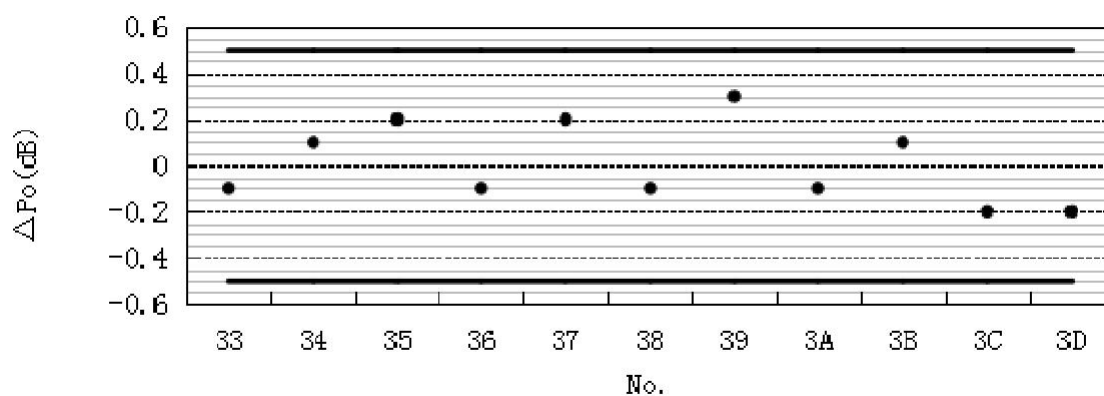


Figure 7: Optical Power Variation in Low Temp Storage Test

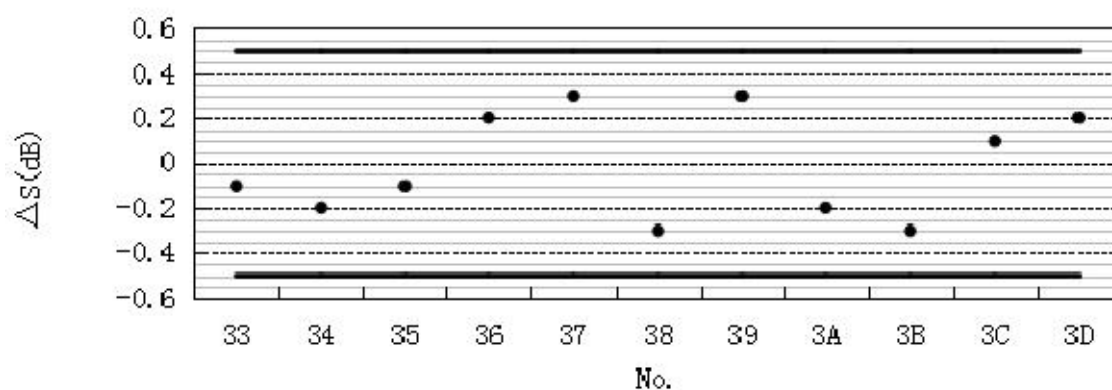


Figure 8: Receiver Sensitivity Variation in Low Temp Storage Test

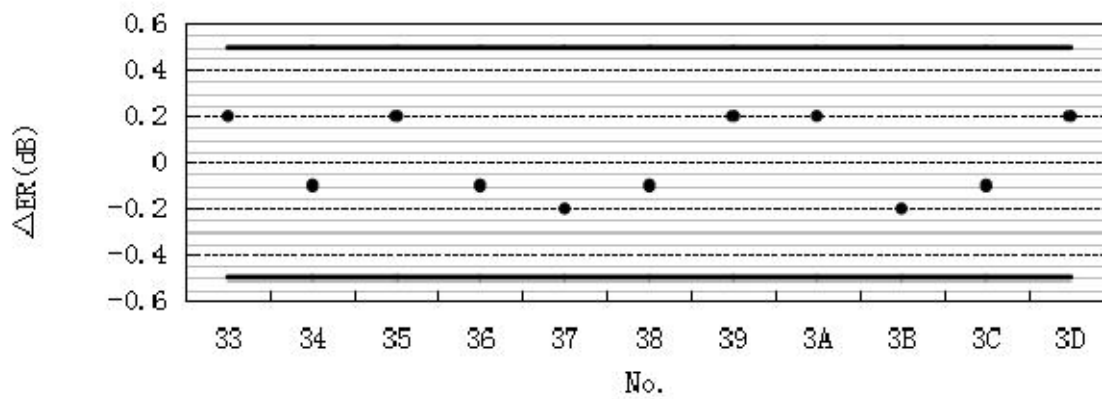


Figure 9: ER Variation in Low Temp Storage Test

Table 10: Data of Low Temp Storage Test (CH1)

No.	Before Test			After Test			Before and after test Variation		
	Po	S	ER	Po	S	ER	ΔPo	ΔS	ΔER
	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
33	-3.1	-14.4	4.9	-3.2	-14.5	5.1	-0.1	-0.1	0.2
34	-3.0	-14.4	5.1	-2.9	-14.6	5.0	0.1	-0.2	-0.1
35	-3.4	-14.2	5.0	-3.2	-14.3	5.2	0.2	-0.1	0.2
36	-3.3	-14.4	5.2	-3.4	-14.2	5.1	-0.1	0.2	-0.1
37	-2.9	-14.8	5.2	-2.7	-14.5	5.0	0.2	0.3	-0.2
38	-2.7	-14.4	5.3	-2.8	-14.7	5.2	-0.1	-0.3	-0.1
39	-2.9	-14.9	5.1	-2.6	-14.6	5.3	0.3	0.3	0.2
3A	-2.7	-14.1	5.2	-2.8	-14.3	5.4	-0.1	-0.2	0.2
3B	-3.1	-14.2	5.2	-3.0	-14.5	5.0	0.1	-0.3	-0.2
3C	-3.0	-14.4	5.0	-3.2	-14.3	4.9	-0.2	0.1	-0.1
3D	-2.9	-14.4	5.1	-3.1	-14.2	5.3	-0.2	0.2	0.2

5.5 Thermal Shock

Table 11: Test Environment

Test	Temperature	Voltage	Ibias
Environment	-40°C, 25°C, 85°C ($\pm 2^\circ\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

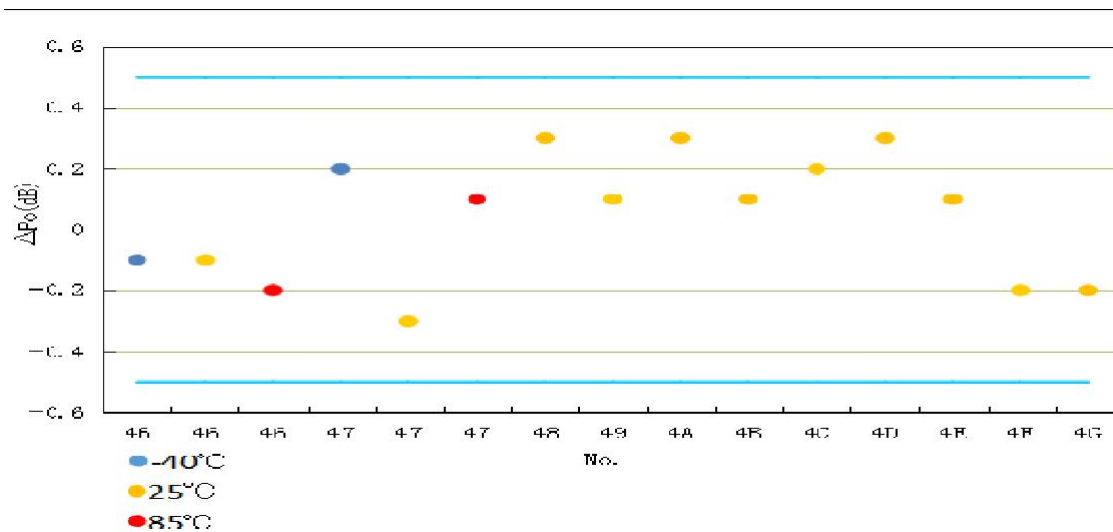


Figure 10: Optical Power Variation in Thermal Shock Test

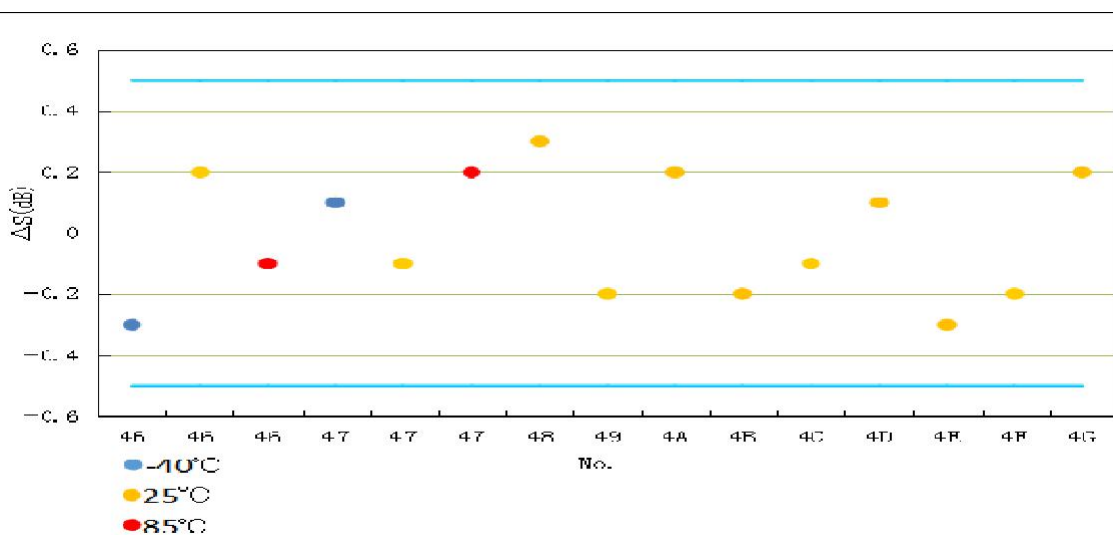


Figure 11: Receiver Sensitivity Variation in Thermal Shock Test

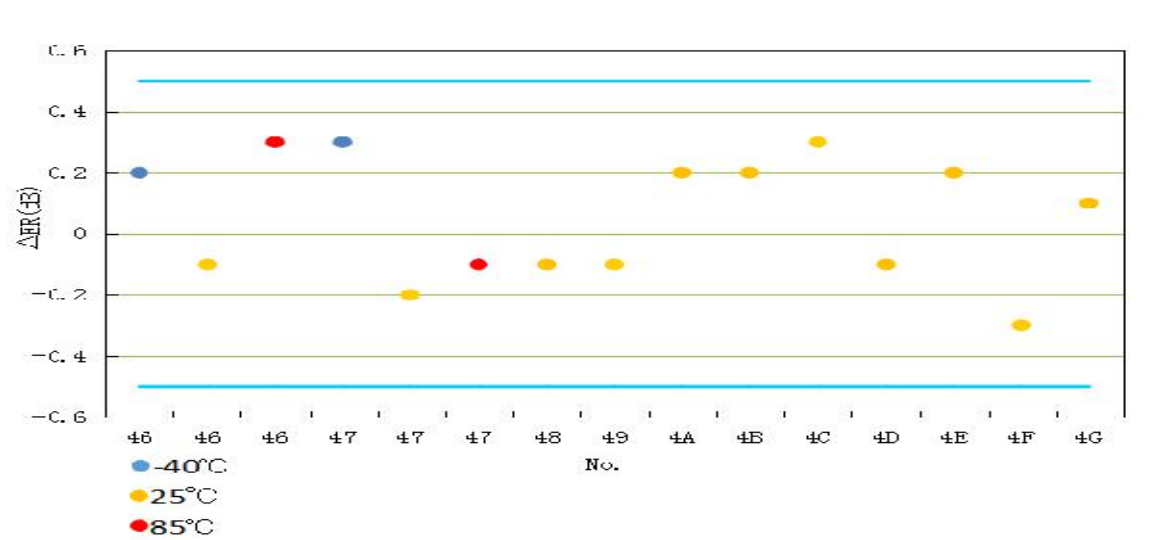


Figure 12: ER Variation in Thermal Shock Test

Table 12: Data of Thermal Shock Test (CH1)

No.		Before Test			After Test			Before and after test		
		Po	S	ER	Po	S	ER	ΔPo	ΔS	ΔER
		(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
46	-40°C	-2.9	-14.2	5.0	-3.0	-14.5	5.2	-0.1	-0.3	0.2
	25°C	-3.1	-14.5	5.2	-3.2	-14.3	5.1	-0.1	0.2	-0.1
	85°C	-3.0	-14.6	4.9	-3.2	-14.7	5.2	-0.2	-0.1	0.3
47	-40°C	-3.2	-14.3	5.1	-3.0	-14.2	5.4	0.2	0.1	0.3
	25°C	-3.1	-14.2	5.3	-3.4	-14.3	5.1	-0.3	-0.1	-0.2
	85°C	-3.3	-14.6	5.1	-3.2	-14.4	5.0	0.1	0.2	-0.1
48		-3.5	-14.4	5.2	-3.2	-14.1	5.1	0.3	0.3	-0.1
49		-3.2	-14.1	5.4	-3.1	-14.3	5.3	0.1	-0.2	-0.1

4A	-3.3	-14.4	5.1	-3.0	-14.2	5.3	0.3	0.2	0.2
4B	-3.3	-14.3	5.0	-3.2	-14.5	5.2	0.1	-0.2	0.2
4C	-2.9	-14.1	4.9	-2.7	-14.2	5.2	0.2	-0.1	0.3
4D	-2.9	-14.4	5.2	-2.6	-14.3	5.1	0.3	0.1	-0.1
4E	-3.1	-14.2	5.1	-3.0	-14.5	5.3	0.1	-0.3	0.2
4F	-3.0	-14.0	5.3	-3.2	-14.2	5.0	-0.2	-0.2	-0.3
4G	-2.9	-14.3	5.1	-3.1	-14.1	5.2	-0.2	0.2	0.1

5.6 Cyc. Moist Res

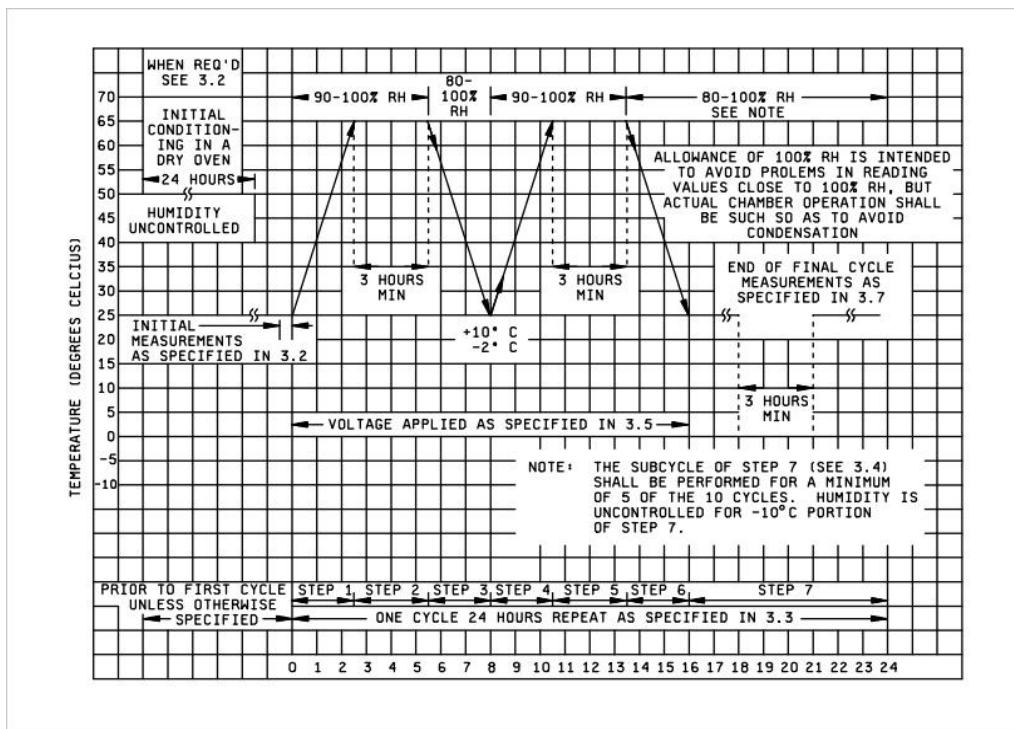


Figure 13: Graphical representation of moisture-resistance test

Table 13: Test Environment

Test	Temperature	Voltage	Ibias
Environment	-40°C, 25°C, 85°C (±2°C)	3.3V (±0.15V)	6mA(25°C)

Figure 14: Optical Power Variation in Cyc. Moist Res. Test

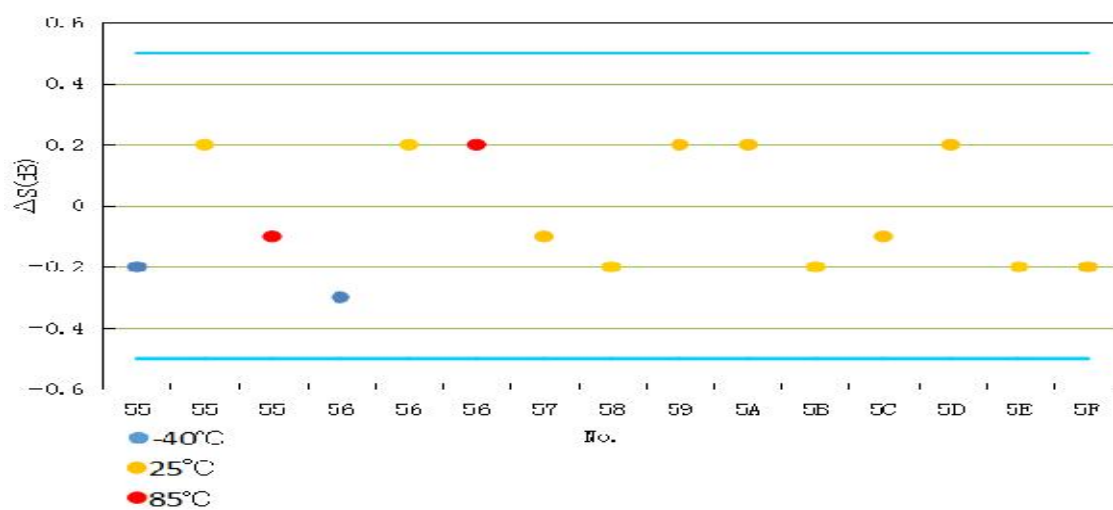


Figure 15: Receiver Sensitivity Variation in Cyc. Moist Res. Test

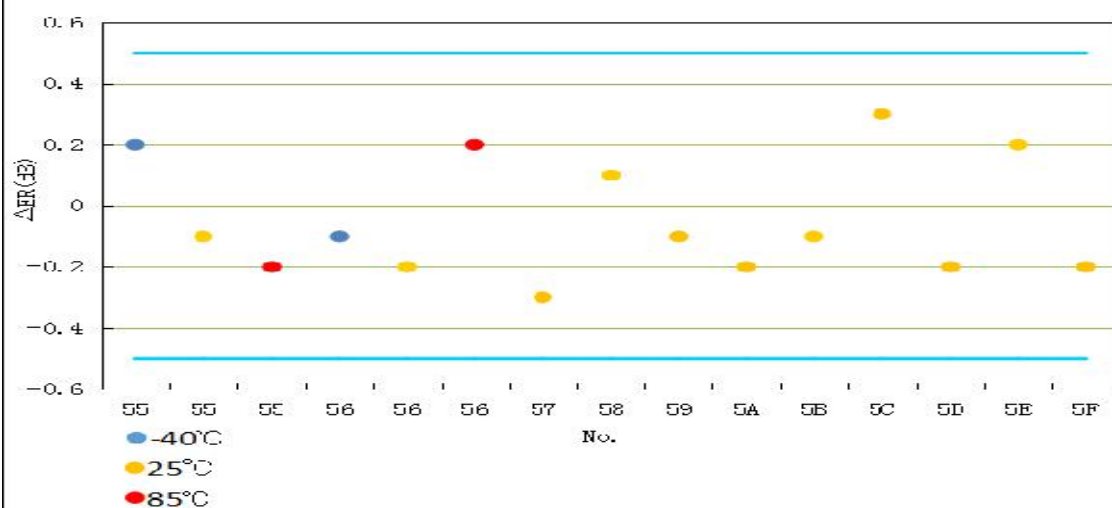


Table 14: Data of Cyc. Moist Res. Test (CH1)

No.		Before Test			After Test			Before and after test Variation		
		Po	S	ER	Po	S	ER	ΔP_o	ΔS	ΔER
		(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dB)
55	-40°C	-2.7	-14.5	5.0	-2.8	-14.7	5.2	-0.1	-0.2	0.2
	25°C	-2.6	-14.8	5.2	-2.8	-14.6	5.1	-0.2	0.2	-0.1
	85°C	-2.8	-14.7	5.2	-2.9	-14.8	5.0	-0.1	-0.1	-0.2
56	-40°C	-3.1	-14.6	5.3	-3.0	-14.9	5.2	0.1	-0.3	-0.1
	25°C	-3.3	-14.9	5.4	-3.1	-14.7	5.2	0.2	0.2	-0.2
	85°C	-3.4	-14.8	4.9	-3.3	-14.6	5.1	0.1	0.2	0.2
57		-2.9	-14.5	5.2	-3.0	-14.6	4.9	-0.1	-0.1	-0.3
58		-3.1	-14.3	5.1	-3.2	-14.5	5.2	-0.1	-0.2	0.1
59		-2.8	-14.6	5.2	-2.7	-14.4	5.1	0.1	0.2	-0.1
5A		-3.2	-14.5	5.2	-3.0	-14.3	5.0	0.2	0.2	-0.2
5B		-3.1	-14.3	5.0	-3.2	-14.5	4.9	-0.1	-0.2	-0.1
5C		-3.0	-14.2	4.9	-3.2	-14.3	5.2	-0.2	-0.1	0.3
5D		-2.7	-14.7	5.3	-3.0	-14.5	5.1	-0.3	0.2	-0.2
5E		-2.8	-14.5	5.1	-2.9	-14.7	5.3	-0.1	-0.2	0.2
5F		-3.1	-14.6	5.2	-2.8	-14.8	5.0	0.3	-0.2	-0.2

5.7 High Temp Storage

Table 15: Test Environment

Test	Temperature	Voltage	Ibias
Environment	-40°C, 25°C, 85°C ($\pm 2^\circ\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

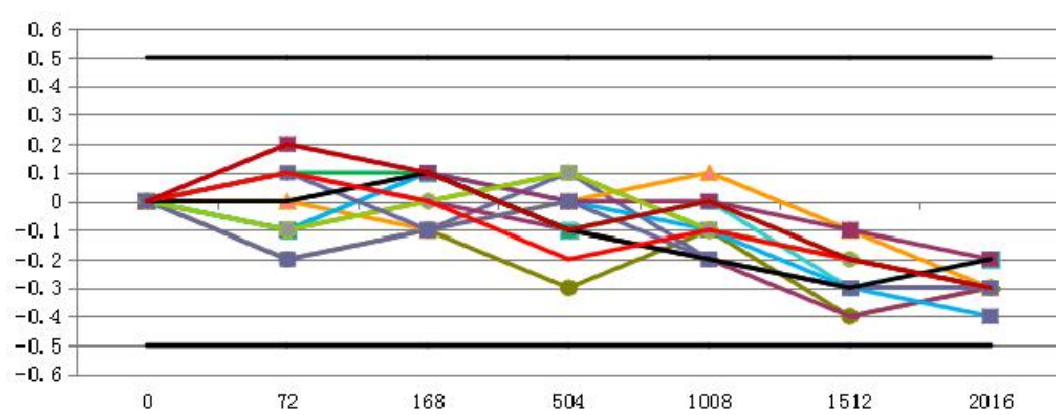


Figure 17: Optical Power Variation in High Temp Storage Test

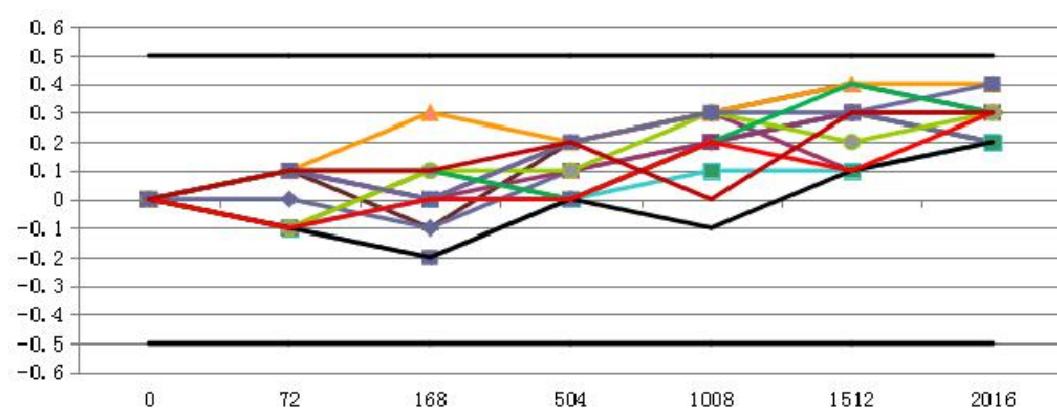


Figure 18: Receiver Sensitivity Variation in High Temp Storage Test

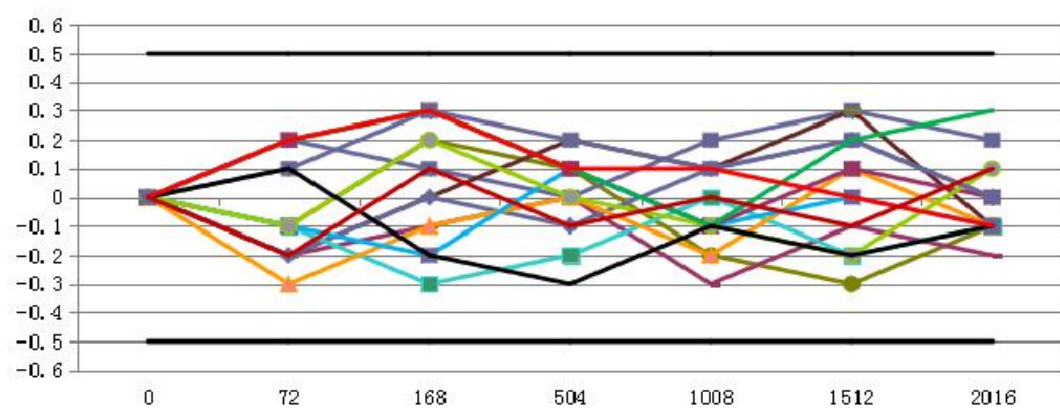


Figure 19: ER Variation in High Temp Storage Test

Table 16: Optical Power Variation of High Temp Storage Test

Time	64			65			66	67	68
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	-0.2	-0.2	0.1	0	-0.1	-0.1	0	-0.1	0.2
168	-0.1	-0.1	0	0.1	0	0.1	-0.1	0.1	0.1
504	-0.3	0.1	-0.1	-0.1	0.1	-0.1	0	0	0
1008	-0.1	-0.2	-0.2	-0.2	-0.1	0	0.1	-0.1	0
1512	-0.4	-0.3	-0.4	-0.3	-0.2	-0.3	-0.1	-0.3	-0.1
2016	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.4	-0.2
MAX	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
MIN	-0.4	-0.3	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.2
Time	69	6A	6B	6C	6D	6E			
0	0	0	0	0	0	0			
72	-0.1	0.1	0.1	0	0.1	0.2			
168	0	-0.1	0.1	0.1	0	0.1			
504	0.1	0	-0.1	-0.1	-0.2	-0.1			
1008	-0.1	-0.2	0	-0.2	-0.1	0			

1512	-0.2	-0.3	-0.2	-0.3	-0.2	-0.2			
2016	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3			
MAX	0.1	0.1	0.1	0.1	0.1	0.2			
MIN	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3			

Table 17: Receiver Sensitivity Variation of High Temp Storage Test

Time	64			65			66	67	68
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	-0.1	-0.1	0.1	0.1	0	-0.1	0.1	-0.1	0.1
168	0.1	-0.2	0	-0.1	-0.1	0	0.3	0	0
504	0	0	0.2	0.2	0.1	0	0.2	0	0.1
1008	0.2	0.2	0.3	0.3	0.2	0.1	0.3	0.2	0.2
1512	0.3	0.3	0.1	0.4	0.3	0.1	0.4	0.3	0.3
2016	0.2	0.2	0.2	0.3	0.2	0.2	0.4	0.3	0.3
MAX	0.3	0.3	0.3	0.4	0.3	0.2	0.4	0.3	0.3
MIN	-0.1	-0.2	0	-0.1	-0.1	-0.1	0	-0.1	0
Time	69	6A	6B	6C	6D	6E			
0	0	0	0	0	0	0			
72	-0.1	0.1	0.1	-0.1	-0.1	0.1			
168	0.1	0	0.1	-0.2	0	0.1			
504	0.1	0.2	0	0	0	0.2			
1008	0.3	0.3	0.2	-0.1	0.2	0			
1512	0.2	0.3	0.4	0.1	0.1	0.3			
2016	0.3	0.4	0.3	0.2	0.3	0.3			
MAX	0.3	0.4	0.4	0.2	0.3	0.3			

MIN	-0.1	0	0	-0.2	-0.1	0			
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Table 18: ER Variation of High Temp Storage Test

Time	64			65			66	67	68
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	-0.1	0.2	-0.2	-0.2	-0.2	-0.1	-0.3	-0.1	0.2
168	0.2	0.1	-0.1	0	0	-0.3	-0.1	-0.2	0.3
504	0.1	0	0	0.2	-0.1	-0.2	0	0.1	0.1
1008	-0.2	0.2	-0.3	0.1	0.1	0	-0.2	-0.1	-0.1
1512	-0.3	0.3	-0.1	0.3	0.2	-0.2	0.1	0	0.1
2016	-0.1	0.2	-0.2	-0.1	0	-0.1	-0.1	-0.1	0
MAX	0.2	0.3	0	0.3	0.2	0	0.1	0.1	0.3
MIN	-0.3	0	-0.3	-0.2	-0.2	-0.3	-0.3	-0.2	-0.1
Time	69	6A	6B	6C	6D	6E			
0	0	0	0	0	0	0			
72	-0.1	0.1	0.2	0.1	0.2	-0.2			
168	0.2	0.3	0.3	-0.2	0.3	0.1			
504	0	0.2	0.1	-0.3	0.1	-0.1			
1008	-0.1	0.1	-0.1	-0.1	0.1	0			
1512	-0.2	0.2	0.2	-0.2	0	-0.1			
2016	0.1	0	0.3	-0.1	-0.1	0.1			
MAX	0.2	0.3	0.3	0.1	0.3	0.1			
MIN	-0.2	0	-0.1	-0.3	-0.1	-0.2			

Table 19: Optical Power Data of High Temp Storage Test

Time	64			65			66	67	68
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	-2.5	-2.6	-2.5	-2.3	-2.5	-2.6	-2.7	-2.5	-2.8
72	-2.7	-2.8	-2.4	-2.3	-2.6	-2.7	-2.7	-2.6	-2.6
168	-2.6	-2.7	-2.5	-2.2	-2.5	-2.5	-2.8	-2.4	-2.7
504	-2.8	-2.5	-2.6	-2.4	-2.4	-2.7	-2.7	-2.5	-2.8
1008	-2.6	-2.8	-2.7	-2.5	-2.6	-2.6	-2.6	-2.6	-2.8
1512	-2.9	-2.9	-2.9	-2.6	-2.7	-2.9	-2.8	-2.8	-2.9
2016	-2.8	-2.9	-2.8	-2.6	-2.8	-2.8	-3.0	-2.9	-3.0
MAX	-2.5	-2.5	-2.4	-2.2	-2.4	-2.5	-2.6	-2.4	-2.6
MIN	-2.9	-2.9	-2.9	-2.6	-2.8	-2.9	-3.0	-2.9	-3.0
Time	69	6A	6B	6C	6D	6E			
0	-3.0	-2.8	-3.1	-2.8	-2.7	-2.9			
72	-3.1	-2.7	-3.0	-2.8	-2.6	-2.7			
168	-3.0	-2.9	-3.0	-2.7	-2.7	-2.8			
504	-2.9	-2.8	-3.2	-2.9	-2.9	-3.0			
1008	-3.1	-3.0	-3.1	-3.0	-2.8	-2.9			
1512	-3.2	-3.1	-3.3	-3.1	-2.9	-3.1			
2016	-3.3	-3.1	-3.4	-3.0	-3.0	-3.2			
MAX	-2.9	-2.7	-3.0	-2.7	-2.6	-2.7			
MIN	-3.3	-3.1	-3.4	-3.1	-3.0	-3.2			

Table 20: Receiver Sensitivity Data of High Temp Storage Test

Time	64	65	66	67	68
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	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	-14.5	-14.3	-14.6	-14.7	-14.5	-14.6	-14.8	-14.6	-14.8
72	-14.6	-14.4	-14.5	-14.6	-14.5	-14.7	-14.7	-14.7	-14.7
168	-14.4	-14.5	-14.6	-14.8	-14.6	-14.6	-14.5	-14.6	-14.8
504	-14.5	-14.3	-14.4	-14.5	-14.4	-14.6	-14.6	-14.6	-14.7
1008	-14.3	-14.1	-14.3	-14.4	-14.3	-14.5	-14.5	-14.4	-14.6
1512	-14.2	-14.0	-14.5	-14.3	-14.2	-14.5	-14.4	-14.3	-14.5
2016	-14.3	-14.1	-14.4	-14.4	-14.3	-14.4	-14.4	-14.3	-14.5
MAX	-14.2	-14	-14.3	-14.3	-14.2	-14.4	-14.4	-14.3	-14.5
MIN	-14.6	-14.5	-14.6	-14.8	-14.6	-14.7	-14.8	-14.7	-14.8
Time	69	6A	6B	6C	6D	6E			
0	-14.6	-14.8	-14.7	-14.4	-14.5	-14.6			
72	-14.7	-14.7	-14.6	-14.5	-14.6	-14.5			
168	-14.5	-14.8	-14.6	-14.6	-14.5	-14.5			
504	-14.5	-14.6	-14.7	-14.4	-14.5	-14.4			
1008	-14.3	-14.5	-14.5	-14.5	-14.3	-14.6			
1512	-14.4	-14.5	-14.3	-14.3	-14.4	-14.3			
2016	-14.3	-14.4	-14.4	-14.2	-14.2	-14.3			
MAX	-14.3	-14.4	-14.3	-14.2	-14.2	-14.3			
MIN	-14.7	-14.8	-14.7	-14.6	-14.6	-14.6			

Table 21: ER Data of High Temp Storage Test

Time	64			65			66	67	68
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	5.2	5.0	5.3	5.1	5.2	5.4	5.2	5.3	5.1

72	5.1	5.2	5.1	4.9	5.0	5.3	4.9	5.2	5.3
168	5.4	5.1	5.2	5.1	5.2	5.1	5.1	5.1	5.4
504	5.3	5.0	5.3	5.3	5.1	5.2	5.2	5.4	5.2
1008	5.0	5.2	5.0	5.2	5.3	5.4	5.0	5.2	5.0
1512	4.9	5.3	5.2	5.4	5.4	5.2	5.3	5.3	5.2
2016	5.1	5.2	5.1	5.0	5.2	5.3	5.1	5.2	5.1
MAX	5.4	5.3	5.3	5.4	5.4	5.4	5.3	5.4	5.4
MIN	4.9	5.0	5.0	4.9	5.0	5.1	4.9	5.1	5.0
Time	69	6A	6B	6C	6D	6E			
0	5.2	5.1	5.0	5.3	5.1	5.2			
72	5.1	5.2	5.2	5.4	5.3	5.0			
168	5.4	5.4	5.3	5.1	5.4	5.3			
504	5.2	5.3	5.1	5.0	5.2	5.1			
1008	5.1	5.2	4.9	5.2	5.2	5.2			
1512	5.0	5.3	5.2	5.1	5.1	5.1			
2016	5.3	5.1	5.3	5.2	5.0	5.3			
MAX	5.4	5.4	5.3	5.4	5.4	5.3			
MIN	5.0	5.1	4.9	5.0	5.0	5.0			

5.8 Damp Heat

Table 22: Test Environment

Test	Temperature	Voltage	Ibias
Environment	-40°C,25°C,85°C (±2°C)	3.3V (±0.15V)	6mA(25°C)

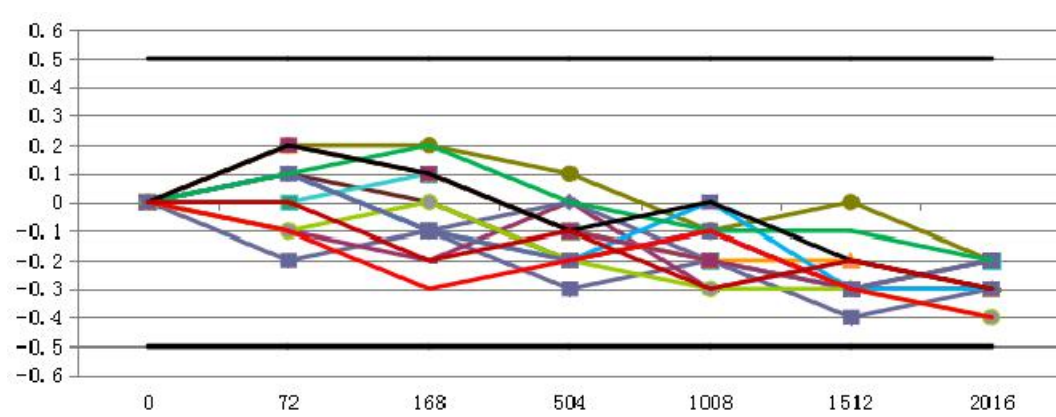


Figure 20: Optical Power Variation in Damp Heat Test

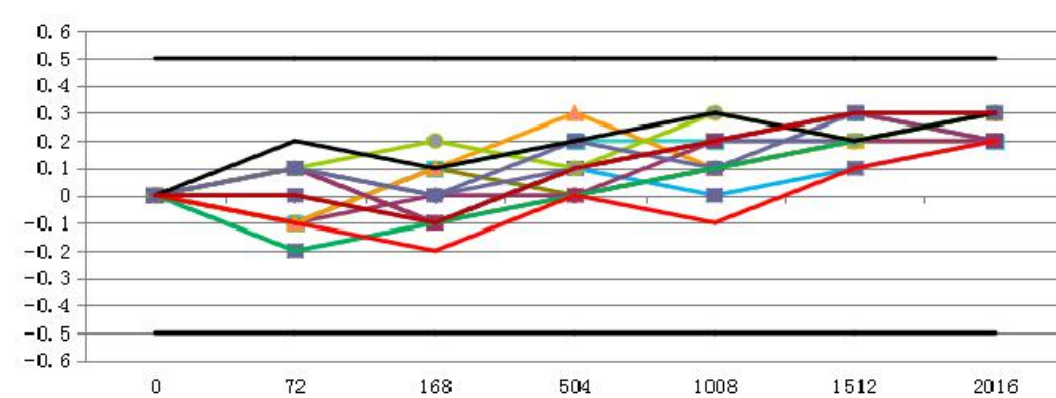


Figure 21: Receiver Sensitivity Variation in Damp Heat Test

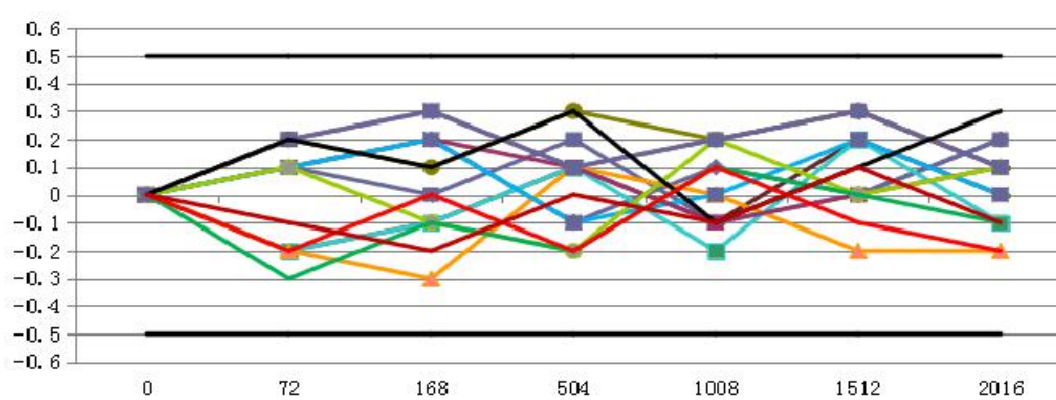


Figure 22: ER Variation in Damp Heat Test

Table 23: Optical Power Variation of Damp Heat Test

Time	82			83			84	85	86
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	0.2	-0.2	-0.1	0.1	0.1	0	0.2	0.1	0.2
168	0.2	-0.1	-0.2	0	-0.1	0.1	0.1	-0.1	0.1
504	0.1	-0.3	0	-0.2	0	-0.1	-0.1	-0.2	-0.1
1008	-0.1	-0.2	-0.3	-0.1	-0.2	-0.2	-0.2	0	-0.2
1512	0	-0.4	-0.2	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3
2016	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3	-0.2
MAX	0.2	0	0	0.1	0.1	0.1	0.2	0.1	0.2
MIN	-0.2	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Time	87	88	89	8A	8B	8C			
0	0	0	0	0	0	0			
72	-0.1	0.1	0.1	0.2	-0.1	0			
168	0	-0.1	0.2	0.1	-0.3	-0.2			
504	-0.2	-0.2	0	-0.1	-0.2	-0.1			
1008	-0.3	-0.1	-0.1	0	-0.1	-0.3			
1512	-0.3	-0.3	-0.1	-0.2	-0.3	-0.2			
2016	-0.4	-0.2	-0.2	-0.3	-0.4	-0.3			
MAX	0	0.1	0.2	0.2	0	0			
MIN	-0.4	-0.3	-0.2	-0.3	-0.4	-0.3			

Table 24: Receiver Sensitivity Variation of Damp Heat Test

Time	82	83	84	85	86
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	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	-0.1	0	-0.1	0.1	0.1	-0.1	-0.1	-0.2	0.1
168	0.1	-0.1	0	-0.1	0	0.1	0.1	-0.1	-0.1
504	0	0.1	0	0.1	0.1	0.2	0.3	0.1	0
1008	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0	0.2
1512	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.1	0.3
2016	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2
MAX	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3
MIN	-0.1	-0.1	-0.1	-0.1	0	-0.1	-0.1	-0.2	-0.1
Time	87	88	89	8A	8B	8C			
0	0	0	0	0	0	0			
72	0.1	0.1	-0.2	0.2	-0.1	0			
168	0.2	0	-0.1	0.1	-0.2	-0.1			
504	0.1	0.2	0	0.2	0	0.1			
1008	0.3	0.1	0.1	0.3	-0.1	0.2			
1512	0.2	0.3	0.2	0.2	0.1	0.3			
2016	0.3	0.3	0.3	0.3	0.2	0.3			
MAX	0.3	0.3	0.3	0.3	0.2	0.3			
MIN	0	0	-0.2	0	-0.2	-0.1			

Table 25: ER Variation of Damp Heat Test

Time	82			83			84	85	86
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	0.2	0.1	0.1	-0.2	0.1	-0.2	-0.2	0.1	0.2

168	0.1	0	0.2	-0.1	0.2	-0.1	-0.3	0.2	0.3
504	0.3	0.2	0.1	0.1	-0.1	0.1	0.1	-0.1	0.1
1008	0.2	-0.1	0.2	-0.1	0.1	-0.2	0	0	-0.1
1512	0.3	0	0.3	0.2	0	0.2	-0.2	0.2	0
2016	0.1	0.2	0.1	0	0.2	-0.1	-0.2	0	0.1
MAX	0.3	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.3
MIN	0	-0.1	0	-0.2	-0.1	-0.2	-0.3	-0.1	-0.1
Time	87	88	89	8A	8B	8C			
0	0	0	0	0	0	0			
72	0.1	0.2	-0.3	0.2	-0.2	-0.1			
168	-0.1	0.3	-0.1	0.1	0	-0.2			
504	-0.2	0.1	-0.2	0.3	-0.2	0			
1008	0.2	0.2	0.1	-0.1	0.1	-0.1			
1512	0	0.3	0	0.1	-0.1	0.1			
2016	0.1	0.1	-0.1	0.3	-0.2	-0.1			
MAX	0.2	0.3	0.1	0.3	0.1	0.1			
MIN	-0.2	0	-0.3	-0.1	-0.2	-0.2			

Table 26: Optical Power Data of Damp Heat Test

Time	82			83			84	85	86
	-40℃	25℃	85℃	-40℃	25℃	85℃			
0	-2.8	-2.6	-2.5	-2.7	-2.9	-2.8	-3.0	-2.5	-2.8
72	-2.6	-2.8	-2.6	-2.6	-2.8	-2.8	-2.8	-2.4	-2.6
168	-2.6	-2.7	-2.7	-2.7	-3.0	-2.7	-2.9	-2.6	-2.7
504	-2.7	-2.9	-2.5	-2.9	-2.9	-2.9	-3.1	-2.7	-2.9
1008	-2.9	-2.8	-2.8	-2.8	-3.1	-3.0	-3.2	-2.5	-3.0

1512	-2.8	-3.0	-2.7	-3.0	-3.2	-3.1	-3.2	-2.8	-3.1
2016	-3.0	-2.9	-2.8	-3.0	-3.2	-3.0	-3.3	-2.8	-3.0
MAX	-2.6	-2.6	-2.5	-2.6	-2.8	-2.7	-2.8	-2.4	-2.6
MIN	-3.0	-3.0	-2.8	-3.0	-3.2	-3.1	-3.3	-2.8	-3.1
Time	87	88	89	8A	8B	8C			
0	-2.6	-2.7	-3.0	-2.8	-2.6	-2.9			
72	-2.7	-2.6	-2.9	-2.6	-2.7	-2.9			
168	-2.6	-2.8	-2.8	-2.7	-2.9	-3.1			
504	-2.8	-2.9	-3.0	-2.9	-2.8	-3.0			
1008	-2.9	-2.8	-3.1	-2.8	-2.7	-3.2			
1512	-2.9	-3.0	-3.1	-3.0	-2.9	-3.1			
2016	-3.0	-2.9	-3.2	-3.1	-3.0	-3.2			
MAX	-2.6	-2.6	-2.8	-2.6	-2.6	-2.9			
MIN	-3.0	-3.0	-3.2	-3.1	-3.0	-3.2			

Table 27: Receiver Sensitivity Data of Damp Heat Test

Time	82			83			84	85	86
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	-14.4	-14.5	-14.6	-14.7	-14.8	-14.8	-14.6	-14.3	-14.5
72	-14.5	-14.5	-14.7	-14.6	-14.7	-14.9	-14.7	-14.5	-14.4
168	-14.3	-14.6	-14.6	-14.8	-14.8	-14.7	-14.5	-14.4	-14.6
504	-14.4	-14.4	-14.6	-14.6	-14.7	-14.6	-14.3	-14.2	-14.5
1008	-14.3	-14.3	-14.5	-14.5	-14.6	-14.6	-14.5	-14.3	-14.3
1512	-14.2	-14.3	-14.4	-14.4	-14.6	-14.5	-14.4	-14.2	-14.2
2016	-14.2	-14.2	-14.4	-14.5	-14.5	-14.6	-14.3	-14.1	-14.3
MAX	-14.2	-14.2	-14.4	-14.4	-14.5	-14.5	-14.3	-14.1	-14.2

MIN	-14.5	-14.6	-14.7	-14.8	-14.8	-14.9	-14.7	-14.5	-14.6
Time	87	88	89	8A	8B	8C			
0	-14.8	-14.6	-14.4	-14.7	-14.3	-14.5			
72	-14.7	-14.5	-14.6	-14.5	-14.4	-14.5			
168	-14.6	-14.6	-14.5	-14.6	-14.5	-14.6			
504	-14.7	-14.4	-14.4	-14.5	-14.3	-14.4			
1008	-14.5	-14.5	-14.3	-14.4	-14.4	-14.3			
1512	-14.6	-14.3	-14.2	-14.5	-14.2	-14.2			
2016	-14.5	-14.3	-14.1	-14.4	-14.1	-14.2			
MAX	-14.5	-14.3	-14.1	-14.4	-14.1	-14.2			
MIN	-14.8	-14.6	-14.6	-14.7	-14.5	-14.6			

Table 28: ER Data of Damp Heat Test

Time	82			83			84	85	86
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	4.9	5.1	5.0	5.2	5.1	5.3	5.4	5.2	5.1
72	5.1	5.2	5.1	5.0	5.2	5.1	5.2	5.3	5.3
168	5.0	5.1	5.2	5.1	5.3	5.2	5.1	5.4	5.4
504	5.2	5.3	5.1	5.3	5.0	5.4	5.5	5.1	5.2
1008	5.1	5.0	5.2	5.1	5.2	5.1	5.4	5.2	5.0
1512	5.2	5.1	5.3	5.4	5.1	5.5	5.2	5.4	5.1
2016	5.0	5.3	5.1	5.2	5.3	5.2	5.2	5.2	5.2
MAX	5.2	5.3	5.3	5.4	5.3	5.5	5.5	5.4	5.4
MIN	4.9	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.0
Time	87	88	89	8A	8B	8C			
0	5.2	4.9	5.2	5.0	5.3	5.2			

72	5.3	5.1	4.9	5.2	5.1	5.1			
168	5.1	5.2	5.1	5.1	5.3	5.0			
504	5.0	5.0	5.0	5.3	5.1	5.2			
1008	5.4	5.1	5.3	4.9	5.4	5.1			
1512	5.2	5.2	5.2	5.1	5.2	5.3			
2016	5.3	5.0	5.1	5.3	5.1	5.1			
MAX	5.4	5.2	5.3	5.3	5.4	5.3			
MIN	5.0	4.9	4.9	4.9	5.1	5.0			

5.9 Damp Heat Operating

Table 29: Test Environment

Test	Temperature	Voltage	Ibias
Environment	-40°C, 25°C, 85°C ($\pm 2^\circ\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

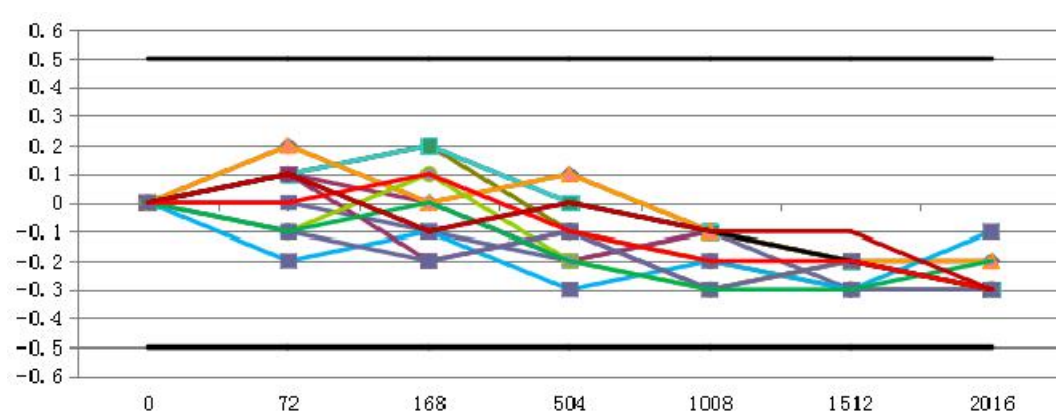


Figure 23: Optical Power Variation in Damp Heat Operating Test

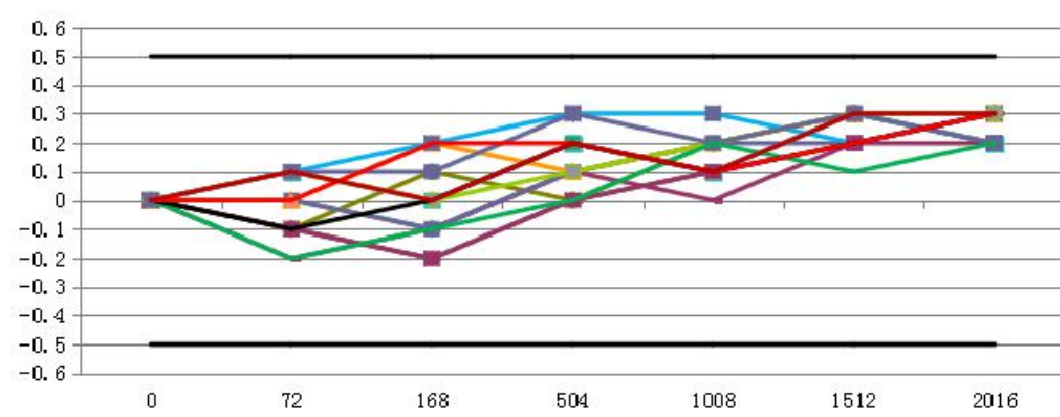


Figure 24: Receiver Sensitivity Variation in Damp Heat Operating Test

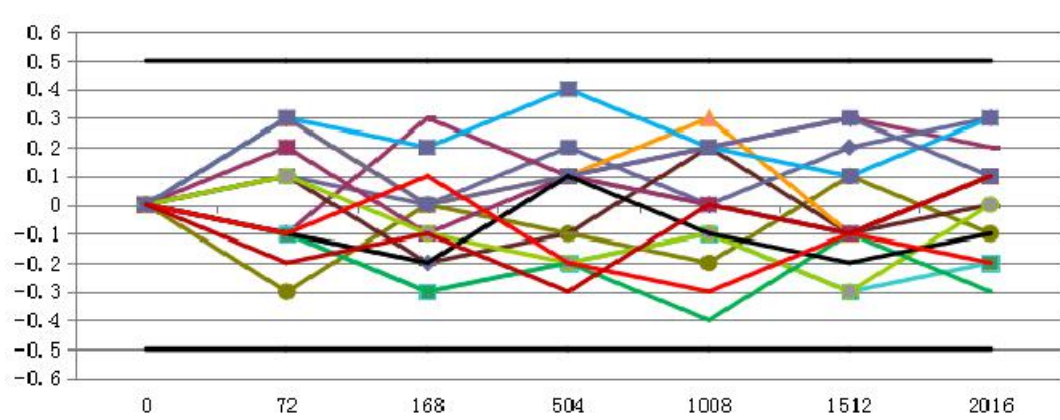


Figure 25: ER Variation in Damp Heat Operating Test

Table 30: Optical Power Variation of Damp Heat Operating Test

Time	A6			A7			A8	A9	AA
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	0.1	0	0.1	0.1	0.2	0.1	0.2	-0.2	0.1
168	0.2	-0.1	0	0.2	0	0.2	0	-0.1	-0.2
504	-0.1	-0.2	-0.2	0	0.1	0	0.1	-0.3	-0.1
1008	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3
1512	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2
2016	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.2	-0.1	-0.3

MAX	0.2	0	0.1	0.2	0.2	0.2	0.2	0	0.1
MIN	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.2	-0.3	-0.3
Time	AB	AC	AD	AE	AF	AG			
0	0	0	0	0	0	0			
72	-0.1	-0.1	-0.1	0.1	0	0.1			
168	0.1	-0.2	0	-0.1	0.1	-0.1			
504	-0.2	-0.1	-0.2	0	-0.1	0			
1008	-0.3	-0.3	-0.3	-0.1	-0.2	-0.1			
1512	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1			
2016	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3			
MAX	0.1	0	0	0.1	0.1	0.1			
MIN	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3			

Table 31: Receiver Sensitivity Variation of Damp Heat Operating Test

Time	A6			A7			A8	A9	AA
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	-0.1	0	-0.2	-0.1	0	0.1	0	0.1	-0.1
168	0.1	-0.1	-0.1	-0.2	-0.1	0	0.2	0.2	-0.2
504	0	0.1	0.1	0	0.1	0.2	0.1	0.3	0
1008	0.2	0.2	0	0.1	0.2	0.1	0.2	0.3	0.1
1512	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2
2016	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.2
MAX	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
MIN	-0.1	-0.1	-0.2	-0.2	-0.1	0	0	0	-0.2
Time	AB	AC	AD	AE	AF	AG			

0	0	0	0	0	0	0			
72	0.1	0.1	-0.2	-0.1	0	0.1			
168	0	0.1	-0.1	0	0.2	0			
504	0.1	0.3	0	0.2	0.2	0.2			
1008	0.2	0.2	0.2	0.1	0.1	0.1			
1512	0.3	0.3	0.1	0.2	0.2	0.3			
2016	0.3	0.2	0.2	0.3	0.3	0.3			
MAX	0.3	0.3	0.2	0.3	0.3	0.3			
MIN	0	0	-0.2	-0.1	0	0			

Table 32: ER Variation of Damp Heat Operating Test

Time	A6			A7			A8	A9	AA
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	0	0	0	0	0	0	0	0	0
72	-0.3	0.1	-0.1	0.1	-0.1	-0.1	0.3	0.3	0.2
168	0	0	0.3	-0.2	-0.2	-0.3	0	0.2	-0.1
504	-0.1	0.2	0.1	-0.1	0.1	-0.2	0.1	0.4	0.1
1008	-0.2	0	0.2	0.2	0	-0.1	0.3	0.2	0
1512	0.1	-0.1	0.3	-0.1	0.2	-0.3	-0.1	0.1	-0.1
2016	-0.1	0.1	0.2	0	0.3	-0.2	0.1	0.3	0.1
MAX	0.1	0.2	0.3	0.2	0.3	0	0.3	0.4	0.2
MIN	-0.3	-0.1	-0.1	-0.2	-0.2	-0.3	-0.1	0	-0.1
Time	AB	AC	AD	AE	AF	AG			
0	0	0	0	0	0	0			
72	0.1	0.3	-0.1	-0.1	-0.1	-0.2			
168	-0.1	0	-0.3	-0.2	0.1	-0.1			

504	-0.2	0.1	-0.2	0.1	-0.2	-0.3			
1008	-0.1	0.2	-0.4	-0.1	-0.3	0			
1512	-0.3	0.3	-0.1	-0.2	-0.1	-0.1			
2016	0	0.1	-0.3	-0.1	-0.2	0.1			
MAX	0.1	0.3	0	0.1	0.1	0.1			
MIN	-0.3	0	-0.4	-0.2	-0.3	-0.3			

Table 33: Optical Power Data of Damp Heat Operating Test

Time	A6			A7			A8	A9	AA
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	-2.5	-2.4	-2.6	-2.8	-2.6	-2.7	-2.8	-2.5	-2.6
72	-2.4	-2.4	-2.5	-2.7	-2.4	-2.6	-2.6	-2.7	-2.5
168	-2.3	-2.5	-2.6	-2.6	-2.6	-2.5	-2.8	-2.6	-2.8
504	-2.6	-2.6	-2.8	-2.8	-2.5	-2.7	-2.7	-2.8	-2.7
1008	-2.7	-2.5	-2.7	-2.9	-2.7	-2.8	-2.9	-2.7	-2.9
1512	-2.8	-2.7	-2.8	-3.0	-2.8	-2.9	-3.0	-2.8	-2.8
2016	-2.8	-2.7	-2.9	-3.1	-2.8	-3.0	-3.0	-2.6	-2.9
MAX	-2.3	-2.4	-2.5	-2.6	-2.4	-2.5	-2.6	-2.5	-2.5
MIN	-2.8	-2.7	-2.9	-3.1	-2.8	-3.0	-3.0	-2.8	-2.9
Time	AB	AC	AD	AE	AF	AG			
0	-2.6	-2.4	-2.7	-2.8	-2.6	-2.5			
72	-2.7	-2.5	-2.8	-2.7	-2.6	-2.4			
168	-2.5	-2.6	-2.7	-2.9	-2.5	-2.6			
504	-2.8	-2.5	-2.9	-2.8	-2.7	-2.5			
1008	-2.9	-2.7	-3.0	-2.9	-2.8	-2.6			
1512	-2.8	-2.6	-3.0	-3.0	-2.8	-2.6			

2016	-2.9	-2.7	-2.9	-3.1	-2.9	-2.8			
MAX	-2.5	-2.4	-2.7	-2.7	-2.5	-2.4			
MIN	-2.9	-2.7	-3.0	-3.1	-2.9	-2.8			

Table 34: Receiver Sensitivity Data of Damp Heat Operating Test

Time	A6			A7			A8	A9	AA
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	-14.5	-14.7	-14.6	-14.5	-14.6	-14.8	-14.6	-14.5	-14.3
72	-14.6	-14.7	-14.8	-14.6	-14.6	-14.7	-14.6	-14.4	-14.4
168	-14.4	-14.8	-14.7	-14.7	-14.7	-14.8	-14.4	-14.3	-14.5
504	-14.5	-14.6	-14.5	-14.5	-14.5	-14.6	-14.5	-14.2	-14.3
1008	-14.3	-14.5	-14.6	-14.4	-14.4	-14.7	-14.4	-14.2	-14.2
1512	-14.2	-14.5	-14.4	-14.2	-14.3	-14.5	-14.3	-14.3	-14.1
2016	-14.3	-14.4	-14.3	-14.3	-14.3	-14.6	-14.3	-14.2	-14.1
MAX	-14.2	-14.4	-14.3	-14.2	-14.3	-14.5	-14.3	-14.2	-14.1
MIN	-14.6	-14.8	-14.8	-14.7	-14.7	-14.8	-14.6	-14.5	-14.5
Time	AB	AC	AD	AE	AF	AG			
0	-14.7	-14.9	-14.6	-14.5	-14.5	-14.8			
72	-14.6	-14.8	-14.8	-14.6	-14.5	-14.7			
168	-14.7	-14.8	-14.7	-14.5	-14.3	-14.8			
504	-14.6	-14.6	-14.6	-14.3	-14.3	-14.6			
1008	-14.5	-14.7	-14.4	-14.4	-14.4	-14.7			
1512	-14.4	-14.6	-14.5	-14.3	-14.3	-14.5			
2016	-14.4	-14.7	-14.4	-14.2	-14.2	-14.5			
MAX	-14.4	-14.6	-14.4	-14.2	-14.2	-14.5			
MIN	-14.7	-14.9	-14.8	-14.6	-14.5	-14.8			

Table 35: ER Data of Damp Heat Operating Test

Time	A6			A7			A8	A9	AA
	-40°C	25°C	85°C	-40°C	25°C	85°C			
0	5.2	5.1	5.0	5.2	5.1	5.4	5.1	4.9	5.2
72	4.9	5.2	4.9	5.3	5.0	5.3	5.4	5.2	5.4
168	5.2	5.1	5.3	5.0	4.9	5.1	5.1	5.1	5.1
504	5.1	5.3	5.1	5.1	5.2	5.2	5.2	5.3	5.3
1008	5.0	5.1	5.2	5.4	5.1	5.3	5.4	5.1	5.2
1512	5.3	5.0	5.3	5.1	5.3	5.1	5.0	5.0	5.1
2016	5.1	5.2	5.2	5.2	5.4	5.2	5.2	5.2	5.3
MAX	5.3	5.3	5.3	5.4	5.4	5.4	5.4	5.3	5.4
MIN	4.9	5.0	4.9	5.0	4.9	5.1	5.0	4.9	5.1
Time	AB	AC	AD	AE	AF	AG			
0	5.3	5.1	5.4	5.2	5.3	5.2			
72	5.4	5.4	5.3	5.1	5.2	5.0			
168	5.2	5.1	5.1	5.0	5.4	5.1			
504	5.1	5.2	5.2	5.3	5.1	4.9			
1008	5.2	5.3	5.0	5.1	5.0	5.2			
1512	5.0	5.4	5.3	5.0	5.2	5.1			
2016	5.3	5.2	5.1	5.1	5.1	5.3			
MAX	5.4	5.4	5.4	5.3	5.4	5.3			
MIN	5.0	5.1	5.0	5.0	5.0	4.9			

5.10 Temperature Cycling

Table 36: Test Environment

Test	Temperature	Voltage	Ibias
Environment	-40°C, 25°C, 85°C ($\pm 2^\circ\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

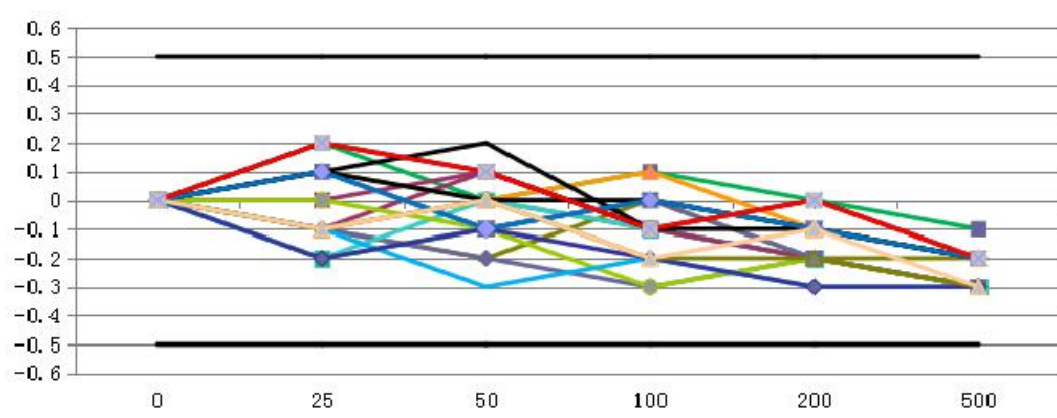


Figure 26: Optical Power Variation in Temperature Cycling Test

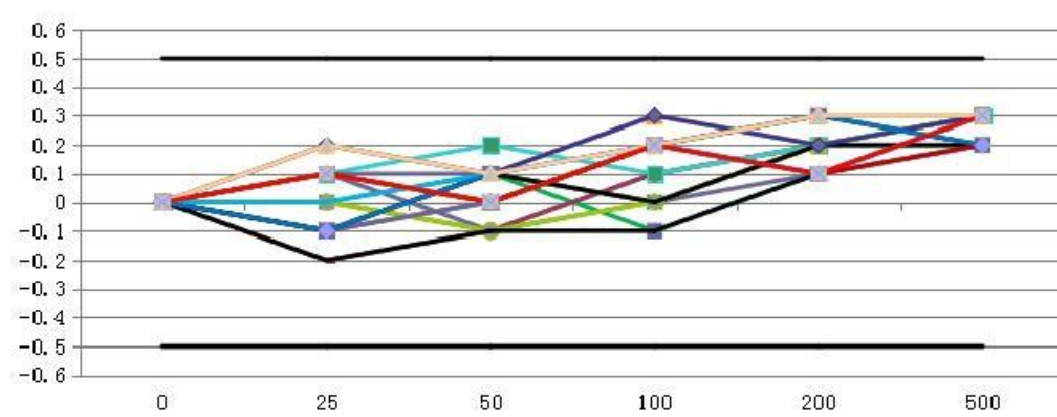


Figure 27: Receiver Sensitivity Variation in Temperature

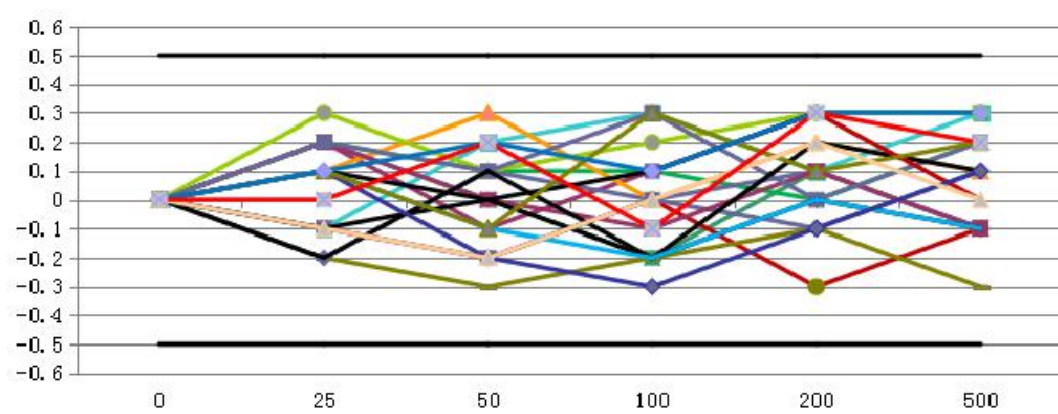


Figure 28: ER Variation in Temperature Cycling Test

Table 37: Optical Power Variation of Temperature Cycling Test

Time	75			76			77			78		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	0	0	0	0	0	0	0	0	0	0	0	0
25	-0.2	0.1	0.2	-0.1	-0.1	-0.1	-0.2	-0.1	0.1	0	0	0.1
50	-0.1	0	0	0.1	-0.2	-0.2	0	0	-0.1	0.1	-0.1	-0.1
100	0	-0.1	0.1	-0.1	0	-0.3	-0.1	0.1	0	-0.1	-0.3	0
200	-0.1	-0.2	0	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2
500	-0.2	-0.2	-0.1	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.3
MAX	0	0.1	0.2	0.1	0	0	0	0.1	0.1	0.1	0	0.1
MIN	-0.2	-0.2	-0.1	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.3
Time	79			7A	7B	7C	7D	7E	7F			
	-40°C	25°C	85°C									
0	0	0	0	0	0	0	0	0	0			
25	0.1	0.1	-0.1	0.2	-0.2	-0.1	0.1	-0.1	0.2			
50	0	0.2	-0.3	0.1	-0.1	0	-0.1	0	0.1			

100	0	-0.1	-0.2	-0.1	-0.2	-0.2	0	-0.2	-0.1			
200	-0.1	0	-0.3	-0.1	-0.3	-0.2	-0.1	-0.1	0			
500	-0.2	-0.2	-0.3	-0.2	-0.3	-0.3	-0.2	-0.3	-0.2			
MAX	0.1	0.2	0	0.2	0	0	0.1	0	0.2			
MIN	-0.2	-0.2	-0.3	-0.2	-0.3	-0.3	-0.2	-0.3	-0.2			

Table 38: Receiver Sensitivity Variation of Temperature Cycling Test

Time	75			76			77			78		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	0	0	0	0	0	0	0	0	0	0	0	0
25	-0.1	0	0	-0.2	-0.1	0.1	0.1	0.2	0.1	-0.1	0	-0.1
50	0.1	-0.1	0.1	-0.1	0.1	-0.1	0.2	0.1	0.1	0	-0.1	0
100	0	0.1	-0.1	0.1	0	0	0.1	0.3	0.2	0.2	0	0.2
200	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.1	0.2	0.1
500	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3
MAX	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3
MIN	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	0	0	0	-0.1	-0.1	-0.1
Time	79			7A	7B	7C	7D	7E	7F			
	-40°C	25°C	85°C									
0	0	0	0	0	0	0	0	0	0			
25	-0.1	0.1	0	-0.2	0.2	0.1	-0.1	0.2	0.1			
50	0.1	0	0.1	-0.1	0.1	0	0.1	0.1	0			
100	0	0.2	0.2	-0.1	0.3	0.2	0.2	0.2	0.2			
200	0.2	0.3	0.1	0.1	0.2	0.3	0.3	0.3	0.1			
500	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.3			

MAX	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3			
MIN	-0.1	0	0	-0.2	0	0	-0.1	0	0			

Table 39: ER Variation of Temperature Cycling Test

Time	75			76			77			78		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	0	0	0	0	0	0	0	0	0	0	0	0
25	0.2	-0.1	0.2	0.2	-0.2	-0.2	-0.1	0.1	-0.1	0.2	0.3	0.2
50	0	-0.2	0.1	-0.1	-0.3	0.1	0.2	0.3	-0.2	0	0.1	0.1
100	-0.2	0	0.1	0.1	-0.2	0	0.3	0	0	-0.1	0.2	0.3
200	0.1	-0.3	0	0.3	-0.1	-0.1	0.1	0.2	0.1	0.1	0.3	0
500	-0.1	-0.1	0.2	0.3	-0.3	0.1	0.3	0.1	-0.1	-0.1	0.3	0.2
MAX	0.2	0	0.2	0.3	0	0.1	0.3	0.3	0.1	0.2	0.3	0.3
MIN	-0.2	-0.3	0	-0.1	-0.3	-0.2	-0.1	0	-0.2	-0.1	0	0
Time	79			7A	7B	7C	7D	7E	7F			
	-40°C	25°C	85°C									
0	0	0	0	0	0	0	0	0	0			
25	-0.2	0.1	0.1	-0.1	0.1	0.1	0.1	-0.1	0			
50	0.1	0	-0.1	0	-0.2	-0.1	0.2	-0.2	0.2			
100	-0.2	-0.2	-0.2	0.1	-0.3	0.3	0.1	0	-0.1			
200	0	0.2	0	0.3	-0.1	0.1	0.3	0.2	0.3			
500	-0.1	0.1	-0.1	0	0.1	0.2	0.3	0	0.2			
MAX	0.1	0.2	0.1	0.3	0.1	0.3	0.3	0.2	0.3			
MIN	-0.2	-0.2	-0.2	-0.1	-0.3	-0.1	0	-0.2	-0.1			

Table 40: Optical Power Data of Temperature Cycling Test

Time	75			76			77			78		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	-2.8	-2.9	-3.1	-2.7	-2.6	-2.8	-2.4	-2.5	-2.5	-2.7	-2.6	-2.7
25	-3.0	-2.8	-2.9	-2.8	-2.7	-2.9	-2.6	-2.6	-2.4	-2.7	-2.6	-2.6
50	-2.9	-2.9	-3.1	-2.6	-2.8	-3.0	-2.4	-2.5	-2.6	-2.6	-2.7	-2.8
100	-2.8	-3.0	-3.0	-2.8	-2.6	-3.1	-2.5	-2.4	-2.5	-2.8	-2.9	-2.7
200	-2.9	-3.1	-3.1	-2.9	-2.8	-3.0	-2.6	-2.6	-2.6	-2.9	-2.8	-2.9
500	-3.0	-3.1	-3.2	-3.0	-2.9	-3.1	-2.7	-2.7	-2.7	-3.0	-2.9	-3.0
MAX	-2.8	-2.8	-2.9	-2.6	-2.6	-2.8	-2.4	-2.4	-2.4	-2.6	-2.6	-2.6
MIN	-3.0	-3.1	-3.2	-3.0	-2.9	-3.1	-2.7	-2.7	-2.7	-3.0	-2.9	-3.0
Time	79			7A	7B	7C	7D	7E	7F			
	-40°C	25°C	85°C									
0	-2.9	-3.0	-2.8	-3.1	-2.7	-2.4	-2.6	-2.8	-3.0			
25	-2.8	-2.9	-2.9	-2.9	-2.9	-2.5	-2.5	-2.9	-2.8			
50	-2.9	-2.8	-3.1	-3.0	-2.8	-2.4	-2.7	-2.8	-2.9			
100	-2.9	-3.1	-3.0	-3.2	-2.9	-2.6	-2.6	-3.0	-3.1			
200	-3.0	-3.0	-3.1	-3.2	-3.0	-2.6	-2.7	-2.9	-3.0			
500	-3.1	-3.2	-3.1	-3.3	-3.0	-2.7	-2.8	-3.1	-3.2			
MAX	-2.8	-2.8	-2.8	-2.9	-2.7	-2.4	-2.5	-2.8	-2.8			
MIN	-3.1	-3.2	-3.1	-3.3	-3.0	-2.7	-2.8	-3.1	-3.2			

Table 41: Receiver Sensitivity Data of Temperature Cycling Test

Time	75			76			77			78		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	-14.5	-14.4	-14.6	-14.3	-14.5	-14.4	-14.7	-14.8	-14.7	-14.6	-14.4	-14.5
25	-14.6	-14.4	-14.6	-14.5	-14.6	-14.3	-14.6	-14.6	-14.6	-14.7	-14.4	-14.6
50	-14.4	-14.5	-14.5	-14.4	-14.4	-14.5	-14.5	-14.7	-14.6	-14.6	-14.5	-14.5
100	-14.5	-14.3	-14.7	-14.2	-14.5	-14.4	-14.6	-14.5	-14.5	-14.4	-14.4	-14.3
200	-14.3	-14.2	-14.5	-14.1	-14.3	-14.3	-14.5	-14.6	-14.4	-14.5	-14.2	-14.4
500	-14.3	-14.1	-14.4	-14.0	-14.2	-14.2	-14.4	-14.5	-14.4	-14.3	-14.1	-14.2
MAX	-14.3	-14.1	-14.4	-14	-14.2	-14.2	-14.4	-14.5	-14.4	-14.3	-14.1	-14.2
MIN	-14.6	-14.5	-14.7	-14.5	-14.6	-14.5	-14.7	-14.8	-14.7	-14.7	-14.5	-14.6
Time	79			7A	7B	7C	7D	7E	7F			
	-40°C	25°C	85°C									
0	-14.5	-14.6	-14.8	-14.3	-14.7	-14.6	-14.5	-14.7	-14.6			
25	-14.6	-14.5	-14.8	-14.5	-14.5	-14.5	-14.6	-14.5	-14.5			
50	-14.4	-14.6	-14.7	-14.4	-14.6	-14.6	-14.4	-14.6	-14.6			
100	-14.5	-14.4	-14.6	-14.4	-14.4	-14.4	-14.3	-14.5	-14.4			
200	-14.3	-14.3	-14.7	-14.2	-14.5	-14.3	-14.2	-14.4	-14.5			
500	-14.3	-14.4	-14.5	-14.1	-14.4	-14.3	-14.3	-14.4	-14.3			
MAX	-14.3	-14.3	-14.5	-14.1	-14.4	-14.3	-14.2	-14.4	-14.3			
MIN	-14.6	-14.6	-14.8	-14.5	-14.7	-14.6	-14.6	-14.7	-14.6			

Table 42: ER Data of Temperature Cycling Test

Time	75			76			77			78		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	5.1	5.2	5.1	5.0	5.4	5.2	5.0	5.1	5.3	5.2	4.9	5.1
25	5.3	5.1	5.3	5.2	5.2	5.0	4.9	5.2	5.2	5.4	5.2	5.3
50	5.1	5.0	5.2	4.9	5.1	5.3	5.2	5.4	5.1	5.2	5.0	5.2
100	4.9	5.2	5.2	5.1	5.2	5.2	5.3	5.1	5.3	5.1	5.1	5.4
200	5.2	4.9	5.1	5.3	5.3	5.1	5.1	5.3	5.4	5.3	5.2	5.1
500	5.0	5.1	5.3	5.3	5.1	5.3	5.3	5.2	5.2	5.1	5.2	5.3
MAX	5.3	5.2	5.3	5.3	5.4	5.3	5.3	5.4	5.4	5.4	5.2	5.4
MIN	4.9	4.9	5.1	4.9	5.1	5.0	4.9	5.1	5.1	5.1	4.9	5.1
Time	79			7A	7B	7C	7D	7E	7F			
	-40°C	25°C	85°C									
0	5.3	5.1	5.3	5.1	5.2	5.0	4.9	5.2	5.1			
25	5.1	5.2	5.4	5.0	5.3	5.1	5.0	5.1	5.1			
50	5.4	5.1	5.2	5.1	5.0	4.9	5.1	5.0	5.3			
100	5.1	4.9	5.1	5.2	4.9	5.3	5.0	5.2	5.0			
200	5.3	5.3	5.3	5.4	5.1	5.1	5.2	5.4	5.4			
500	5.2	5.2	5.2	5.1	5.3	5.2	5.2	5.2	5.3			
MAX	5.4	5.3	5.4	5.4	5.3	5.3	5.2	5.4	5.4			
MIN	5.1	4.9	5.1	5.0	4.9	4.9	4.9	5.0	5.0			

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Table 43: Test Environment

Test	Temperature	Voltage	Ibias
Environment	-40°C,25°C,85°C ($\pm 2^{\circ}\text{C}$)	3.3V ($\pm 0.15\text{V}$)	6mA(25°C)

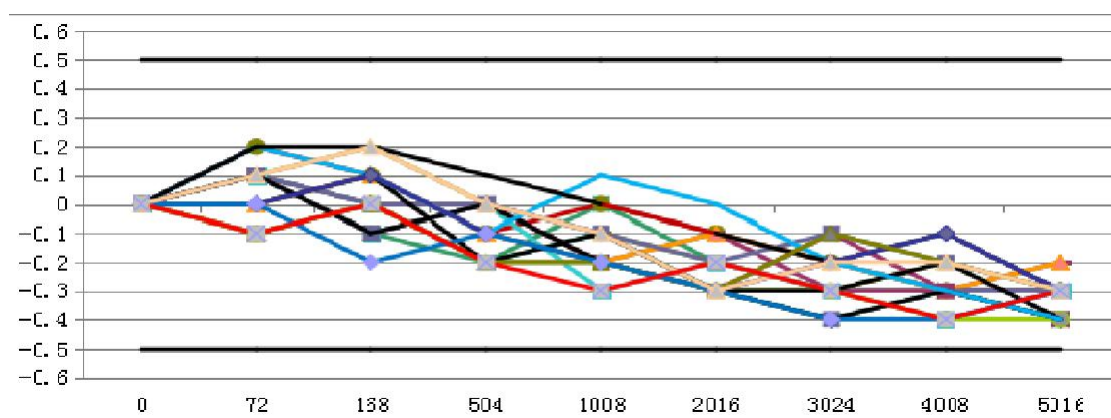


Figure 29: Optical Power Variation in Accel. Aging Test

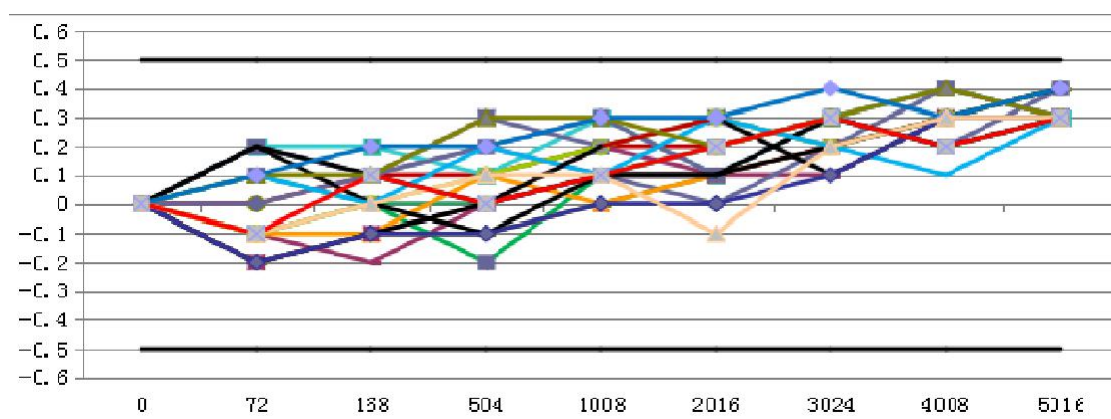


Figure 30: Receiver Sensitivity Variation in Accel. Aging Test

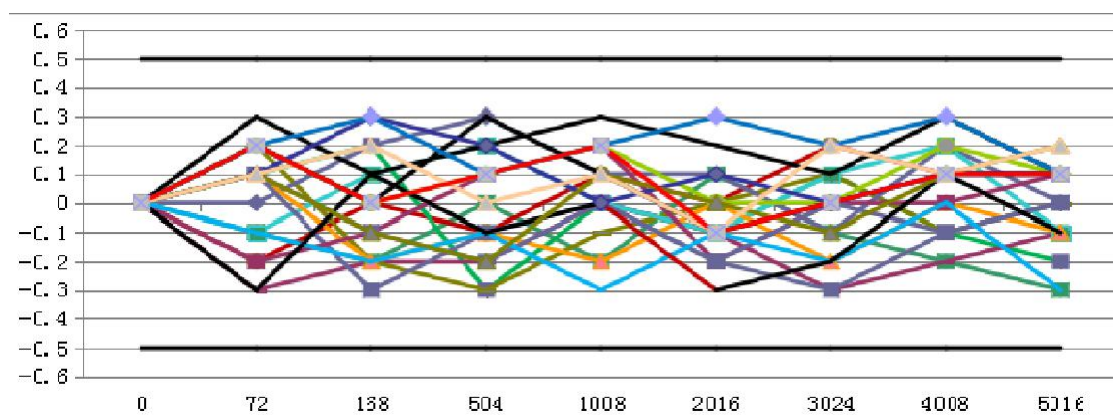


Figure 31: ER Variation in Accel. Aging Test

Table 44: Optical Power Variation of Accel. Aging Test

Time	96			97			98			99		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	0	0	0	0	0	0	0	0	0	0	0	0
72	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0	-0.1	0.1	-0.1	0.1
168	-0.1	0.1	0	0	0.2	0	-0.1	0.1	0	-0.1	0	-0.1
504	-0.2	-0.1	-0.2	0	0	0	0	-0.1	-0.2	0	-0.2	0
1008	0	0	-0.1	-0.2	-0.1	-0.1	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1
2016	-0.2	-0.1	-0.3	-0.1	-0.2	-0.3	-0.2	-0.1	-0.3	-0.3	-0.3	-0.2
3024	-0.3	-0.2	-0.4	-0.3	-0.3	-0.2	-0.3	-0.2	-0.4	-0.1	-0.3	-0.1
4008	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.4	-0.3	-0.3	-0.3	-0.4	-0.2
5016	-0.4	-0.3	-0.4	-0.2	-0.3	-0.3	-0.3	-0.2	-0.3	-0.4	-0.4	-0.3
MAX	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0	0.1	0	0.1
MIN	-0.4	-0.3	-0.4	-0.3	-0.3	-0.3	-0.4	-0.3	-0.4	-0.4	-0.4	-0.3
Time	9A			9B	9C	9D	9E	9F	9G			
	-40°C	25°C	85°C									

0	0	0	0	0	0	0	0	0	0			
72	0.1	0	0.2	0.2	0	-0.1	0	0.1	-0.1			
168	-0.1	0.1	0.1	0.2	0.1	0	-0.2	0.2	0			
504	0	-0.2	-0.1	0.1	-0.1	-0.2	-0.1	0	-0.2			
1008	-0.2	-0.1	0.1	0	-0.2	-0.2	-0.2	-0.1	-0.3			
2016	-0.3	-0.3	0	-0.1	-0.3	-0.3	-0.3	-0.3	-0.2			
3024	-0.3	-0.4	-0.2	-0.2	-0.2	-0.1	-0.4	-0.2	-0.3			
4008	-0.2	-0.3	-0.3	-0.1	-0.1	-0.2	-0.4	-0.2	-0.4			
5016	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3			
MAX	0.1	0.1	0.2	0.2	0.1	0	0	0.2	0			
MIN	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4	-0.3	-0.4			

Table 45: Receiver Sensitivity Variation of Accel. Aging Test

Time	96			97			98			99		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	0	0	0	0	0	0	0	0	0	0	0	0
72	-0.1	0	0.1	-0.1	-0.2	0	0.2	-0.1	0.2	-0.2	-0.1	0.2
168	0	0.1	0	-0.2	-0.1	0.1	0.2	-0.1	0.1	-0.1	0	0.1
504	0	0.1	-0.2	0	-0.1	0.2	0.1	0.1	0.3	0	0.1	0.2
1008	0.1	0.2	0.1	0.2	0	0.1	0.3	0	0.2	0.1	0.2	0.3
2016	0.2	0.2	0.2	0.1	0.1	0	0.1	0.1	0.3	0.1	0.3	0.1
3024	0.3	0.3	0.3	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3
4008	0.2	0.4	0.2	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.2
5016	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4
MAX	0.3	0.4	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.4
MIN	-0.1	0	-0.2	-0.2	-0.2	0	0	-0.1	0	-0.2	-0.1	0

Time	9A			9B	9C	9D	9E	9F	9G			
	-40°C	25°C	85°C									
0	0	0	0	0	0	0	0	0	0			
72	-0.2	0.2	0.1	0.2	-0.2	0.1	0.1	-0.1	-0.1			
168	-0.1	0	0	0.1	-0.1	0.1	0.2	0	0.1			
504	0	-0.1	0.2	0	-0.1	0.3	0.2	0.1	0			
1008	0.1	0.1	0.1	0.2	0	0.3	0.3	0.1	0.1			
2016	0.1	0.1	0.3	0.3	0	0.2	0.3	-0.1	0.2			
3024	0.3	0.2	0.2	0.1	0.1	0.3	0.4	0.2	0.3			
4008	0.2	0.3	0.1	0.3	0.3	0.4	0.3	0.3	0.2			
5016	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3			
MAX	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.3	0.3			
MIN	-0.2	-0.1	0	0	-0.2	0	0	-0.1	-0.1			

Table 46: ER Variation of Accel. Aging Test

Time	96			97			98			99		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	0	0	0	0	0	0	0	0	0	0	0	0
72	-0.1	-0.2	0.1	-0.3	0.2	0	-0.1	0.1	0.1	-0.2	0.2	0.1
168	-0.2	0	0.2	-0.2	-0.2	0.2	0.1	-0.2	-0.3	-0.1	0	-0.1
504	0	-0.1	-0.3	-0.2	-0.3	0.3	0.2	-0.1	-0.1	0.1	0.1	-0.2
1008	-0.2	0.1	0	0	-0.1	0.1	0	-0.2	0	0.2	0.2	0
2016	0.1	0	-0.1	-0.1	0	0.1	-0.1	0	-0.2	-0.2	0	-0.2
3024	-0.1	0.2	0.1	-0.3	0.1	-0.1	0.1	-0.2	-0.3	0	0	0
4008	-0.2	0.1	-0.1	-0.2	-0.1	0.2	0.2	0	-0.1	0	0.2	-0.1

5016	-0.3	0.1	-0.2	-0.1	0	0	-0.1	-0.1	0	0.1	0.1	0
MAX	0.1	0.2	0.2	0	0.2	0.3	0.2	0.1	0.1	0.2	0.2	0.1
MIN	-0.3	-0.2	-0.3	-0.3	-0.3	-0.1	-0.1	-0.2	-0.3	-0.2	0	-0.2
Time	9A			9B	9C	9D	9E	9F	9G			
	-40°C	25°C	85°C									
0	0	0	0	0	0	0	0	0	0			
72	0.2	0.3	-0.1	-0.3	0.1	0.1	0.2	0.1	0.2			
168	0	0.1	-0.2	0.1	0.3	-0.1	0.3	0.2	0			
504	0.3	0.2	-0.1	-0.1	0.2	-0.2	0.1	0	0.1			
1008	0.1	0.3	-0.3	0	0	0.1	0.2	0.1	0.2			
2016	-0.1	0.2	-0.1	-0.3	0.1	0	0.3	-0.1	-0.1			
3024	0	0.1	-0.2	-0.2	0	-0.1	0.2	0.2	0			
4008	0.1	0.3	0	0.1	0.1	0.1	0.3	0.1	0.1			
5016	0.1	0.1	-0.3	-0.1	0.1	0.2	0.1	0.2	0.1			
MAX	0.3	0.3	0	0.1	0.3	0.2	0.3	0.2	0.2			
MIN	-0.1	0	-0.3	-0.3	0	-0.2	0	-0.1	-0.1			

Table 47: Optical Power Data of Accel. Aging Test

Time	96			97			98			99		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	-2.5	-2.8	-2.7	-2.6	-2.9	-2.8	-2.5	-2.7	-2.6	-2.8	-2.7	-2.7
72	-2.4	-2.6	-2.6	-2.5	-2.8	-2.7	-2.4	-2.7	-2.7	-2.7	-2.8	-2.6
168	-2.6	-2.7	-2.7	-2.6	-2.7	-2.8	-2.6	-2.6	-2.6	-2.9	-2.7	-2.8
504	-2.7	-2.9	-2.9	-2.6	-2.9	-2.8	-2.5	-2.8	-2.8	-2.8	-2.9	-2.7
1008	-2.5	-2.8	-2.8	-2.8	-3.0	-2.9	-2.8	-2.9	-2.8	-3.0	-2.9	-2.8

2016	-2.7	-2.9	-3.0	-2.7	-3.1	-3.1	-2.7	-2.8	-2.9	-3.1	-3.0	-2.9
3024	-2.8	-3.0	-3.1	-2.9	-3.2	-3.0	-2.8	-2.9	-3.0	-2.9	-3.0	-2.8
4008	-2.8	-3.1	-3.0	-2.9	-3.1	-3.1	-2.9	-3.0	-2.9	-3.1	-3.1	-2.9
5016	-2.9	-3.1	-3.1	-2.8	-3.2	-3.1	-2.8	-2.9	-2.9	-3.2	-3.1	-3.0
MAX	-2.4	-2.6	-2.6	-2.5	-2.7	-2.7	-2.4	-2.6	-2.6	-2.7	-2.7	-2.6
MIN	-2.9	-3.1	-3.1	-2.9	-3.2	-3.1	-2.9	-3.0	-3.0	-3.2	-3.1	-3.0
Time	9A			9B	9C	9D	9E	9F	9G			
	-40°C	25°C	85°C									
0	-2.6	-2.5	-2.7	-3.0	-2.8	-2.5	-2.7	-2.9	-2.6			
72	-2.5	-2.5	-2.5	-2.8	-2.8	-2.6	-2.7	-2.8	-2.7			
168	-2.7	-2.4	-2.6	-2.8	-2.7	-2.5	-2.9	-2.7	-2.6			
504	-2.6	-2.7	-2.8	-2.9	-2.9	-2.7	-2.8	-2.9	-2.8			
1008	-2.8	-2.6	-2.6	-3.0	-3.0	-2.7	-2.9	-3.0	-2.9			
2016	-2.9	-2.8	-2.7	-3.1	-3.1	-2.8	-3.0	-3.2	-2.8			
3024	-2.9	-2.9	-2.9	-3.2	-3.0	-2.6	-3.1	-3.1	-2.9			
4008	-2.8	-2.8	-3.0	-3.1	-2.9	-2.7	-3.1	-3.1	-3.0			
5016	-3.0	-2.9	-3.1	-3.3	-3.1	-2.8	-3.0	-3.2	-2.9			
MAX	-2.5	-2.4	-2.5	-2.8	-2.7	-2.5	-2.7	-2.7	-2.6			
MIN	-3.0	-2.9	-3.1	-3.3	-3.1	-2.8	-3.1	-3.2	-3.0			

Table 48: Receiver Sensitivity Data of Accel. Aging Test

Time	96			97			98			99		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	-14.5	-14.7	-14.6	-14.5	-14.4	-14.7	-14.8	-14.6	-14.9	-14.3	-14.5	-14.7
72	-14.6	-14.7	-14.5	-14.6	-14.6	-14.7	-14.6	-14.7	-14.7	-14.5	-14.6	-14.5

168	-14.5	-14.6	-14.6	-14.7	-14.5	-14.6	-14.6	-14.7	-14.8	-14.4	-14.5	-14.6
504	-14.5	-14.6	-14.8	-14.5	-14.5	-14.5	-14.7	-14.5	-14.6	-14.3	-14.4	-14.5
1008	-14.4	-14.5	-14.5	-14.3	-14.4	-14.6	-14.5	-14.6	-14.7	-14.2	-14.3	-14.4
2016	-14.3	-14.5	-14.4	-14.4	-14.3	-14.7	-14.7	-14.5	-14.6	-14.2	-14.2	-14.6
3024	-14.2	-14.4	-14.3	-14.4	-14.2	-14.5	-14.5	-14.4	-14.7	-14.1	-14.3	-14.4
4008	-14.3	-14.3	-14.4	-14.2	-14.1	-14.4	-14.4	-14.3	-14.5	-14.0	-14.2	-14.5
5016	-14.2	-14.4	-14.3	-14.2	-14.0	-14.4	-14.5	-14.3	-14.6	-14.0	-14.1	-14.3
MAX	-14.2	-14.3	-14.3	-14.2	-14	-14.4	-14.4	-14.3	-14.5	-14.0	-14.1	-14.3
MIN	-14.6	-14.7	-14.8	-14.7	-14.6	-14.7	-14.8	-14.7	-14.9	-14.5	-14.6	-14.7
Time	9A			9B	9C	9D	9E	9F	9G			
	-40°C	25°C	85°C									
0	-14.3	-14.5	-14.6	-14.7	-14.5	-14.7	-14.9	-14.5	-14.6			
72	-14.5	-14.3	-14.5	-14.5	-14.7	-14.6	-14.8	-14.6	-14.7			
168	-14.4	-14.5	-14.6	-14.6	-14.6	-14.6	-14.7	-14.5	-14.5			
504	-14.3	-14.6	-14.4	-14.7	-14.6	-14.4	-14.7	-14.4	-14.6			
1008	-14.2	-14.4	-14.5	-14.5	-14.5	-14.4	-14.6	-14.4	-14.5			
2016	-14.2	-14.4	-14.3	-14.4	-14.5	-14.5	-14.6	-14.6	-14.4			
3024	-14.0	-14.3	-14.4	-14.6	-14.4	-14.4	-14.5	-14.3	-14.3			
4008	-14.1	-14.2	-14.5	-14.4	-14.2	-14.3	-14.6	-14.2	-14.4			
5016	-14.0	-14.2	-14.3	-14.3	-14.2	-14.4	-14.5	-14.2	-14.3			
MAX	-14.0	-14.2	-14.3	-14.3	-14.2	-14.3	-14.5	-14.2	-14.3			
MIN	-14.5	-14.6	-14.6	-14.7	-14.7	-14.7	-14.9	-14.6	-14.7			

Table 49: ER Data of Accel. Aging Test

Time	96			97			98			99		
	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C	-40°C	25°C	85°C
0	5.3	5.1	5.2	5.4	5.2	5.1	5.2	5.3	5.4	5.2	5.1	5.3
72	5.2	4.9	5.3	5.1	5.4	5.1	5.1	5.4	5.5	5.0	5.3	5.4
168	5.1	5.1	5.4	5.2	5.0	5.3	5.3	5.1	5.1	5.1	5.1	5.2
504	5.3	5.0	4.9	5.2	4.9	5.4	5.4	5.2	5.3	5.3	5.2	5.1
1008	5.1	5.2	5.2	5.4	5.1	5.2	5.2	5.1	5.4	5.4	5.3	5.3
2016	5.4	5.1	5.1	5.3	5.2	5.2	5.1	5.3	5.2	5.0	5.1	5.1
3024	5.2	5.3	5.3	5.1	5.3	5.0	5.3	5.1	5.1	5.2	5.1	5.3
4008	5.1	5.2	5.1	5.2	5.1	5.3	5.4	5.3	5.3	5.2	5.3	5.2
5016	5.0	5.2	5.0	5.3	5.2	5.1	5.1	5.2	5.4	5.3	5.2	5.3
MAX	5.4	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.4	5.3	5.4
MIN	5.0	4.9	4.9	5.1	4.9	5.0	5.1	5.1	5.1	5.0	5.1	5.1
Time	9A			9B	9C	9D	9E	9F	9G			
	-40°C	25°C	85°C									
0	5.1	5.0	5.3	5.2	5.1	5.2	4.9	5.2	5.1			
72	5.3	5.3	5.2	4.9	5.2	5.3	5.1	5.3	5.3			
168	5.1	5.1	5.1	5.3	5.4	5.1	5.2	5.4	5.1			
504	5.4	5.2	5.2	5.1	5.3	5.0	5.0	5.2	5.2			
1008	5.2	5.3	5.0	5.2	5.1	5.3	5.1	5.3	5.3			
2016	5.0	5.2	5.2	4.9	5.2	5.2	5.2	5.1	5.0			
3024	5.1	5.1	5.1	5.0	5.1	5.1	5.1	5.4	5.1			
4008	5.2	5.3	5.3	5.3	5.2	5.3	5.2	5.3	5.2			

5016	5.2	5.1	5.0	5.1	5.2	5.4	5.0	5.4	5.2			
MAX	5.4	5.3	5.3	5.3	5.4	5.4	5.2	5.4	5.3			
MIN	5.0	5.0	5.0	4.9	5.1	5.0	4.9	5.1	5.0			

5.12 Flammability

We hereby state the following status of compliance to the requirements of UL 94

NO	PART NAME	Brand	Material TYPE	CLASS	UL FILE NO.
1	Insulatingheat conduction pad	Bergquist	GAP PAD 1500	UL94 V-0	E59150
2	Absorbing Materials	DOO SUNG	IDCI	UL94 V-0	E311093
3	OSA(plastic)	SABIC	1010	UL94 V-0	E121562
4	PCB	Fastprint	M11	UL94 V-0	E204460
5	Endcap	Baotian	EPDM	UL94 V-0	*

*Supplier Baotian approved UL94 V-0 in the report.