

UNITY OPTO TECHNOLOGY CO., LTD

RELIABILITY TESTS

P/N:

MSL-299SW

TEST ITEM:

- ◆ OPERATION LIFE TEST
- ◆ THERMAL SHOCK
- ◆ TEMPERATURE CYCLE
- ◆ SOLDERABILITY
- ◆ SOLDER RESISTANCE
- ◆ HIGH TEMPERATURE STORAGE
- ◆ LOW TEMPERATURE STORAGE
- ◆ LEVEL 2A TEST CONDITION

UNITY OPTO TECHNOLOGY CO., LTD.

OPERATION LIFT TEST

DOC. NO.:QR460-1

Date: 12/20/2005

1.PURPOSE:

To test the Power Output and confirm the maximum Power Decay is lower than 20% after burn-in at room temperature ($T_a = 25^\circ\text{C}$).

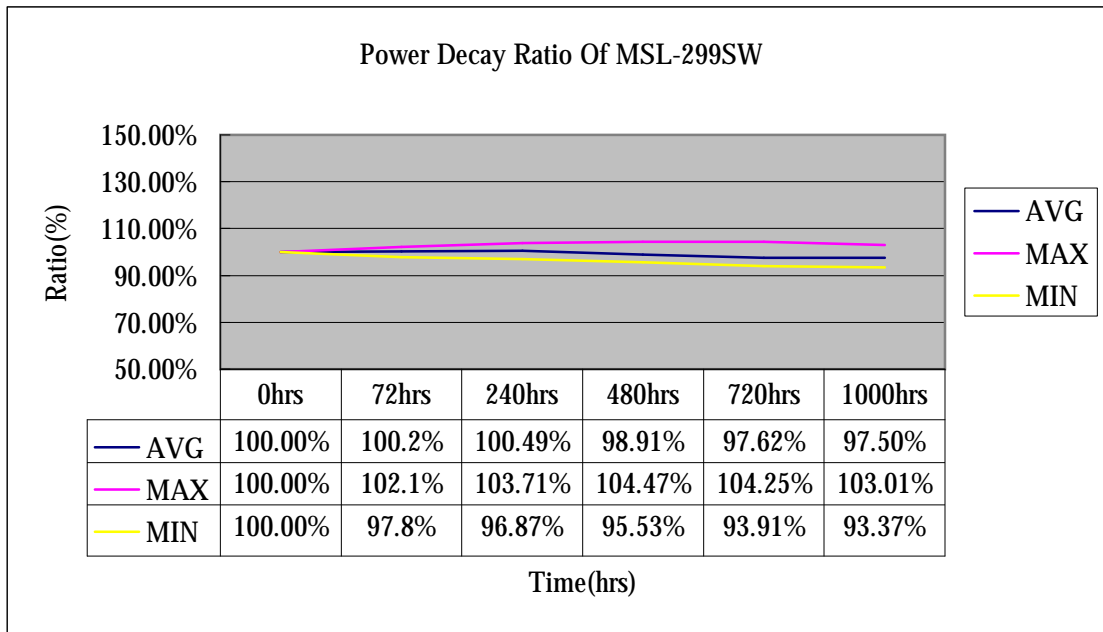
2.P/N:

MSL-299SW

3.TEST CONDITION:

1. $T_a = 25 \pm 5^\circ\text{C}$
2. $I_f = 20 \text{ mA}$
3. Time = 1000 hrs

4.RESULT:



5.CONCLUSION:

After 1000 hrs burn-in at $T_a = 25^\circ\text{C}$, The max power decay is lower than 20%.
The judgement is ACCEPT.

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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UNITY OPTO TECHNOLOGY CO., LTD

THERMAL SHOCK

DOC. NO.:QR460-2

Date: 12/20/2005

1.PURPOSE:

To test for OPEN/SHORT after Air-to-Air Thermal Shock.

2.P/N:

MSL-299SW

3.TEST CONDITION:

1. After IR Reflow
2. $105\pm 5^{\circ}\text{C}$ (10min)~ $-55\pm 5^{\circ}\text{C}$ (10min) for 200 cycles.
3. Transfer time = 5 ± 1 min

4.RESULT:

1. Test item: OPEN/SHORT
2. Test result:

Sample Q'ty	Defect Q'ty		Judgement
	OPEN	SHORT	
50	0	0	ACC

5.CONCLUSION:

After testing thermal shock for 200 cycles, all samples PASS.
The judgement is ACCEPT.

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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TEMPERATURE CYCLE

DOC. NO.:QR460-3

Date: 12/20/2005

1.PURPOSE:

To test for OPEN/SHORT after Temperature Cycle.

2.P/N:

MSL-299SW

3.TEST CONDITION:

1. After IR Reflow
2. $105\pm 5^{\circ}\text{C}$ (30mins)~ 25°C (5mins)~ $-55\pm 5^{\circ}\text{C}$ (30mins)~ 25°C (5mins) for 100 cycles.
3. Transfer time = 5 ± 1 min

4.RESULT:

1. Test item: OPEN/SHORT
2. Test result:

Sample Q'ty	Defect Q'ty		Judgement
	OPEN	SHORT	
30	0	0	ACC

5.CONCLUSION:

After testing temperature cycle for 100 cycles, all samples PASS.
The judgement is ACCEPT.

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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SOLDERABILITY

DOC. NO.:QR460-4

Date: 12/20/2005

1.PURPOSE:

To visually test for solder coverage after soldering at 230 degrees C.

2.P/N:

MSL-299SW

3.TEST CONDITION:

1. $T_{\text{dipped area}} = 230 \pm 5$ degrees C
2. $t_{\text{dip}} = 3\text{sec}$
3. Criteria: The solder coverage area should over 95%.

4.RESULT:

1. Test item: OPEN/SHORT
2. Test result:

Sample Q'ty	Defect Q'ty	Judgement
30	0	ACC

5.CONCLUSION:

After soldering, all samples are PASS. The judgement is ACCEPT.

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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SOLDERABILITY RESISTANCE

DOC. NO.:QR460-5

Date: 12/20/2005

1.PURPOSE:

To test for OPEN/SHORT after soldering at $260\pm 5^{\circ}\text{C}$.

2.P/N:

MSL-299SW

3.TEST CONDITION:

1. $T_{\text{dipped area}} = 260\pm 5^{\circ}\text{C}$
2. $T_{\text{dip}} = 10\pm 1\text{sec}$

4.RESULT:

1. Test item: OPEN/SHORT
2. Test result:

Sample Q'ty	Defect Q'ty		Judgement
	OPEN	SHORT	
30	0	0	ACC

5.CONCLUSION:

After soldering, all samples are PASS.
The judgement is ACCEPT

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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UNITY OPTO TECHNOLOGY CO., LTD
HIGH TEMPERATURE STORAGE

DOC. NO.:QR460-6

Date: 12/20/2005

1.PURPOSE:

To test for OPEN/SHORT after High Temperature Storage.

2.P/N:

MSL-299SW

3.TEST CONDITION:

1. Ta = 105±5°C
2. Time = 1000 hrs

4.RESULT:

1. Test item: OPEN/SHORT
2. Test result:

Sample Q'ty	Defect Q'ty		Judgement
	OPEN	SHORT	
30	0	0	ACC

5.CONCLUSION:

After testing high temperature storage for 1000hrs, all samples are PASS.
The judgement is ACCEPT.

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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UNITY OPTO TECHNOLOGY CO., LTD
LOW TEMPERATURE STORAGE

DOC. NO.:QR460-7

Date: 12/20/2005

1.PURPOSE:

To test for OPEN/SHORT after Low Temperature Storage.

2.P/N:

MSL-299SW

3.TEST CONDITION:

1. $T_a = -40 \pm 5^\circ\text{C}$
2. Time = 1000 hrs

4.RESULT:

1. Test item: OPEN/SHORT
2. Test result:

Sample Q'ty	Defect Q'ty		Judgement
	OPEN	SHORT	
30	0	0	ACC

5.CONCLUSION:

After testing low temperature storage for 1000hrs, all samples are PASS.
The judgement is ACCEPT.

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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LEVEL 2A TEST CONDITION

DOC. NO.:QR460-8

Date: 12/20/2005

1.PURPOSE:

To test for OPEN/SHORT after Level 2A Test Condition.

2.P/N:

MSL-299SW

3.TEST CONDITION:

1. Baking 20 hrs
2. 60°C / 60%RH 5 days
3. IR-Reflow 2 Times
4. 105±5°C (15min)~-55±5°C (15min) for 100 cycles

4.RESULT:

1. Test item: OPEN/SHORT
2. Test result:

Sample Q'ty	Defect Q'ty		Judgement
	OPEN	SHORT	
50	0	0	ACC

5.CONCLUSION:

After testing Level 2A for 100 cycles, all samples are PASS.
The judgement is ACCEPT.

PREPARED BY:	Zhiyong Tsai	APPROVED BY:	J.M
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