

**TRACO<sup>®</sup>  
POWER**

Product: **TES 3 Series**  
Single Output Models

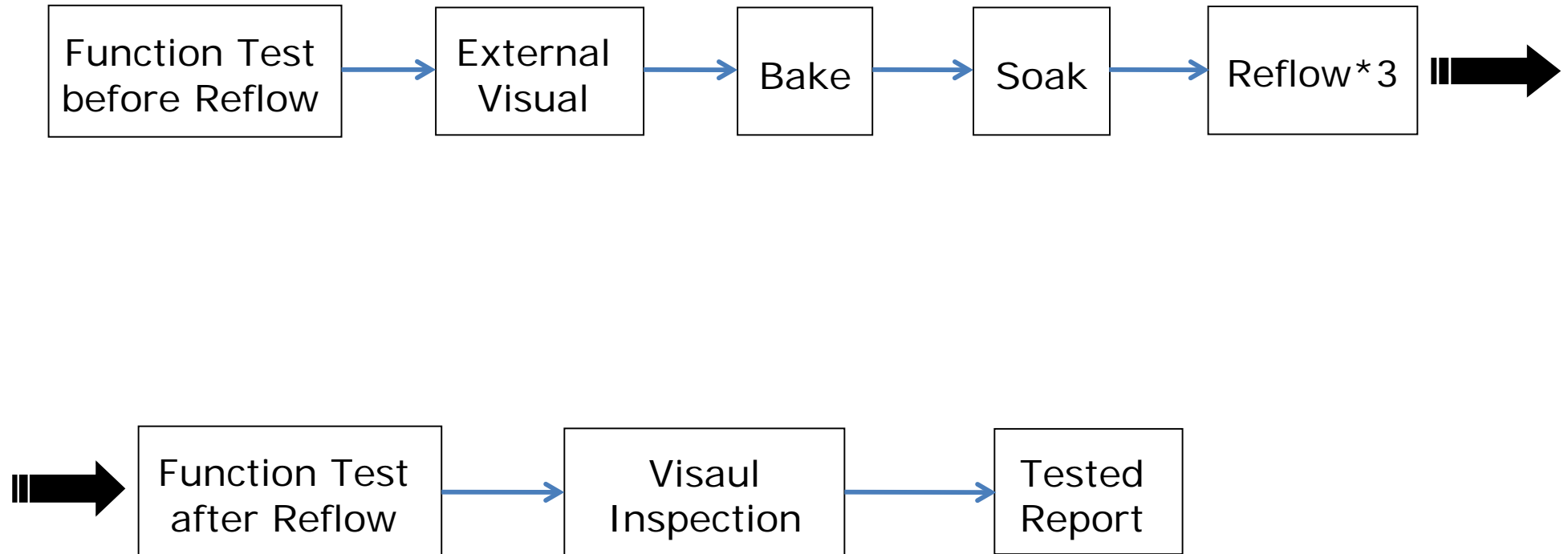
Moisture Sensitivity Level (MSL) Test Report  
as per IPC/JEDEC J-STD-020C



## Table of Contents

	<u>page</u>
Tested Flowchart	<u>1</u>
Tested Data before Reflow	<u>2</u>
245°C Temperature Reflow Profile	<u>3</u>
Tested Data after Reflow	<u>4</u>
Pictures	<u>5-43</u>
Conclusion	<u>44</u>

## Tested Flowchart for TES 3 Products



## Test Report

Model Number : TES 3-1210(date code : 0730)  
Q'TY : 30 pcs

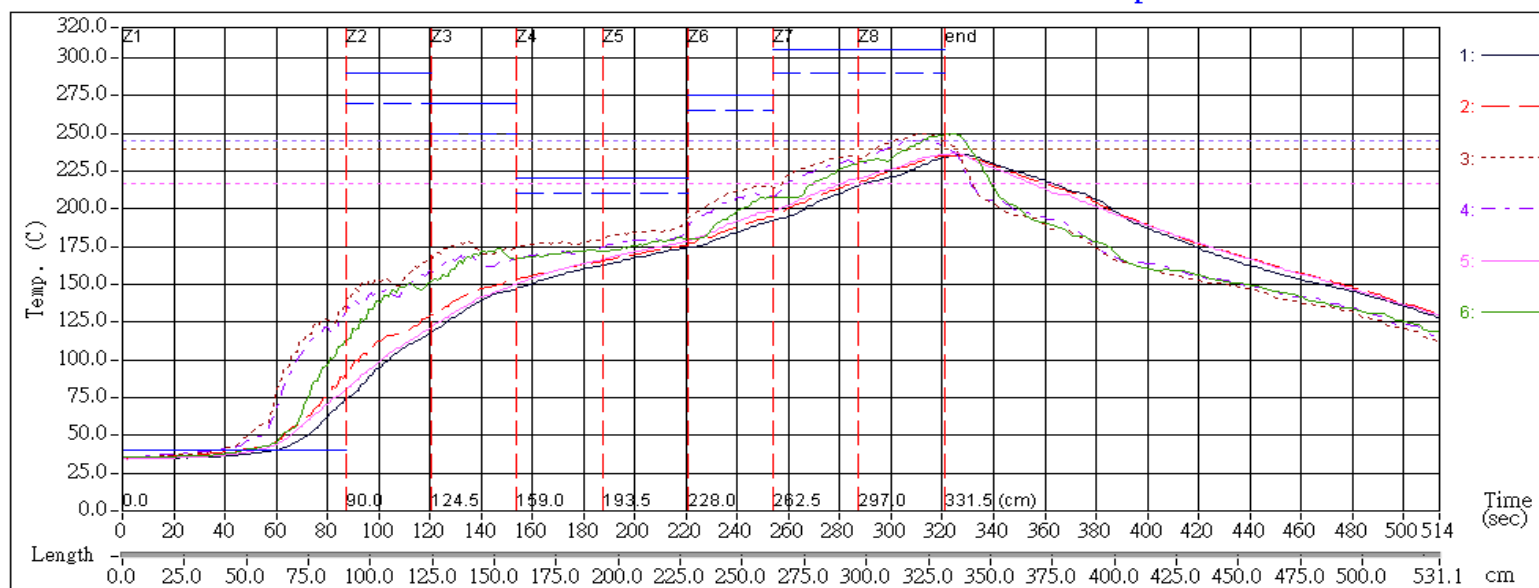
Before Reflow Process

Date: 30.07.2007  
Tested By: *Jordan on*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	269.2	> 71.5	3.267 ~ 3.333	< 75	-0.3 ~ 0.3	-1 ~ 1		
1	12	257.30	74.753	3.279	36.8	0	0.518	OK	pass
2		255.80	75.348	3.286	36.8	0.03	0.456	OK	pass
3		255.10	75.114	3.267	21.6	0	0.52	OK	pass
4		257.20	74.880	3.283	23.2	0	0.457	OK	pass
5		258.80	74.598	3.292	38.4	0.03	0.425	OK	pass
6		256.40	74.990	3.279	24	0	0.457	OK	pass
7		256.70	74.924	3.28	23.2	0	0.488	OK	pass
8		258.30	74.422	3.278	33.6	0.061	0.488	OK	pass
9		256.10	75.011	3.276	24	0.031	0.733	OK	pass
10		256.70	75.079	3.287	24	0	0.487	OK	pass
11		255.30	75.389	3.283	22.4	-0.03	0.487	OK	pass
12		258.10	74.644	3.286	20.8	-0.03	0.426	OK	pass
13		256.40	74.676	3.267	35.2	0	0.643	OK	pass
14		255.30	75.300	3.279	23.2	0.03	0.488	OK	pass
15		254.50	75.332	3.27	44	0	0.489	OK	pass
16		255.00	75.321	3.276	25.6	0.061	0.549	OK	pass
17		257.50	74.814	3.286	20	0	0.396	OK	pass
18		255.80	75.329	3.287	21.6	0.03	0.456	OK	pass
19		255.60	75.370	3.286	41.6	-0.03	0.426	OK	pass
20		254.70	75.213	3.268	23.2	0	0.428	OK	pass
21		255.60	75.133	3.276	21.6	0.031	0.458	OK	pass
22		256.10	75.057	3.279	25.6	0.031	0.488	OK	pass
23		256.00	75.161	3.282	23.2	0	0.457	OK	pass
24		255.00	75.197	3.271	24.8	0.031	0.428	OK	pass
25		255.60	75.216	3.279	25.6	0	0.427	OK	pass
26		256.00	75.278	3.287	33.6	0	0.487	OK	pass
27		258.00	74.680	3.286	23.2	0.03	0.456	OK	pass
28		258.70	74.558	3.29	24	0	0.486	OK	pass
29		256.80	74.654	3.27	31.2	-0.061	0.489	OK	pass
30		255.90	75.326	3.288	37.6	0.000	0.456	OK	pass



## THERMOTRACKER Report



**Date(dd/mm/yy)**  
15/08/2007

**Company**  
TRACO

**Product**  
TES 3

**Line Speed**  
62.00 cm/Min

**Down Load Information**  
**Scan Rate(mm:ss):** 00:01.0  
**Date(dd/mm/yy):** 15/08/07  
**Time(hh:mm:ss):** 13:44:28

**Data File**  
MSIW1000+COVER.pwd

**Zone Set Value(C)and Length (cm)**

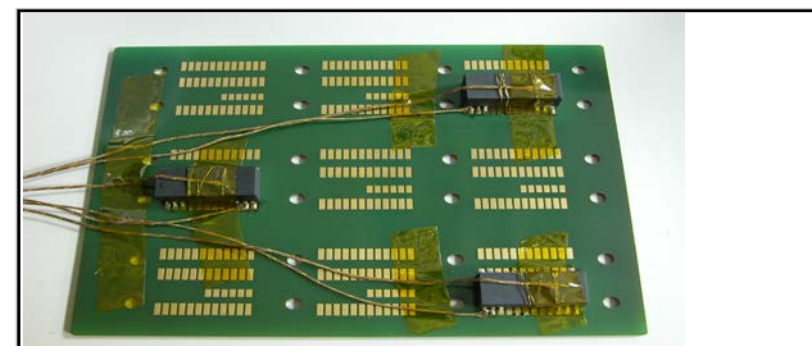
Zone	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
TOP	40	290	270	220	220	275	305	305
BOTTOM	40	270	250	210	210	265	290	290
Length	90.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5

**Comment**



**Sensor Description and Max./Threshold Information**

Sensor Name	Max. Temp. (C)	At Time (sec)	Time(sec) above217.0C	Time(sec) above240.0C	Time(sec) above245.0C
Pin	235.7	328.00	72.00	0.00	0.00
Pin	235.0	325.00	74.00	0.00	0.00
Cover *	249.4	313.00	74.00	31.00	19.00
Cover *	245.9	313.00	72.00	23.00	8.00
Pin	236.5	325.00	73.00	0.00	0.00
Cover *	249.8	325.00	69.00	24.00	16.00



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\* The temperatures of package topside surfaces meet the definition of JEDEC J-STD-020C.

# Test Report

Model Number : TES 3-1210(date code : 0730)  
Q'TY : 30 pcs

After Reflow Process

Date: 15.08.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 269.2	> 71.5	3.267 ~ 3.333	< 75	-0.3 ~ 0.3	-1 ~ 1		
1	12	255.30	75.005	3.269	20.8	0.061	0.642	OK	pass
2		257.70	74.378	3.272	30.4	0.031	0.581	OK	pass
3		256.10	74.795	3.27	22.4	0	0.612	OK	pass
4		255.90	74.809	3.268	22.4	0	0.612	OK	pass
5		258.70	74.319	3.282	21.6	0	0.64	OK	pass
6		256.70	74.781	3.277	31.2	0	0.519	OK	pass
7		254.70	74.979	3.26	30.4	0.061	0.583	OK	pass
8		255.40	75.300	3.283	21.6	0	0.548	OK	pass
9		256.60	74.605	3.268	32.8	0.031	0.581	OK	pass
10		255.50	75.155	3.278	32.8	0.031	0.549	OK	pass
11		257.40	74.648	3.28	20	0	0.579	OK	pass
12		255.00	75.163	3.272	22.4	0	0.581	OK	pass
13		254.20	75.235	3.265	24.8	0.061	0.521	OK	pass
14		254.70	75.158	3.268	34.4	0	0.612	OK	pass
15		256.50	74.679	3.27	20.8	0.031	0.642	OK	pass
16		257.80	74.440	3.276	28.8	0	0.611	OK	pass
17		255.10	75.224	3.276	32.8	0.031	0.611	OK	pass
18		256.50	74.908	3.28	36.8	0.03	0.64	OK	pass
19		255.30	75.075	3.272	36.8	-0.031	0.642	OK	pass
20		254.70	74.973	3.26	22.4	-0.031	0.552	OK	pass
21		255.50	74.946	3.269	20	0.031	0.612	OK	pass
22		256.20	74.858	3.274	19.2	0.061	0.58	OK	pass
23		255.50	74.946	3.269	32.8	0.061	0.551	OK	pass
24		254.90	74.869	3.258	22.4	-0.031	0.645	OK	pass
25		255.40	75.022	3.271	40	-0.031	0.611	OK	pass
26		255.60	75.011	3.273	20.8	0.031	0.703	OK	pass
27		257.80	74.533	3.28	34.4	0	0.549	OK	pass
28		257.80	74.351	3.272	23.2	0.031	0.642	OK	pass
29		256.50	74.473	3.261	19.2	0.031	0.613	OK	pass
30		255.10	75.132	3.272	33.6	0.031	0.550	OK	pass





【NO : 1】 After Reflow

**Visual Inspection after Reflow Process**



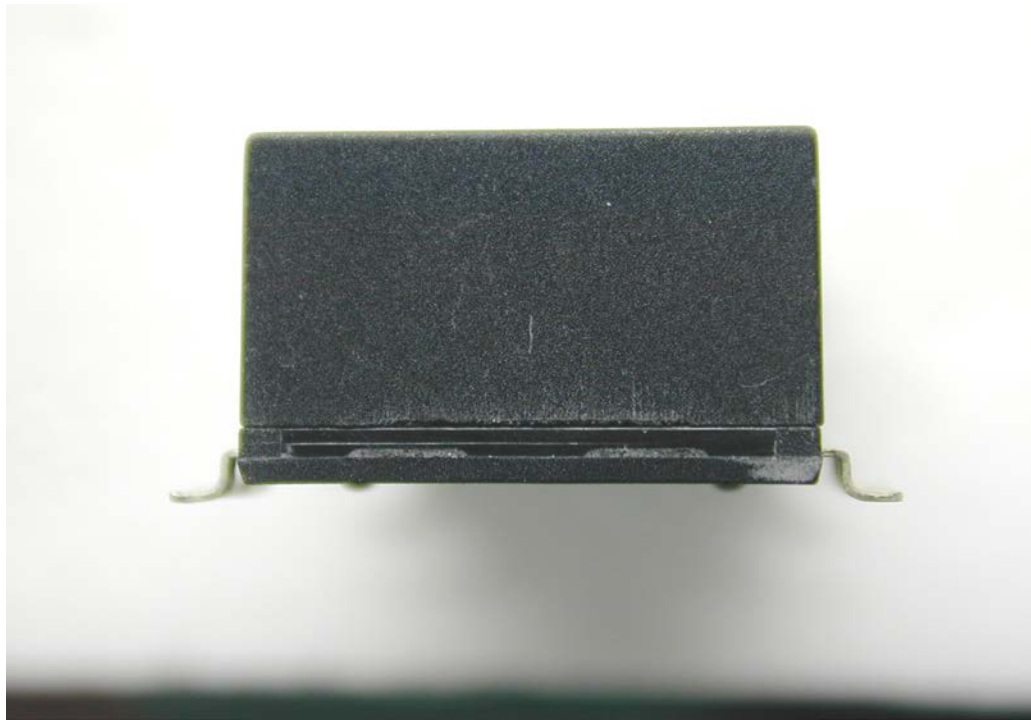
【NO : 1】 After Reflow

Visual Inspection after Reflow Process



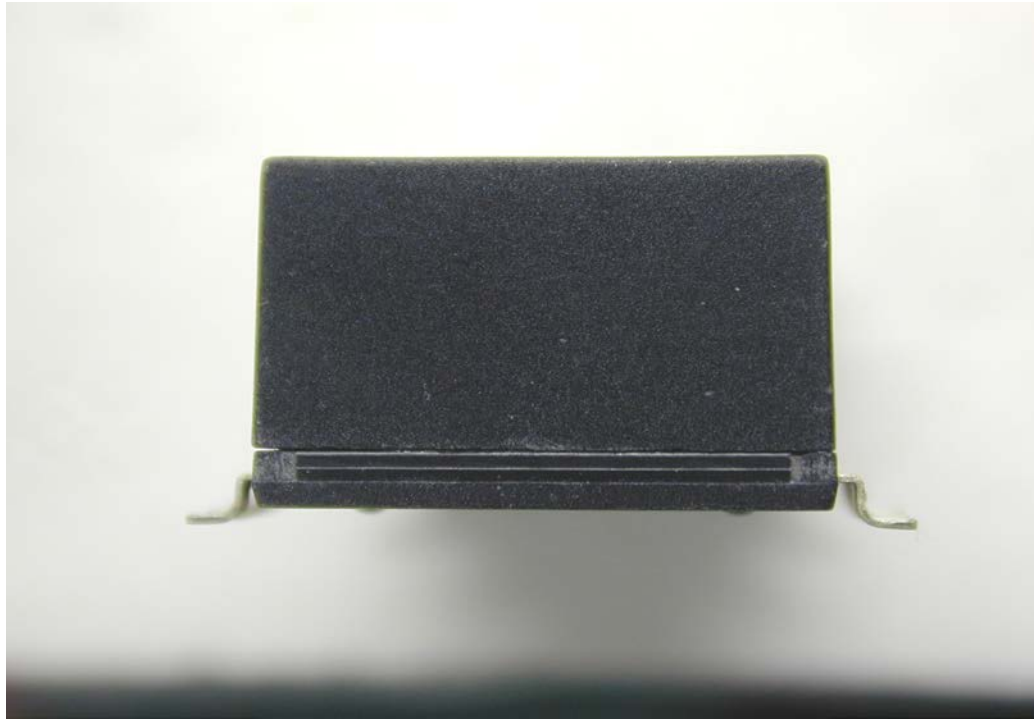
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**Visual Inspection after Reflow Process**



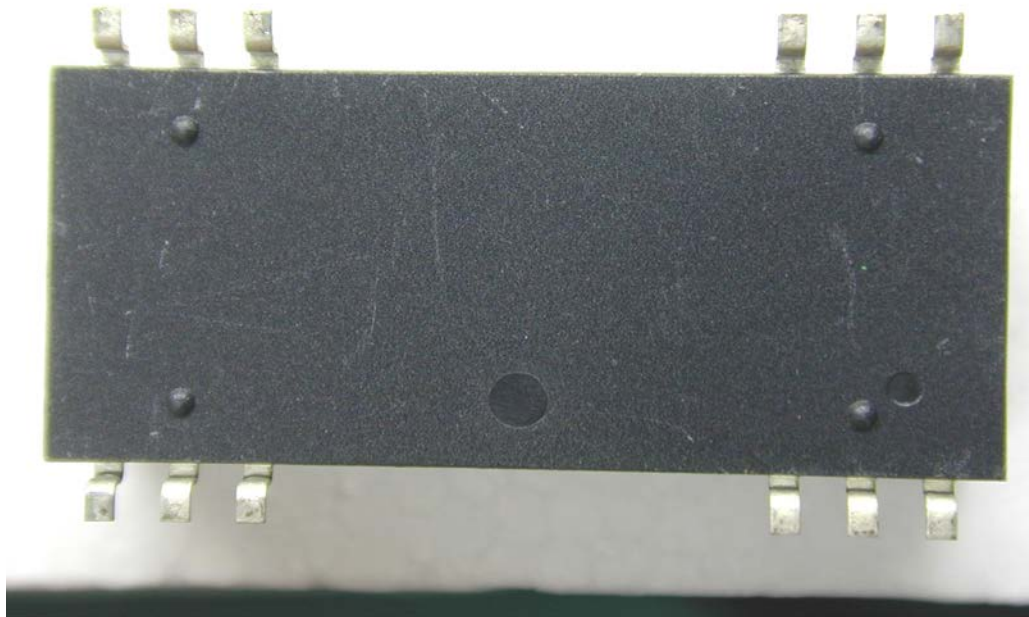
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Visual Inspection after Reflow Process



【NO : 1】 After Reflow

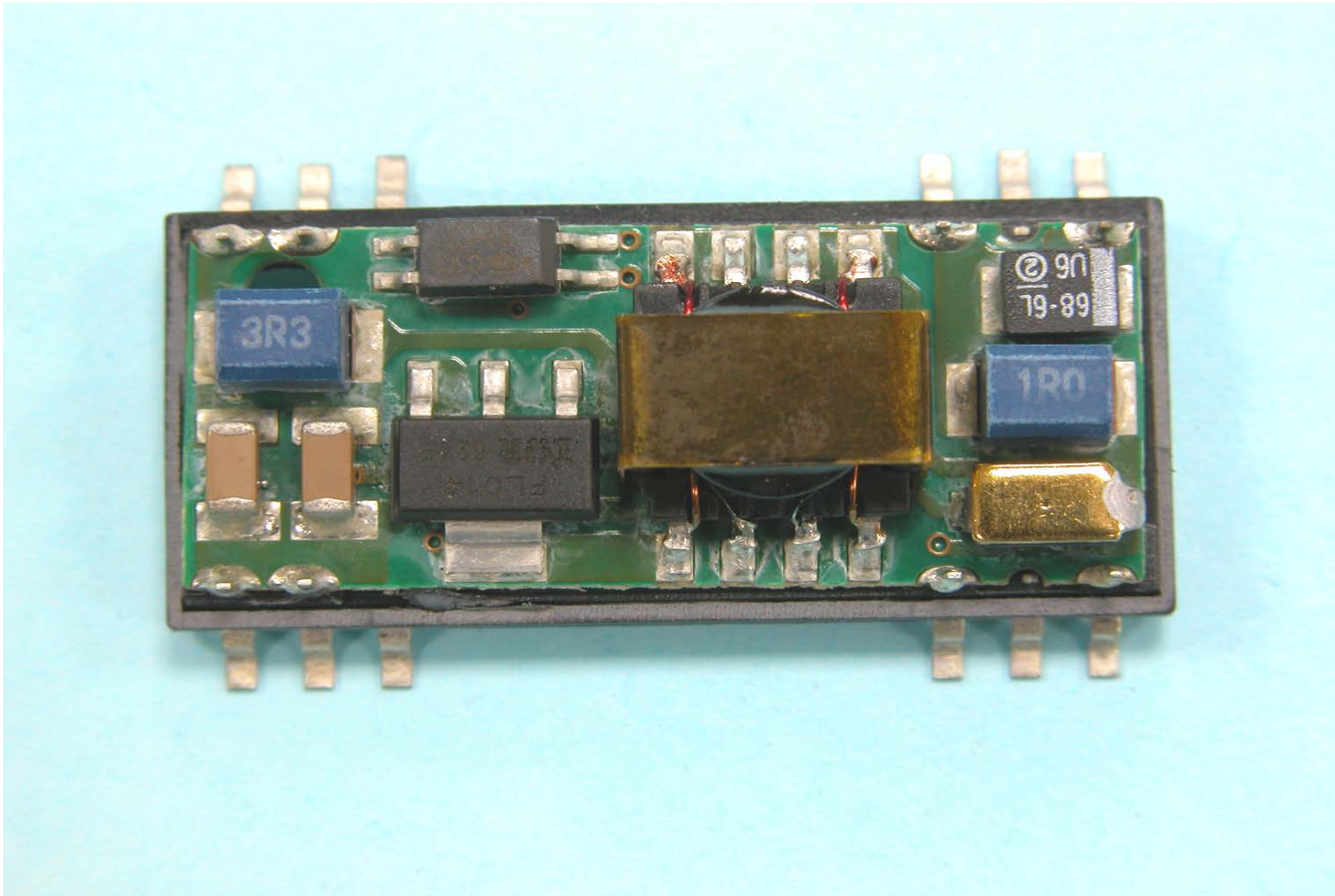
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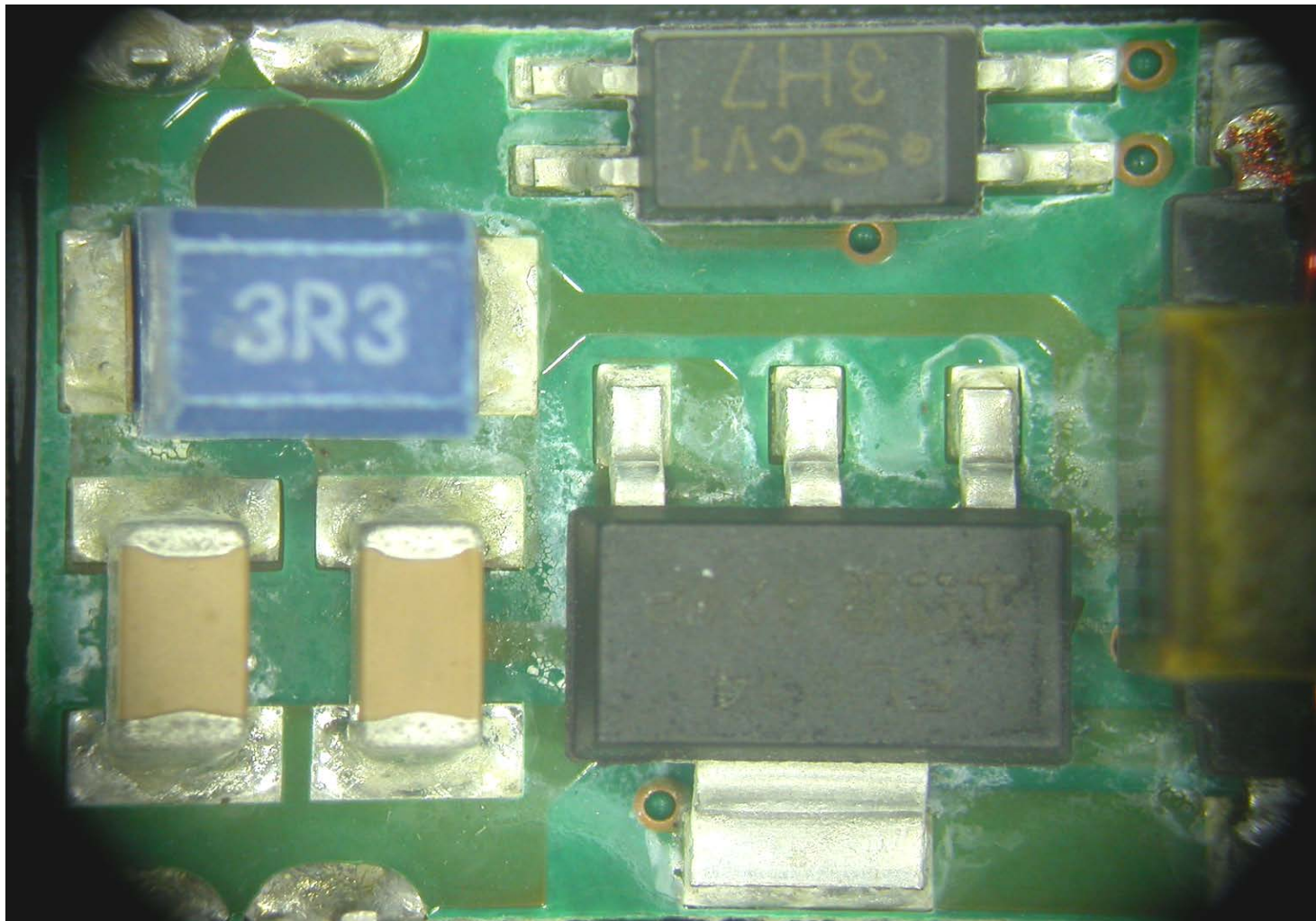
**Solder Joint Visual Inspection after Reflow Process**





Top Side View-1

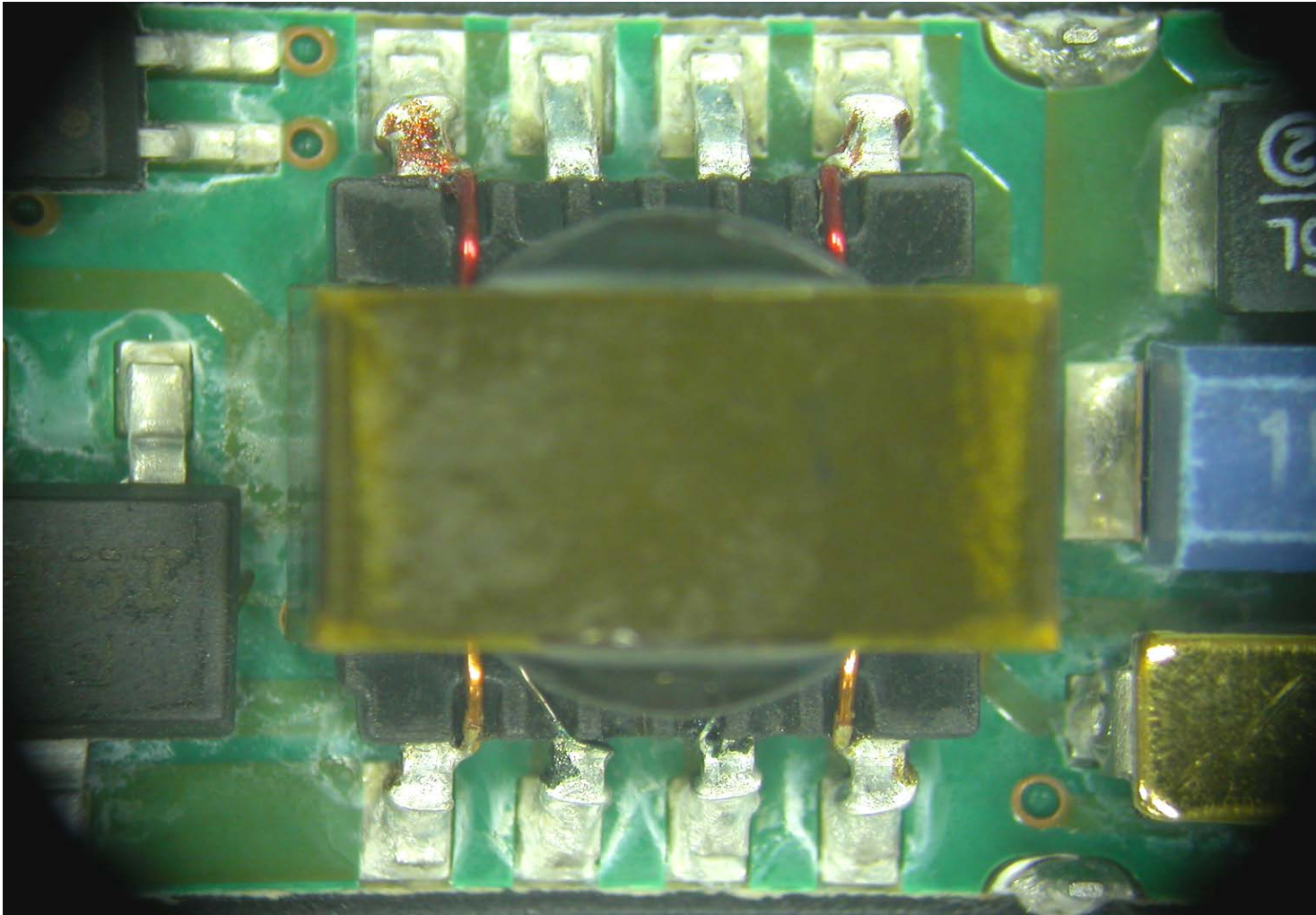
**Solder Joint Visual Inspection after Reflow Process**



Top Side View-1.1

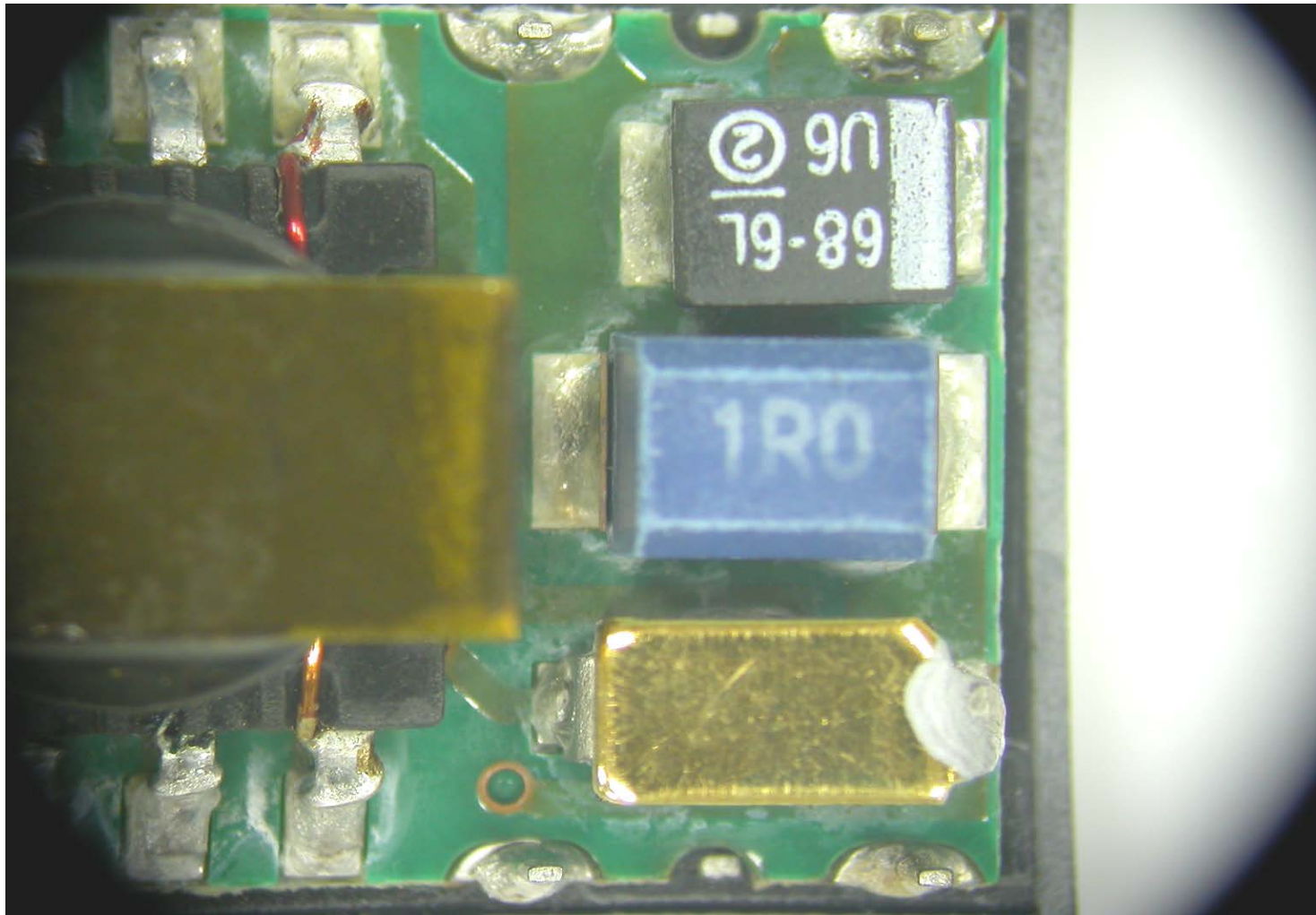
**Solder Joint Visual Inspection after Reflow Process**





Top Side View-1.2

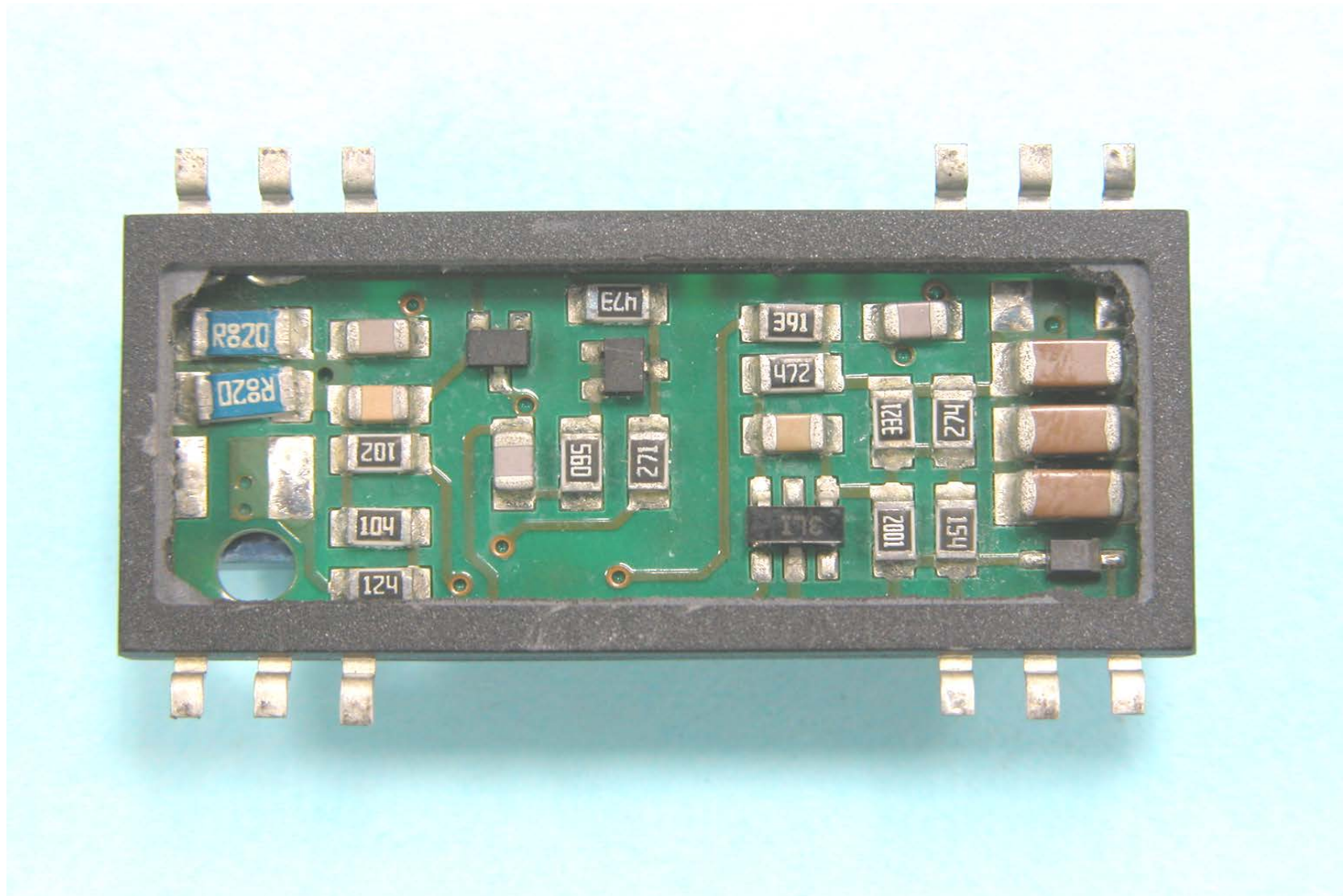
**Solder Joint Visual Inspection after Reflow Process**



Top Side View-1.3

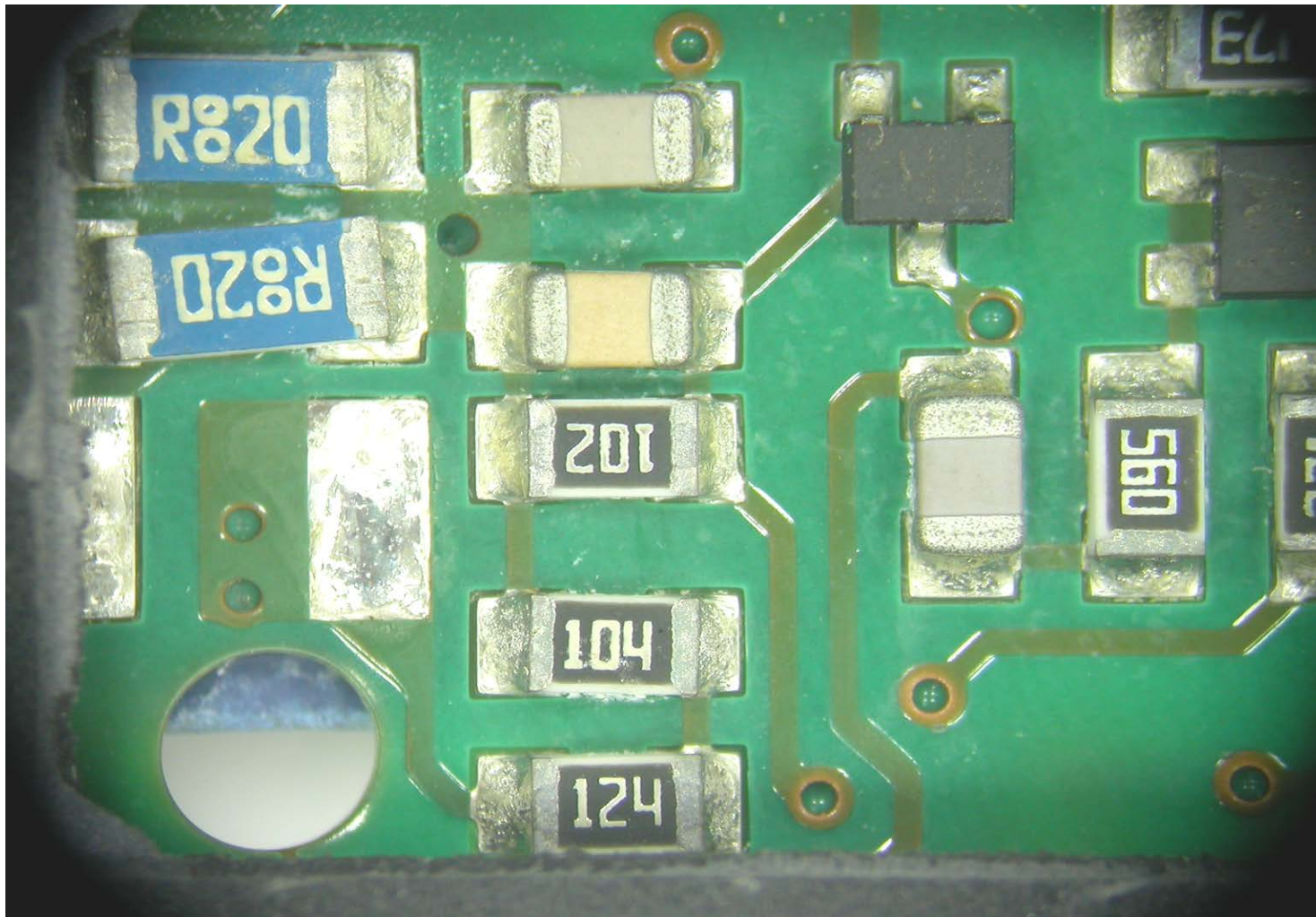
**Solder Joint Visual Inspection after Reflow Process**





Bottom Side View-1

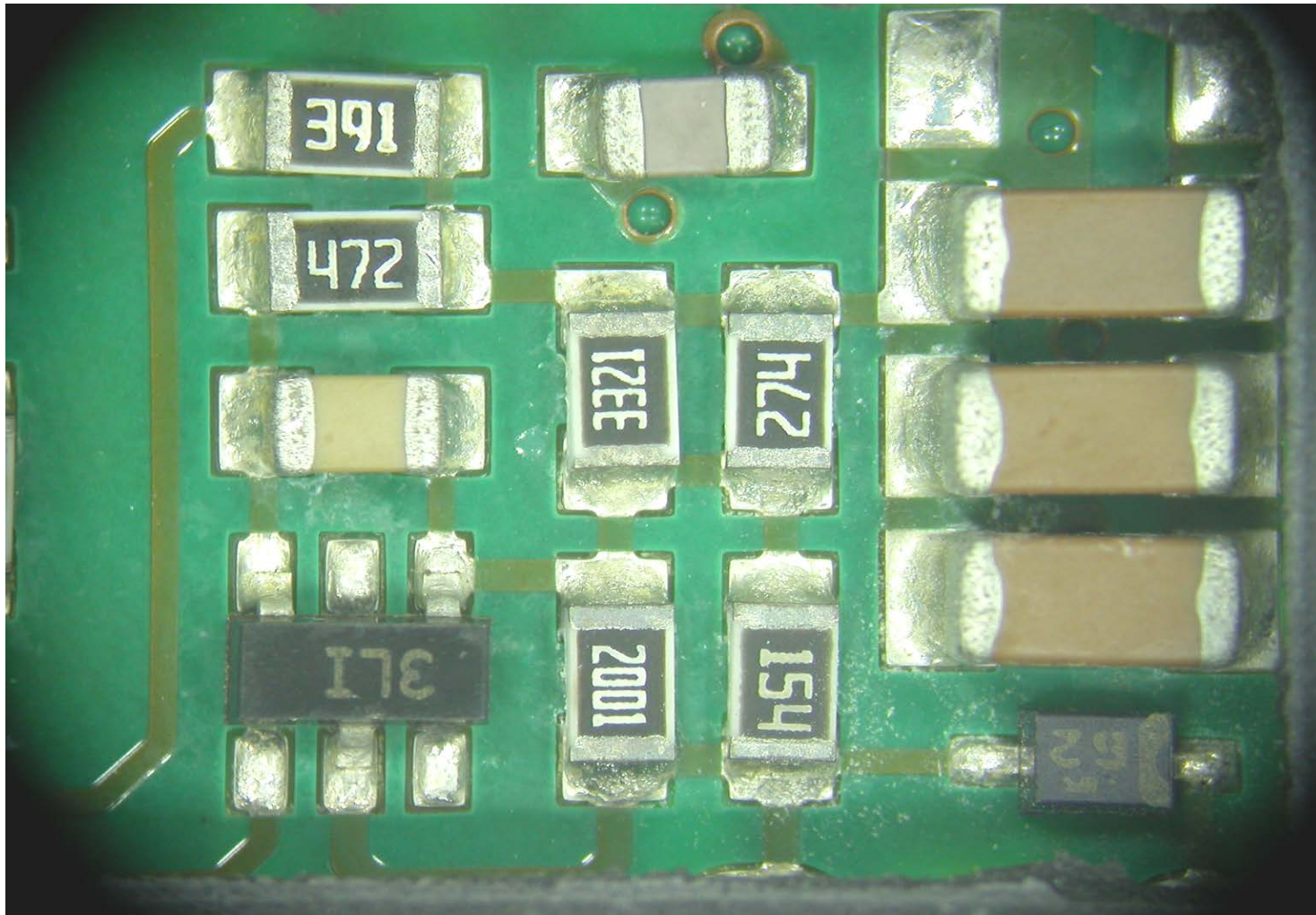
**Solder Joint Visual Inspection after Reflow Process**



Bottom Side View-1.1

**Solder Joint Visual Inspection after Reflow Process**





Bottom Side View-1.2

**Visual Inspection after Reflow Process**



【NO : 2】 After Reflow

**Visual Inspection after Reflow Process**





【NO : 2】 After Reflow

**Visual Inspection after Reflow Process**



【NO : 2】 After Reflow

**Visual Inspection after Reflow Process**



【NO : 2】 After Reflow

**Visual Inspection after Reflow Process**



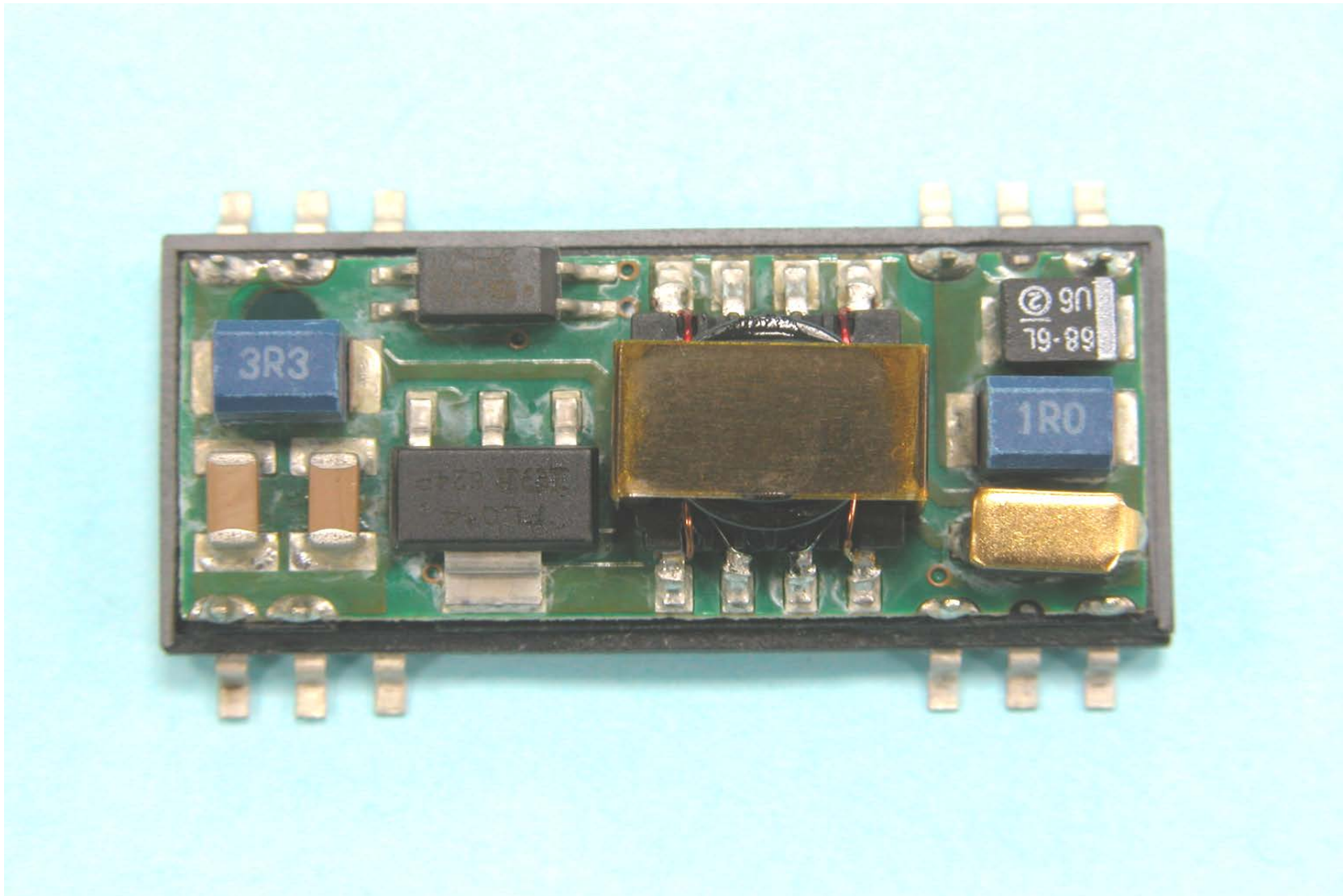
【NO : 2】 After Reflow

**Visual Inspection after Reflow Process**



【NO : 2】 After Reflow

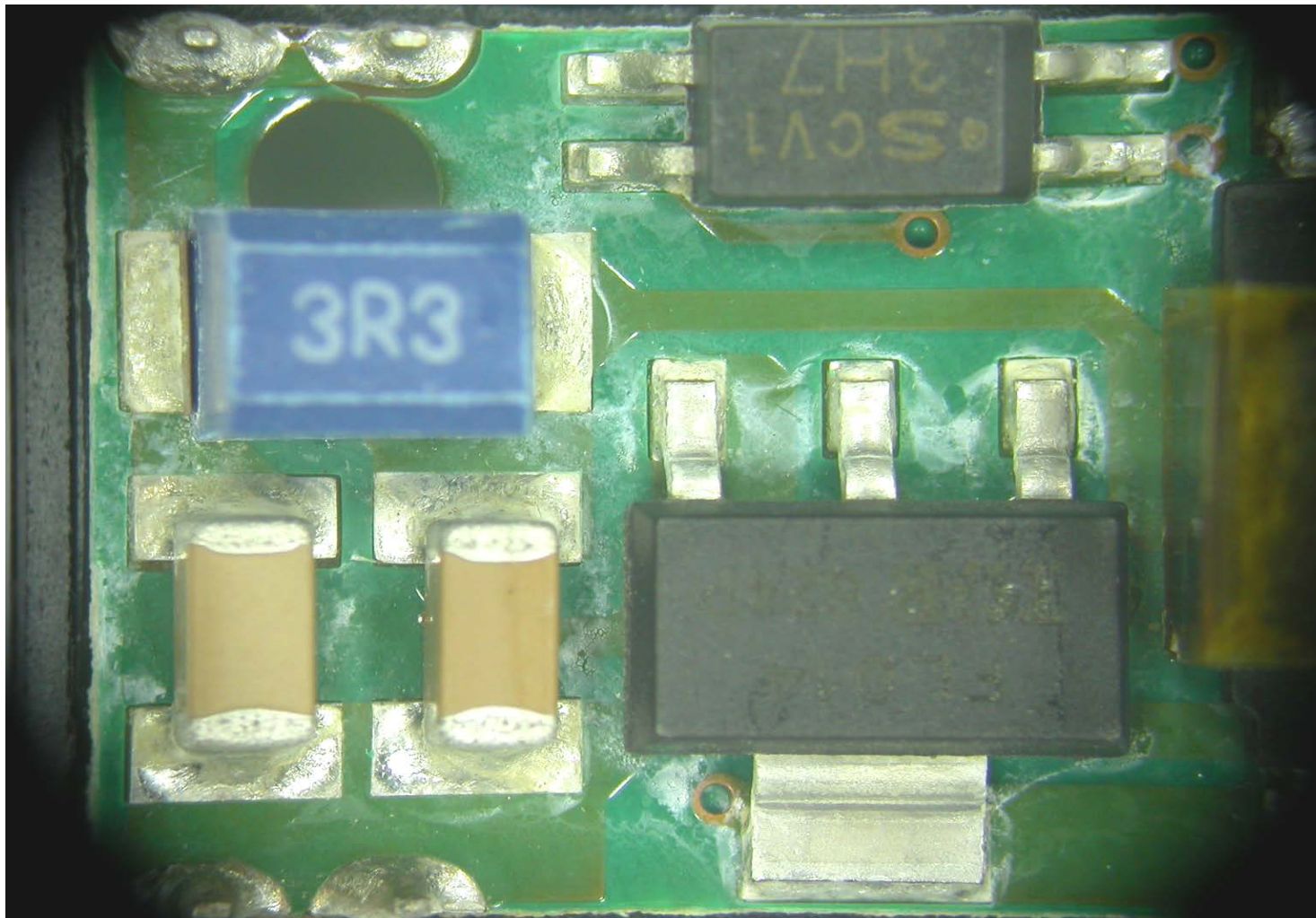
**Solder Joint Visual Inspection after Reflow Process**



Top Side View-2

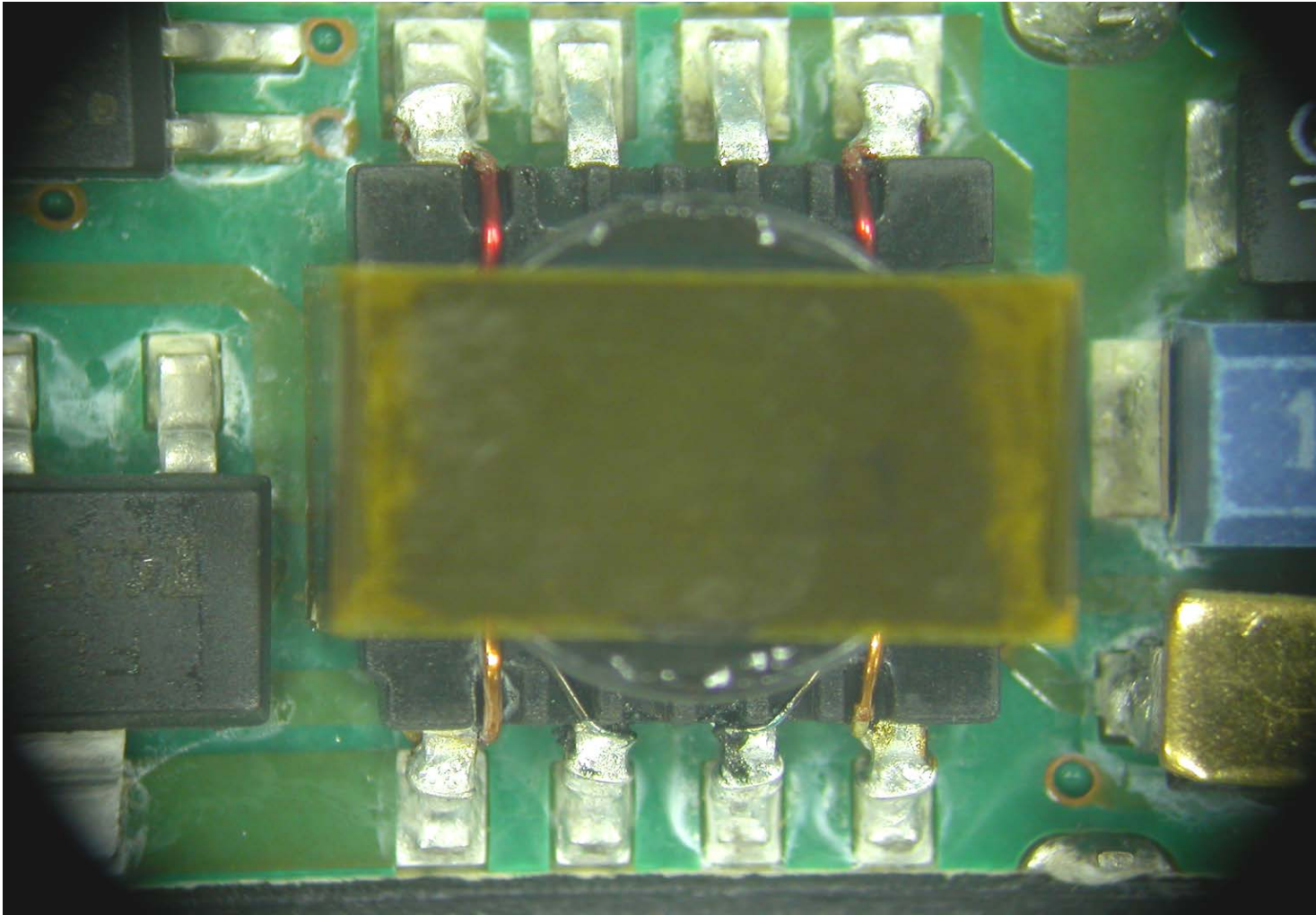
**Solder Joint Visual Inspection after Reflow Process**





Top Side View-2.1

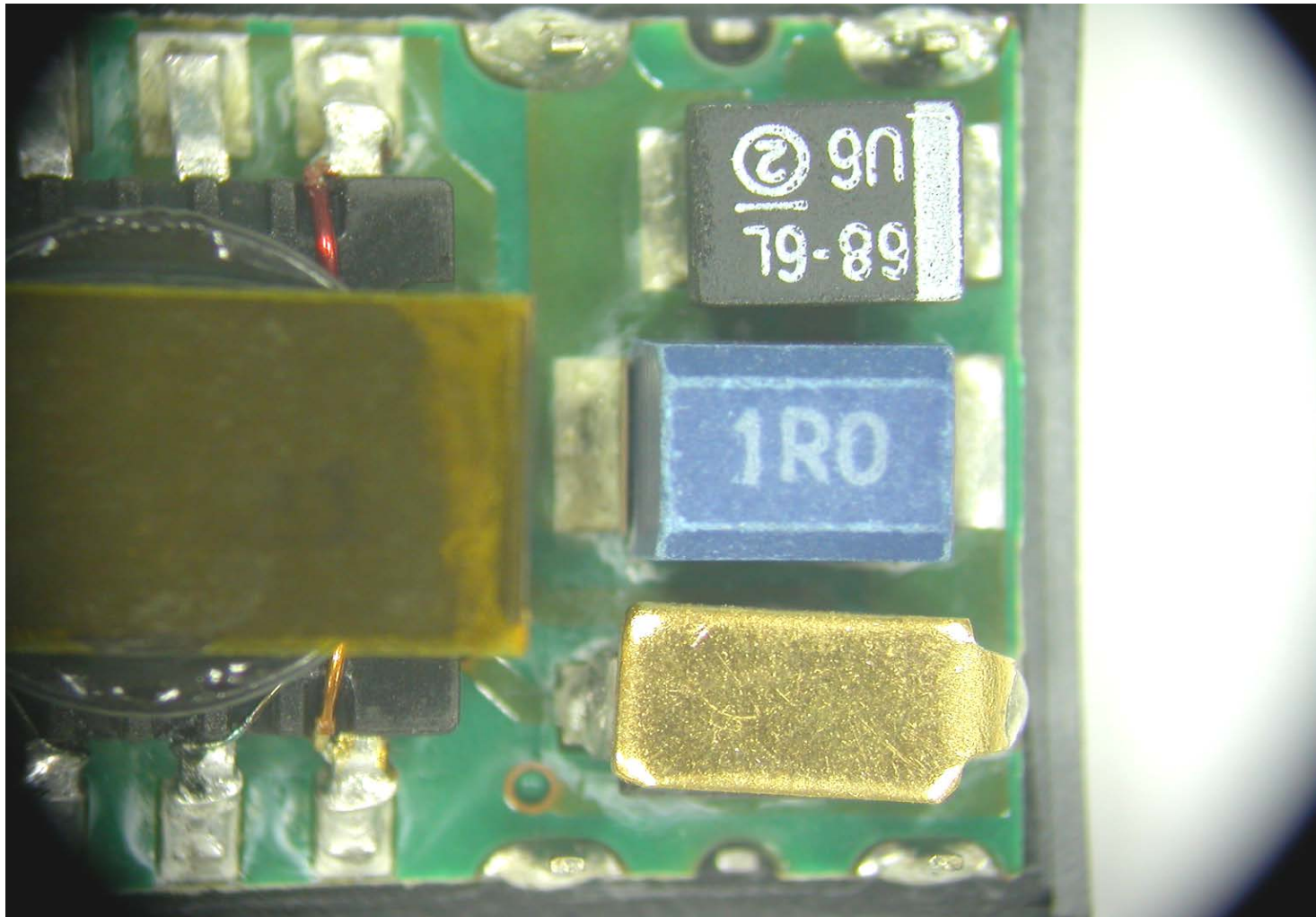
**Solder Joint Visual Inspection after Reflow Process**



Top Side View-2.2

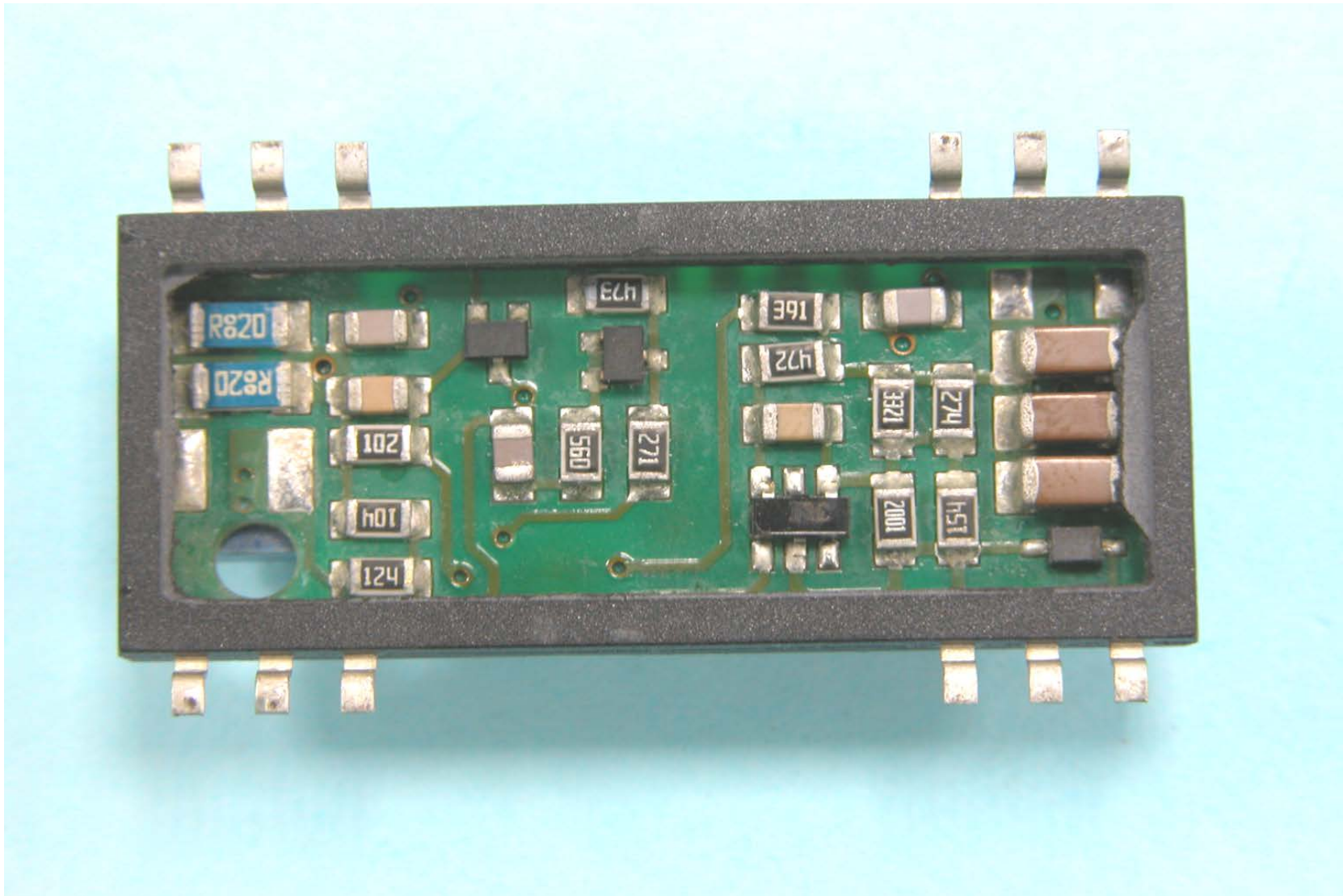
**Solder Joint Visual Inspection after Reflow Process**





Top Side View-2.3

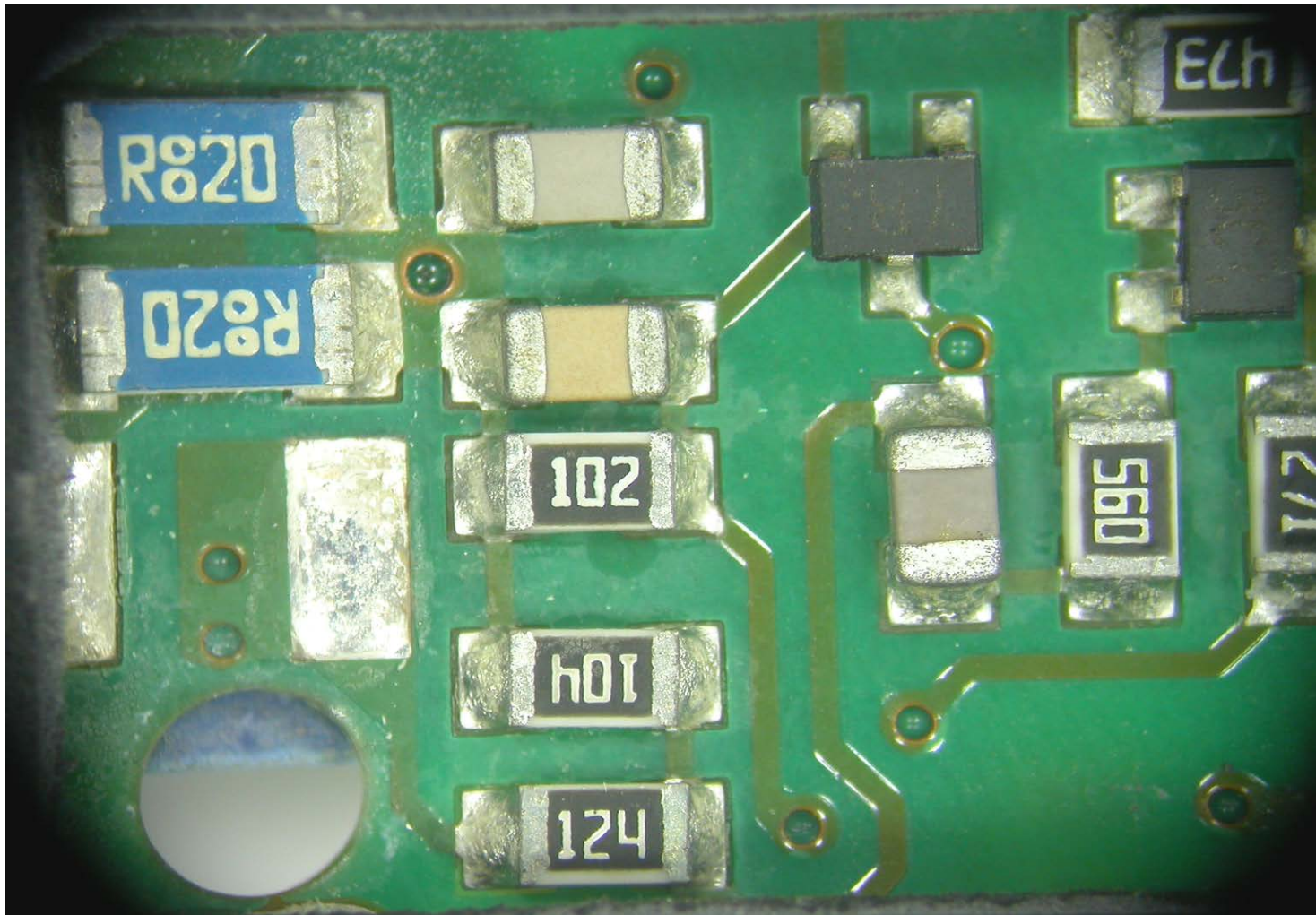
**Solder Joint Visual Inspection after Reflow Process**



Bottom Side View-2

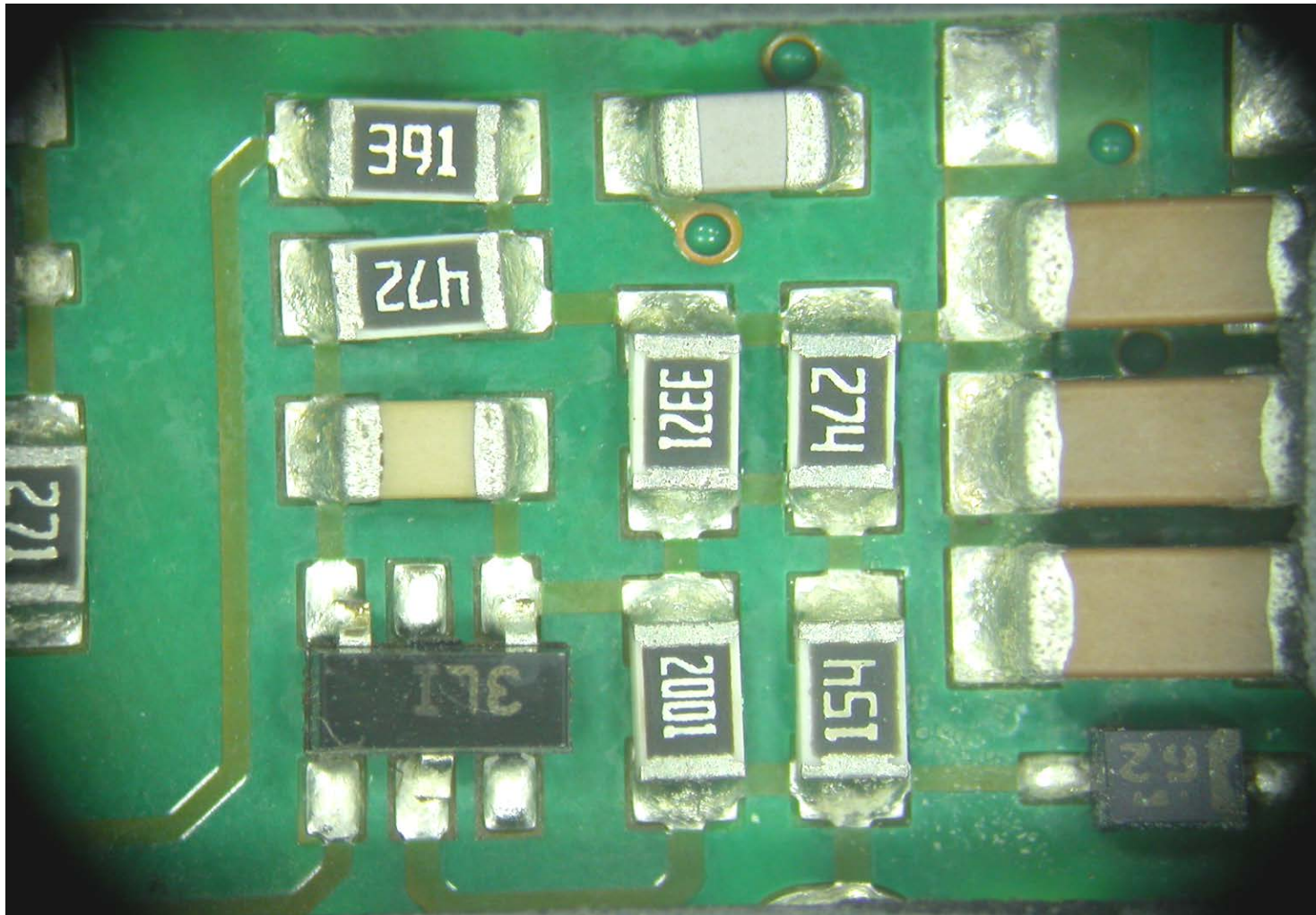
**Solder Joint Visual Inspection after Reflow Process**





Bottom Side View-2.1

**Solder Joint Visual Inspection after Reflow Process**



Bottom Side View-2.2

**Visual Inspection after Reflow Process**



【NO : 3】 After Reflow

**Visual Inspection after Reflow Process**





【NO : 3】 After Reflow

**Visual Inspection after Reflow Process**



**【NO : 3】 After Reflow**

**Visual Inspection after Reflow Process**



**【NO : 3】 After Reflow**

**Visual Inspection after Reflow Process**





**【NO : 3】 After Reflow**

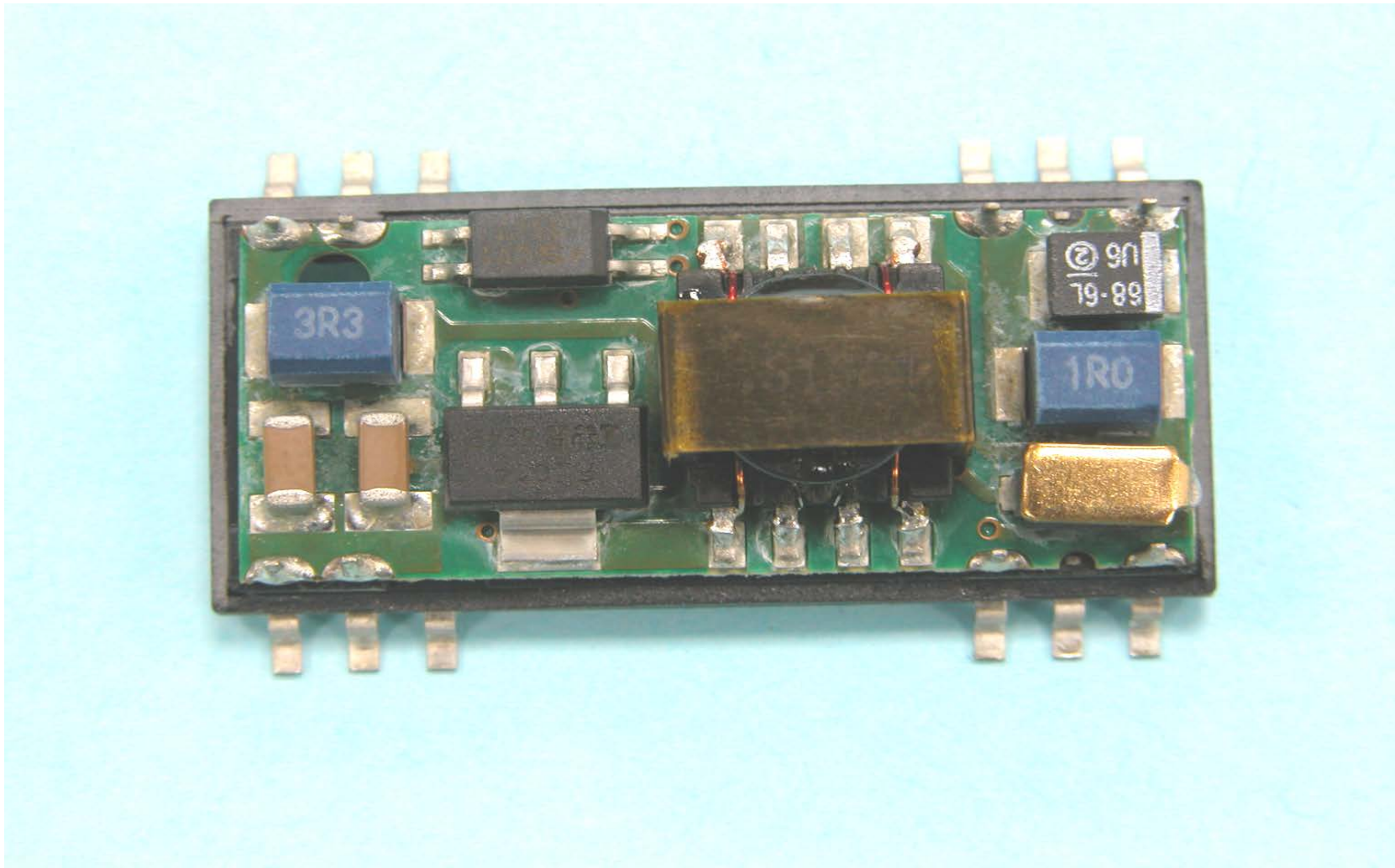
**Visual Inspection after Reflow Process**



【NO : 3】 After Reflow

### Solder Joint Visual Inspection after Reflow Process

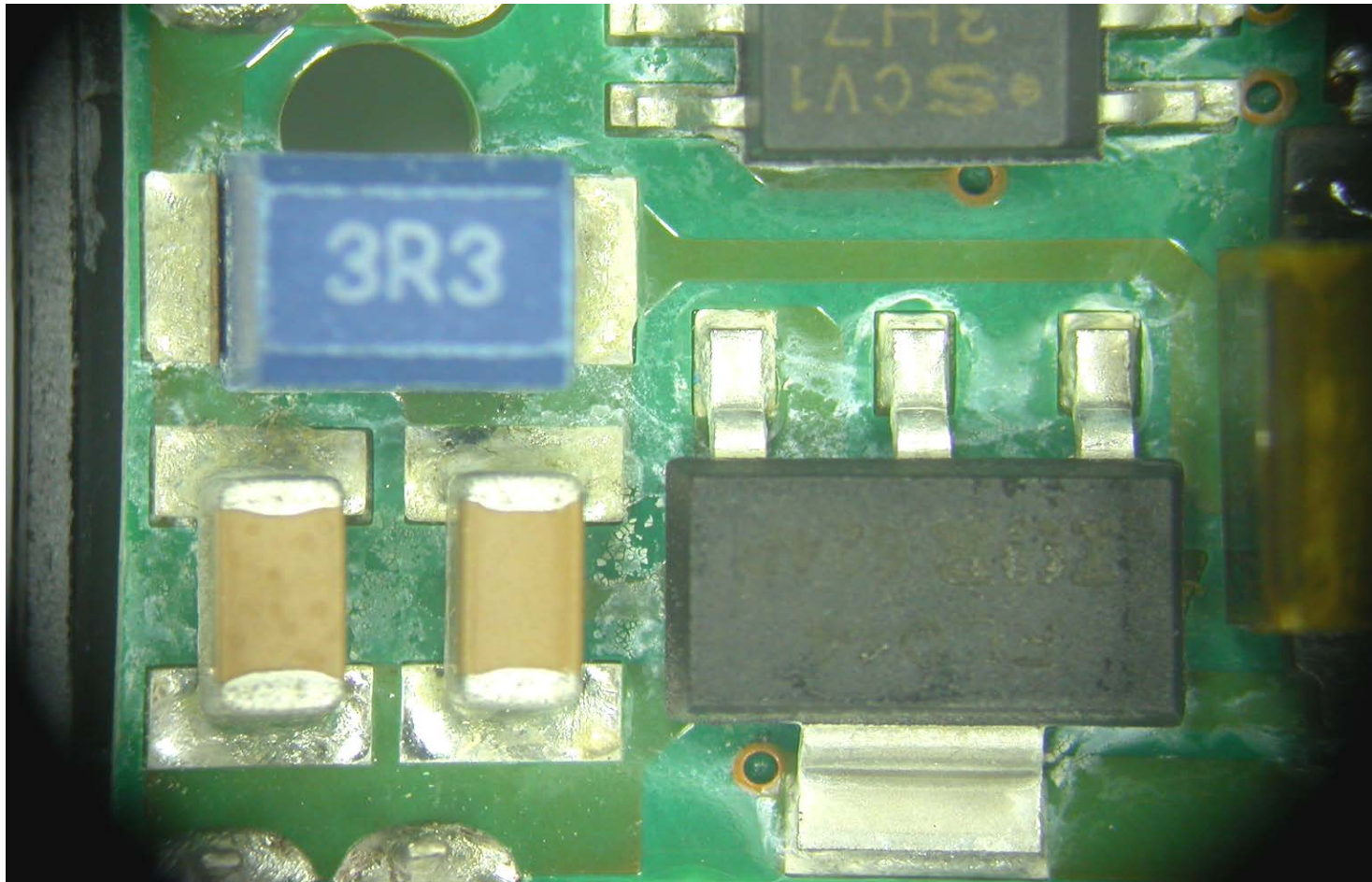




Top Side View-3

**Solder Joint Visual Inspection after Reflow Process**



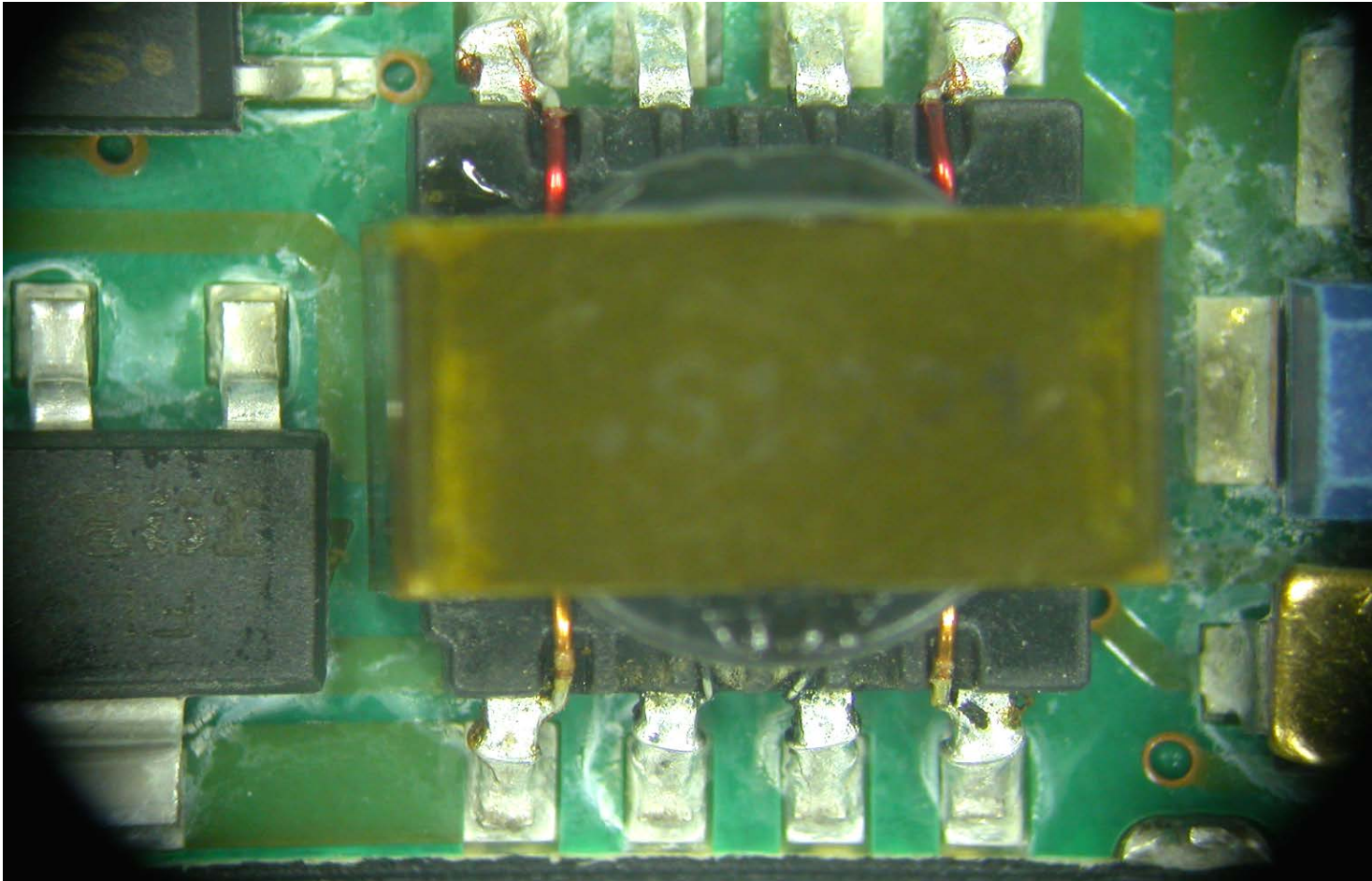


Top Side View-3.1

### Solder Joint Visual Inspection after Reflow Process



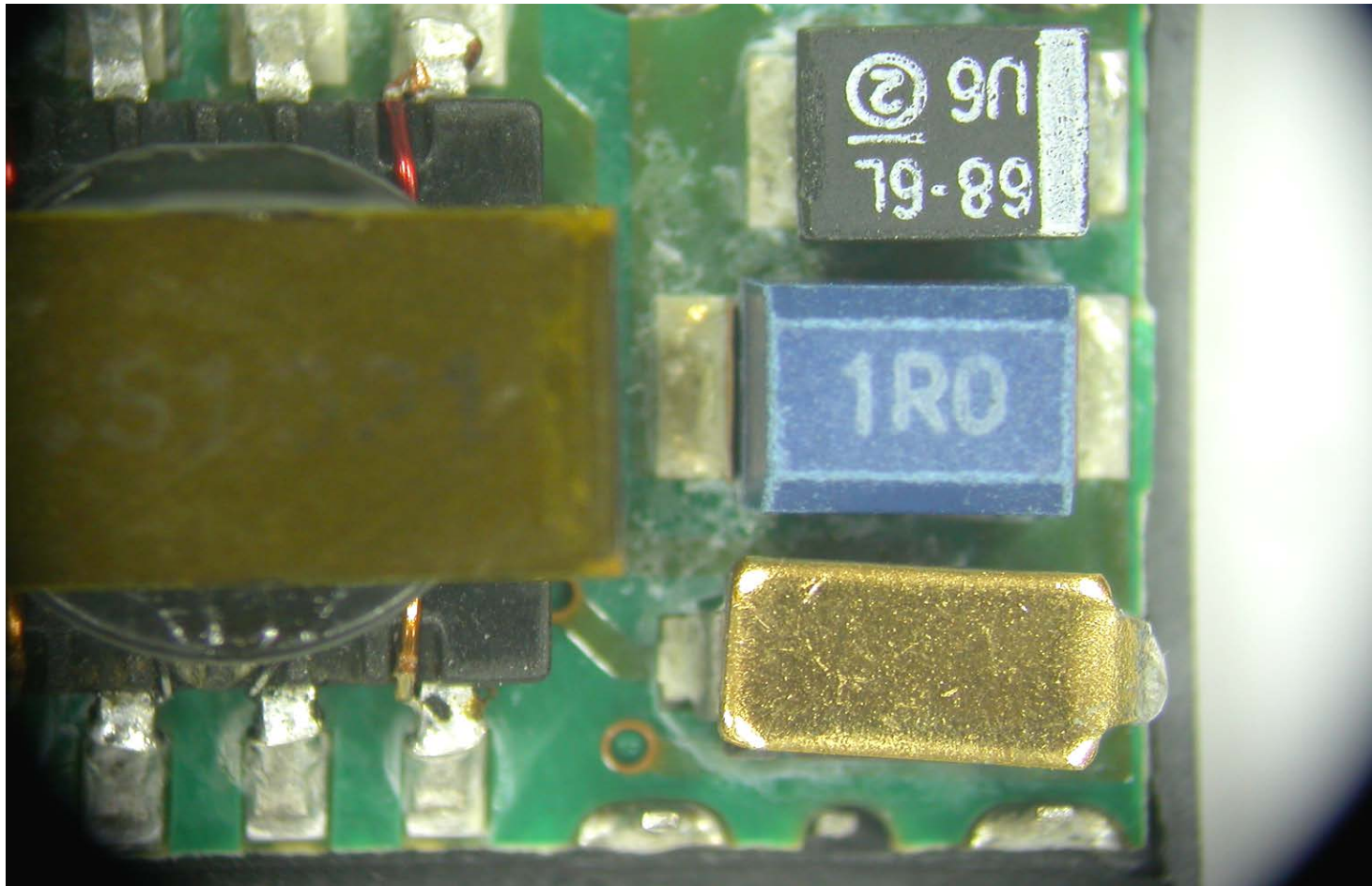




Top Side View-3.2

### Solder Joint Visual Inspection after Reflow Process



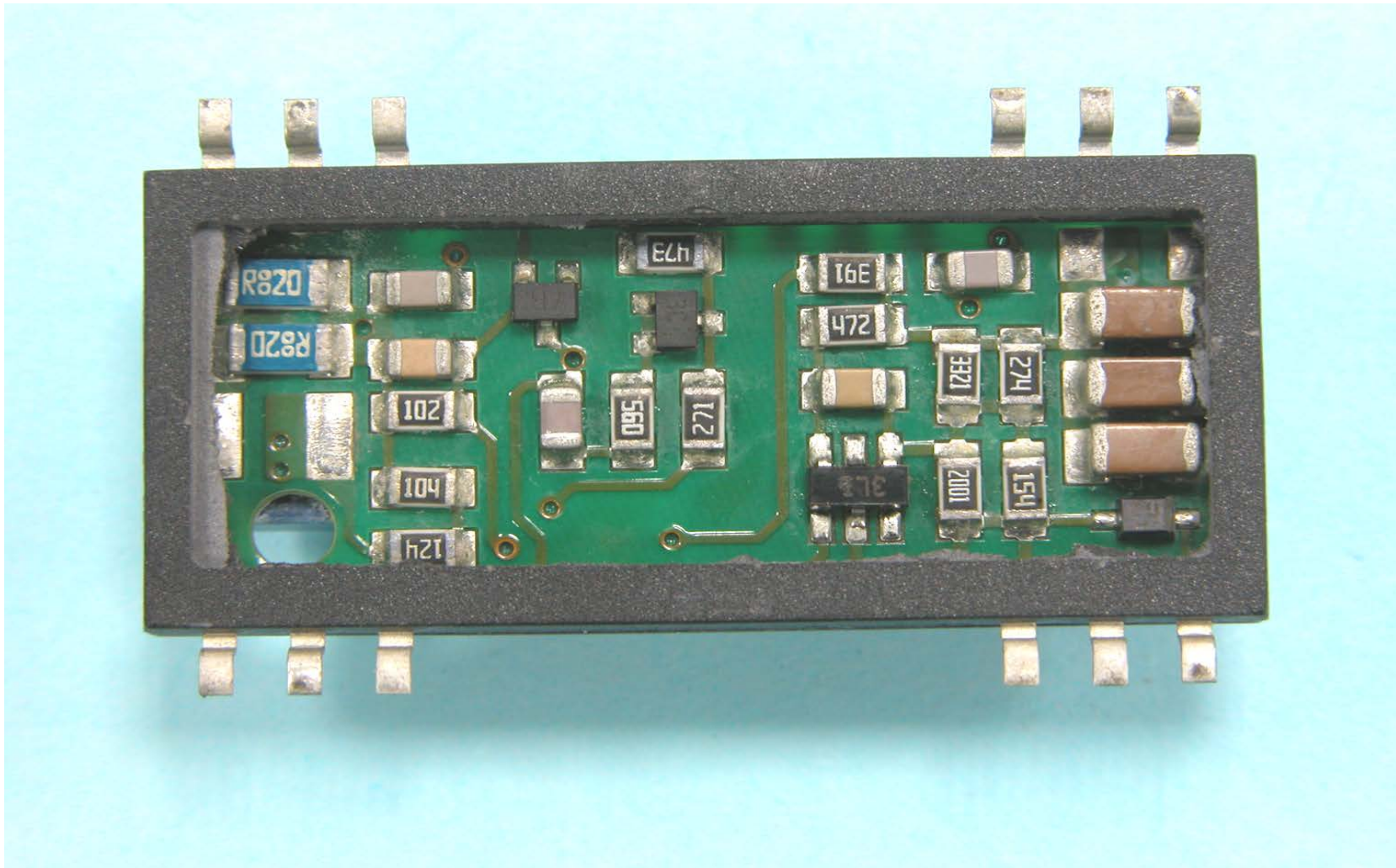


Top Side View-3.3

**Solder Joint Visual Inspection after Reflow Process**



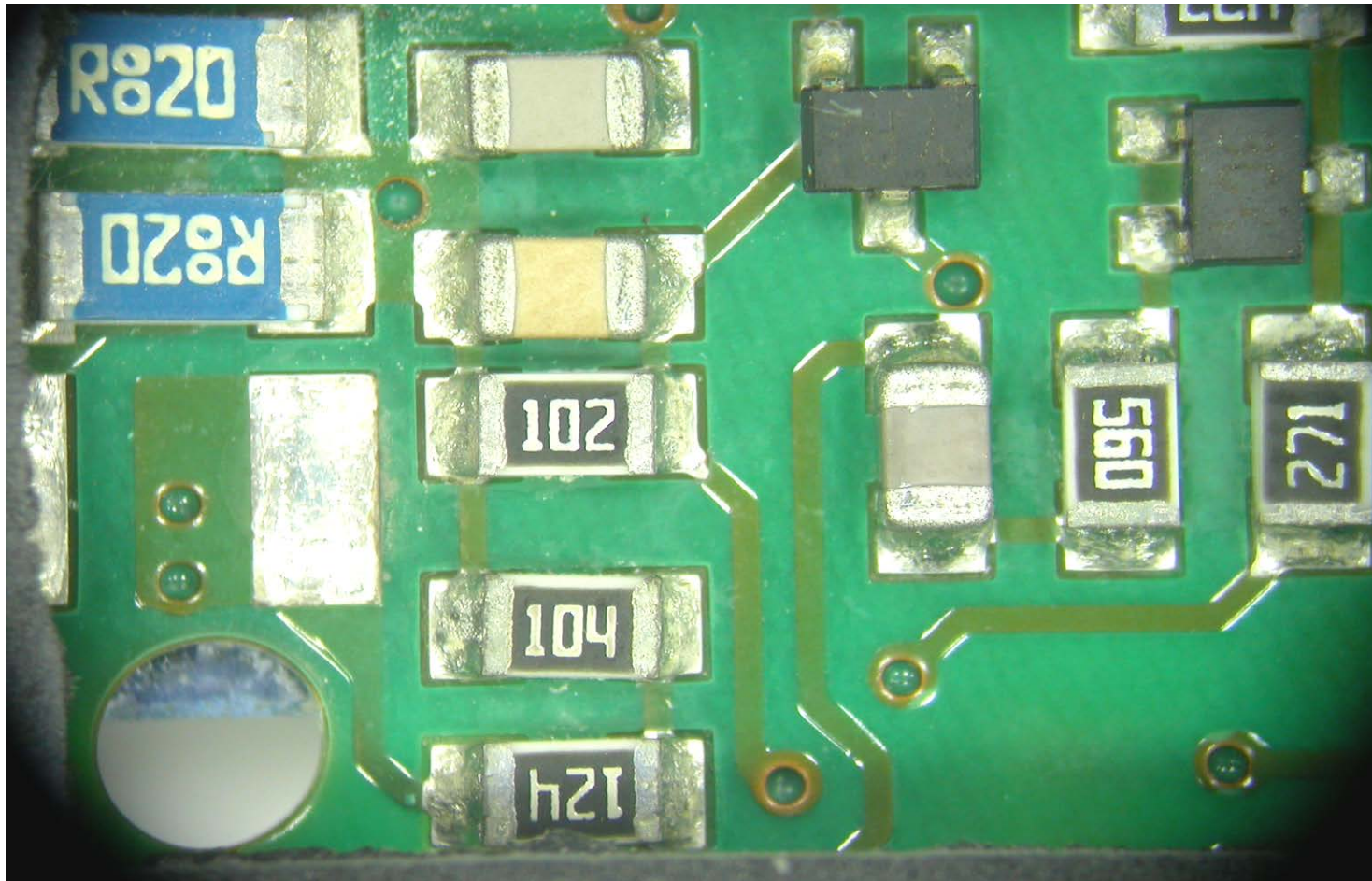




Bottom Side View-3

**Solder Joint Visual Inspection after Reflow Process**



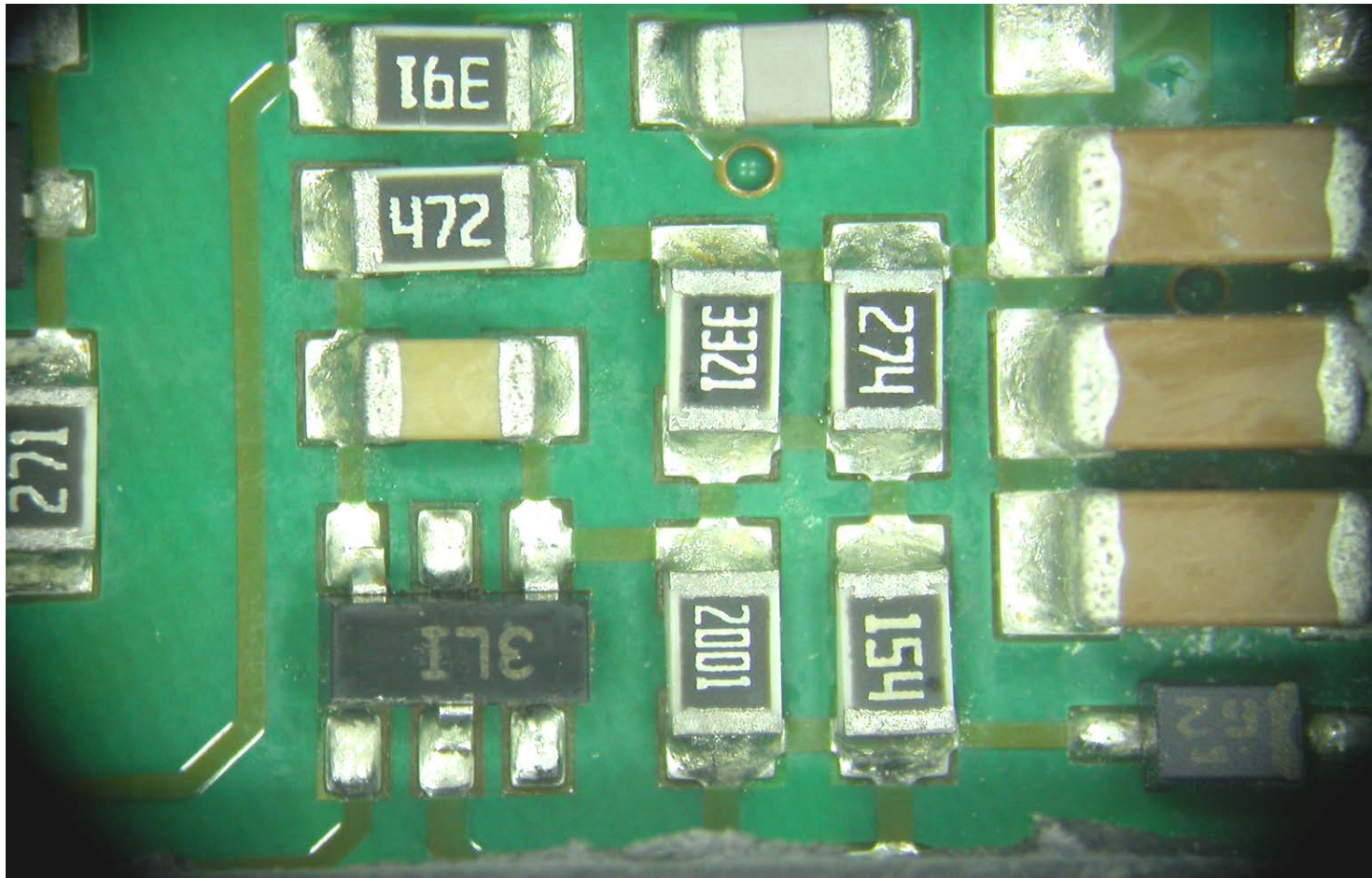


Bottom Side View-3.1

# **Solder Joint Visual Inspection after Reflow Process**







Bottom Side View-3.2

## Conclusion

After above test process, there's no abnormal situation found and all tested units meet electrical characteristics. The products meet MSL Level 2 as per IPC/JEDEC J-STD-020C.

Date : #####

**TRACO  
POWER**

Product: **TES 3 Series**  
Dual Output Models

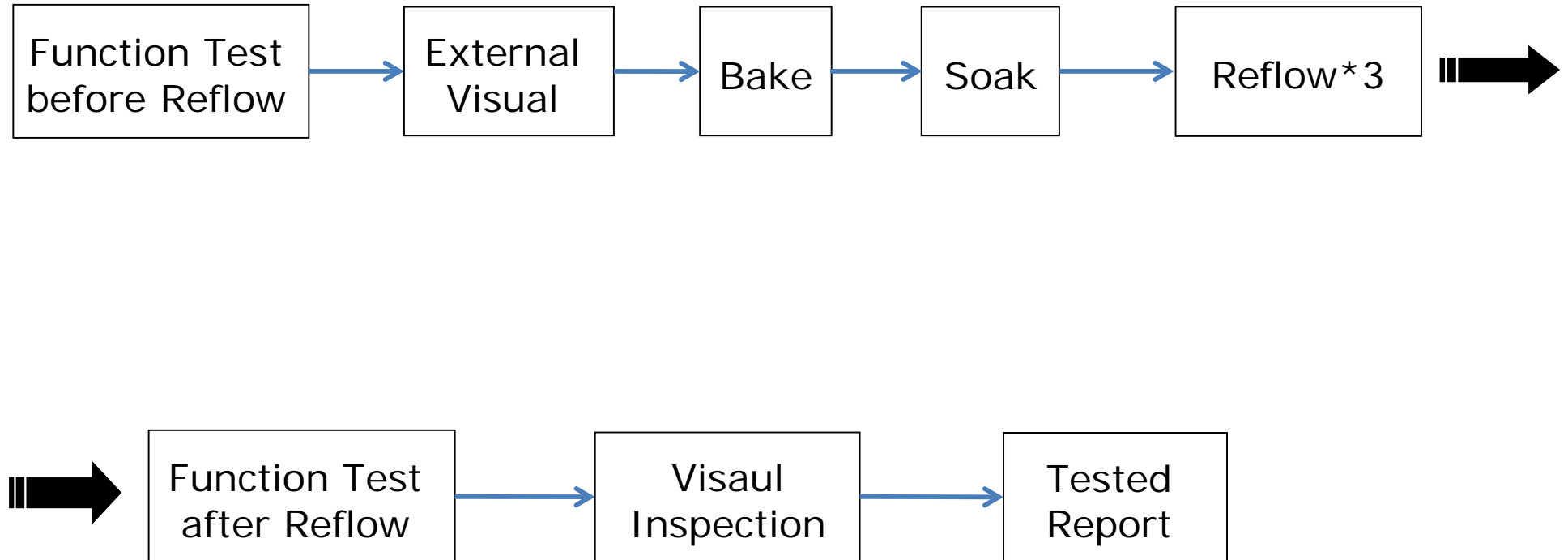
Moisture Sensitivity Level (MSL) Test Report  
as per IPC/JEDEC J-STD-020C



## Table of Contents

	Page
Tested Flowchart	<u>1</u>
Tested Data before Reflow	<u>2</u>
245°C Temperature Reflow Profile	<u>3</u>
Tested Data after Reflow	<u>4</u>
Pictures	<u>5-43</u>
Conclusion	<u>44</u>

# Tested Flowchart for Open-Frame Products



# Test Report

Model Number : TES 3-1222(date code : 0730)  
Q'TY : 30 pcs

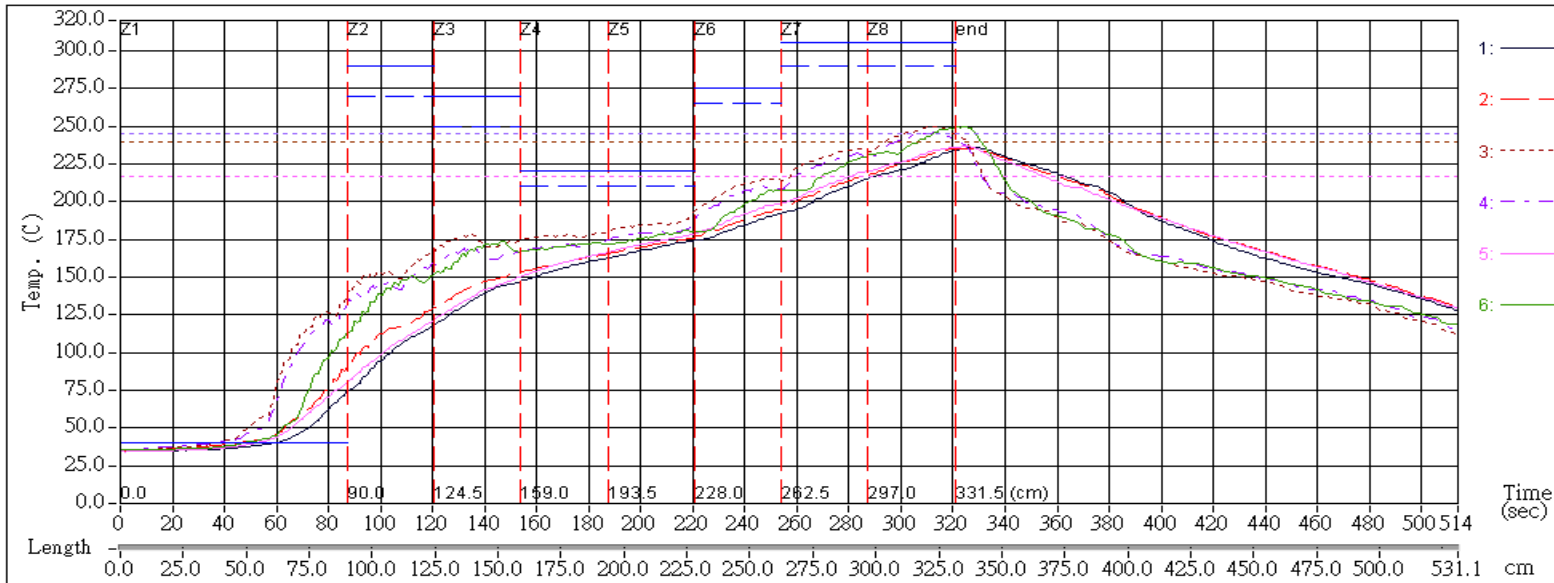
Before Reflow Process

Date: 30.07.2007  
Tested By: Jordan ou

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp p)		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 318.5	> 78.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
1	12	310.40	80.415	12.044	12.036	24.0	20.0	0.04	-0.04	0.03	0.08	OK	pass
2		312.40	80.151	12.076	12.078	23.2	26.4	0.04	0.03	0.05	0.07	OK	pass
3		313.20	80.147	12.103	12.112	22.4	24.8	0.02	0.08	0.01	0.15	OK	pass
4		312.60	80.282	12.108	12.102	28.0	30.4	0.04	0.05	0.06	0.11	OK	pass
5		314.10	79.481	12.041	12.042	27.2	27.2	0.03	0.05	0.02	0.08	OK	pass
6		311.40	80.369	12.069	12.076	24.0	24.8	0.04	0.02	0.09	0.04	OK	pass
7		311.20	80.200	12.048	12.030	27.2	28.0	0.01	0.05	0.01	0.13	OK	pass
8		312.50	80.288	12.110	12.096	21.6	22.4	0.06	0.04	0.14	0.01	OK	pass
9		310.50	80.226	12.021	12.012	28.8	31.2	0.05	0.01	0.12	0.05	OK	pass
10		311.80	80.268	12.080	12.064	24.0	24.8	0.03	0.06	0.08	0.09	OK	pass
11		311.40	80.239	12.059	12.047	20.8	24.0	0.03	0.03	0.03	0.07	OK	pass
12		315.90	79.358	12.120	12.061	36.8	38.4	0.10	-0.03	0.15	0.01	OK	pass
13		312.10	80.270	12.088	12.082	26.4	28.8	0.04	0.03	0.03	0.08	OK	pass
14		312.80	80.116	12.094	12.084	30.4	29.6	0.05	0.03	0.08	0.03	OK	pass
15		311.30	80.327	12.085	12.041	23.2	24.0	0.03	0.06	0.02	0.13	OK	pass
16		311.30	80.471	12.089	12.080	28.0	25.6	0.02	0.03	0.04	0.07	OK	pass
17		312.60	80.201	12.094	12.082	23.2	24.0	0.04	0.05	0.12	0.05	OK	pass
18		310.90	80.234	12.044	12.024	26.4	26.4	0.03	0.06	0.05	0.11	OK	pass
19		312.20	80.305	12.103	12.086	25.6	28.0	0.04	0.04	0.08	0.10	OK	pass
20		312.20	80.356	12.111	12.085	25.6	28.8	0.06	0.05	0.11	0.05	OK	pass
21		312.10	80.190	12.081	12.061	24.8	25.6	0.04	0.07	0.05	0.11	OK	pass
22		311.50	80.259	12.056	12.062	29.6	26.4	0.04	0.03	0.08	0.06	OK	pass
23		311.50	80.348	12.058	12.088	25.6	26.4	0.04	0.04	0.03	0.07	OK	pass
24		312.60	80.292	12.105	12.104	26.4	30.4	0.04	0.05	0.06	0.09	OK	pass
25		312.60	80.238	12.097	12.099	24.0	26.4	0.04	0.03	0.07	0.04	OK	pass
26		310.20	80.361	12.037	12.010	24.8	31.2	0.05	0.02	0.13	0.04	OK	pass
27		311.10	80.426	12.073	12.065	31.2	33.6	0.02	0.05	0.03	0.08	OK	pass
28		311.50	80.197	12.055	12.044	34.4	30.4	0.04	0.02	0.06	0.06	OK	pass
29		311.40	80.441	12.087	12.077	23.2	24.8	0.03	0.04	0.06	0.06	OK	pass
30		312.30	80.138	12.085	12.057	28.0	27.2	0.04	0.03	0.10	0.03	OK	pass



## THERMOTRACKER Report



<b>Date(dd/mm/yy)</b>	15/08/2007
<b>Company</b>	TRACO
<b>Product</b>	TES 3
<b>Line Speed</b>	62.00 cm/Min
<b>Down Load Information</b>	
<b>Scan Rate(mm:ss):</b>	00:01.0
<b>Date(dd/mm/yy):</b>	15/08/07
<b>Time(hh:mm:ss):</b>	13:44:28
<b>Data File</b>	MSIW1000+COVER.pwd

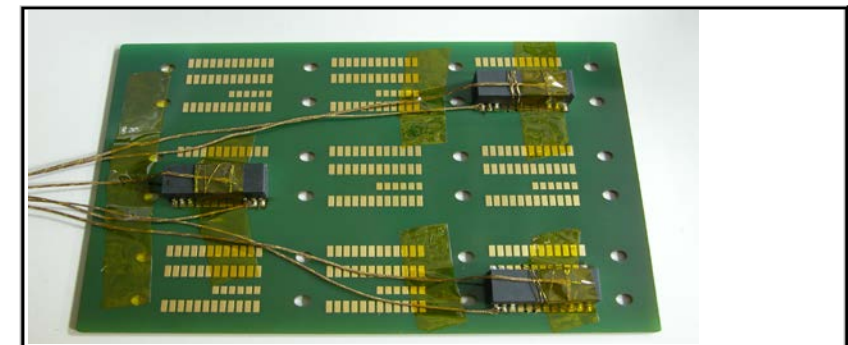
**Zone Set Value(C)and Length (cm)**

Zone	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
TOP	40	290	270	220	220	275	305	305
BOTTOM	40	270	250	210	210	265	290	290
Length	90.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5

**Comment**

**Sensor Description and Max./Threshold Information**

Sensor Name	Max. Temp. (C)	At Time (sec)	Time(sec) above217.0C	Time(sec) above240.0C	Time(sec) above245.0C
Pin	235.7	328.00	72.00	0.00	0.00
Pin	235.0	325.00	74.00	0.00	0.00
Cover *	249.4	313.00	74.00	31.00	19.00
Cover *	245.9	313.00	72.00	23.00	8.00
Pin	236.5	325.00	73.00	0.00	0.00
Cover *	249.8	325.00	69.00	24.00	16.00



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\* The temperatures of package topside surfaces meet the definition of JEDEC J-STD-020C.

# Test Report

Model Number : TES 3-1222(date code : 0730)  
Q'TY : 30 pcs

After Reflow Process

Date: 16.08.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp p)		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 318.5	> 78.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
1	12	308.80	80.647	12.007	12.018	24.8	29.6	0.05	0.03	0.05	0.08	OK	pass
2		310.60	80.475	12.046	12.067	25.6	29.6	0.04	0.03	0.05	0.05	OK	pass
3		311.50	80.461	12.076	12.103	23.2	27.2	0.01	0.07	0.01	0.15	OK	pass
4		311.30	80.501	12.081	12.095	30.4	35.2	0.05	0.03	0.06	0.09	OK	pass
5		312.60	79.734	12.015	12.033	31.2	35.2	0.03	0.03	0.01	0.08	OK	pass
6		309.90	80.634	12.043	12.069	27.2	30.4	0.03	0.03	0.09	0.03	OK	pass
7		309.90	80.439	12.026	12.027	27.2	29.6	0.01	0.04	0.01	0.12	OK	pass
8		310.80	80.614	12.085	12.091	23.2	26.4	0.05	0.03	0.16	0.01	OK	pass
9		308.80	80.503	11.990	11.998	28.0	31.2	0.04	0.01	0.12	0.03	OK	pass
10		310.10	80.565	12.053	12.055	24.0	30.4	0.06	0.05	0.09	0.09	OK	pass
11		309.90	80.484	12.032	12.036	26.4	31.2	0.03	0.05	0.03	0.08	OK	pass
12		314.60	79.595	12.103	12.059	37.6	39.2	0.10	-0.03	0.14	0.04	OK	pass
13		310.50	80.541	12.060	12.072	23.2	28.8	0.05	0.04	0.05	0.09	OK	pass
14		311.10	80.357	12.058	12.064	25.6	28.0	0.03	0.03	0.08	0.04	OK	pass
15		310.10	80.506	12.058	12.032	26.4	28.8	0.03	0.06	0.03	0.13	OK	pass
16		310.30	80.721	12.081	12.089	28.8	31.2	0.03	0.05	0.04	0.07	OK	pass
17		310.30	80.673	12.091	12.065	31.2	32.8	0.02	0.01	0.05	0.02	OK	pass
18		309.70	80.469	12.027	12.022	25.6	29.6	0.03	0.05	0.04	0.11	OK	pass
19		310.90	80.544	12.081	12.083	25.6	28.8	0.03	0.05	0.07	0.07	OK	pass
20		310.80	80.545	12.083	12.074	27.2	30.4	0.04	0.03	0.10	0.04	OK	pass
21		310.70	80.447	12.062	12.058	24.0	25.6	0.03	0.05	0.04	0.12	OK	pass
22		310.00	80.477	12.026	12.049	28.0	31.2	0.06	0.04	0.09	0.05	OK	pass
23		310.30	80.552	12.037	12.084	26.4	29.6	0.03	0.03	0.04	0.07	OK	pass
24		311.50	80.553	12.099	12.115	26.4	28.8	0.03	0.04	0.05	0.08	OK	pass
25		311.30	80.468	12.077	12.096	23.2	28.0	0.04	0.03	0.08	0.04	OK	pass
26		309.10	80.606	12.026	12.018	23.2	28.0	0.06	0.01	0.13	0.02	OK	pass
27		309.60	80.679	12.049	12.056	32.0	35.2	0.03	0.04	0.03	0.08	OK	pass
28		310.20	80.450	12.039	12.044	36.0	37.6	0.06	0.02	0.06	0.06	OK	pass
29		310.00	80.643	12.059	12.066	24.0	28.8	0.04	0.03	0.08	0.06	OK	pass
30		311.10	80.314	12.061	12.051	29.6	35.2	0.04	0.03	0.10	0.02	OK	pass

---

## Visual Inspection after Reflow Process



【NO : 1】 After Reflow

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## Visual Inspection after Reflow Process



【NO : 1】 After Reflow



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## Visual Inspection after Reflow Process



【NO : 1】 After Reflow

---

## Visual Inspection after Reflow Process



【NO : 1】 After Reflow

---

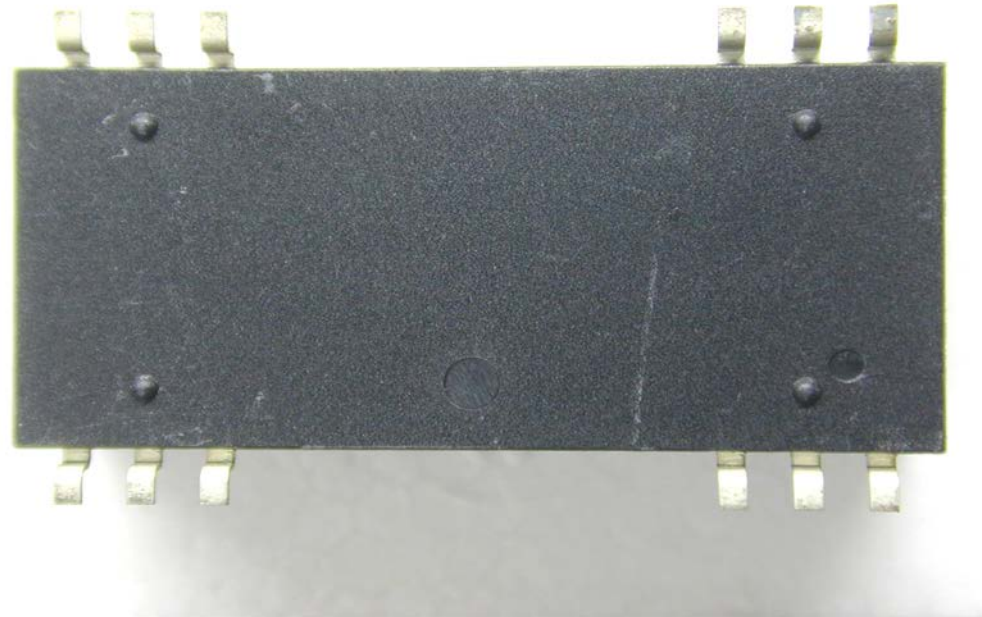
## Visual Inspection after Reflow Process



【NO : 1】 After Reflow

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## Visual Inspection after Reflow Process

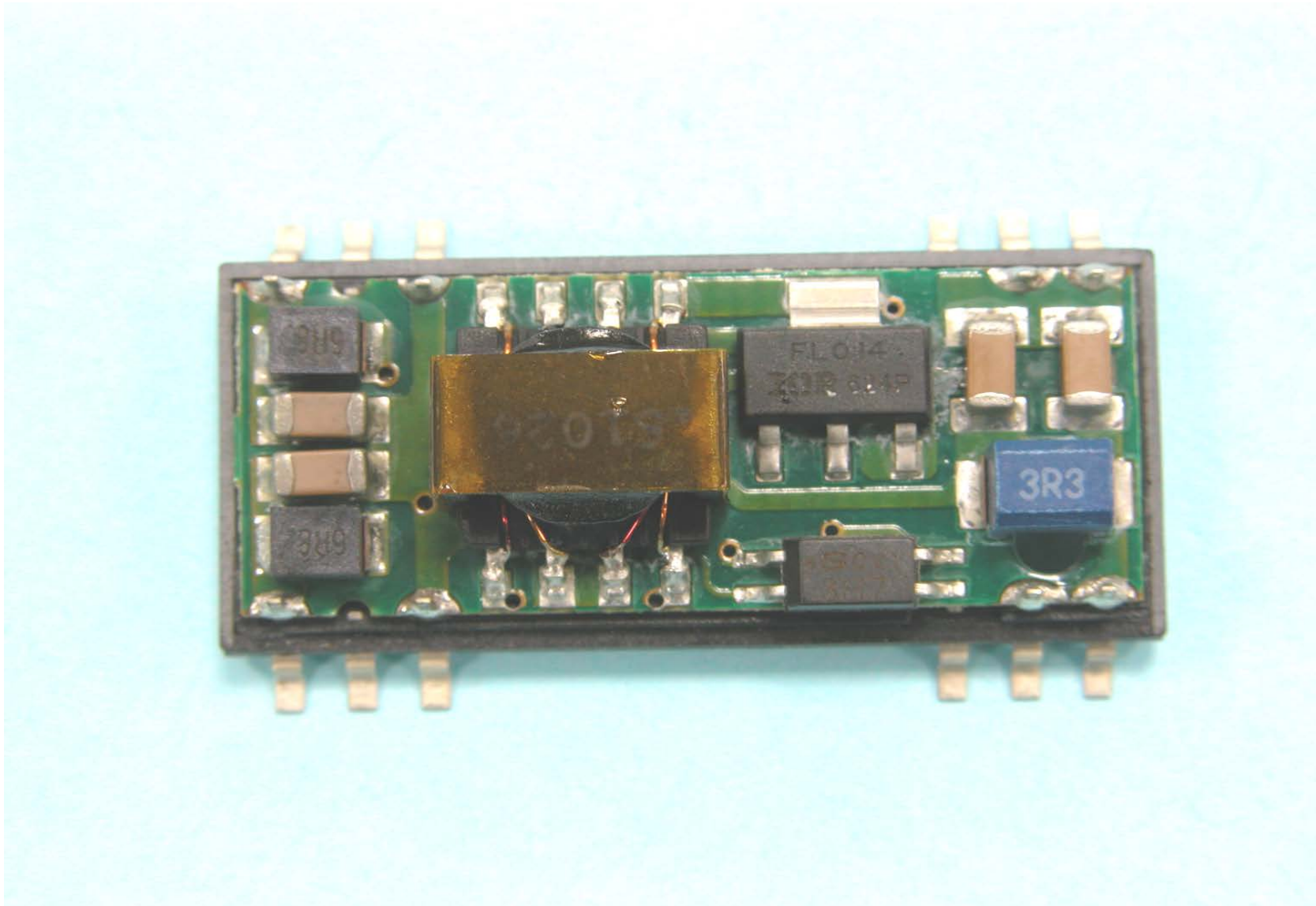


【NO : 1】 After Reflow



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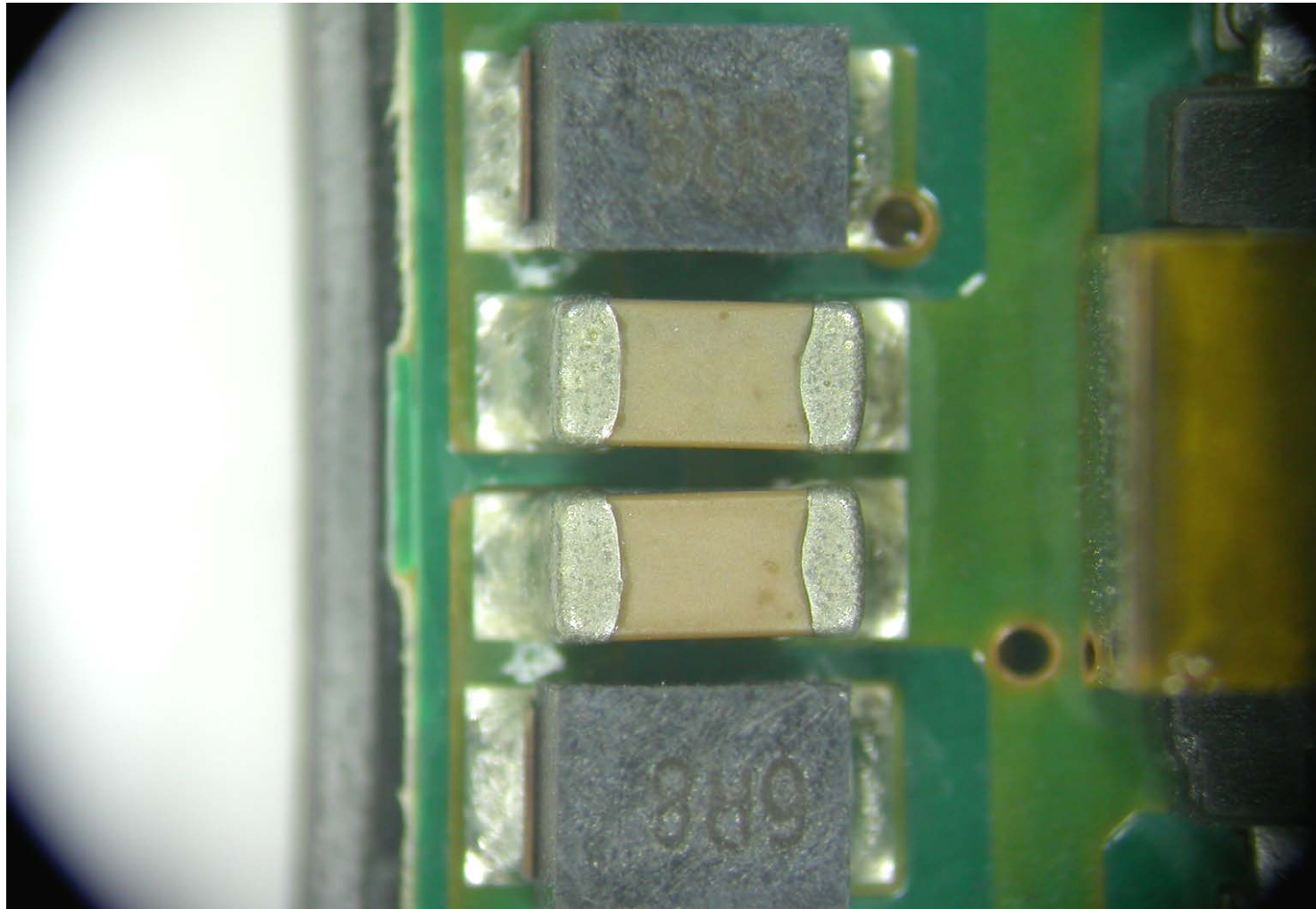
## Solder Joint Visual Inspection after Reflow Process



Top Side View-1

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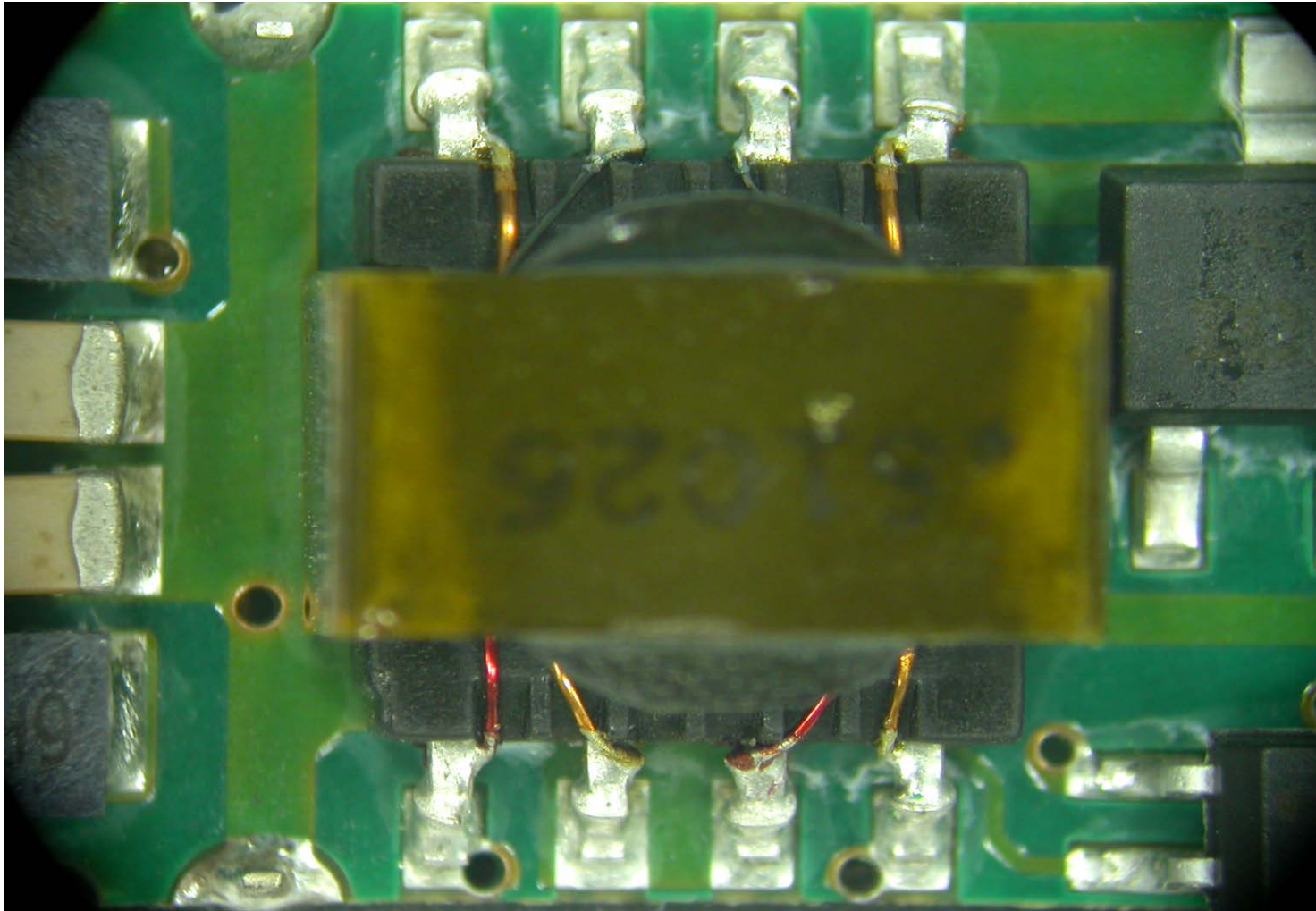
## Solder Joint Visual Inspection after Reflow Process



Top Side View-1.1

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## Solder Joint Visual Inspection after Reflow Process

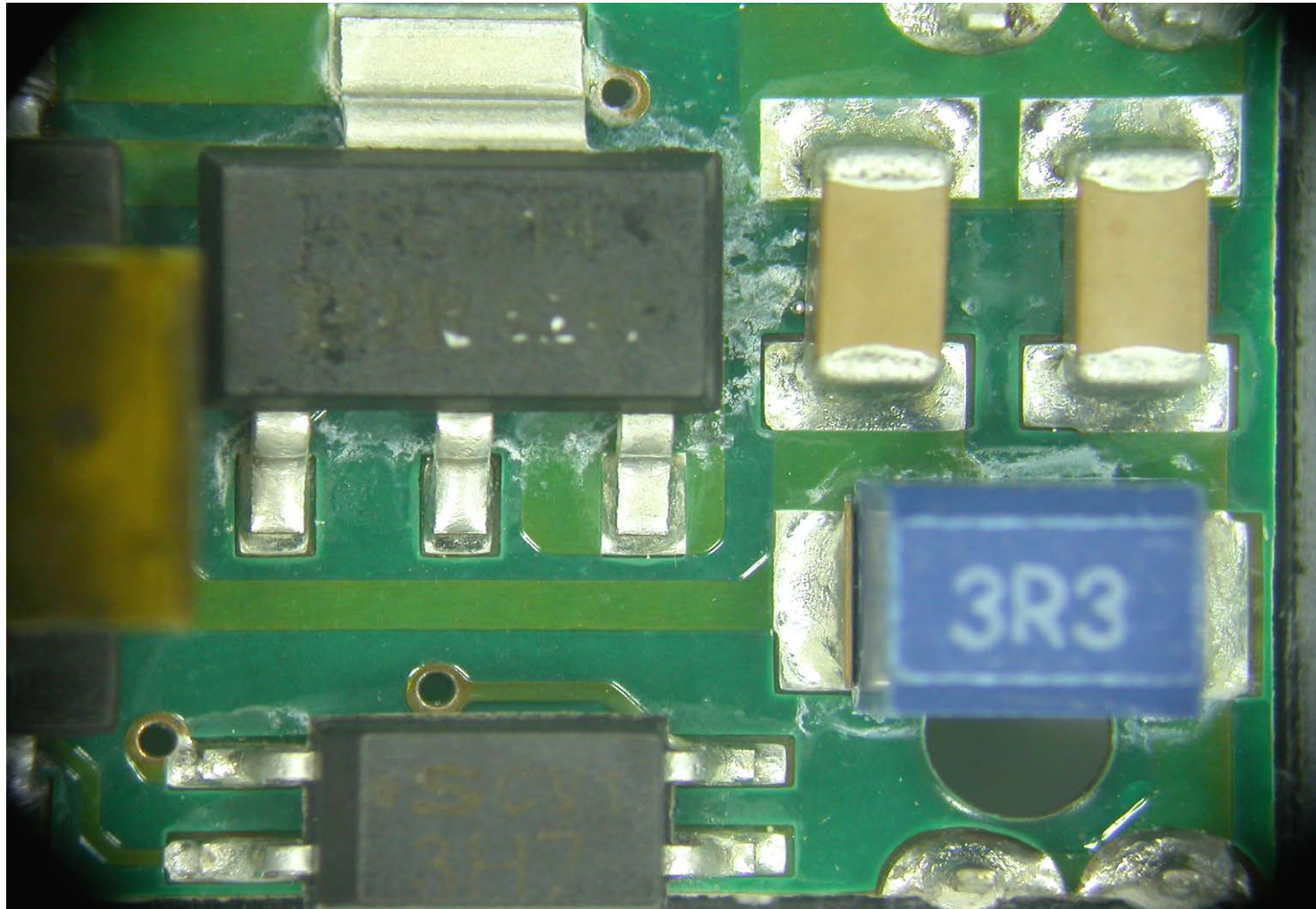


Top Side View-1.2



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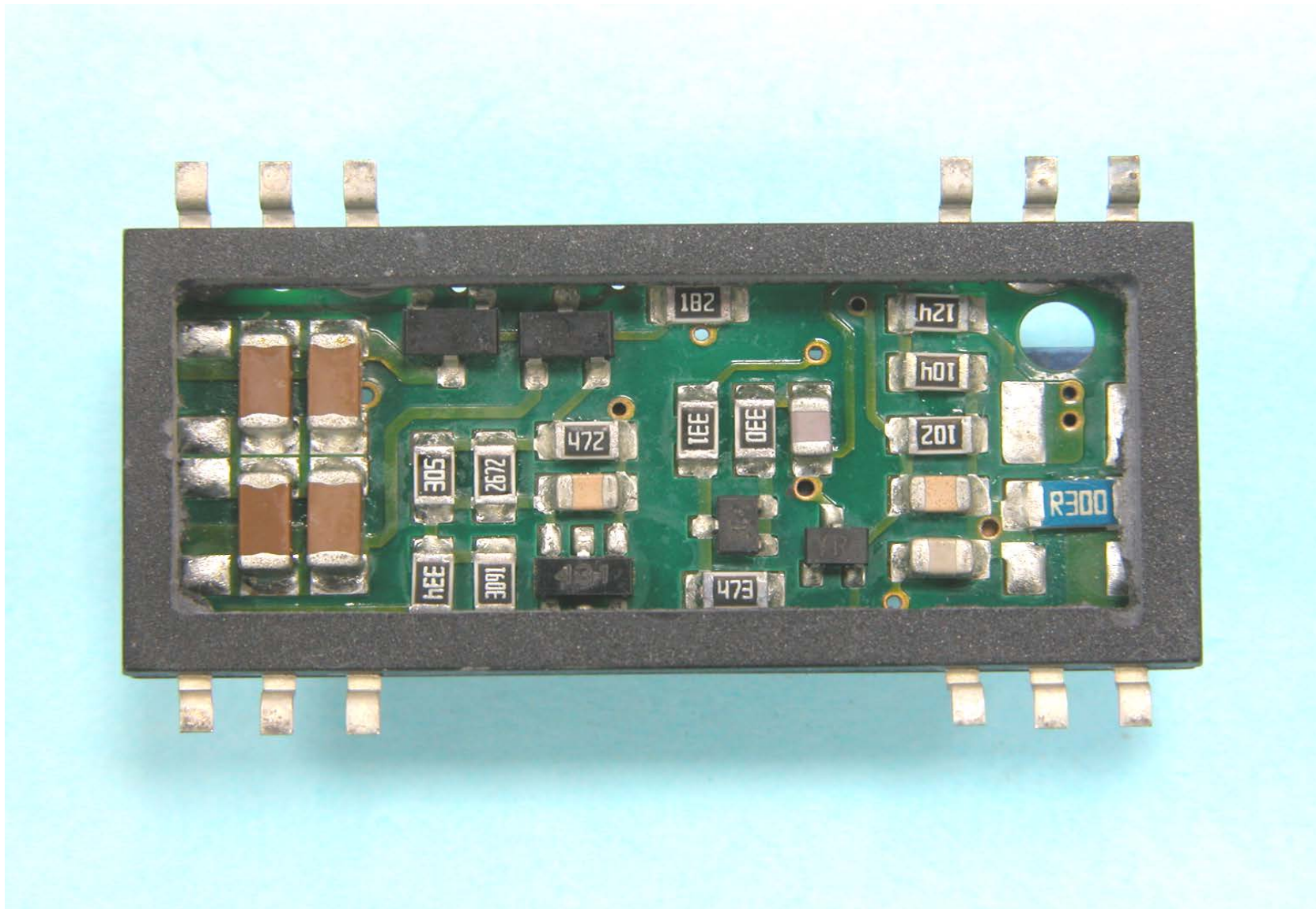
## Solder Joint Visual Inspection after Reflow Process



Top Side View-1.3

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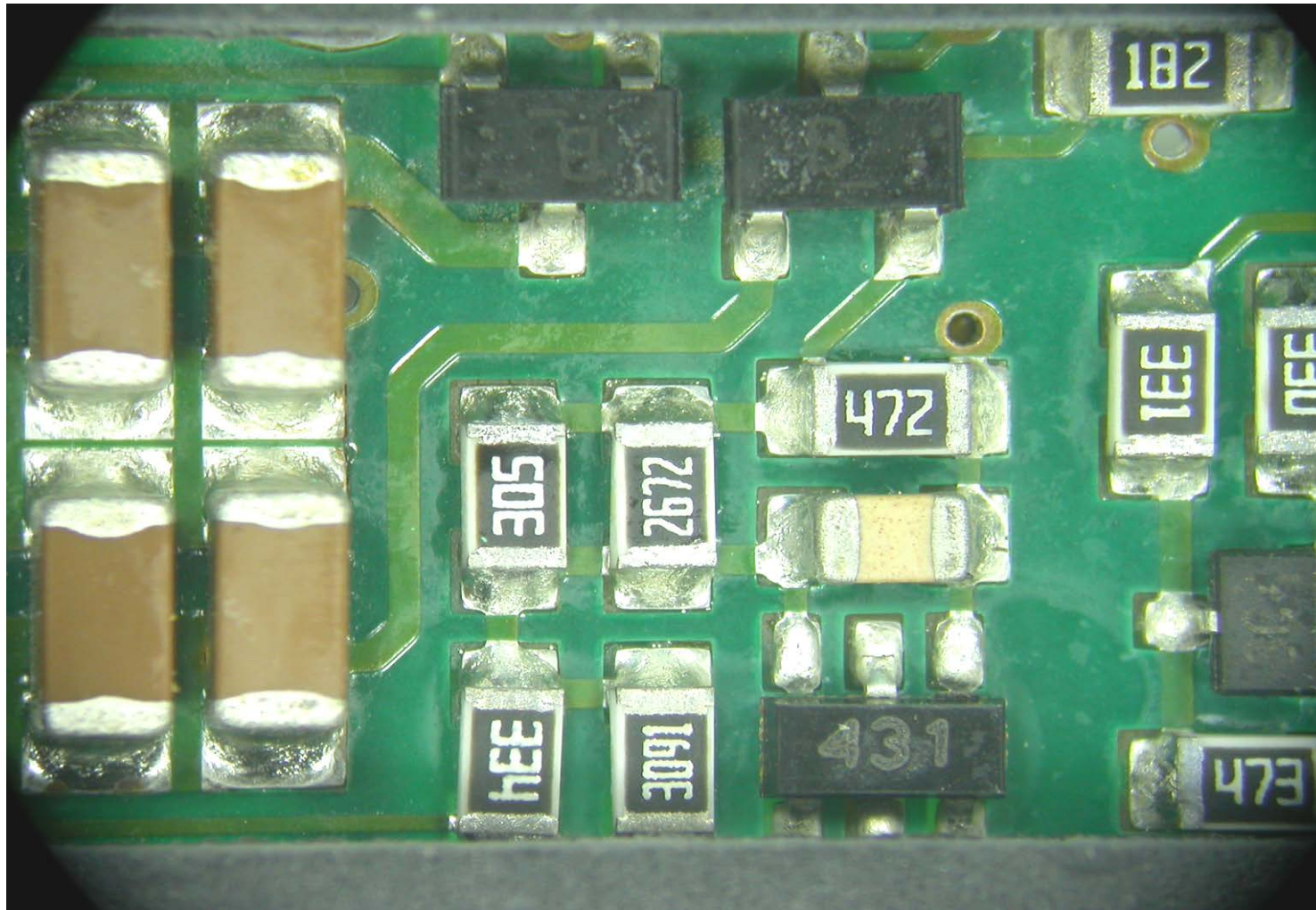
## Solder Joint Visual Inspection after Reflow Process



Bottom Side View-1



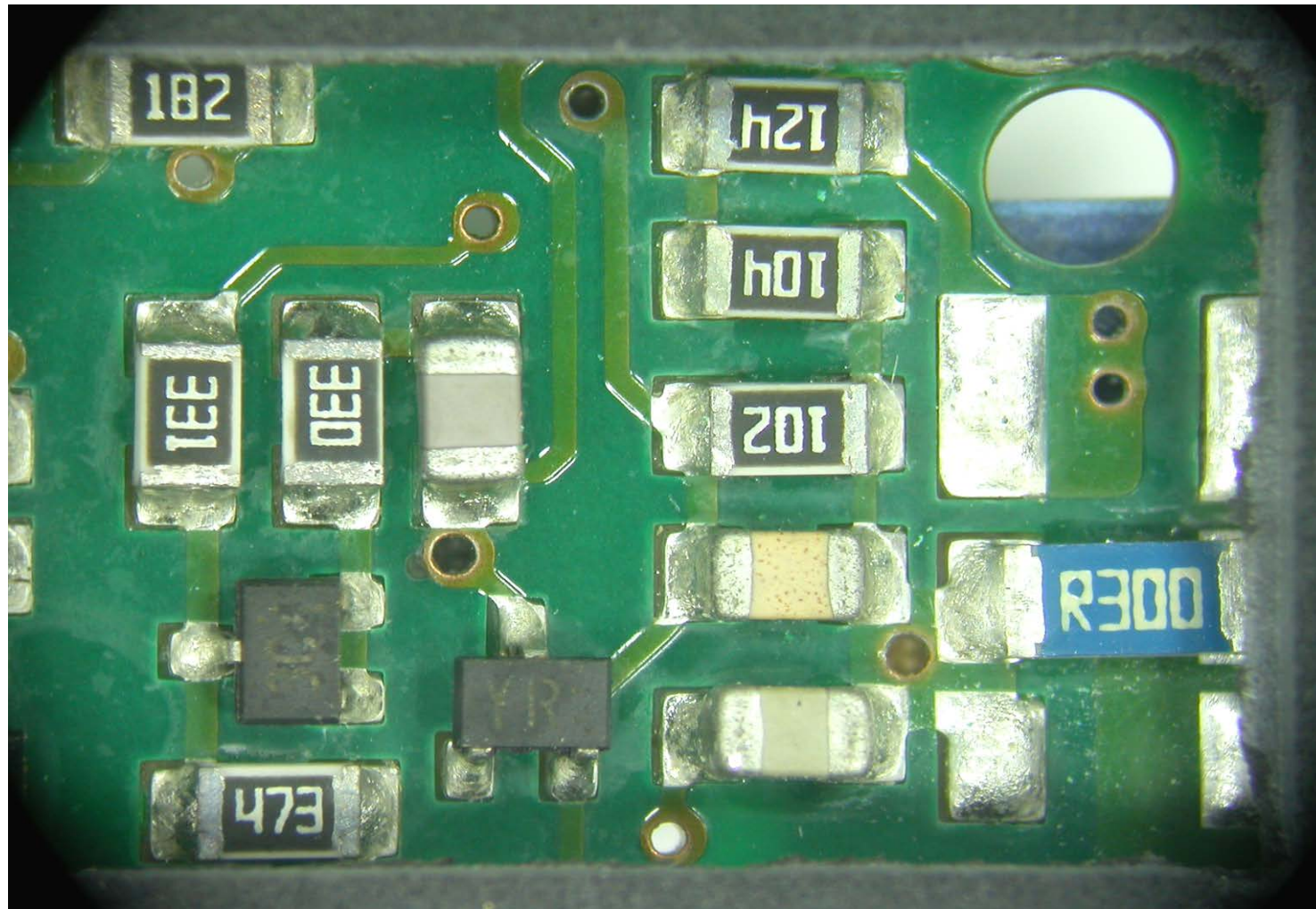
## Solder Joint Visual Inspection after Reflow Process



Bottom Side View-1.1

---

Solder Joint Visual Inspection after Reflow Process



Bottom Side View-1.2



---

## Visual Inspection after Reflow Process



【NO : 2】 After Reflow

---

## Visual Inspection after Reflow Process



【NO : 2】 After Reflow

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## Visual Inspection after Reflow Process



【NO : 2】 After Reflow



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## Visual Inspection after Reflow Process



【NO : 2】 After Reflow

---

## Visual Inspection after Reflow Process



【NO : 2】 After Reflow

---

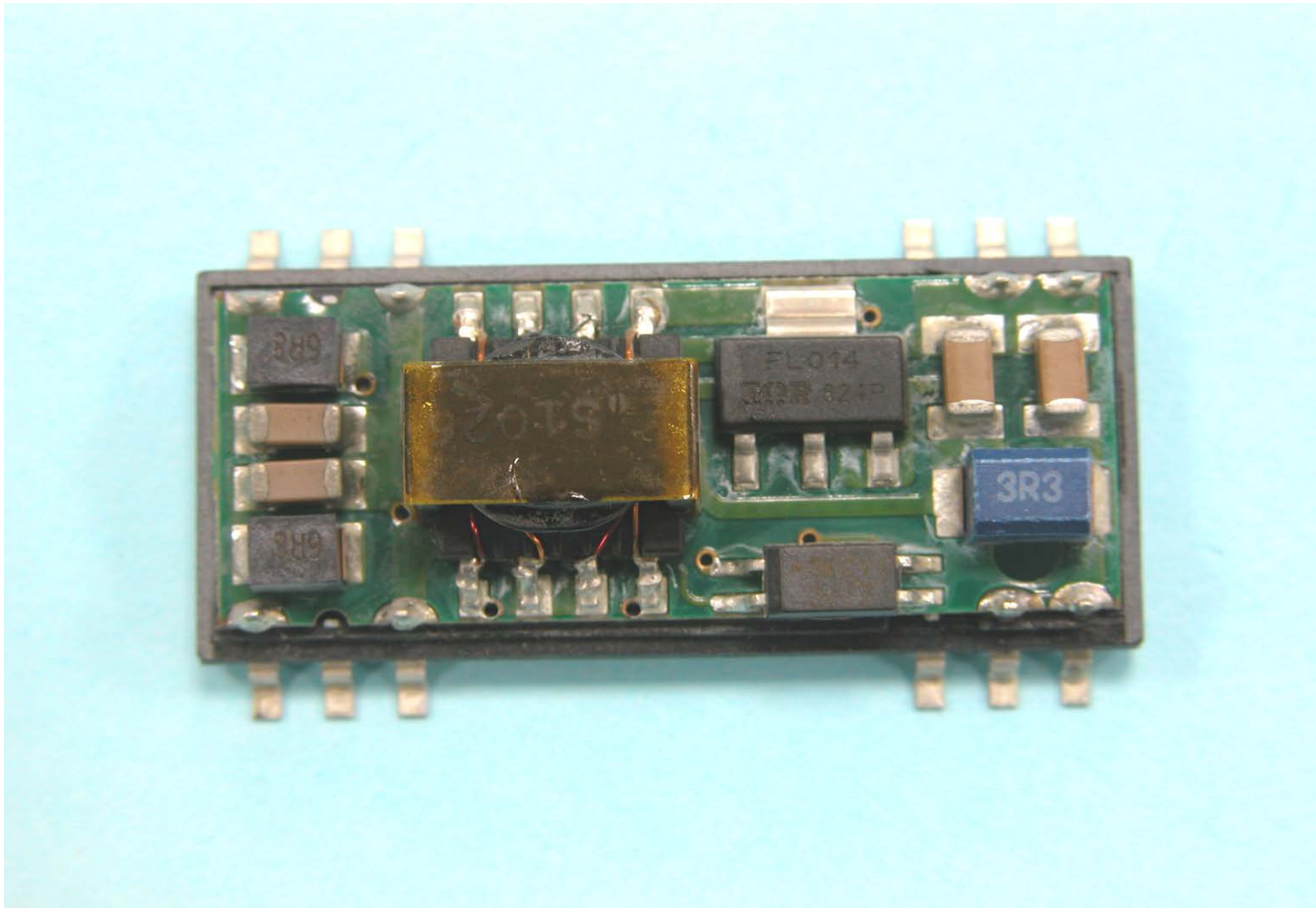
## Visual Inspection after Reflow Process



【NO : 2】 After Reflow

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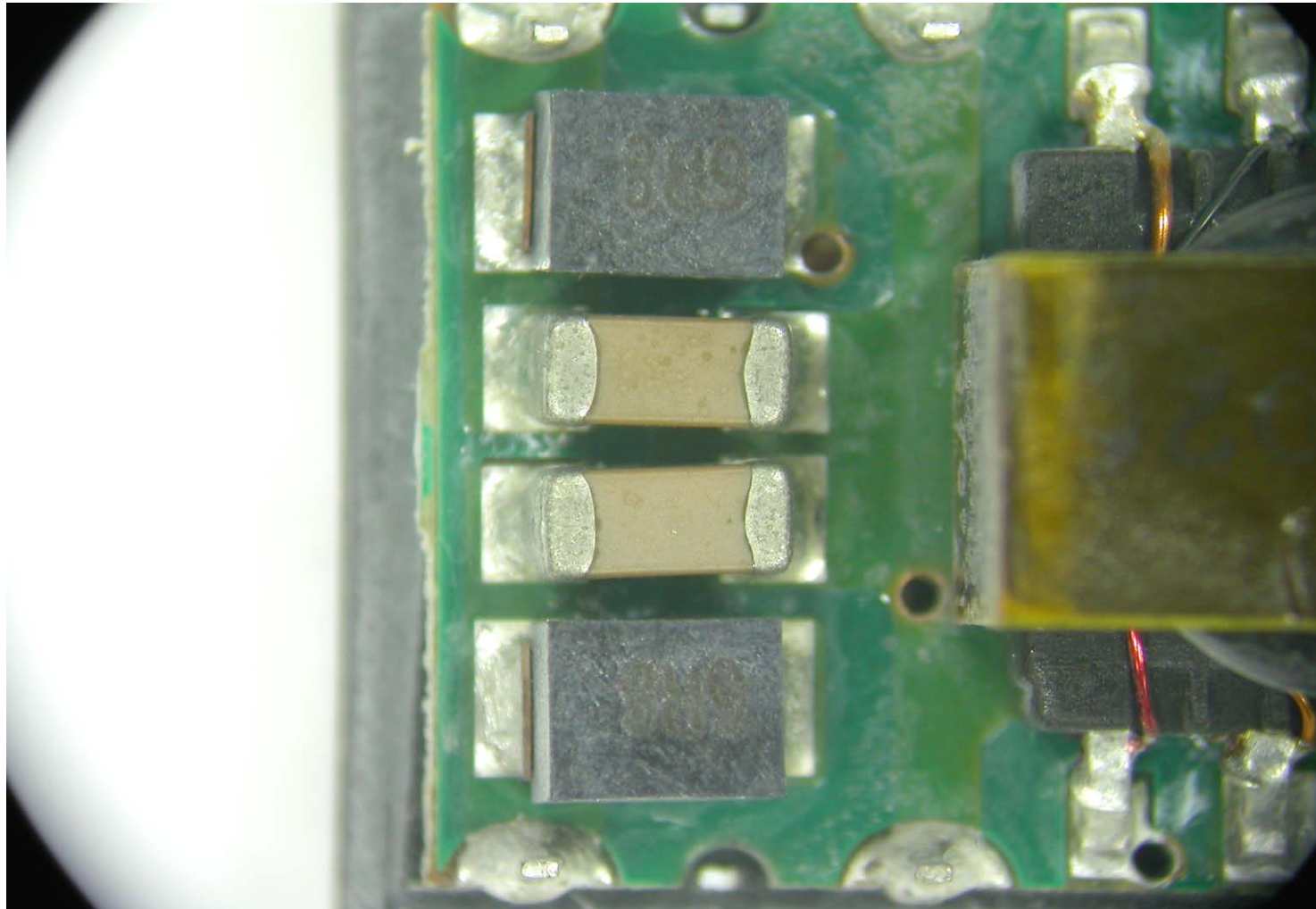
## Solder Joint Visual Inspection after Reflow Process



Top Side View-2

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## Solder Joint Visual Inspection after Reflow Process

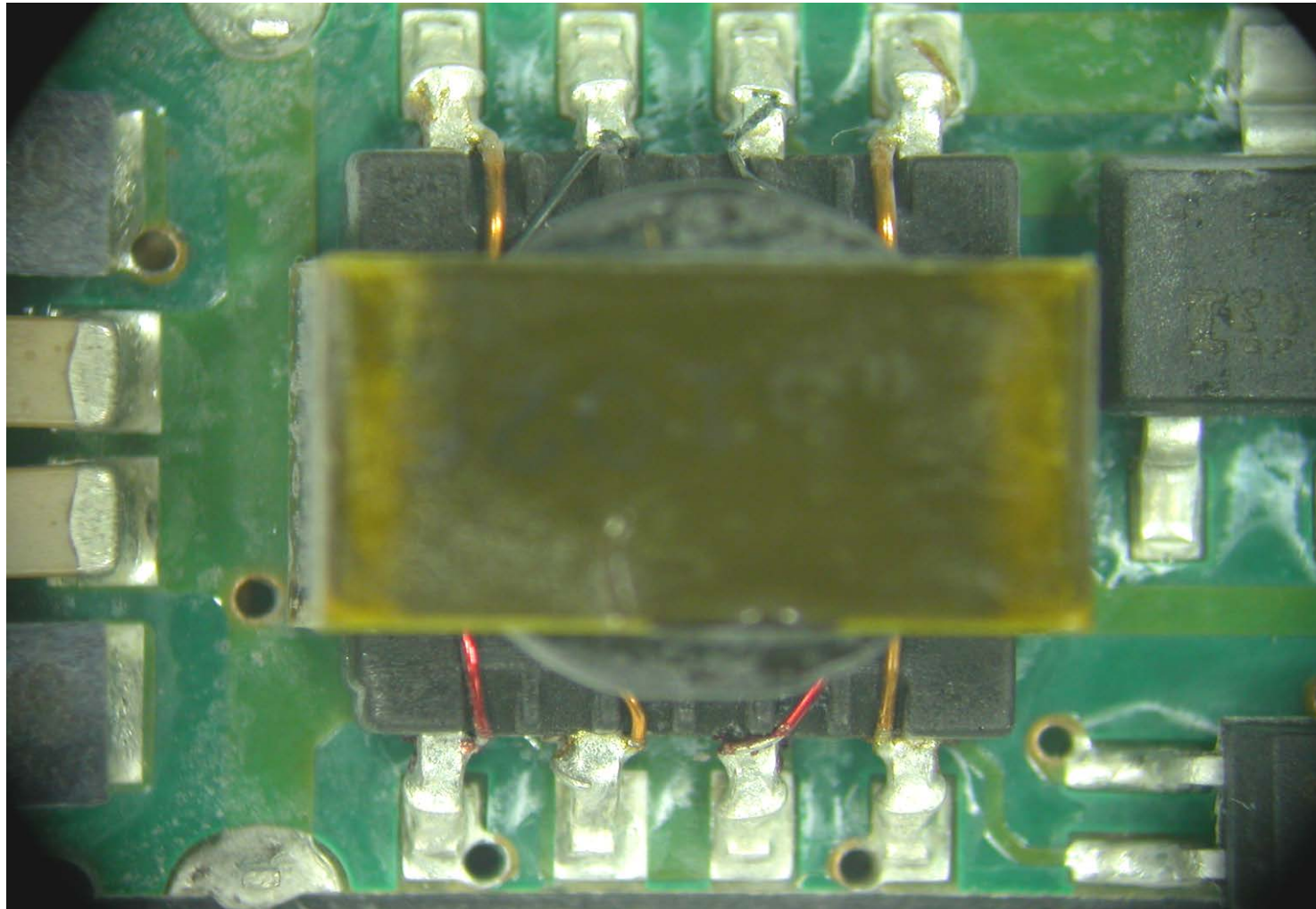


Top Side View-2.1



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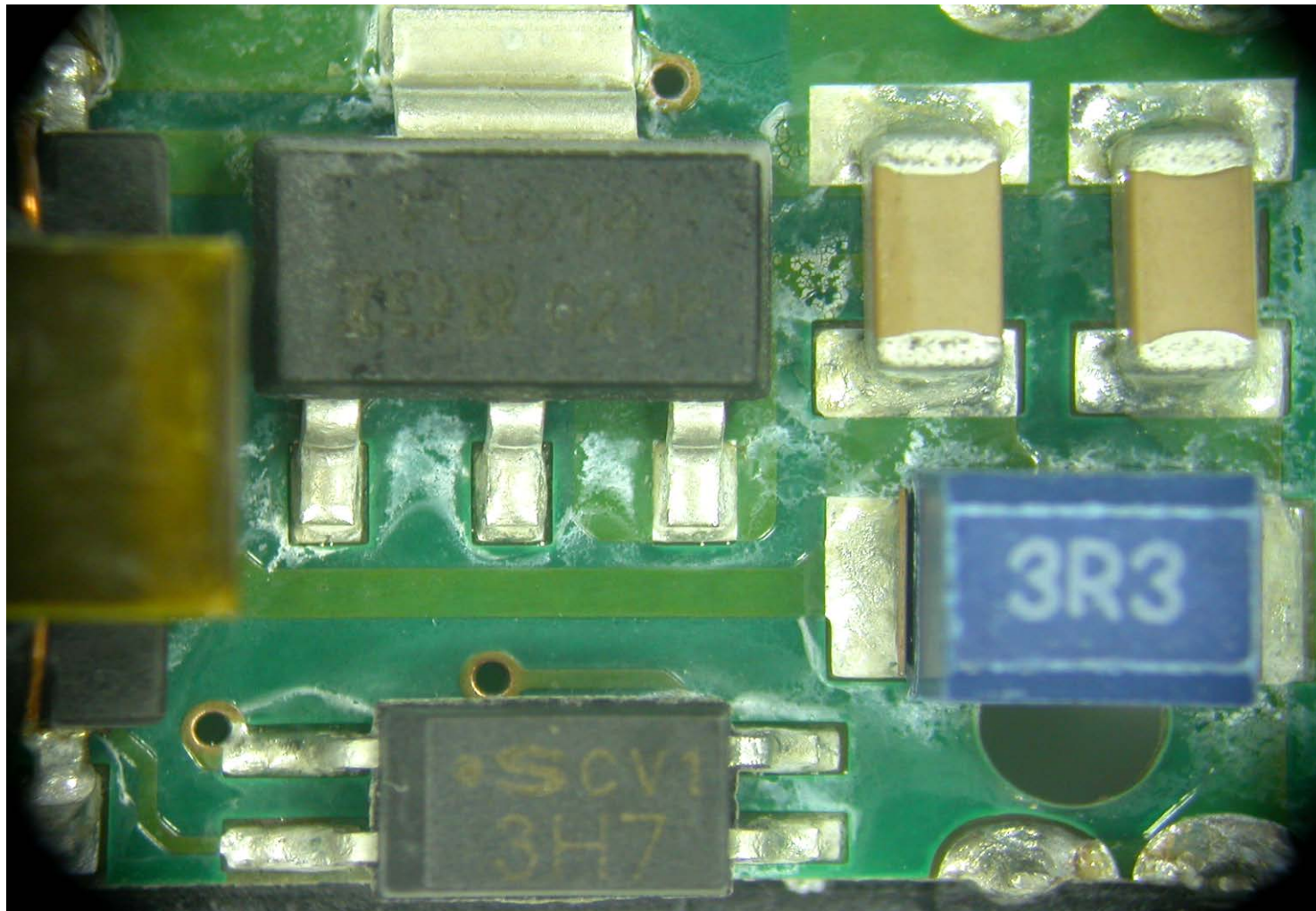
## Solder Joint Visual Inspection after Reflow Process



Top Side View-2.2

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Solder Joint Visual Inspection after Reflow Process

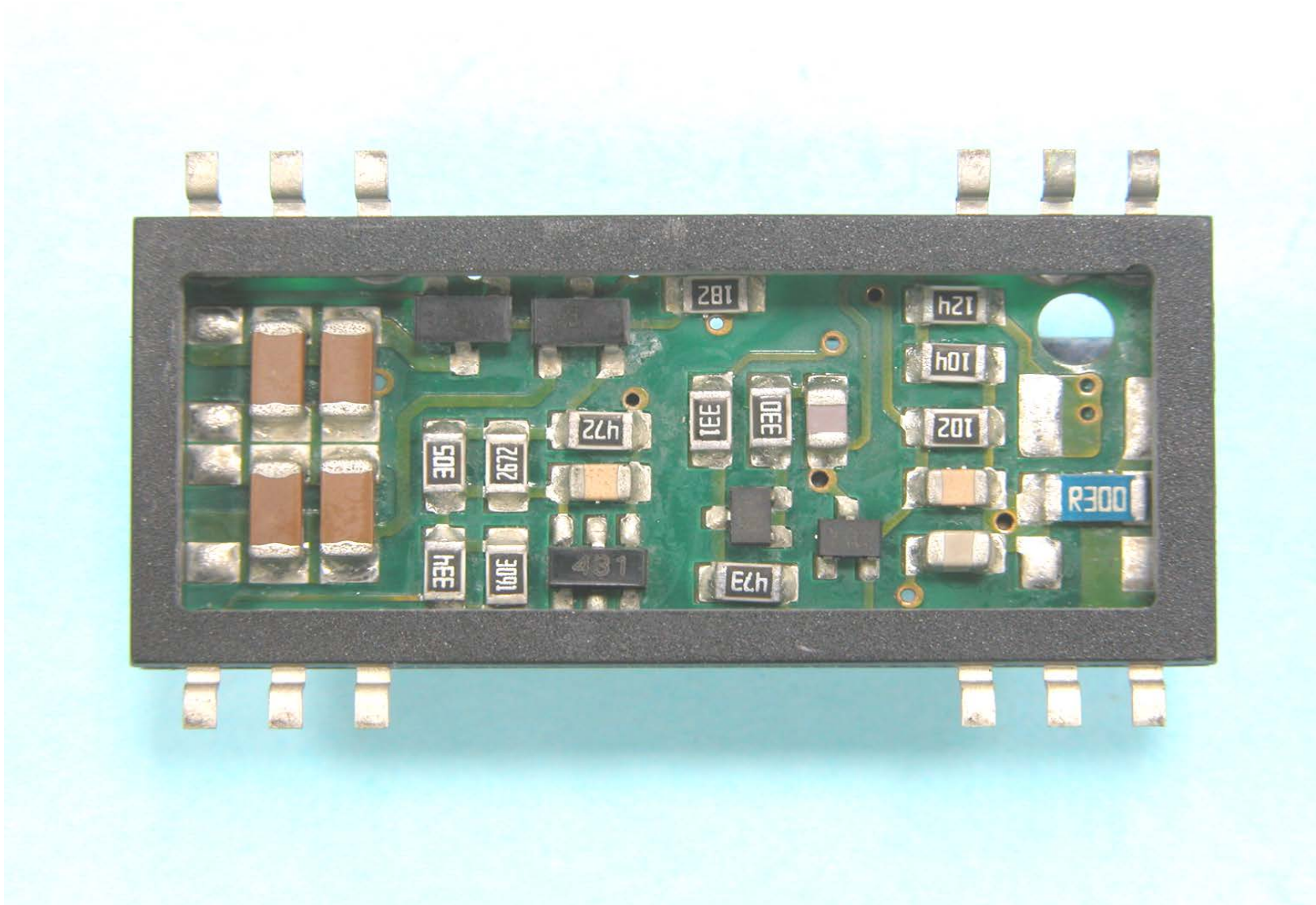


Top Side View-2.3



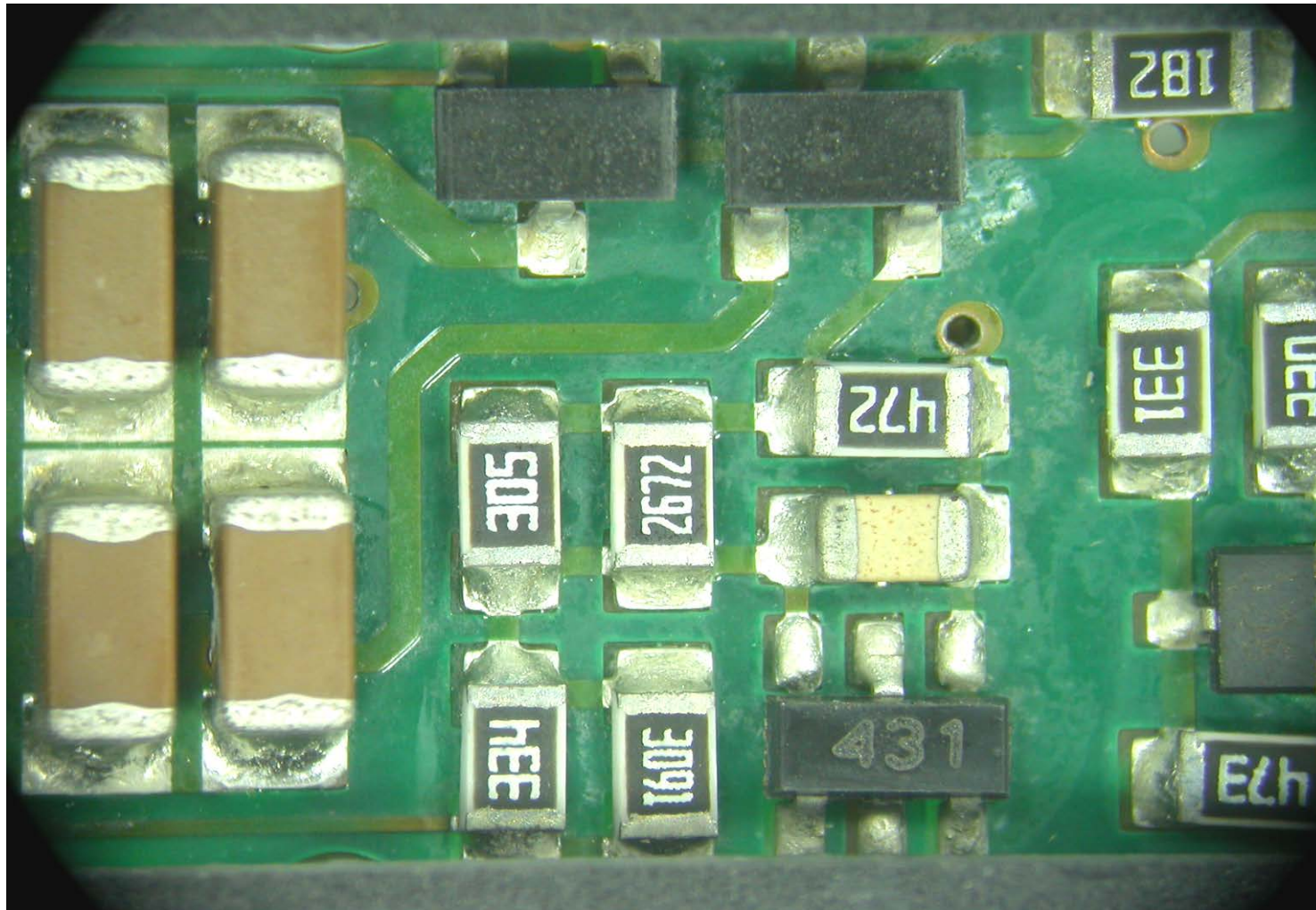
---

## Solder Joint Visual Inspection after Reflow Process



Bottom Side View-2

## Solder Joint Visual Inspection after Reflow Process

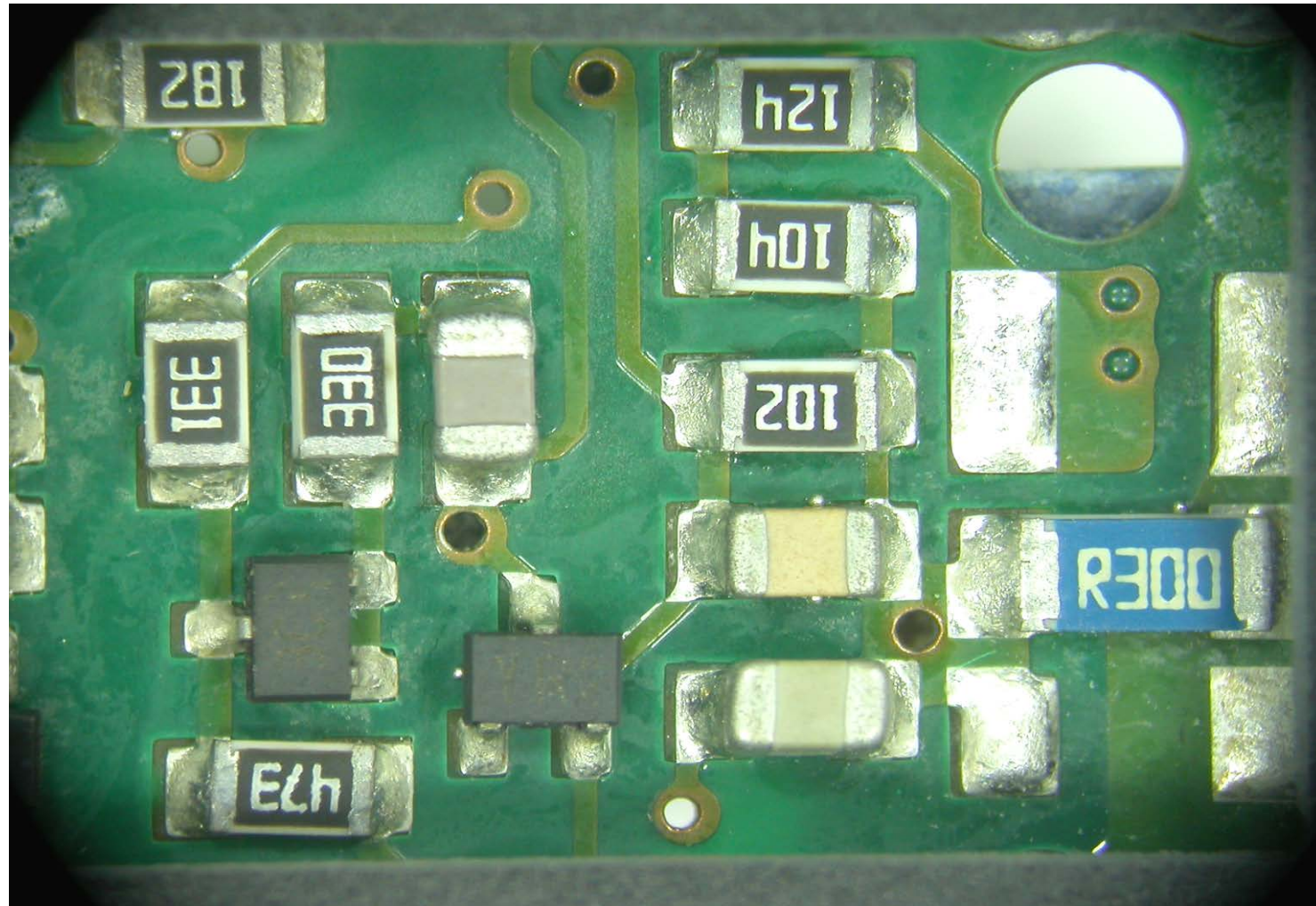


Bottom Side View-2.1



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Solder Joint Visual Inspection after Reflow Process



Bottom Side View-2.2



---

## Visual Inspection after Reflow Process



【NO : 3】 After Reflow

---

## Visual Inspection after Reflow Process



【NO : 3】 After Reflow

---

## Visual Inspection after Reflow Process



【NO : 3】 After Reflow

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## Visual Inspection after Reflow Process



【NO : 3】 After Reflow



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## Visual Inspection after Reflow Process



【NO : 3】 After Reflow

---

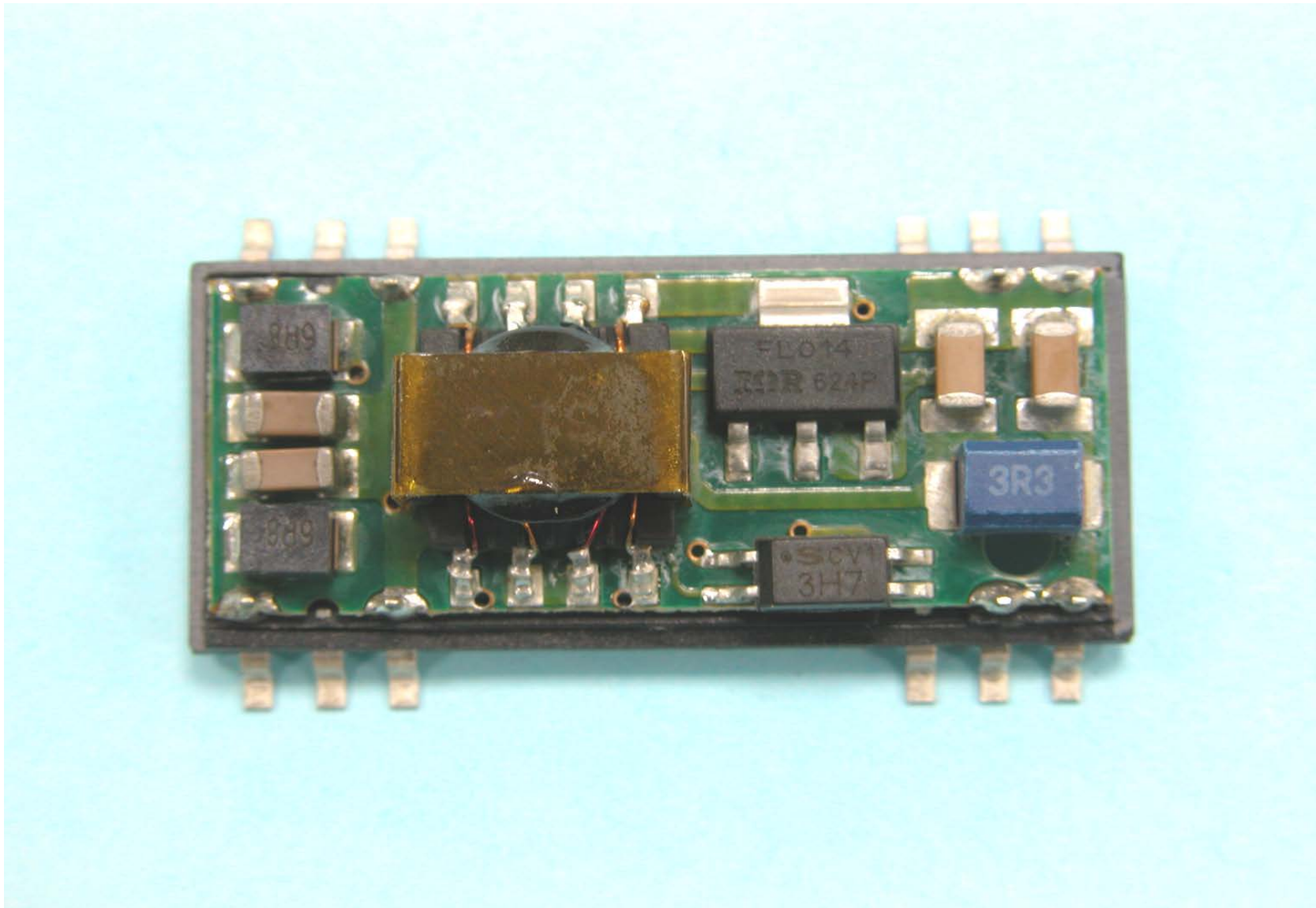
## Visual Inspection after Reflow Process



【NO : 3】 After Reflow

---

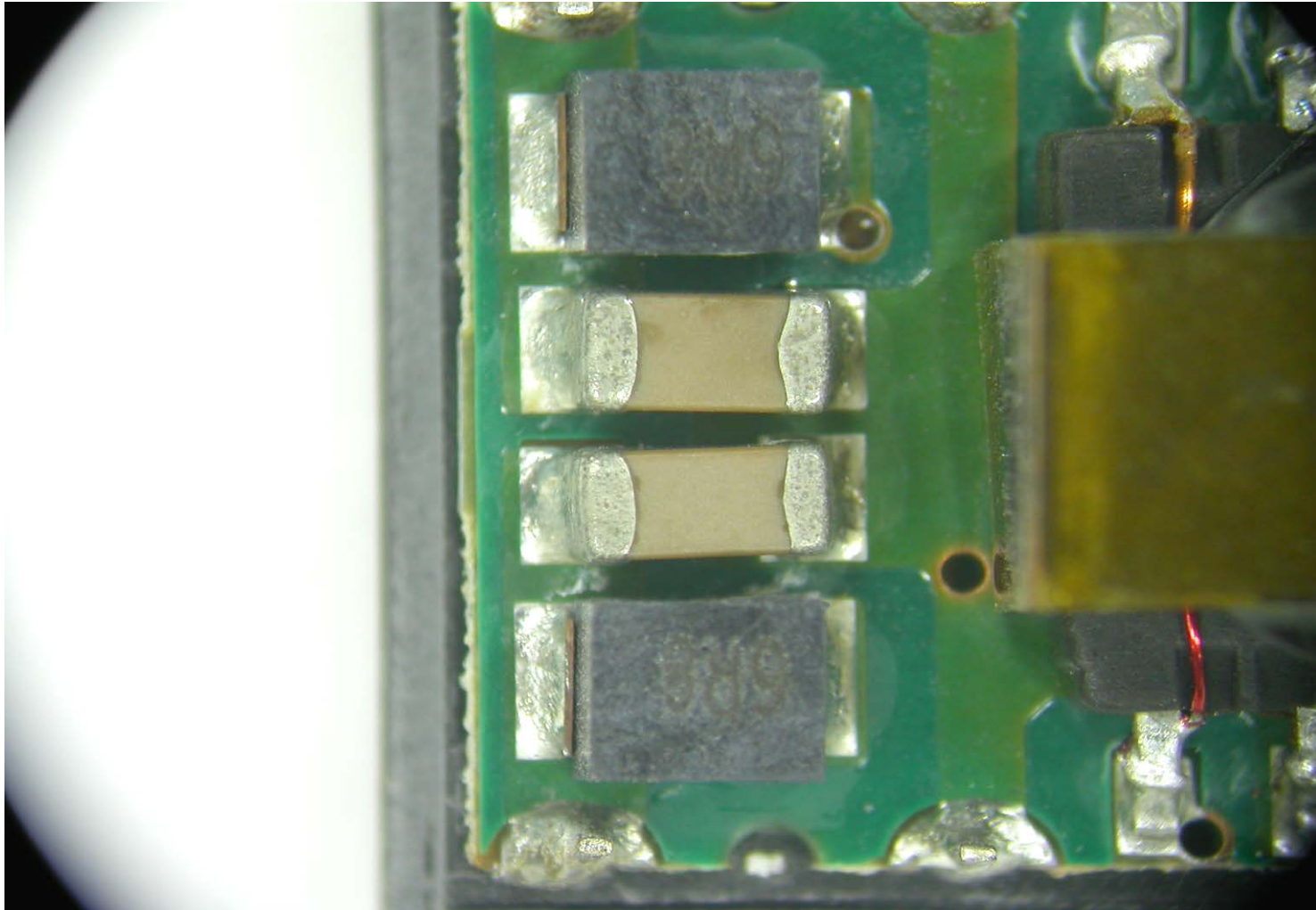
## Solder Joint Visual Inspection after Reflow Process



Top Side View-3

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## Solder Joint Visual Inspection after Reflow Process

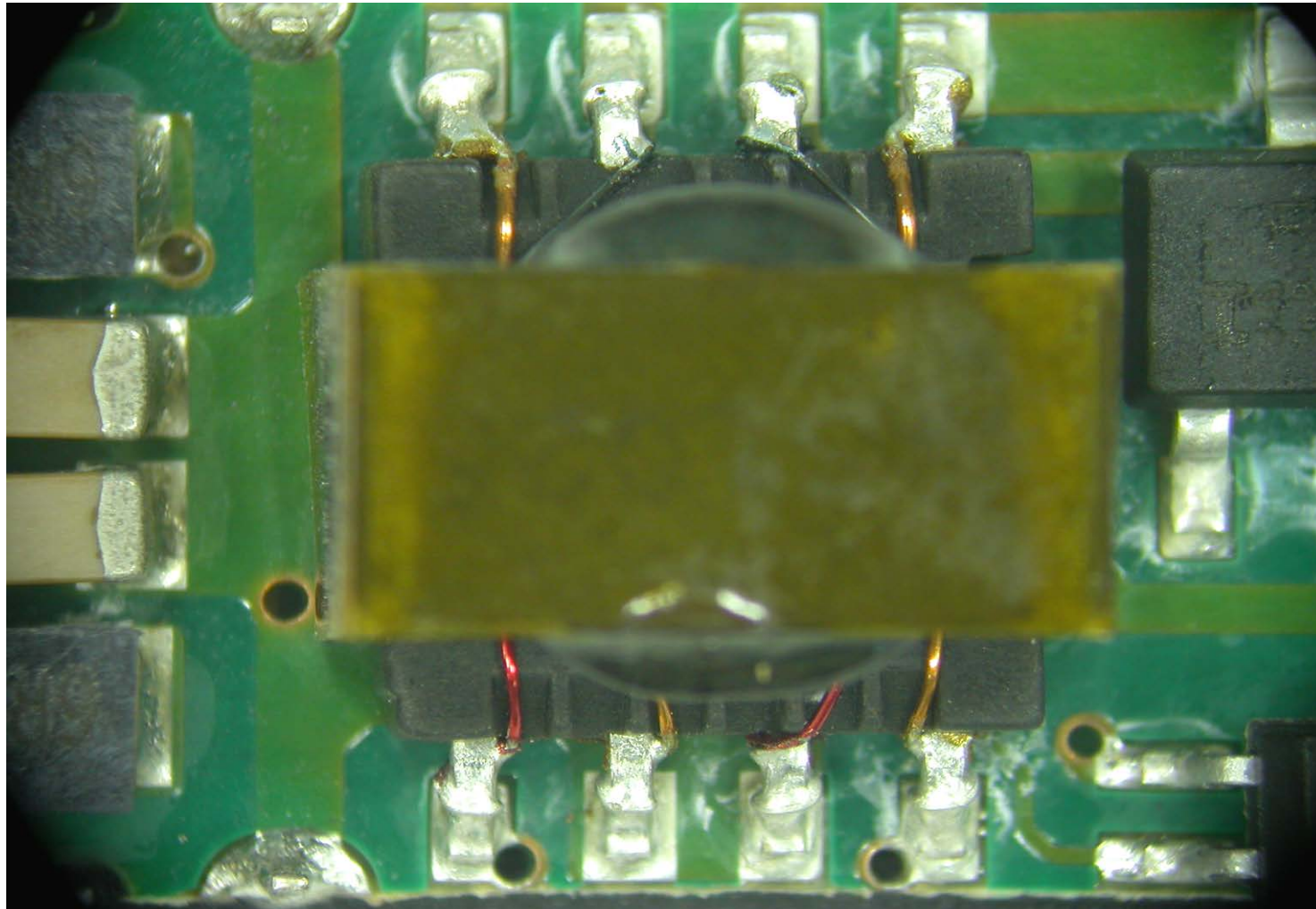


Top Side View-3.1



---

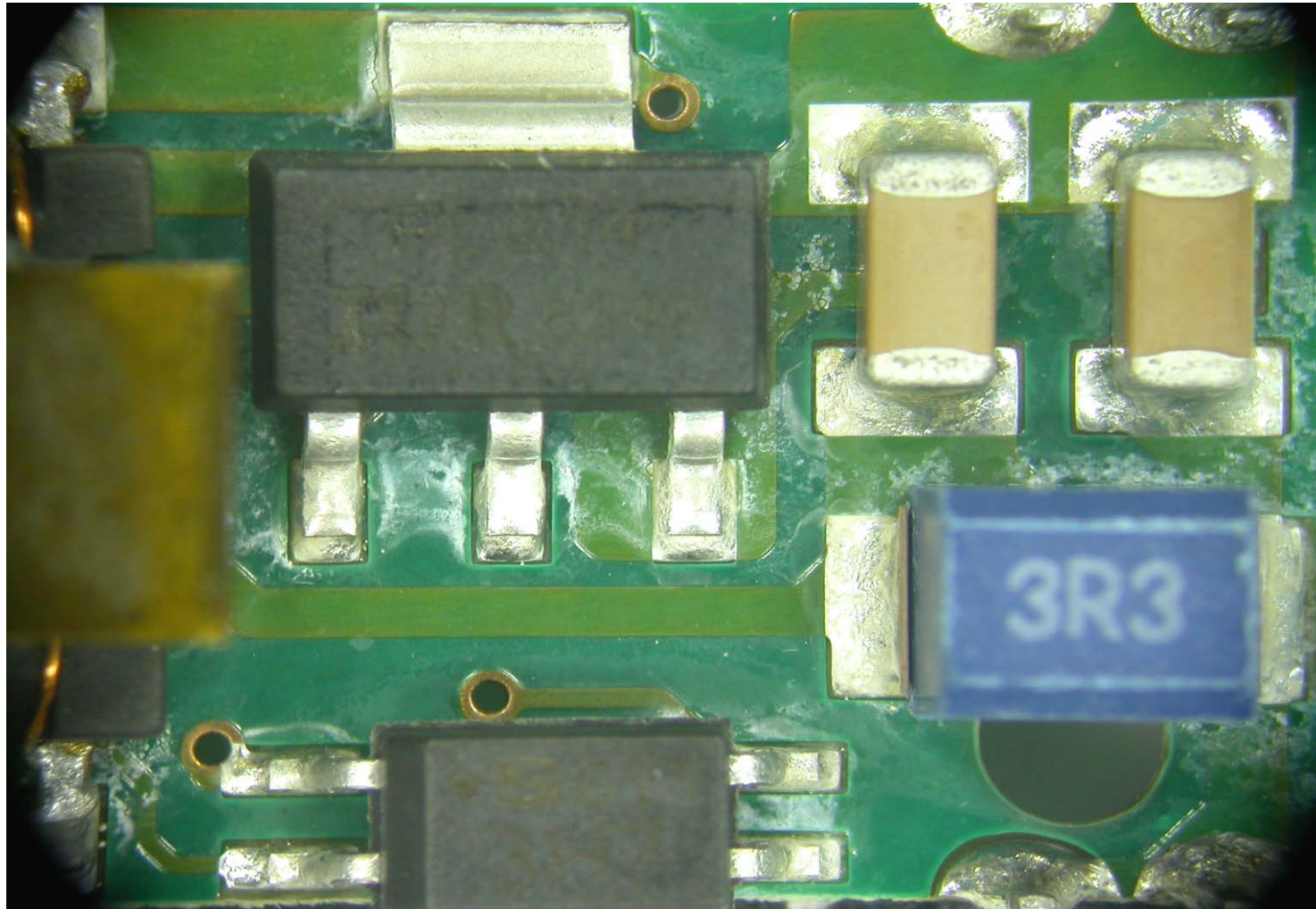
## Solder Joint Visual Inspection after Reflow Process



Top Side View-3.2

---

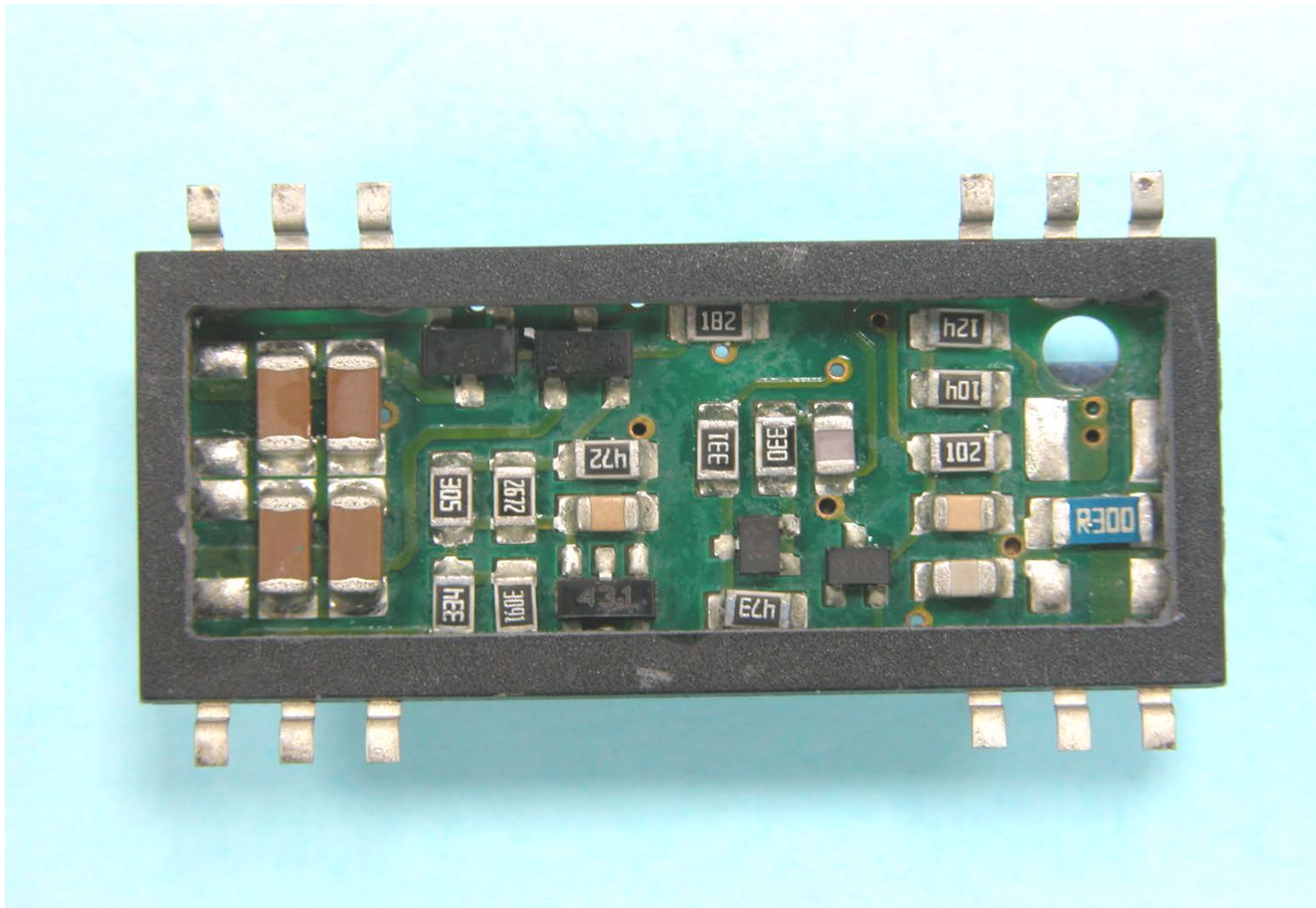
## Solder Joint Visual Inspection after Reflow Process



Top Side View-3.3



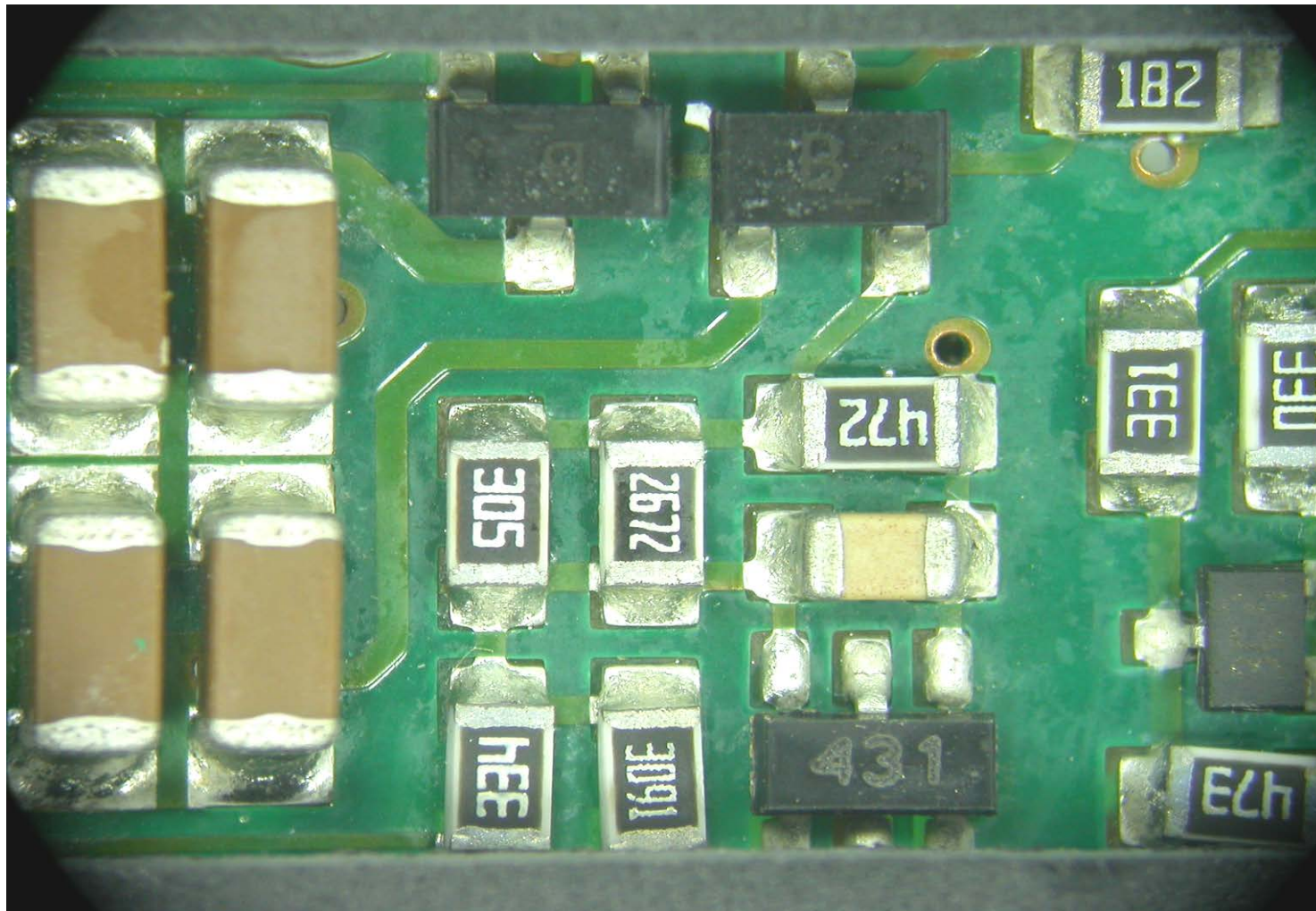
## Solder Joint Visual Inspection after Reflow Process



Bottom Side View-3

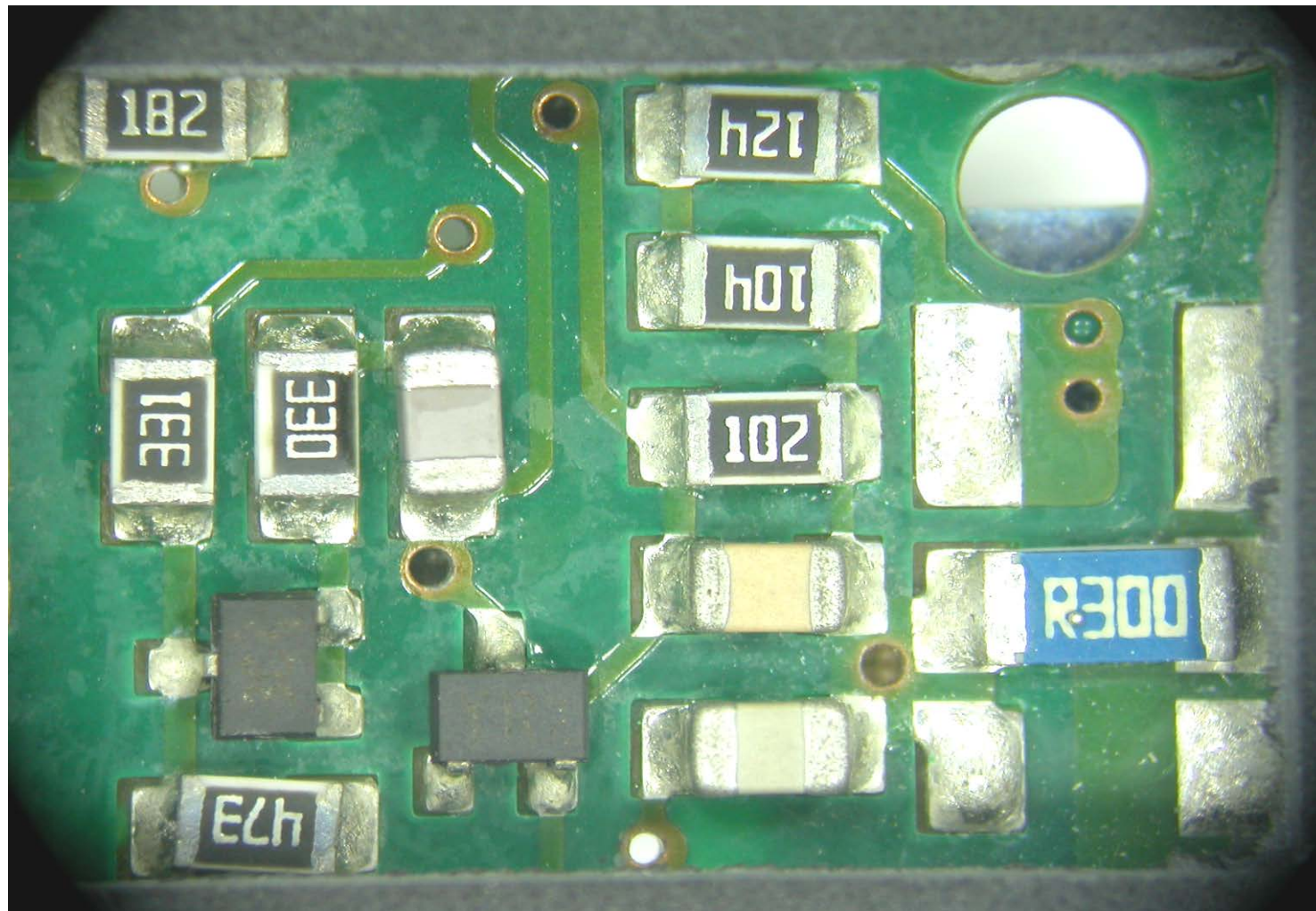
---

Solder Joint Visual Inspection after Reflow Process



Bottom Side View-3.1





Bottom Side View-3.2

## Conclusion

After above test process, there's no abnormal situation found and all tested units meet electrical characteristics. The products meet MSL Level 2 as per IPC/JEDEC J-STD-020C.

Date : 17.08.2007

**TRACO<sup>®</sup>  
POWER**

Product: **TES 3 Series**  
Single Output Models

Moisture Sensitivity Level (MSL) Test Report  
as per IPC/JEDEC J-STD-020C

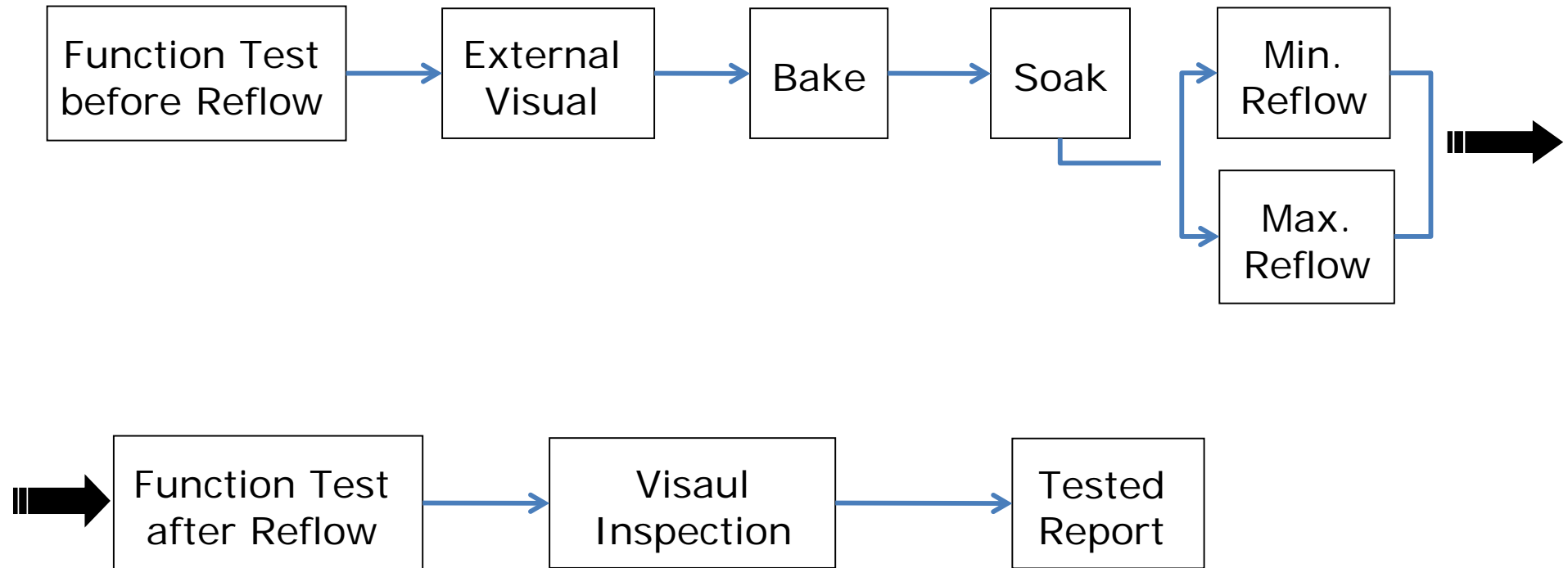


**Table of Contents**

	<u>page</u>
Tested Flowchart	<u>1</u>
Tested Data before Min.Reflow	<u>2</u>
Min. Temperature Reflow Profile	<u>3</u>
Tested Data after Min.Reflow	<u>4-6</u>
Tested Data before Max.Reflow	<u>7</u>
Max. Temperature Reflow Profile	<u>8</u>
Tested Data after Max.Reflow	<u>9-11</u>
Pictures	<u>12-46</u>
Conclusion	<u>47</u>

## Tested Flowchart for Open-Frame Products





## Test Report

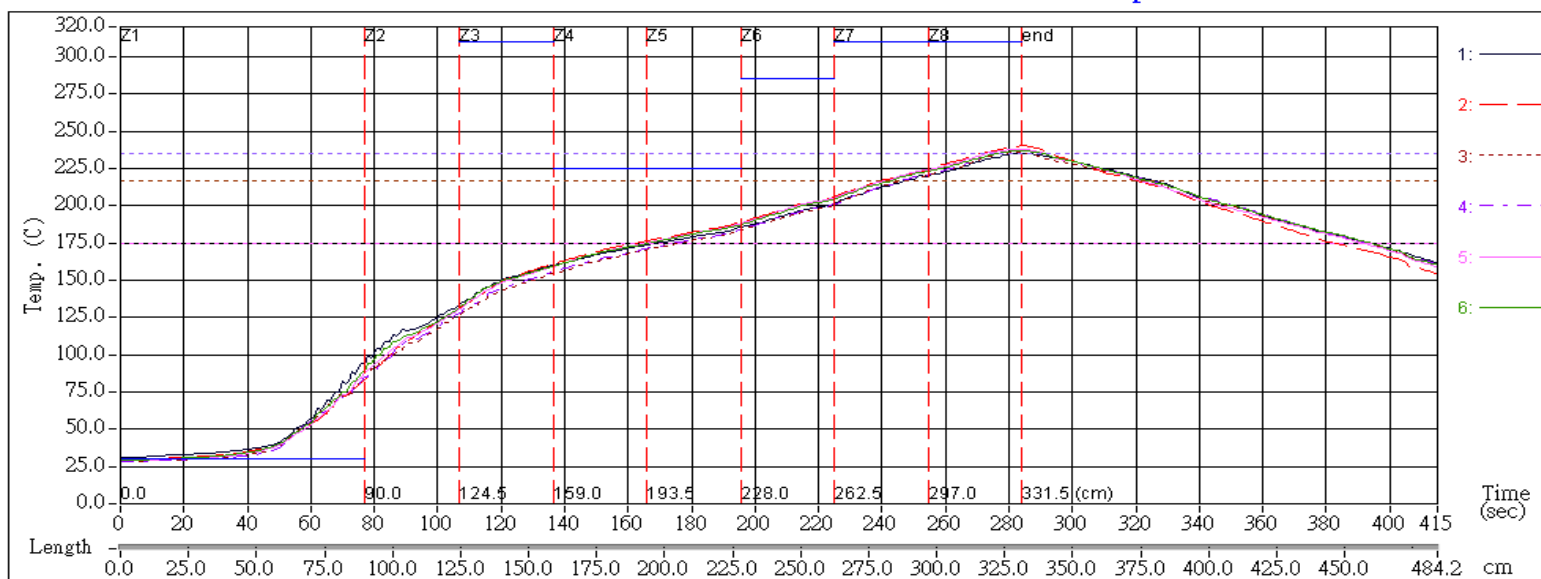
Model Number : TES 3-2411(date code : 0701)  
Q'TY : 30 pcs

Before Reflow Process

Date: 15.12.2006  
Tested By: *Jordan on*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
1	24	155.00	80.341	4.989	27.6	-0.06	0.541	OK	pass
2		154.80	79.978	4.96	28	-0.06	0.625	OK	pass
3		155.40	79.927	4.976	18.4	-0.08	0.643	OK	pass
4		155.10	79.936	4.967	18.8	-0.06	0.423	OK	pass
5		155.10	80.290	4.989	24.4	-0.04	0.461	OK	pass
6		154.70	80.029	4.96	25.6	-0.06	0.423	OK	pass
7		154.70	80.222	4.972	19.2	-0.04	0.422	OK	pass
8		155.40	80.215	4.994	17.2	-0.04	0.38	OK	pass
9		154.10	80.469	4.968	20	-0.04	0.423	OK	pass
10		155.10	80.065	4.975	17.2	-0.04	0.462	OK	pass
11		155.00	80.422	4.994	31.2	-0.08	0.38	OK	pass
12		154.40	80.443	4.976	26.8	-0.06	0.342	OK	pass
13		155.30	80.314	4.997	28.4	-0.04	0.38	OK	pass
14		154.40	80.297	4.967	19.2	-0.06	0.403	OK	pass
15		154.90	80.071	4.969	26.4	-0.04	0.483	OK	pass
16		155.20	80.254	4.99	20.8	-0.06	0.421	OK	pass
17		154.90	80.183	4.976	16.8	-0.04	0.382	OK	pass
18		154.90	80.457	4.993	25.6	-0.04	0.361	OK	pass
19		155.60	80.176	4.998	28	-0.04	0.4	OK	pass
20		155.40	80.231	4.995	18.8	-0.08	0.38	OK	pass
21		154.30	80.479	4.975	25.6	-0.06	0.382	OK	pass
22		154.30	80.462	4.974	19.2	-0.06	0.362	OK	pass
23		154.50	80.245	4.967	24	-0.06	0.423	OK	pass
24		154.50	80.359	4.974	26.8	-0.04	0.402	OK	pass
25		154.80	80.332	4.982	18.4	-0.04	0.381	OK	pass
26		154.60	80.322	4.975	19.2	-0.06	0.442	OK	pass
27		154.70	80.093	4.964	26	-0.04	0.363	OK	pass
28		154.30	80.543	4.979	26	-0.08	0.402	OK	pass
29		154.70	80.206	4.971	19.2	-0.06	0.422	OK	pass
30		154.90	80.215	4.978	18.8	-0.040	0.442	OK	pass

## THERMOTRACKER Report



Date(dd/mm/yy)  
08/01/2007

Company  
TRACO

Product  
TES 3-2411

Line Speed  
70.00 cm/Min

Down Load Information  
Scan Rate(mm:ss): 00:01.0  
Date(dd/mm/yy): 05/01/07  
Time(hh:mm:ss): 18:54:56

Data File  
TES 3-2411

### Zone Set Value(C)and Length (cm)

Zone	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
TOP	30	330	310	225	225	285	310	310
BOTTOM	30	330	310	225	225	285	310	310
Length	90.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5

### Comment

### Sensor Description and Max./Threshold Information

Sensor Name	Max. Temp. (C)	At Time (sec)	Time(sec) above175.0C	Time(sec) above217.0C	Time(sec) above235.0C
	234.9	286.00	224.00	77.00	0.00
	240.1	285.00	218.00	78.00	21.00
	235.5	284.00	215.00	76.00	6.00
	236.8	285.00	218.00	78.00	15.00
	238.0	283.00	224.00	78.00	17.00
	236.7	284.00	226.00	79.00	14.00

### Sensor Location X mm, Ymm

1: -----, -----  
2: -----, -----  
3: -----, -----  
4: -----, -----  
5: -----, -----  
6: -----, -----

### Workpiece Move Direction



# Test Report

Model Number : TES 3-2411(date code : 0701)

Q'TY : 30 pcs

1st Reflow Process  
at min. temperature profile

Date: 08.01.2007

Tested By: *Jordan on*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
1	24	156.30	79.992	5.008	18.4	-0.04	0.439	OK	pass
2		155.60	79.854	4.977	29.2	-0.04	0.422	OK	pass
3		155.90	79.924	4.991	24.4	-0.02	0.461	OK	pass
4		155.80	79.735	4.976	21.2	-0.04	0.402	OK	pass
5		155.90	80.052	4.999	25.2	-0.04	0.4	OK	pass
6		155.60	79.658	4.965	25.6	-0.02	0.463	OK	pass
7		155.30	80.005	4.977	30.4	-0.04	0.402	OK	pass
8		156.10	79.852	4.993	25.2	-0.02	0.461	OK	pass
9		154.80	80.215	4.974	27.6	-0.06	0.402	OK	pass
10		156.10	79.819	4.991	23.2	-0.02	0.421	OK	pass
11		156.00	79.574	4.985	30.8	-0.03	0.339	OK	pass
12		155.30	80.138	4.985	27.2	-0.06	0.401	OK	pass
13		156.00	80.050	5.002	35.2	-0.04	0.4	OK	pass
14		155.10	80.048	4.973	26.4	-0.04	0.382	OK	pass
15		155.50	79.937	4.979	24	-0.06	0.422	OK	pass
16		155.80	80.056	4.996	21.2	-0.06	0.42	OK	pass
17		155.50	79.953	4.98	24	-0.04	0.382	OK	pass
18		155.70	80.203	5.002	24.4	-0.02	0.36	OK	pass
19		156.30	79.927	5.004	28	-0.04	0.42	OK	pass
20		156.10	79.931	4.998	24.8	-0.06	0.44	OK	pass
21		155.30	79.666	4.956	26.4	-0.02	0.908	OK	pass
22		155.20	80.103	4.98	26.4	-0.06	0.422	OK	pass
23		155.20	80.022	4.975	21.6	-0.06	0.422	OK	pass
24		155.30	80.050	4.98	26.8	-0.04	0.402	OK	pass
25		155.50	80.044	4.986	25.2	-0.02	0.421	OK	pass
26		155.40	80.126	4.988	27.6	-0.06	0.381	OK	pass
27		155.20	79.876	4.966	25.6	-0.06	0.423	OK	pass
28		155.00	80.285	4.985	22.4	-0.06	0.401	OK	pass
29		155.30	80.017	4.978	24.8	-0.04	0.382	OK	pass
30		155.50	80.027	4.985	26	-0.060	0.381	OK	pass



# Test Report

Model Number : TES 3-2411(date code : 0701)  
Q'TY : 30 pcs

2nd Reflow Process  
at min. temperature profile

Date: 08.01.2007  
Tested By: *Jordan on*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
1	24	156.20	80.034	5.008	27.6	-0.04	0.419	OK	pass
2		155.60	79.878	4.979	21.6	-0.04	0.422	OK	pass
3		155.90	79.948	4.993	25.6	-0.02	0.421	OK	pass
4		155.70	79.794	4.977	34.4	-0.06	0.382	OK	pass
5		155.90	80.060	5	26	-0.04	0.36	OK	pass
6		155.50	79.720	4.966	24	-0.04	0.423	OK	pass
7		155.40	79.980	4.979	20	0	0.382	OK	pass
8		156.10	79.862	4.994	25.2	-0.02	0.441	OK	pass
9		154.80	80.210	4.974	28	-0.04	0.422	OK	pass
10		156.10	79.782	4.989	23.2	-0.04	0.421	OK	pass
11		155.90	79.788	4.983	30.4	-0.02	0.763	OK	pass
12		155.40	80.093	4.986	26.4	-0.06	0.381	OK	pass
13		156.00	80.041	5.002	22.8	-0.04	0.38	OK	pass
14		155.10	80.071	4.975	28	-0.04	0.342	OK	pass
15		155.60	79.893	4.98	27.6	-0.06	0.402	OK	pass
16		155.80	79.999	4.993	22.4	-0.06	0.461	OK	pass
17		155.50	79.913	4.978	23.6	-0.04	0.382	OK	pass
18		155.80	80.143	5.002	24.4	-0.06	0.4	OK	pass
19		156.20	79.954	5.003	26.8	-0.02	0.42	OK	pass
20		156.00	80.009	5	23.6	-0.06	0.4	OK	pass
21		155.20	80.115	4.981	26	-0.02	0.462	OK	pass
22		155.10	80.150	4.98	26.8	-0.08	0.402	OK	pass
23		155.10	80.038	4.973	25.2	-0.04	0.442	OK	pass
24		155.30	80.015	4.978	26	-0.04	0.422	OK	pass
25		155.40	80.092	4.986	23.2	-0.02	0.401	OK	pass
26		155.50	80.073	4.988	28.4	-0.06	0.361	OK	pass
27		155.30	79.871	4.969	26.8	-0.04	0.402	OK	pass
28		155.10	80.247	4.986	25.6	-0.06	0.361	OK	pass
29		155.50	79.944	4.98	24.4	-0.04	0.382	OK	pass
30		155.60	79.974	4.985	26.4	-0.040	0.381	OK	pass

# Test Report

Model Number : TES 3-2411(date code : 0701)  
Q'TY : 30 pcs

3th Reflow Process  
at min. temperature profile

Date: 08.01.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
1	24	155.50	80.711	5.018	20	0.08	0.259	OK	pass
2		155.20	80.379	4.984	16.4	-0.06	0.341	OK	pass
3		156.50	80.624	5.013	47.2	0.16	0.12	OK	pass
4		155.70	80.188	4.994	16.4	0.161	0.1	OK	pass
5		156.10	80.182	5.007	15.6	0.7	0.26	OK	pass
6		155.40	79.818	4.969	27.2	0	0.362	OK	pass
7		155.20	80.049	4.977	21.6	-0.04	0.422	OK	pass
8		156.00	79.911	4.994	25.2	-0.04	0.441	OK	pass
9		154.80	80.223	4.975	27.6	0	0.402	OK	pass
10		156.10	79.811	4.991	22.8	-0.04	0.421	OK	pass
11		155.90	80.010	4.997	20	-0.02	0.5	OK	pass
12		155.40	80.059	4.984	28	-0.06	0.421	OK	pass
13		155.90	80.106	5.003	36.4	-0.04	0.36	OK	pass
14		155.10	80.036	4.973	26.4	-0.04	0.382	OK	pass
15		155.50	79.943	4.98	28	-0.06	0.402	OK	pass
16		155.80	80.013	4.994	20.4	-0.06	0.461	OK	pass
17		155.50	79.862	4.975	24	-0.02	0.422	OK	pass
18		155.80	80.125	5.001	24.4	-0.04	0.4	OK	pass
19		156.20	79.952	5.003	23.6	-0.04	0.42	OK	pass
20		156.10	79.939	4.999	23.6	-0.02	0.38	OK	pass
21		155.30	79.691	4.958	26.4	-0.02	0.847	OK	pass
22		155.10	80.180	4.982	26	-0.02	0.381	OK	pass
23		155.20	80.016	4.975	23.6	-0.02	0.402	OK	pass
24		155.30	80.077	4.982	26.8	-0.08	0.361	OK	pass
25		155.40	79.993	4.98	24.8	-0.06	0.522	OK	pass
26		155.40	80.138	4.989	28.8	-0.04	0.361	OK	pass
27		155.30	79.852	4.968	27.6	-0.02	0.382	OK	pass
28		155.00	80.280	4.985	28	-0.02	0.401	OK	pass
29		155.40	79.993	4.98	24.4	-0.04	0.361	OK	pass
30		155.50	80.006	4.984	26.8	-0.040	0.421	OK	pass

# Test Report

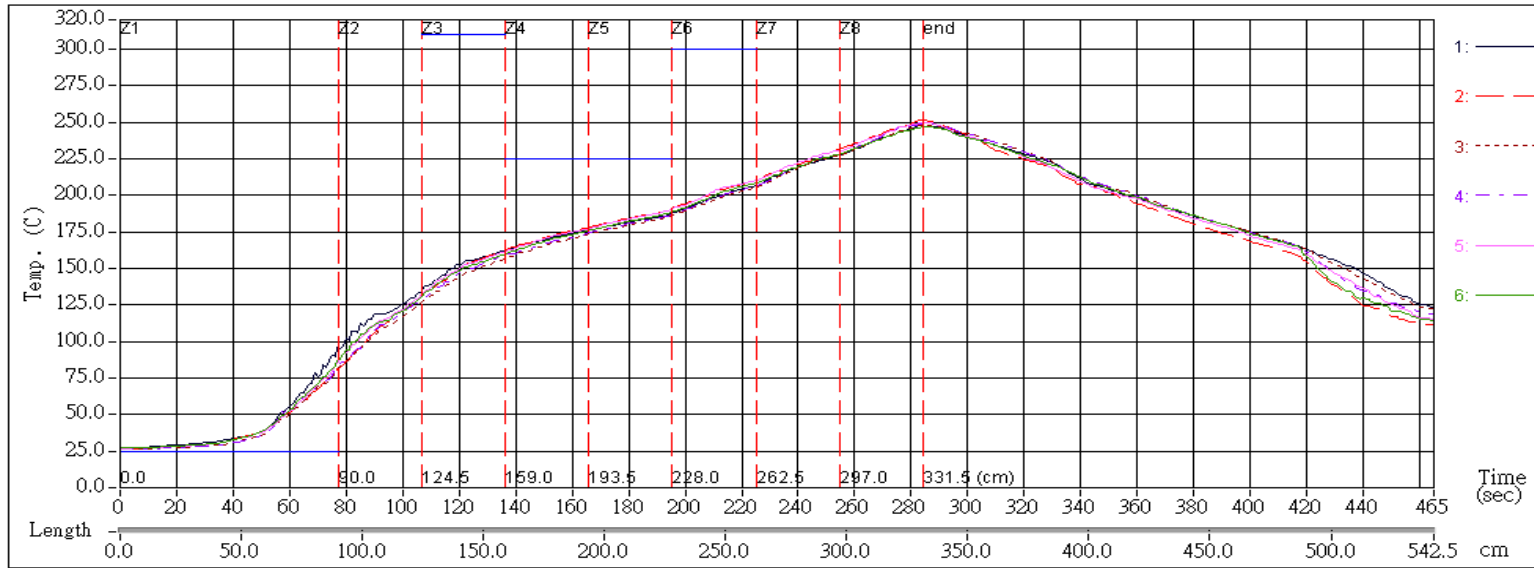
Model Number : TES 3-2411(date code : 0701)  
Q'TY : 30 pcs

Before Reflow Process

Date: 15.12.2006  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
31	24	154.10	80.404	4.964	18.4	-0.06	0.423	OK	pass
32		154.70	80.335	4.979	24.8	-0.06	0.382	OK	pass
33		155.10	80.225	4.985	19.2	-0.04	0.361	OK	pass
34		154.70	80.222	4.972	18	-0.04	0.382	OK	pass
35		155.10	80.144	4.98	24.8	-0.04	0.402	OK	pass
36		154.20	80.239	4.957	20.8	-0.02	0.424	OK	pass
37		154.50	80.229	4.966	18.8	-0.04	0.403	OK	pass
38		155.20	80.285	4.992	25.6	-0.06	0.501	OK	pass
39		154.60	80.306	4.974	19.2	-0.06	0.382	OK	pass
40		155.50	80.259	5	26	-0.06	0.36	OK	pass
41		154.60	80.193	4.967	17.2	-0.04	0.503	OK	pass
42		154.90	80.038	4.967	21.2	-0.04	0.342	OK	pass
43		154.60	80.371	4.978	26	-0.04	0.382	OK	pass
44		155.10	80.128	4.979	26.4	-0.08	0.422	OK	pass
45		154.60	80.322	4.975	18.4	-0.08	0.402	OK	pass
46		155.40	80.198	4.993	17.6	-0.06	0.421	OK	pass
47		154.60	80.354	4.977	18.4	-0.02	0.382	OK	pass
48		154.30	80.301	4.964	16.4	-0.081	0.463	OK	pass
49		154.60	80.322	4.975	18.4	-0.06	0.382	OK	pass
50		154.90	80.070	4.969	25.6	-0.101	0.402	OK	pass
51		154.50	80.390	4.976	25.6	-0.04	0.382	OK	pass
52		154.50	80.374	4.975	18.4	-0.04	0.382	OK	pass
53		155.00	80.341	4.989	17.6	-0.06	0.381	OK	pass
54		155.20	80.301	4.993	18.8	-0.04	0.421	OK	pass
55		154.90	80.312	4.984	28	-0.06	0.381	OK	pass
56		155.10	80.160	4.981	24	-0.06	0.381	OK	pass
57		155.30	79.800	4.965	26	-0.101	0.463	OK	pass
58		154.50	80.406	4.977	27.2	-0.04	0.382	OK	pass
59		154.90	80.247	4.98	19.6	-0.06	0.482	OK	pass
60		155.30	80.282	4.995	27.6	-0.060	0.400	OK	pass

## THERMOTRACKER Report



Date(dd/mm/yy)  
11/01/2007

Company  
TRACO

Product  
TES 3-2411

Line Speed  
70.00 cm/Min

Down Load Information  
Scan Rate(mm:ss): 00:01.0  
Date(dd/mm/yy): 10/01/07  
Time(hh:mm:ss): 10:51:51

Data File  
TES 3-2411

Zone Set Value(C)and Length (cm)

Zone	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
TOP	25	330	310	225	225	300	320	330
BOTTOM	25	330	310	225	225	300	320	330
Length	90.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5

Comment

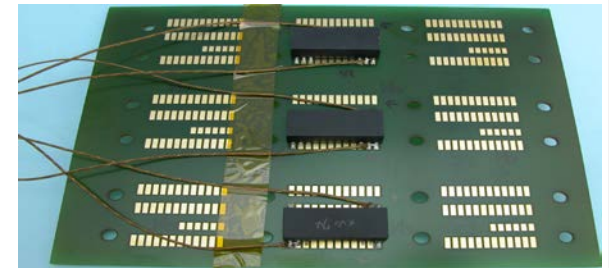
Sensor Description and Max./Threshold Information

Sensor Name	Max. Temp. (C)	At Time (sec)	Time(sec) above175.0C	Time(sec) above217.0C	Time(sec) above245.0C
	247.4	283.00	236.00	98.00	13.00
	251.0	283.00	230.00	97.00	21.00
	248.1	287.00	230.00	97.00	16.00
	249.1	287.00	231.00	98.00	19.00
	249.4	285.00	236.00	98.00	19.00
	246.7	286.00	234.00	98.00	11.00

Sensor Location  
X mm, Ymm

1: -----, -----  
2: -----, -----  
3: -----, -----  
4: -----, -----  
5: -----, -----  
6: -----, -----

Workpiece  
Move Direction





# Test Report

Model Number : TES 3-2411(date code : 0701)  
Q'TY : 30 pcs

1st Reflow Process  
at max. temperature profile

Date: 11.01.2007  
Tested By: *Jordan on*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
31	24	154.80	80.254	4.977	26.4	-0.06	0.402	OK	pass
32		155.40	80.089	4.986	23.6	-0.04	0.381	OK	pass
33		155.70	79.983	4.989	19.6	-0.02	0.361	OK	pass
34		155.30	80.012	4.978	23.2	-0.06	0.362	OK	pass
35		155.80	79.980	4.992	24	-0.06	0.361	OK	pass
36		155.10	80.035	4.973	30.4	-0.04	0.362	OK	pass
37		155.30	79.931	4.973	26.8	-0.04	0.382	OK	pass
38		155.70	80.192	5.002	26	-0.04	0.4	OK	pass
39		155.50	79.973	4.982	27.2	-0.02	0.381	OK	pass
40		156.10	80.017	5.004	26.8	-0.04	0.36	OK	pass
41		155.20	80.095	4.98	23.6	-0.1	0.361	OK	pass
42		155.60	79.825	4.976	33.2	-0.04	0.362	OK	pass
43		155.30	80.140	4.986	18.8	-0.02	0.381	OK	pass
44		155.70	79.950	4.987	26	-0.04	0.361	OK	pass
45		155.20	80.095	4.98	27.6	-0.04	0.361	OK	pass
46		155.90	80.056	5	23.6	-0.04	0.34	OK	pass
47		155.30	80.172	4.988	28	-0.06	0.381	OK	pass
48		155.00	80.134	4.976	25.2	-0.02	0.382	OK	pass
49		155.20	80.095	4.98	24	-0.06	0.402	OK	pass
50		155.50	79.812	4.972	20	-0.06	0.402	OK	pass
51		155.50	80.021	4.985	24	-0.04	0.361	OK	pass
52		155.00	80.198	4.98	25.2	-0.04	0.361	OK	pass
53		155.70	80.143	4.999	25.6	-0.04	0.38	OK	pass
54		155.90	80.120	5.004	19.6	-0.02	0.42	OK	pass
55		155.50	80.085	4.989	26.8	-0.04	0.401	OK	pass
56		155.60	80.050	4.99	24	-0.02	0.361	OK	pass
57		155.70	79.726	4.973	25.2	-0.04	0.422	OK	pass
58		155.30	80.188	4.989	27.2	-0.02	0.341	OK	pass
59		155.30	80.124	4.985	20.8	-0.02	0.361	OK	pass
60		155.80	80.123	5.001	22.4	0.000	0.440	OK	pass

# Test Report

Model Number : TES 3-2411(date code : 0701)  
Q'TY : 30 pcs

2nd Reflow Process  
at max. temperature profile

Date: 11.01.2007  
Tested By: *Jordan on*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
31	24	154.90	80.173	4.975	26.8	-0.04	0.402	OK	pass
32		155.50	80.055	4.987	24.8	-0.02	0.381	OK	pass
33		155.70	79.982	4.989	26.4	-0.02	0.381	OK	pass
34		155.30	79.981	4.976	26.4	-0.06	0.402	OK	pass
35		155.80	79.949	4.99	18.8	-0.06	0.381	OK	pass
36		155.00	80.055	4.971	30.8	-0.04	0.382	OK	pass
37		155.20	79.968	4.972	24.8	-0.06	0.362	OK	pass
38		155.70	80.181	5.002	20	-0.02	0.38	OK	pass
39		155.30	80.066	4.982	27.6	-0.06	0.361	OK	pass
40		156.10	80.007	5.004	21.2	-0.02	0.36	OK	pass
41		155.20	80.049	4.977	23.2	-0.02	0.402	OK	pass
42		155.60	79.778	4.973	22.4	-0.08	0.402	OK	pass
43		155.20	80.193	4.986	26.4	-0.06	0.381	OK	pass
44		33.80	368.150	4.985	26	-0.04	0.381	OK	pass
45		155.10	80.100	4.977	19.6	-0.04	0.422	OK	pass
46		155.80	80.092	4.999	22.4	-0.06	0.4	OK	pass
47		155.40	80.121	4.988	27.6	-0.06	0.381	OK	pass
48		155.00	80.167	4.978	18.8	-0.06	0.342	OK	pass
49		155.00	80.199	4.98	25.2	-0.04	0.361	OK	pass
50		155.50	79.829	4.973	20.4	-0.08	0.382	OK	pass
51		155.50	80.005	4.984	24	-0.06	0.401	OK	pass
52		155.00	80.199	4.98	24.8	-0.06	0.382	OK	pass
53		155.70	80.127	4.998	22.8	-0.1	0.4	OK	pass
54		155.60	80.113	5.002	24.8	-0.04	0.42	OK	pass
55		155.50	80.068	4.989	27.6	-0.04	0.381	OK	pass
56		155.60	80.044	4.991	23.6	-0.04	0.381	OK	pass
57		155.70	79.693	4.972	25.2	-0.02	0.422	OK	pass
58		155.20	80.174	4.986	22	-0.02	0.381	OK	pass
59		155.30	80.092	4.984	31.2	-0.04	0.421	OK	pass
60		155.70	80.191	5.003	22	-0.060	0.420	OK	pass

# Test Report

Model Number : TES 3-2411(date code : 0701)  
Q'TY : 30 pcs

3th Reflow Process  
at max. temperature profile

Date: 11.01.2007  
Tested By: *Jordan on*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)	Ripple&Noise (mVp-p)	Line Regulation (%)	Load Regulation (%)	Isolation Voltage	Result
No	(Vdc)	< 163.4	> 76.5	4.95 ~ 5.05	< 75	-0.3 ~ 0.3	-1 ~ 1		
31	24	154.80	80.227	4.975	23.2	-0.06	0.442	OK	pass
32		155.60	79.992	4.986	25.2	-0.06	0.401	OK	pass
33		155.70	79.940	4.986	18.4	-0.02	0.421	OK	pass
34		155.30	80.000	4.977	25.6	-0.04	0.402	OK	pass
35		156.00	79.834	4.989	24.4	-0.06	0.441	OK	pass
36		155.00	80.058	4.971	23.6	-0.04	0.402	OK	pass
37		155.30	79.921	4.972	26	-0.06	0.382	OK	pass
38		155.70	80.164	5	25.2	-0.06	0.42	OK	pass
39		155.40	80.045	4.983	20.8	-0.06	0.381	OK	pass
40		156.10	79.958	5	26.4	-0.06	0.42	OK	pass
41		155.10	80.134	4.979	18	-0.06	0.382	OK	pass
42		155.70	79.746	4.974	23.2	-0.02	0.362	OK	pass
43		155.30	80.143	4.986	22	-0.04	0.401	OK	pass
44		155.70	79.924	4.985	21.6	-0.06	0.381	OK	pass
45		155.20	80.068	4.978	22.8	-0.04	0.382	OK	pass
46		155.90	80.061	5	23.2	-0.02	0.38	OK	pass
47		155.40	80.108	4.987	23.2	-0.04	0.421	OK	pass
48		155.10	80.102	4.977	19.2	-0.04	0.382	OK	pass
49		155.10	80.150	4.98	25.6	-0.06	0.382	OK	pass
50		155.50	79.815	4.972	25.6	-0.06	0.402	OK	pass
51		155.30	80.127	4.985	24.4	-0.04	0.381	OK	pass
52		155.20	80.098	4.98	26.8	-0.06	0.361	OK	pass
53		155.80	80.111	5	26	-0.06	0.38	OK	pass
54		155.90	80.091	5.002	25.2	-0.04	0.42	OK	pass
55		155.50	80.105	4.99	19.6	-0.04	0.361	OK	pass
56		155.70	80.018	4.991	24	-0.02	0.361	OK	pass
57		155.70	79.408	4.953	25.6	-0.04	0.767	OK	pass
58		155.30	80.159	4.987	27.2	-0.02	0.401	OK	pass
59		155.40	80.011	4.981	32	-0.02	0.442	OK	pass
60		155.90	80.140	5.005	32.8	-0.020	0.400	OK	pass

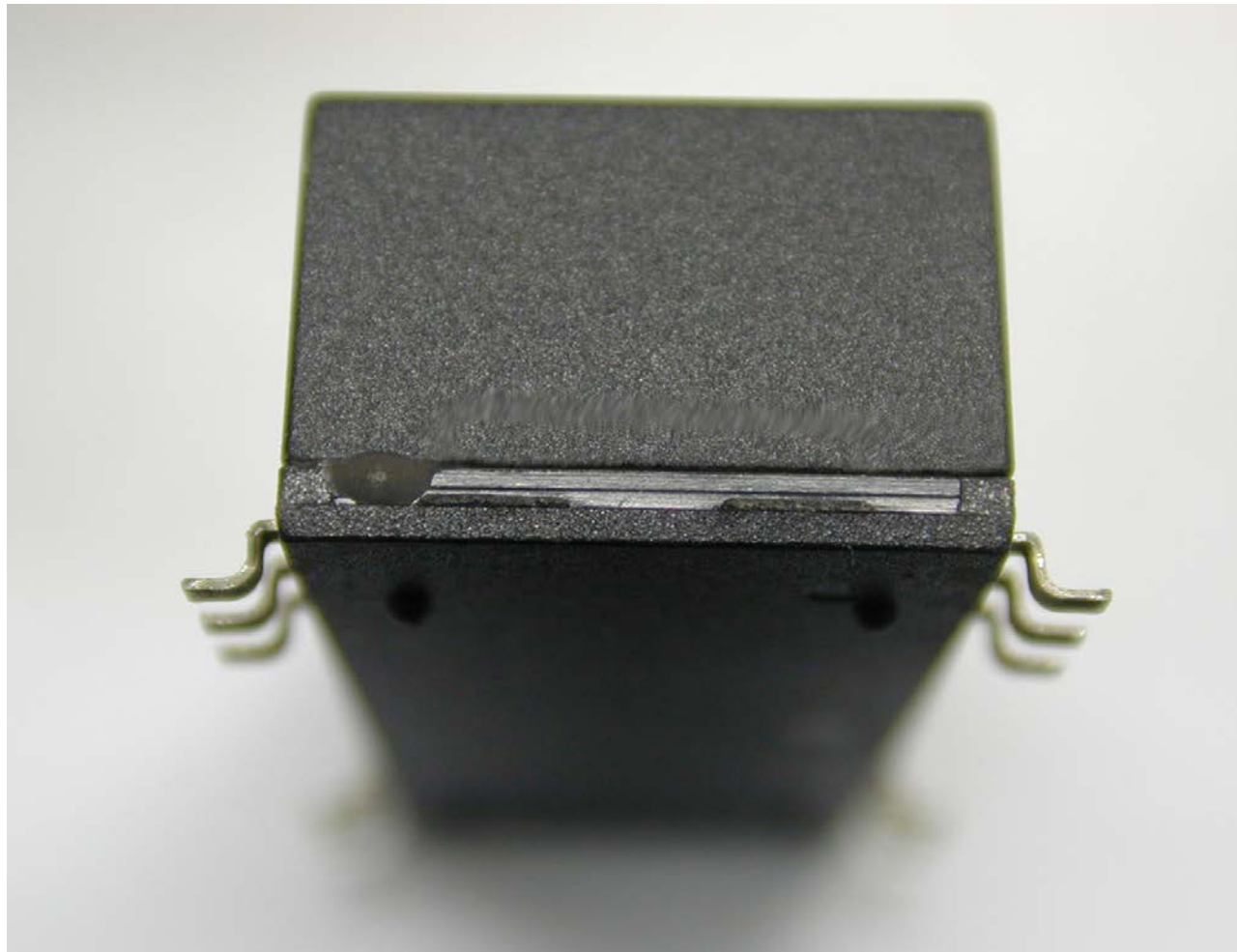
**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**



**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**

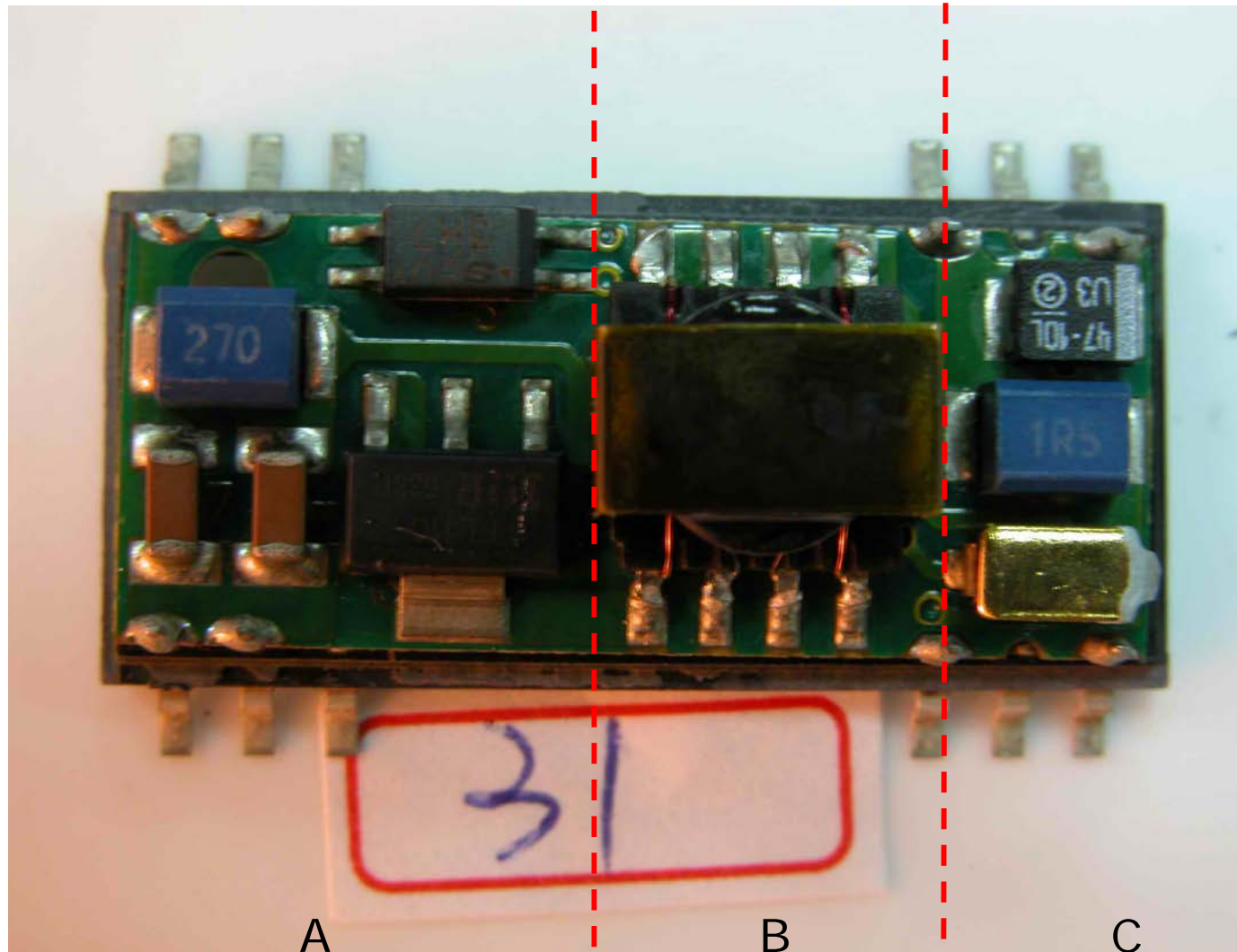
**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**

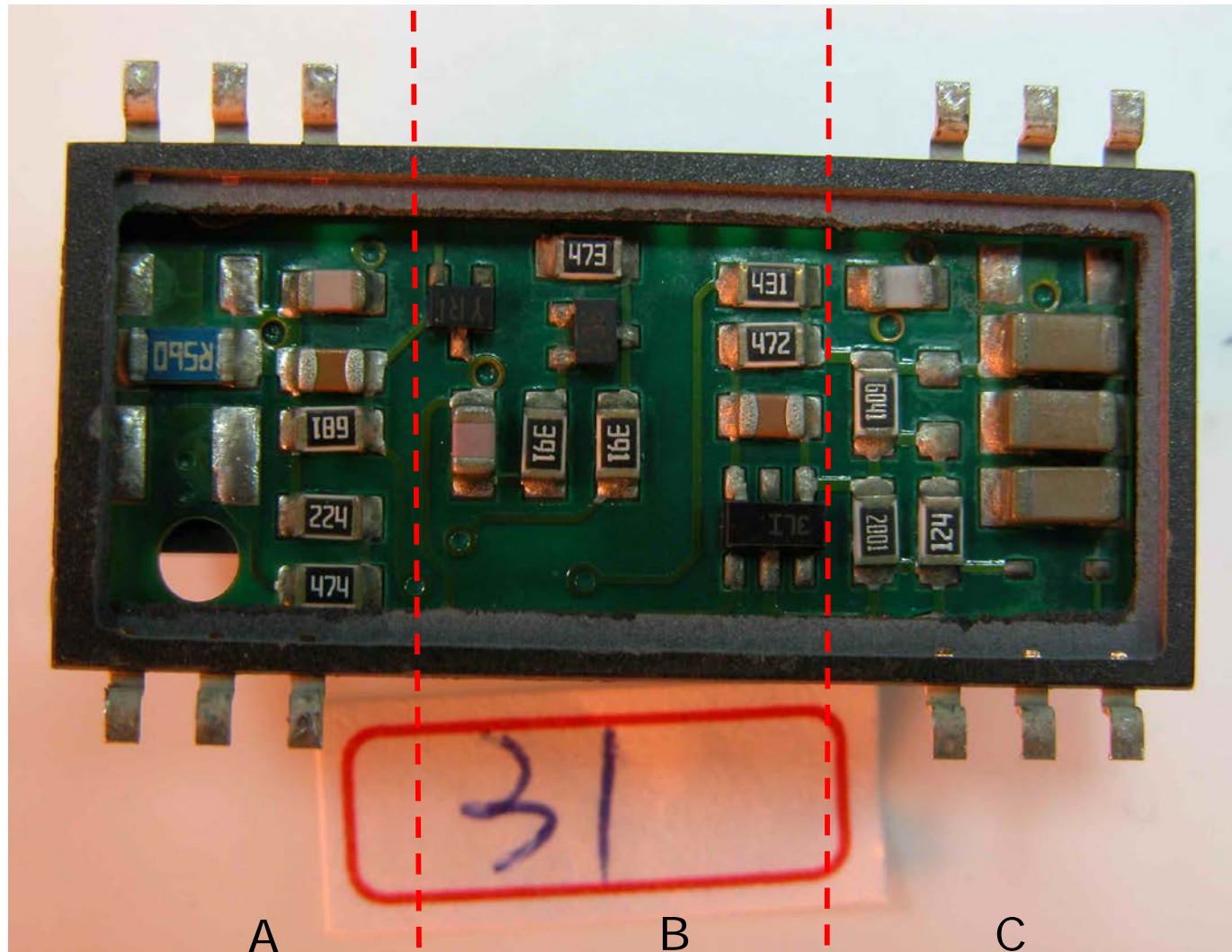


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



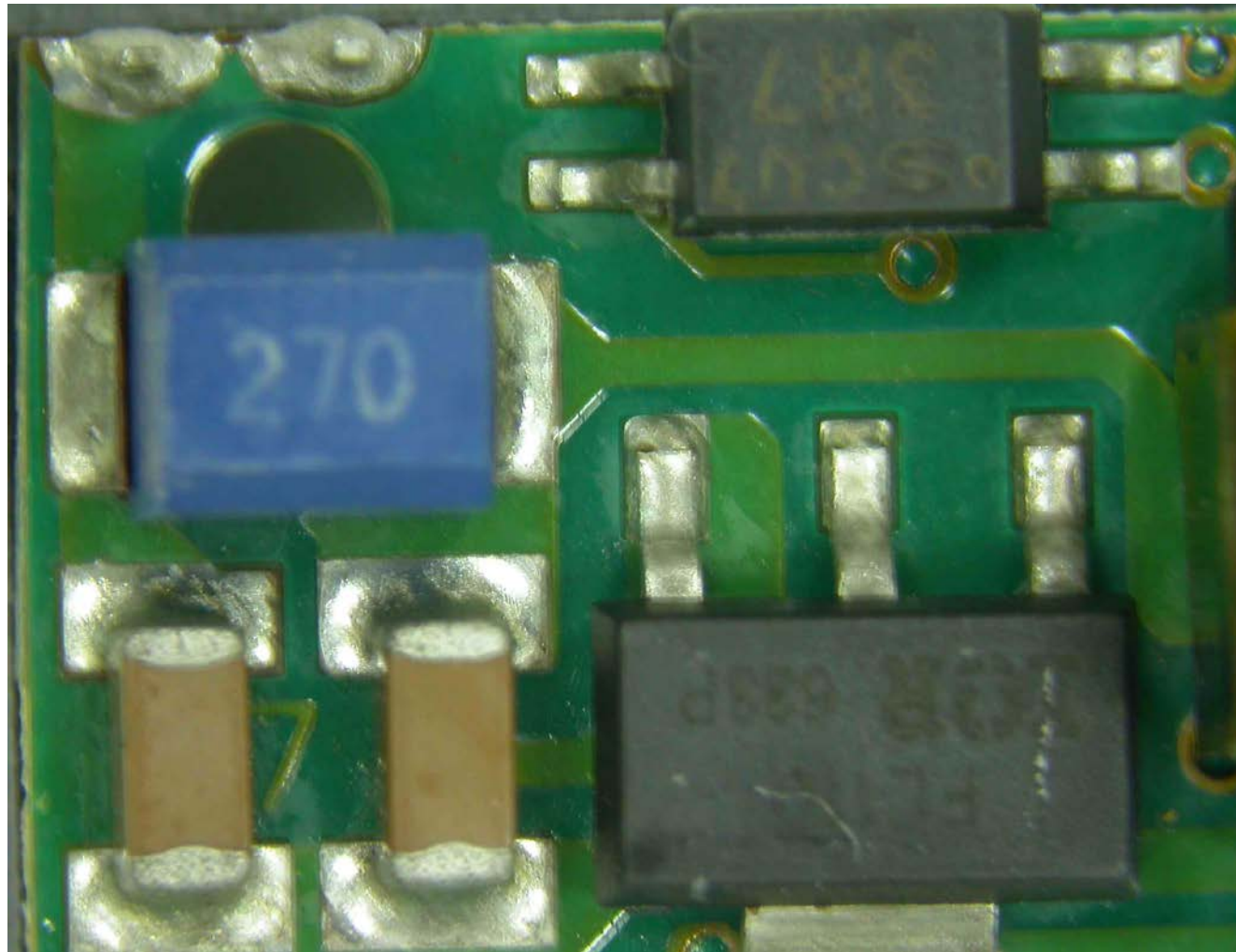
Top Side

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



Bottom Side

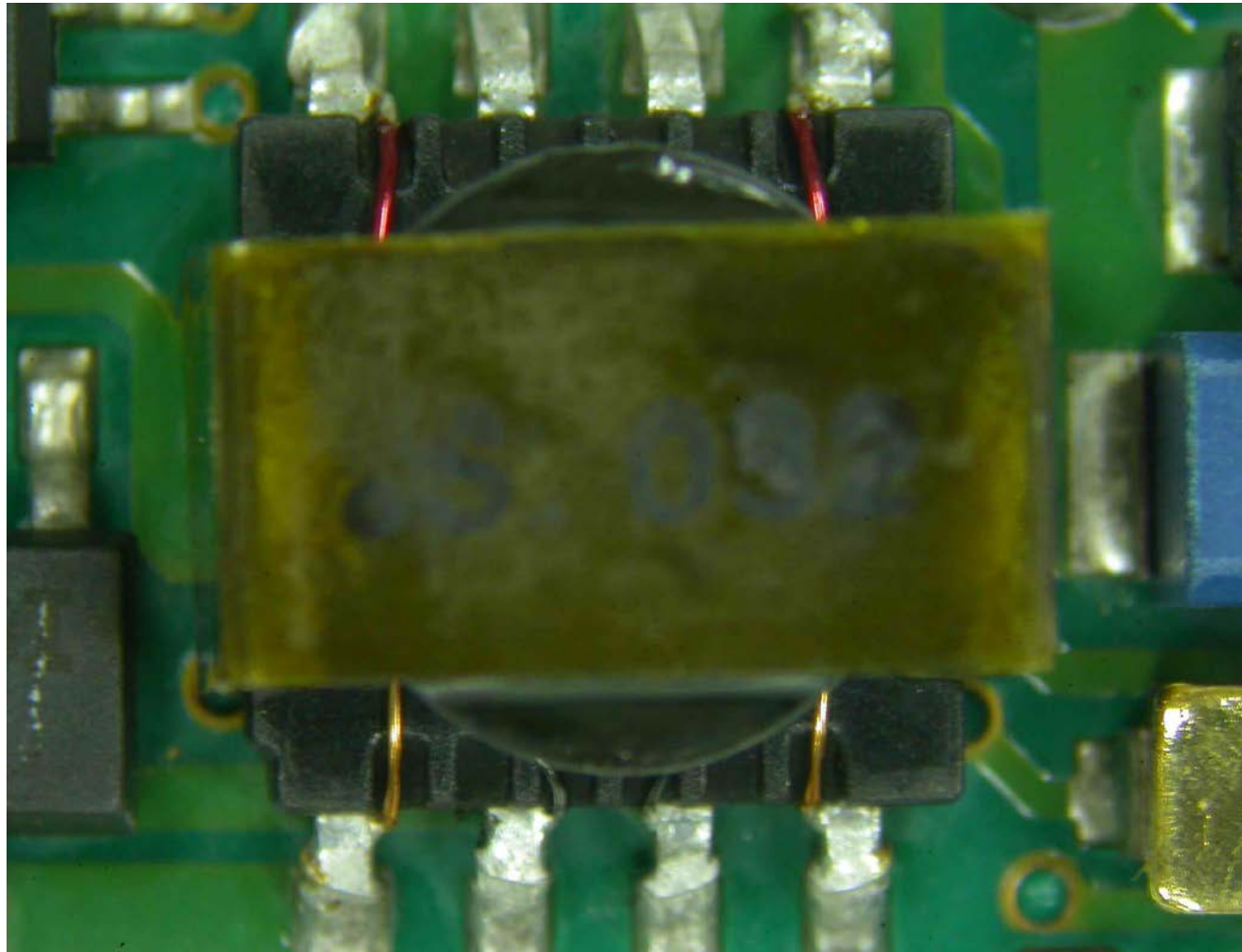
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Top Side-A



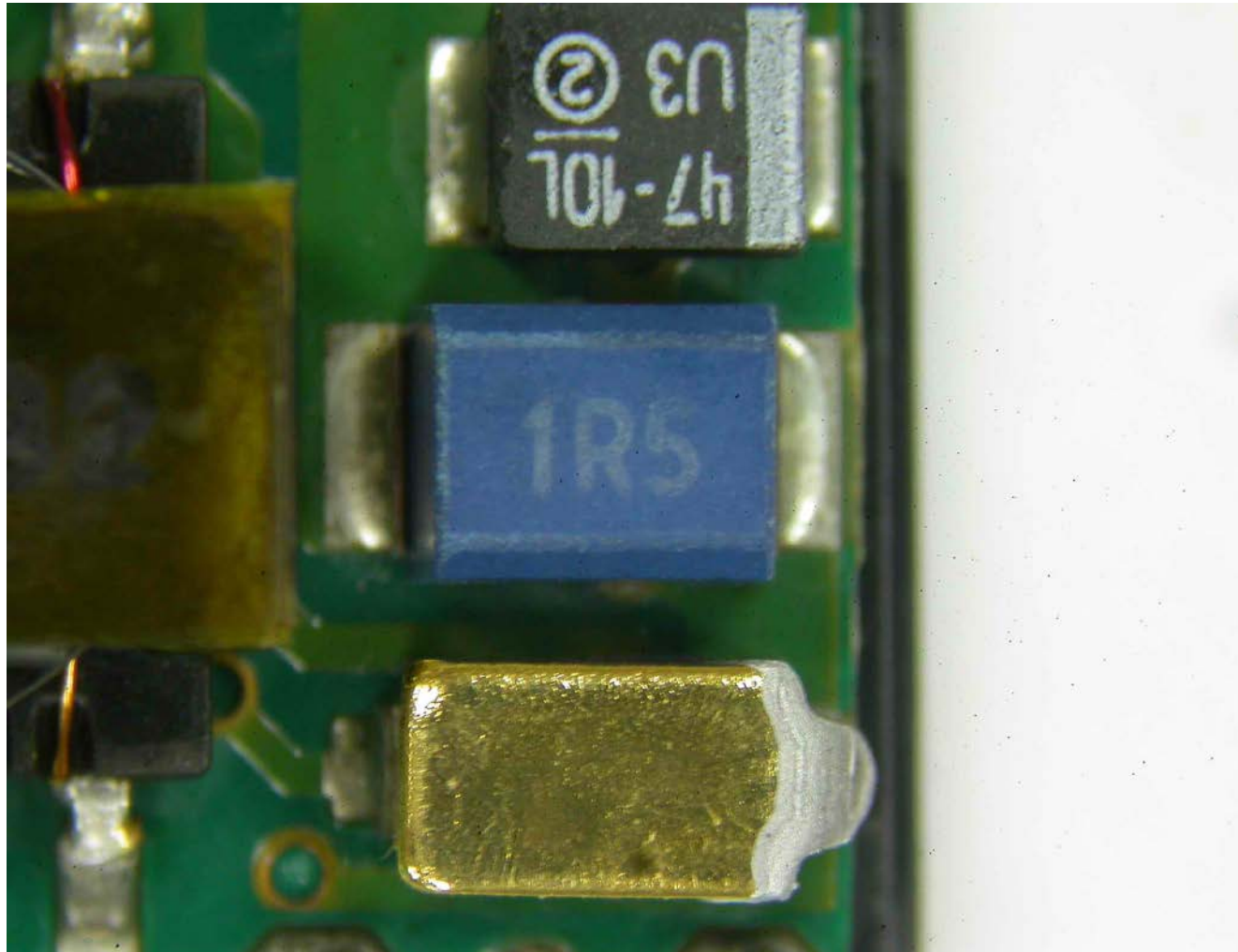
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Top Side-B

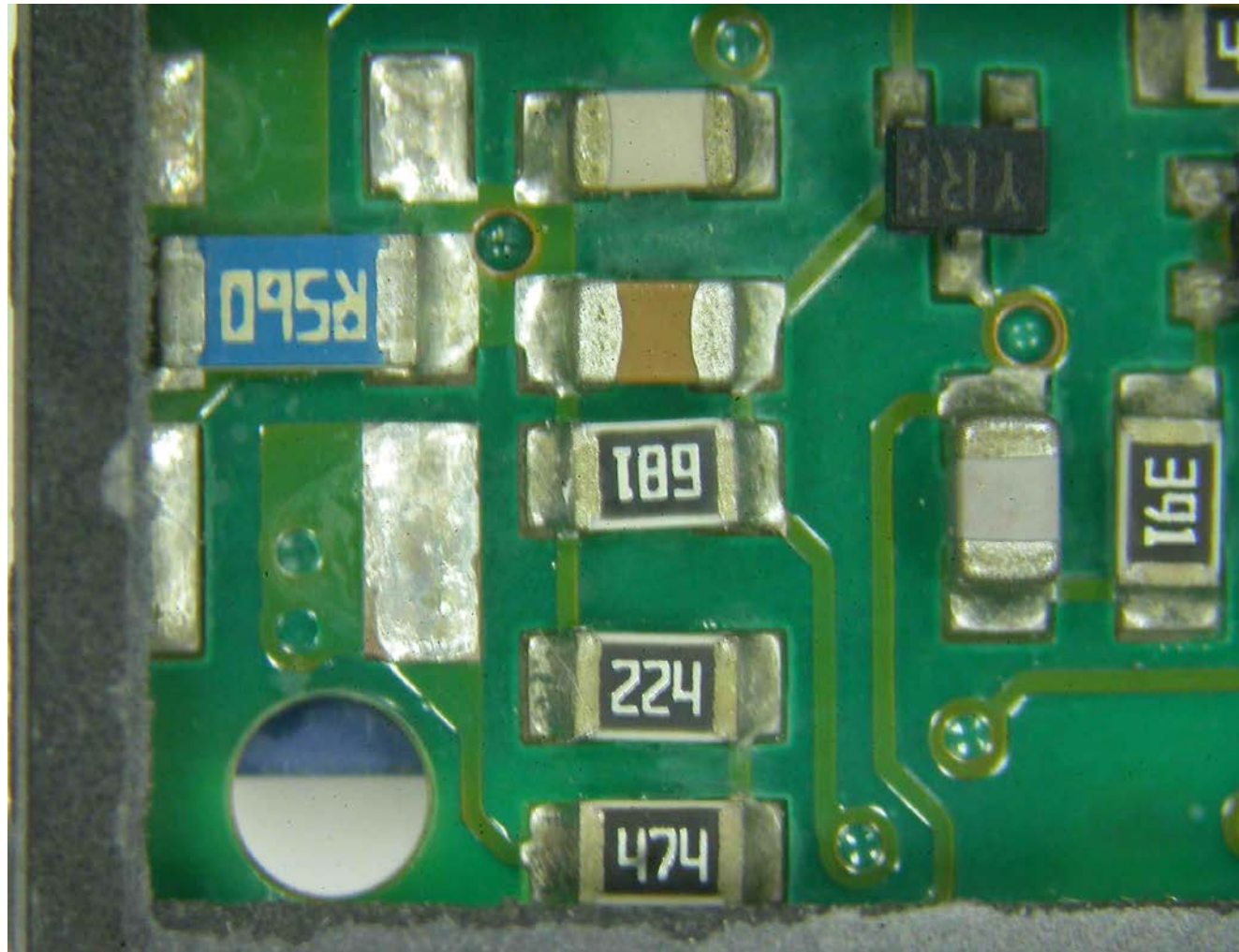


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



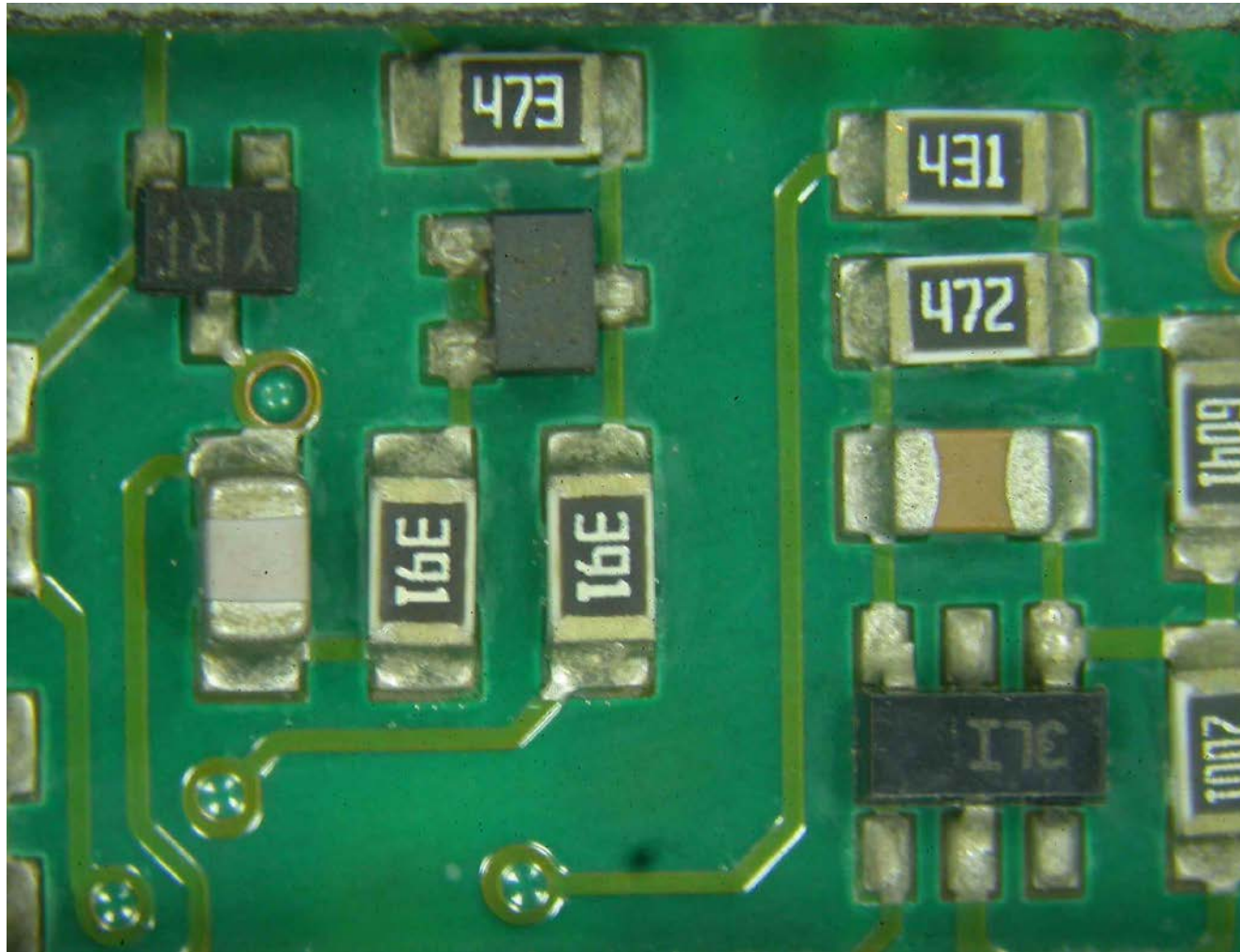
【NO : 31】 Top Side-C

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Bottom Side-A

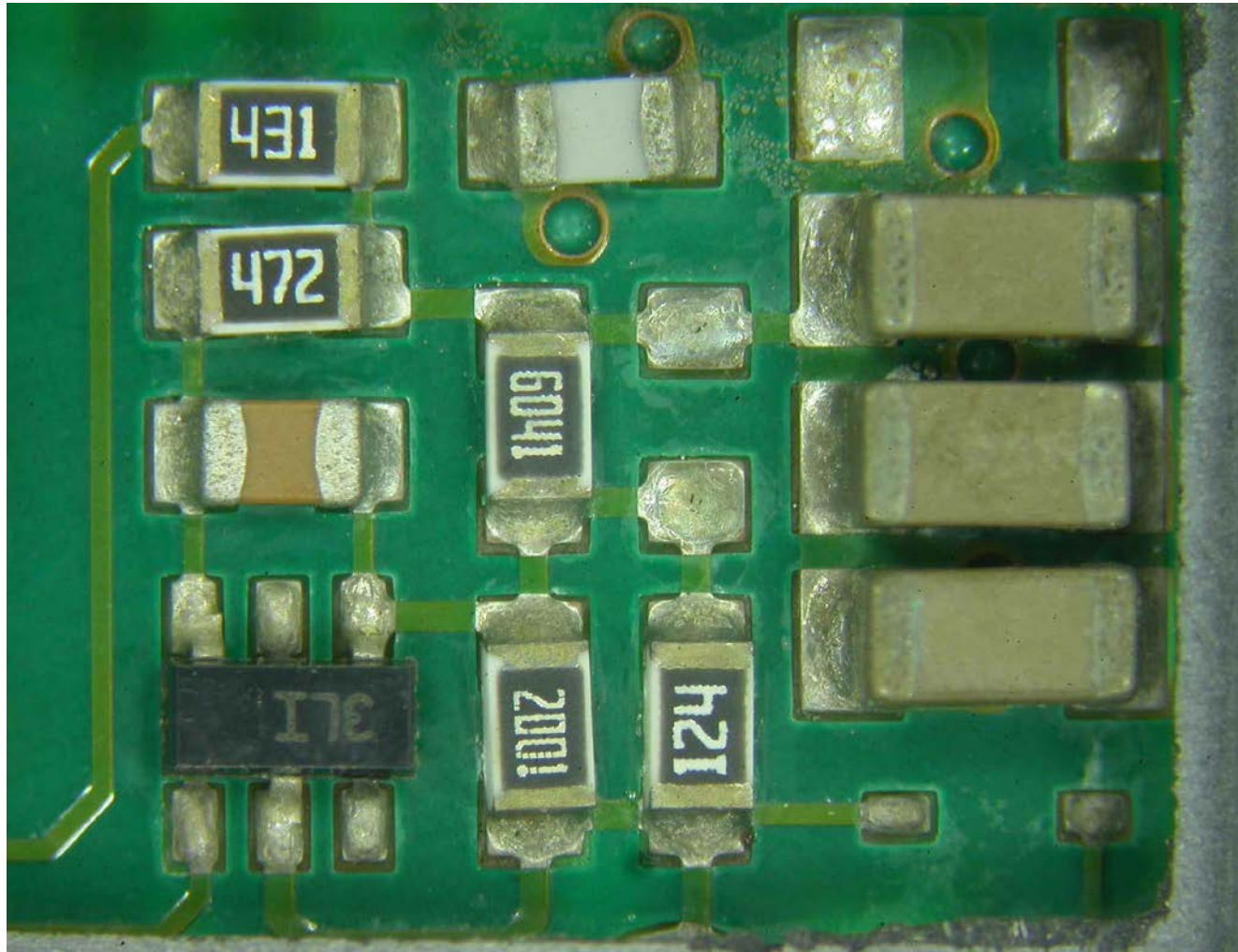
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Bottom Side-B



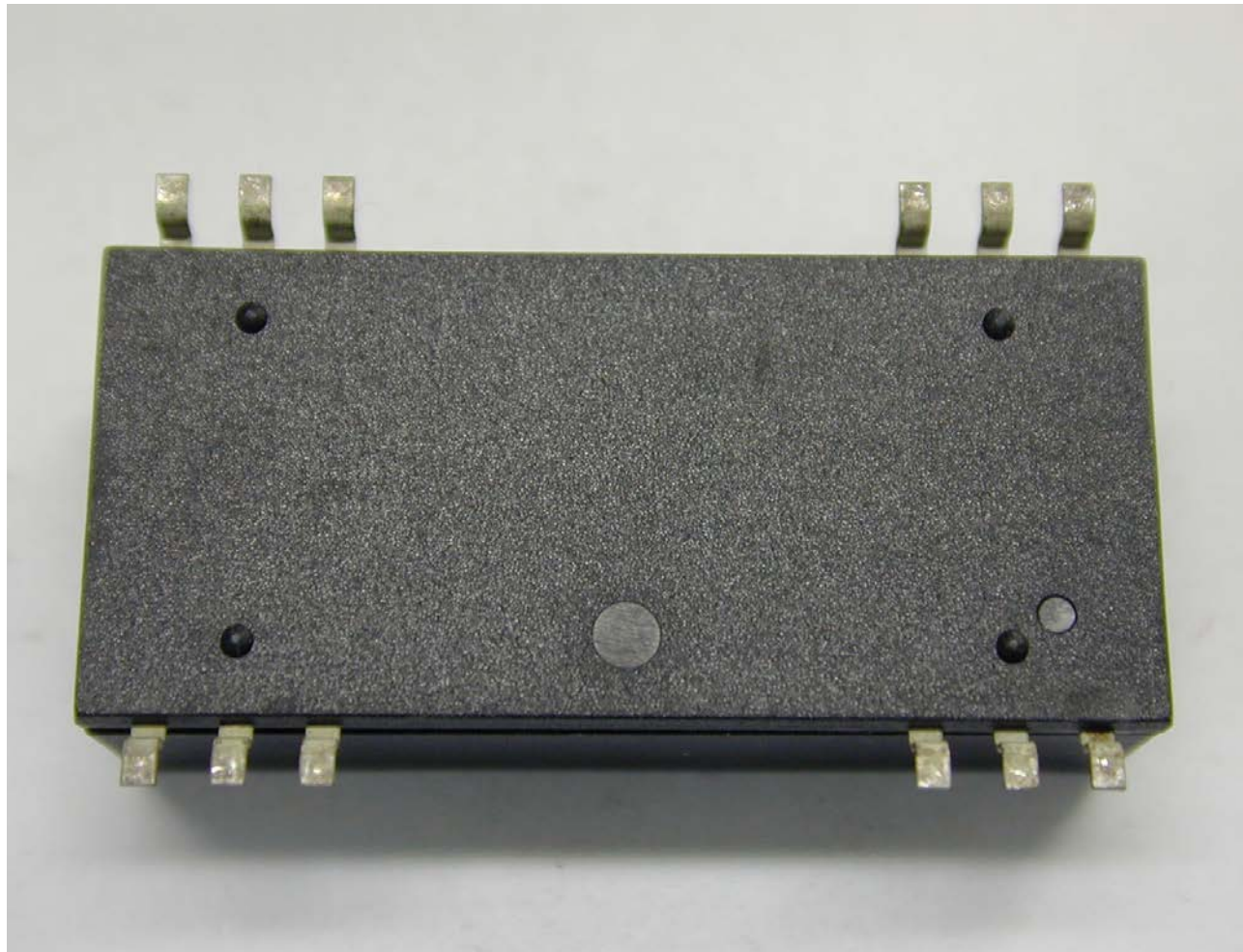
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Bottom Side-C



**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



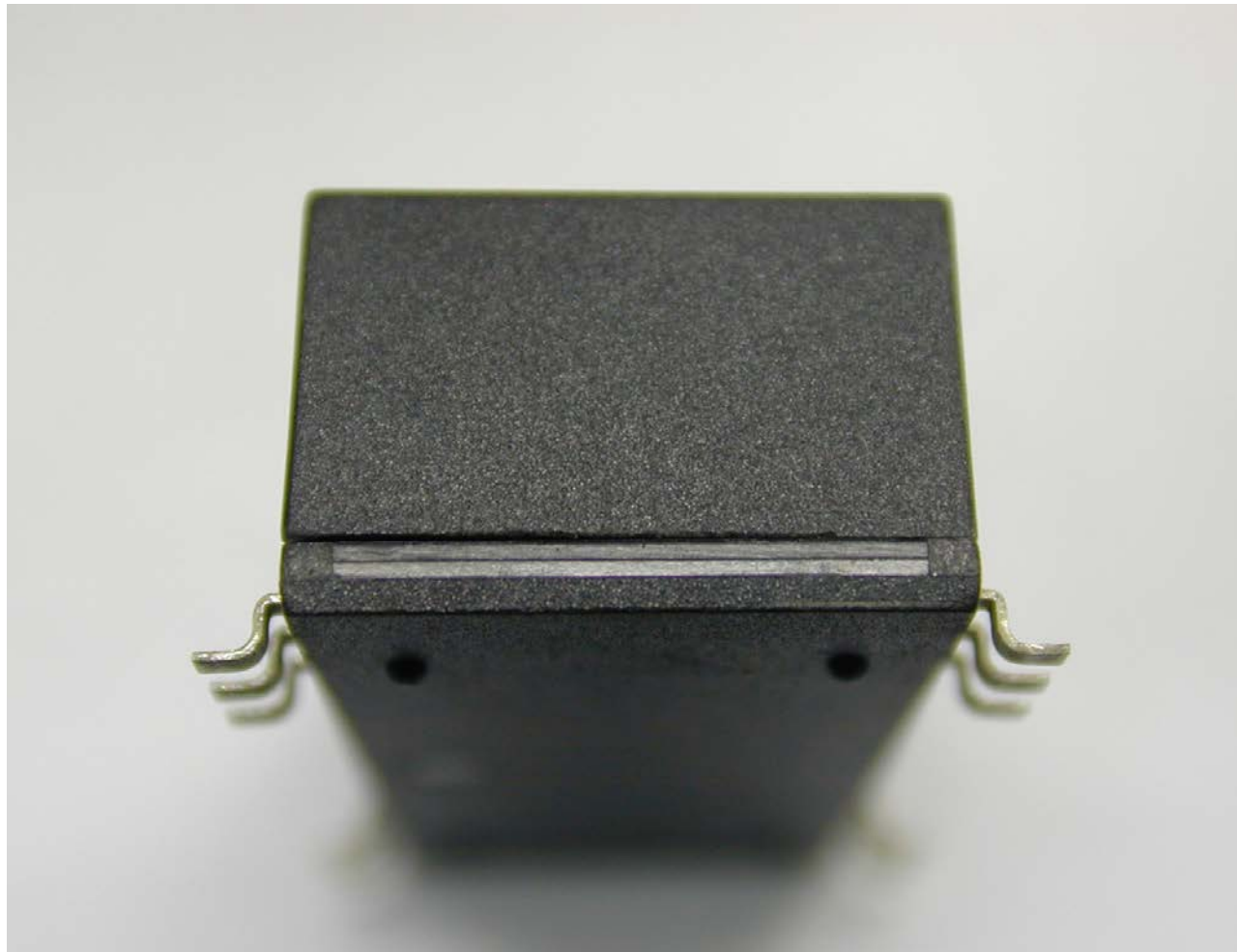
**【NO : 32】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 32】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 32】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 32】 After 3th Reflow Process**

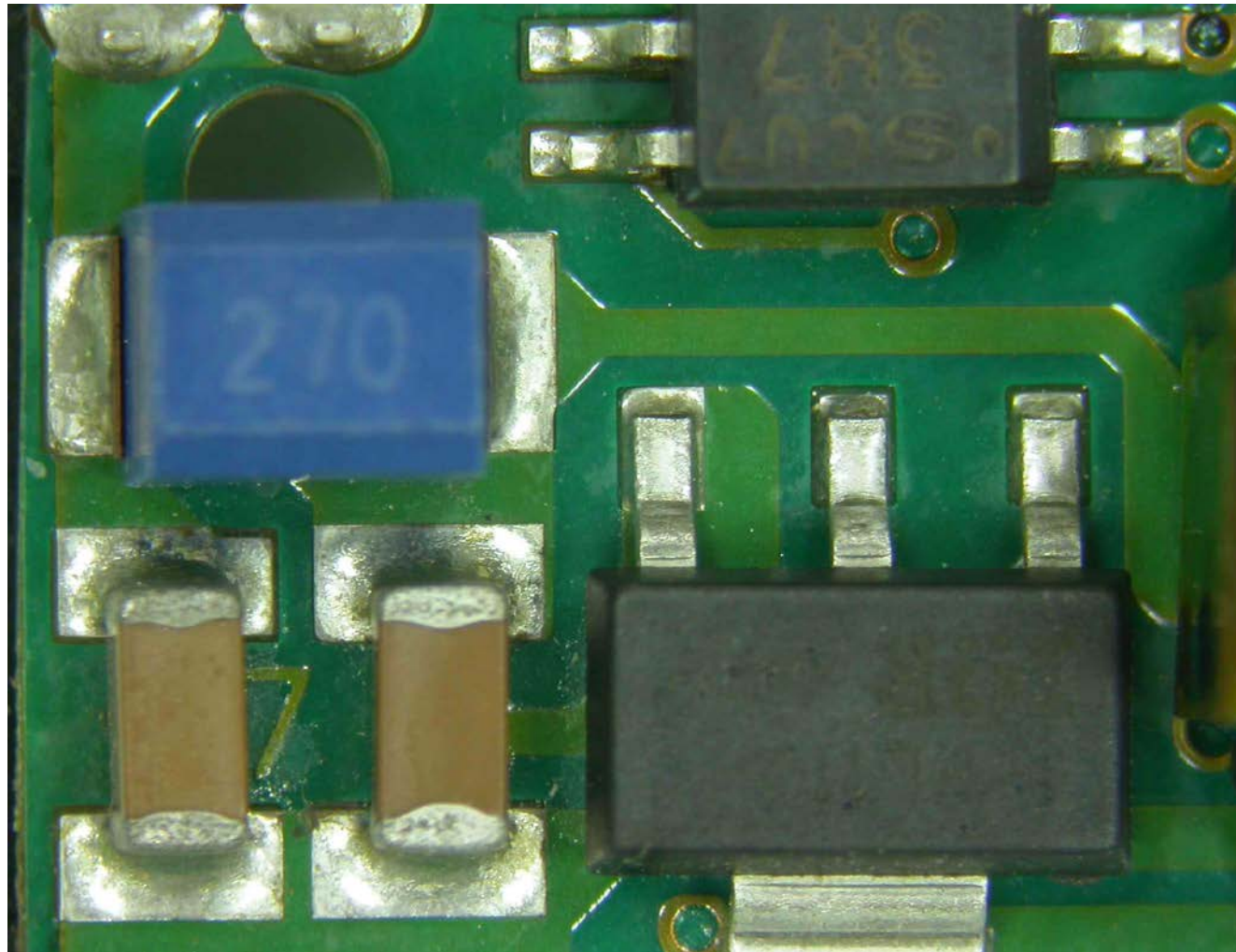


**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



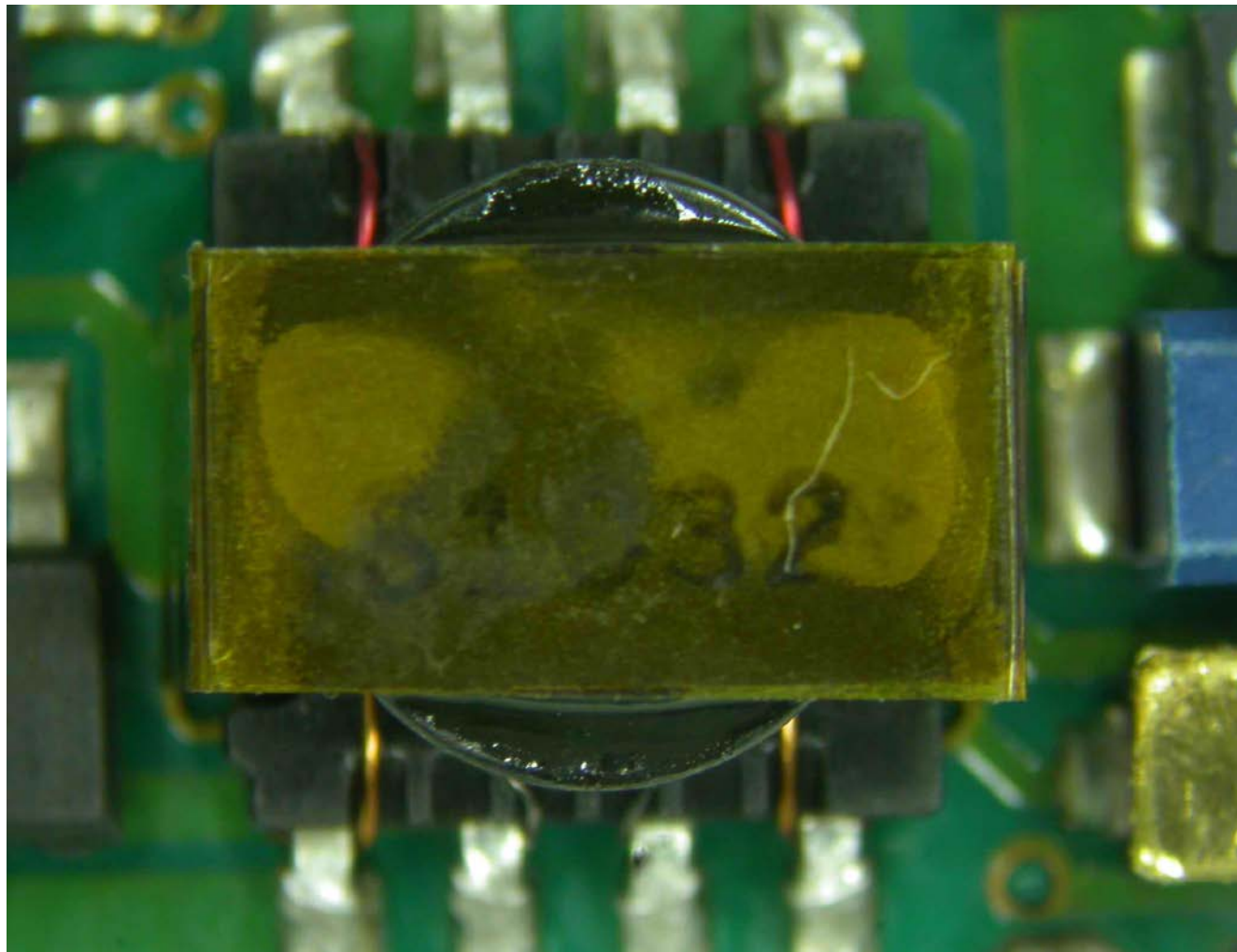
**【NO : 32】 After 3th Reflow Process**

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Top Side-A

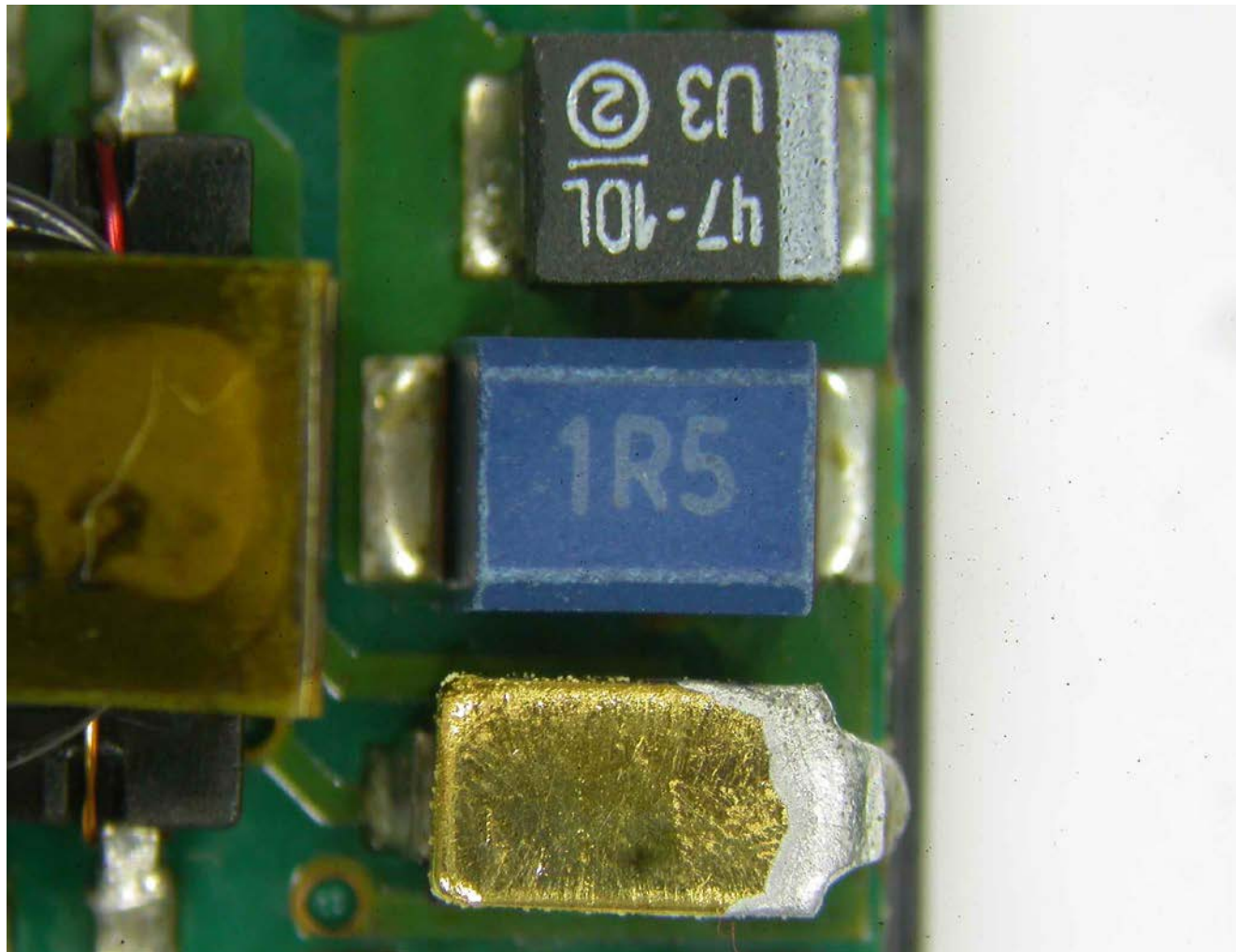
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Top Side-B



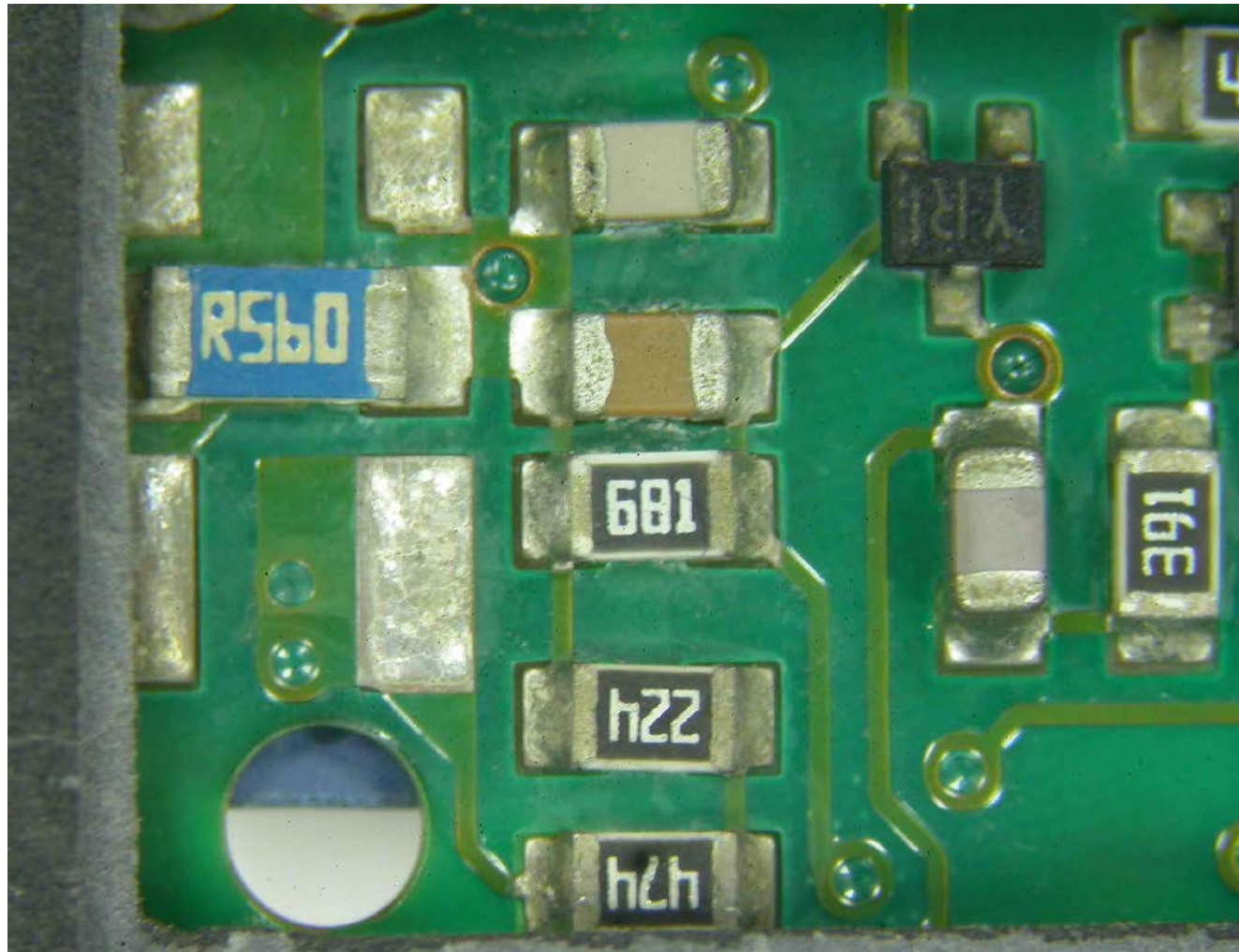
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Top Side-C

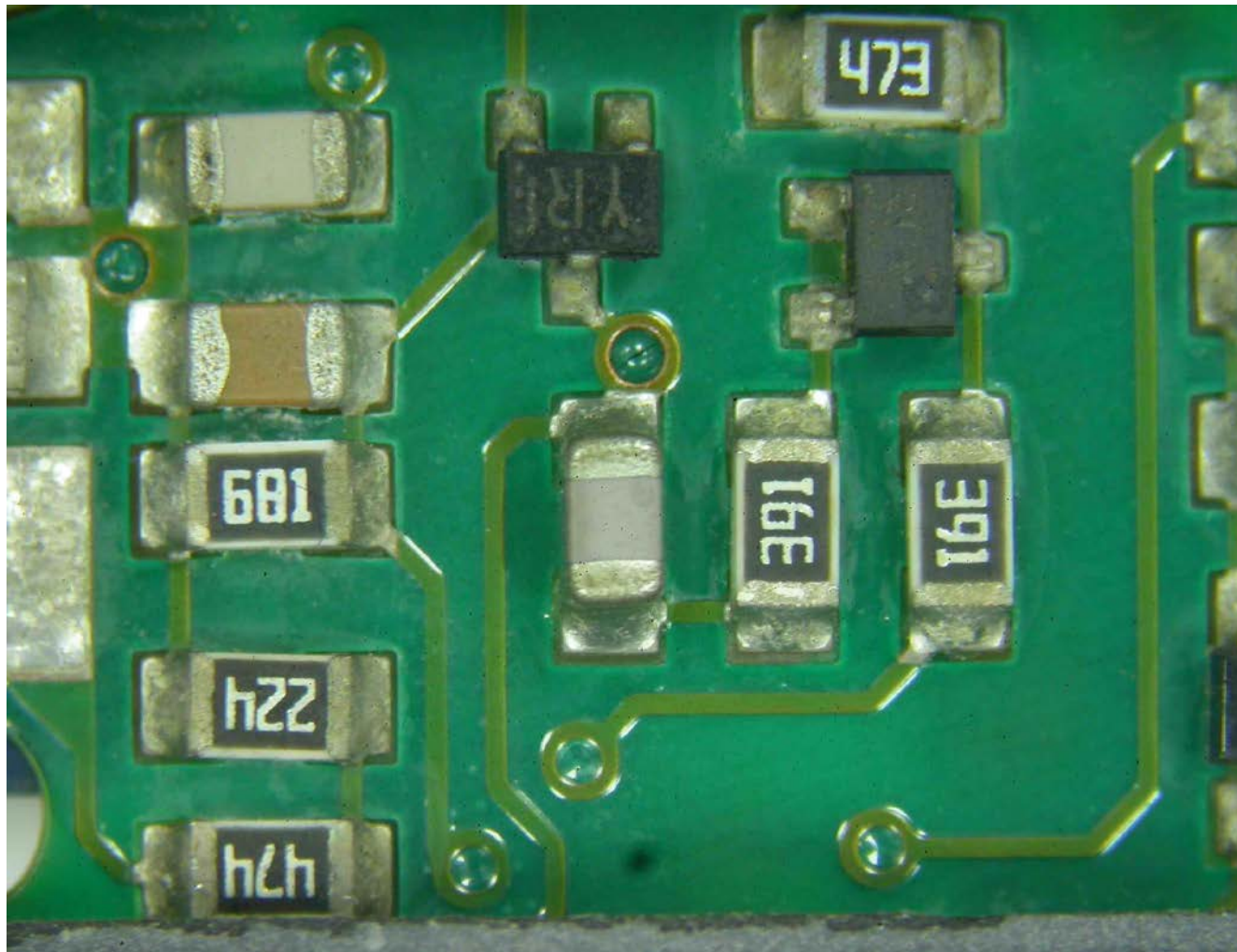


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Bottom Side-A

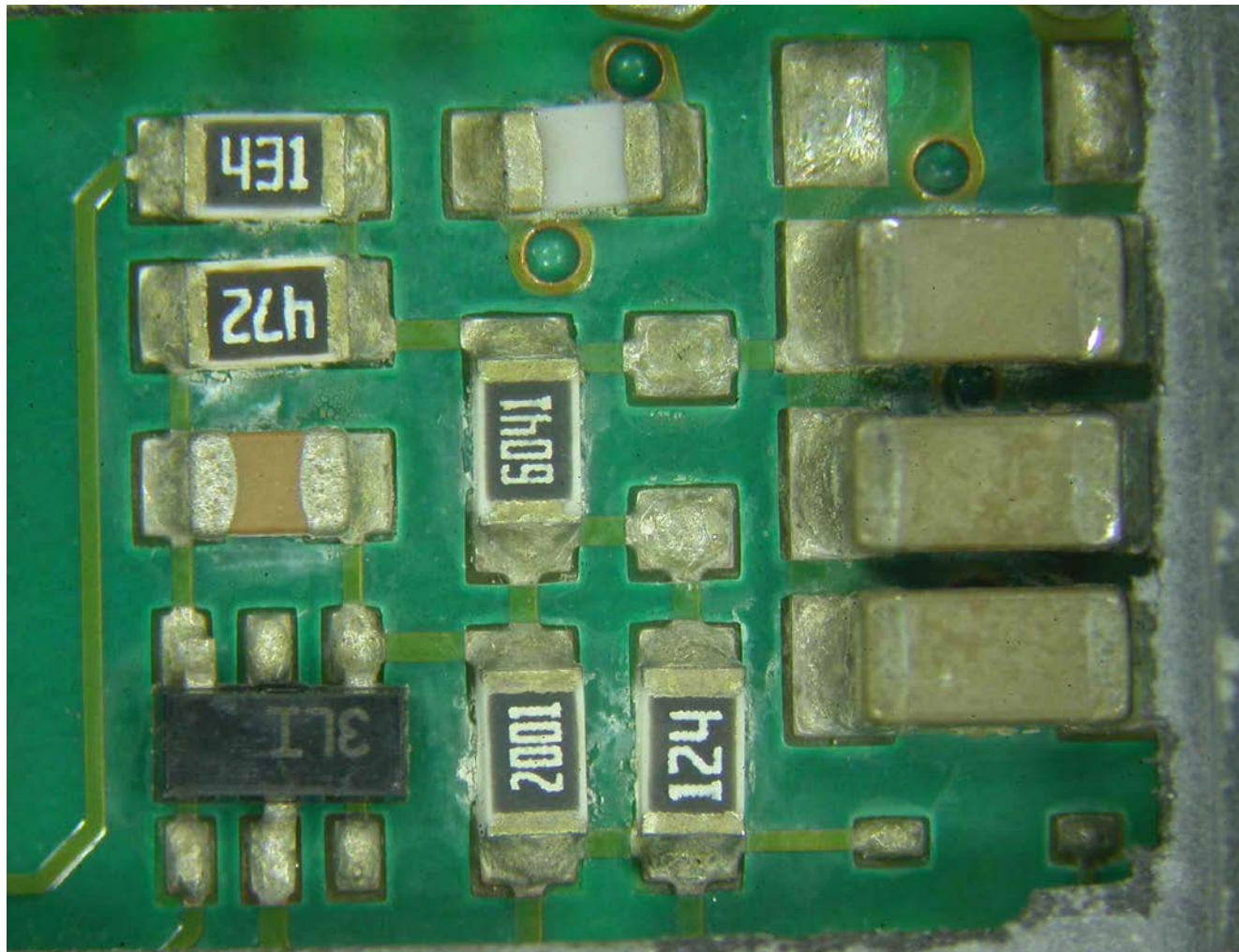
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Bottom Side-B

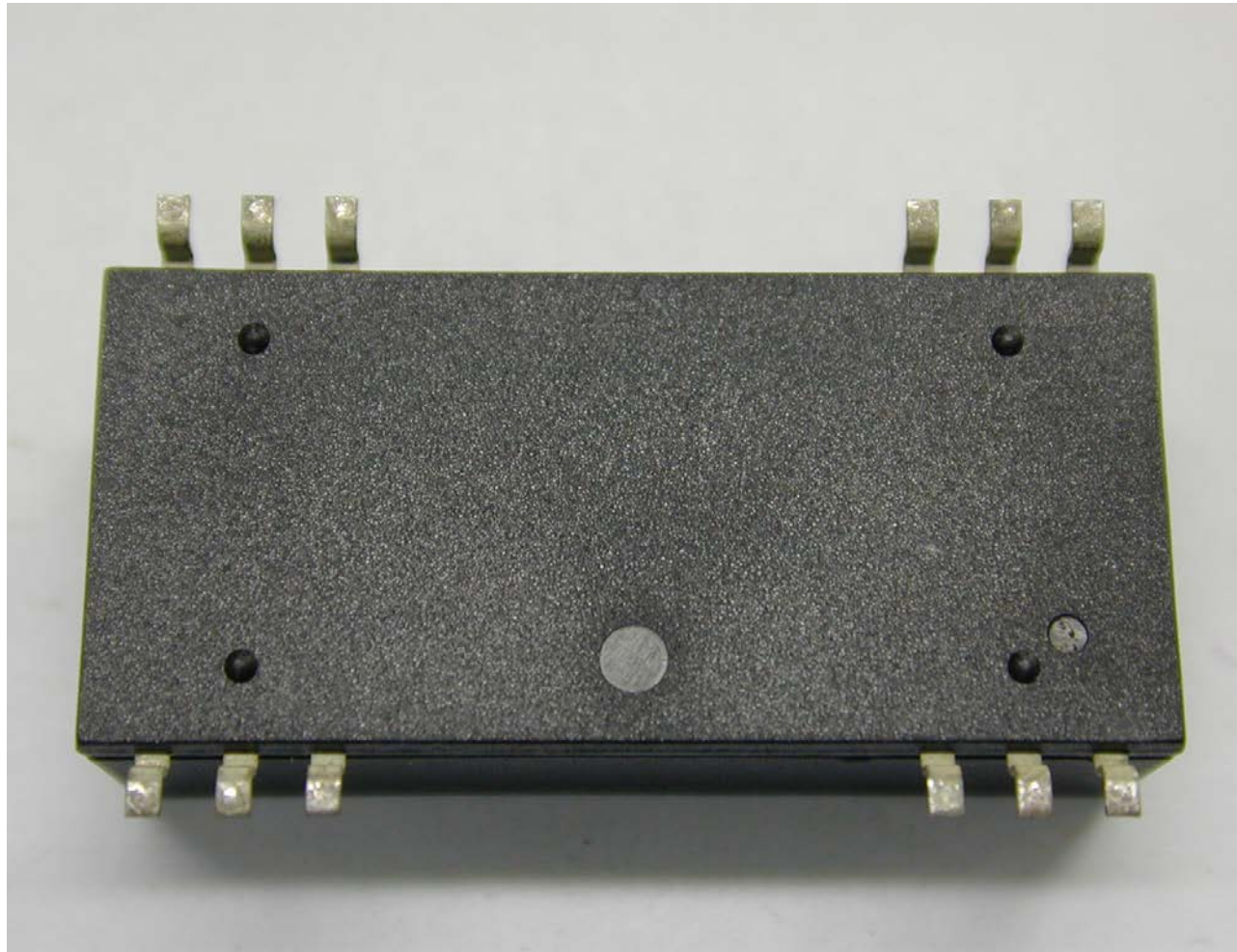


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Bottom Side-C

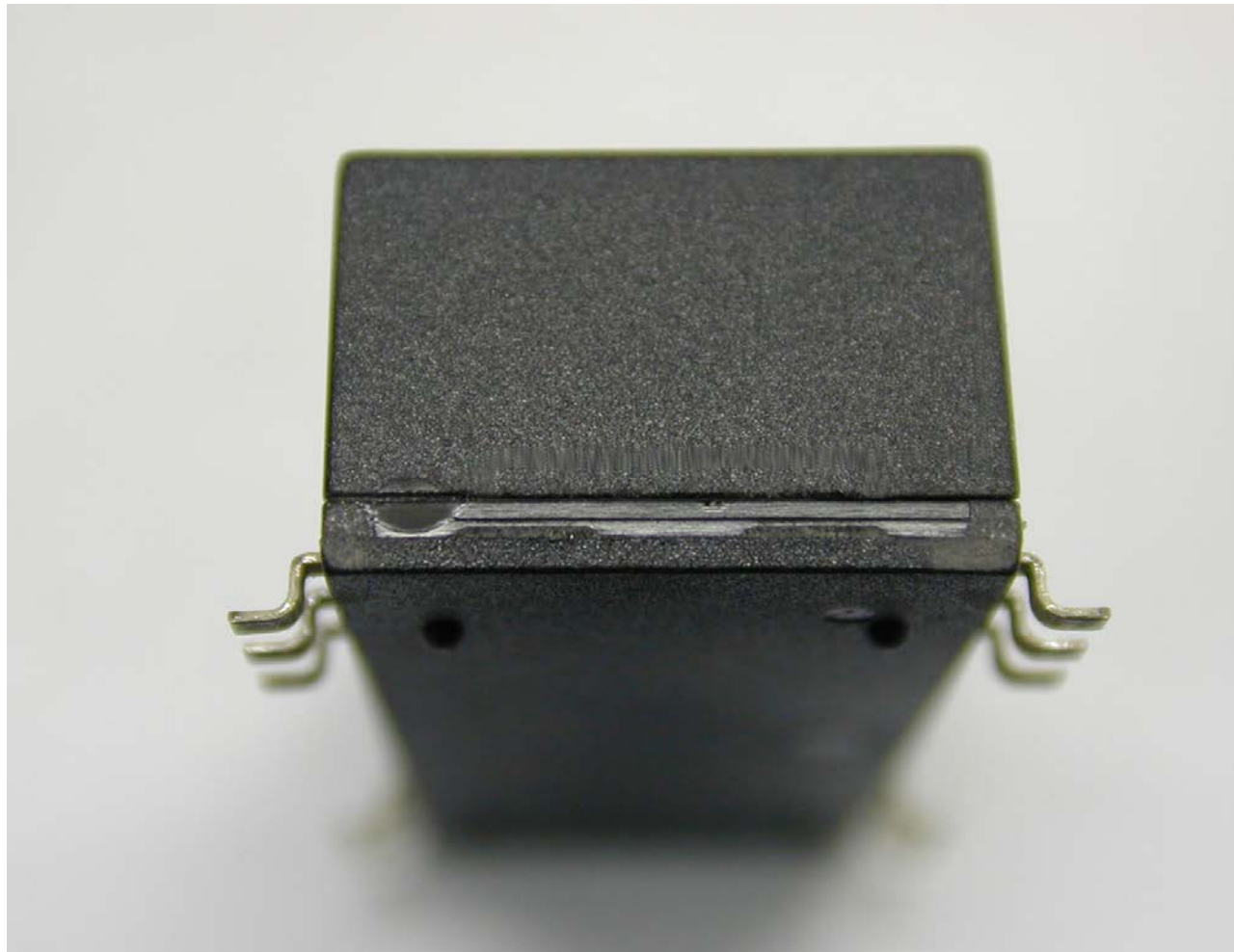
**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**



**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**

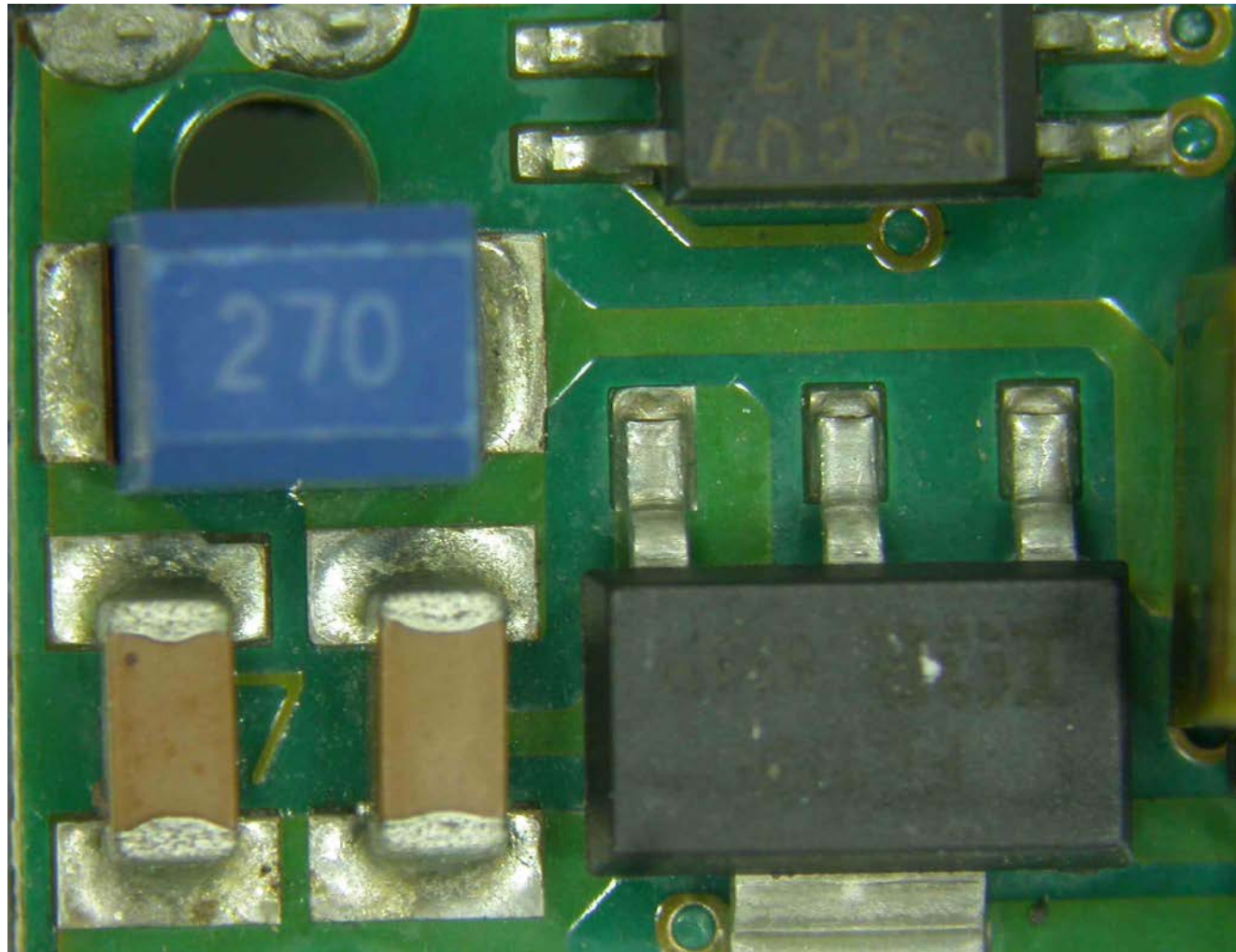
**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**

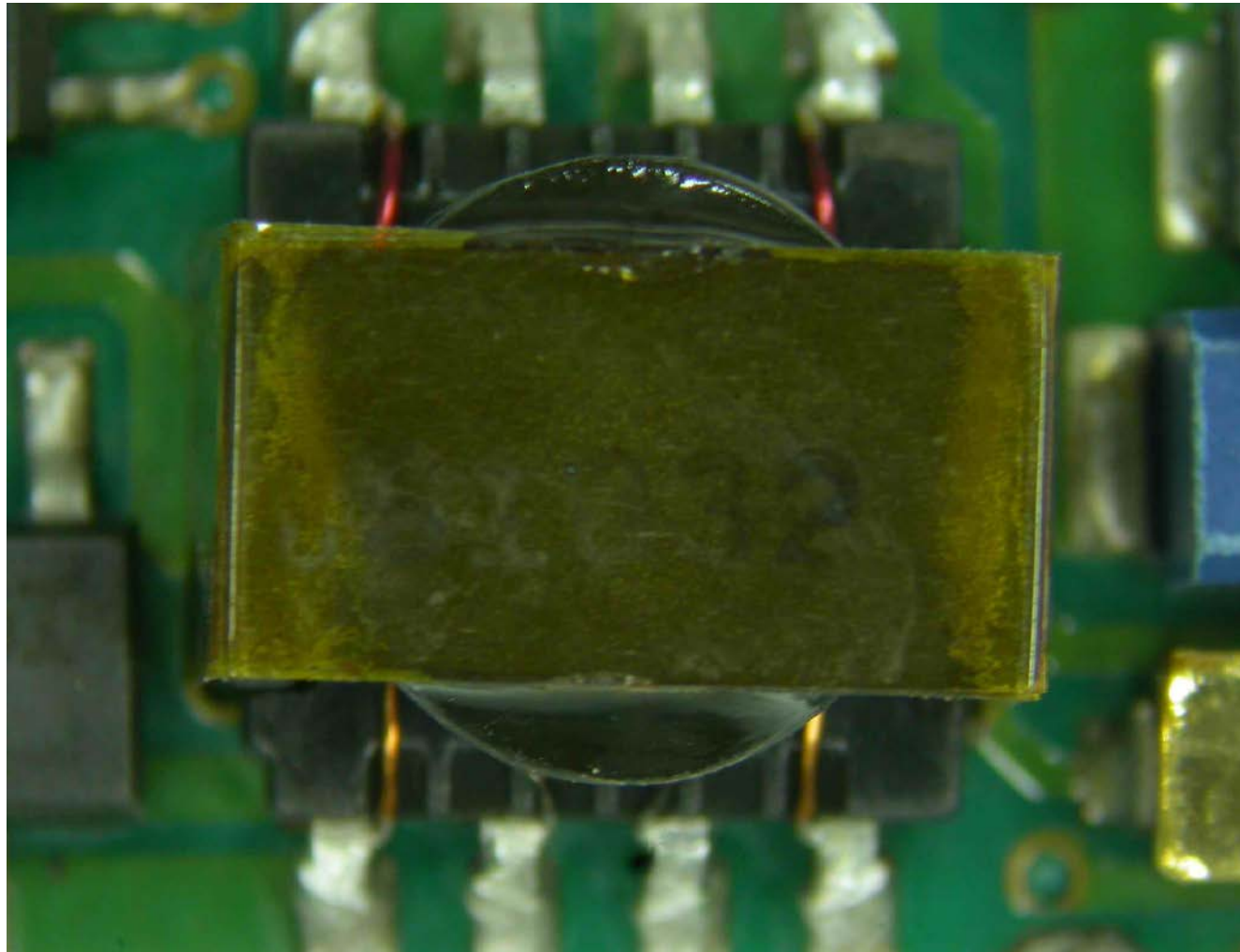


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



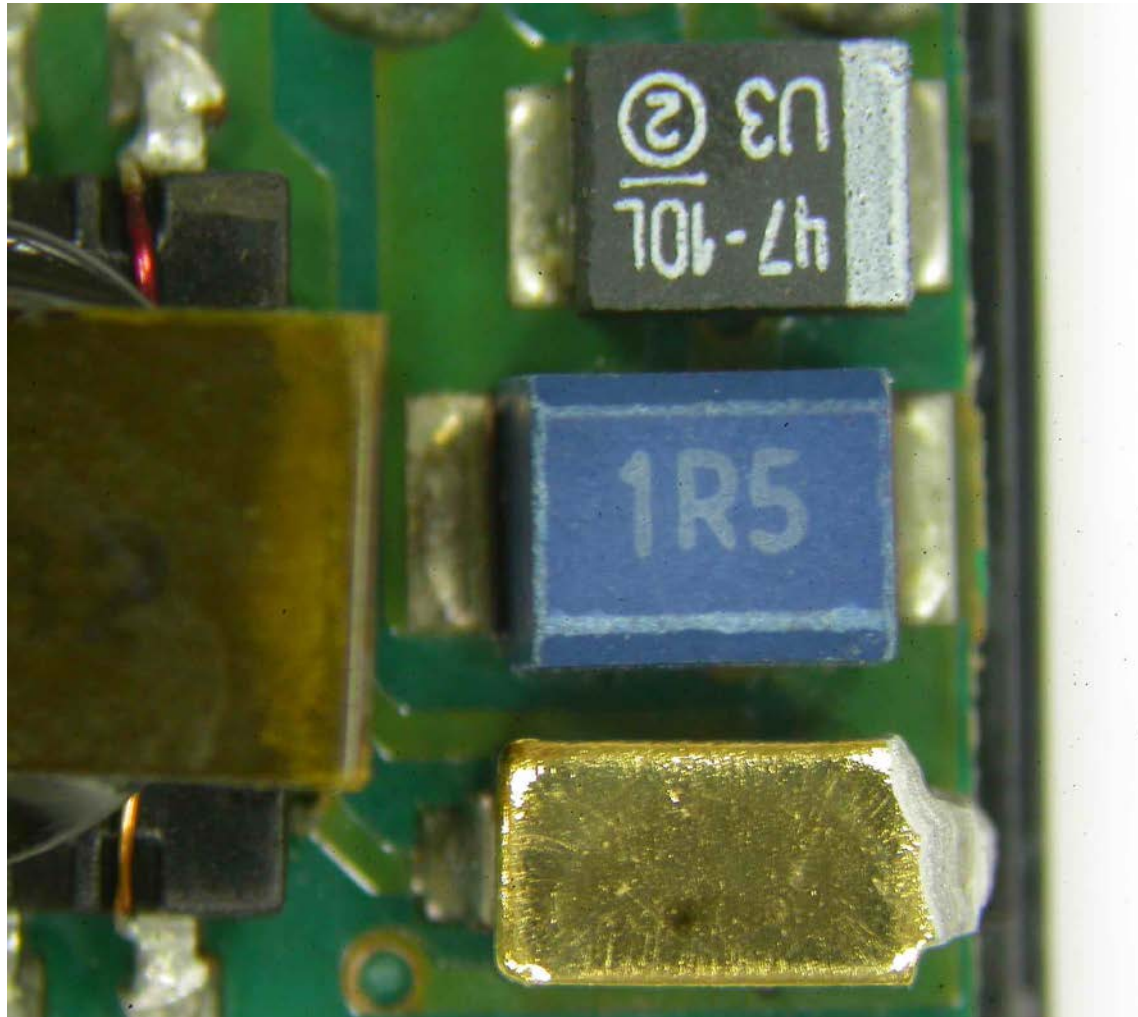
【NO : 33】 Top Side-A

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Top Side-B

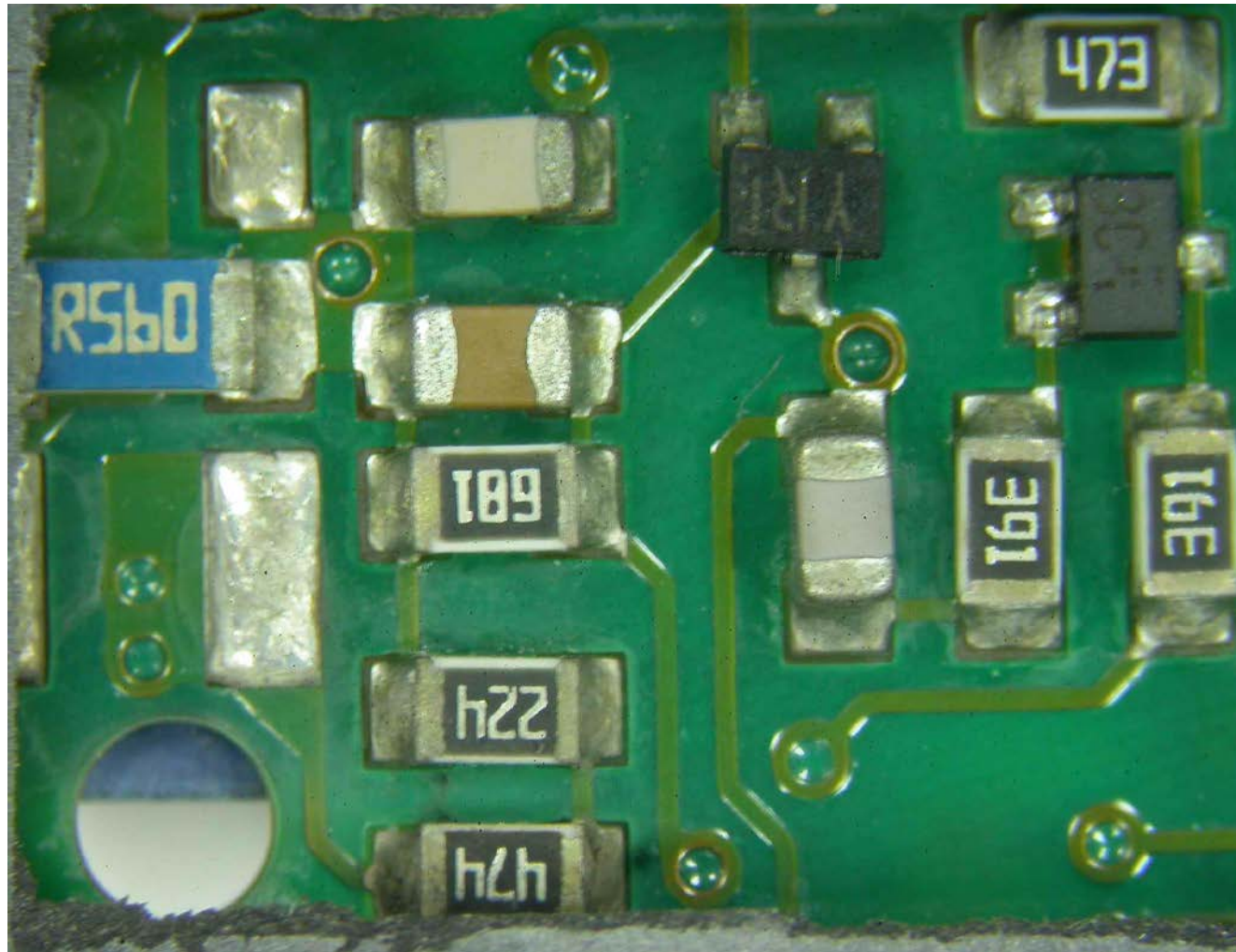
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Top Side-C



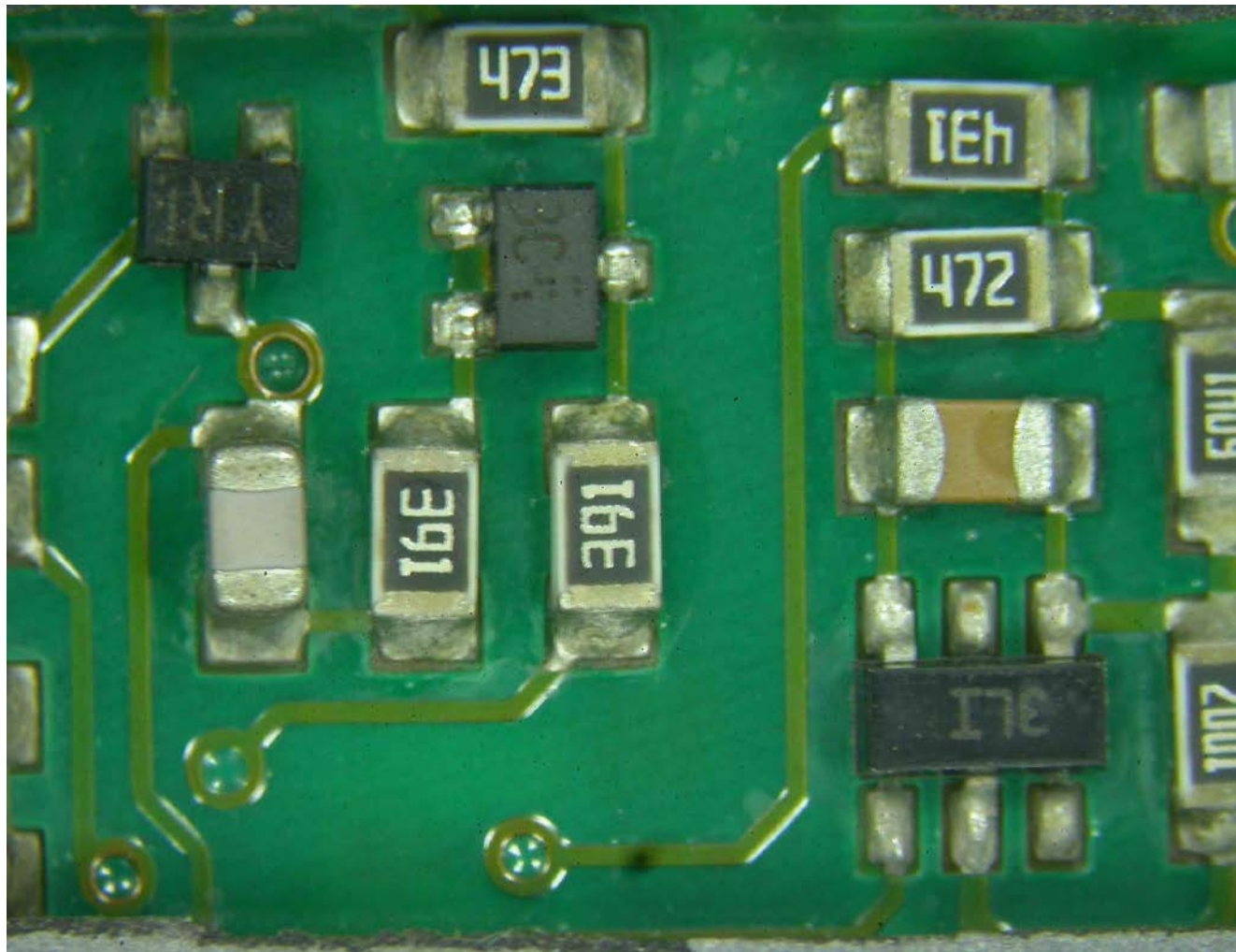
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Bottom Side-A

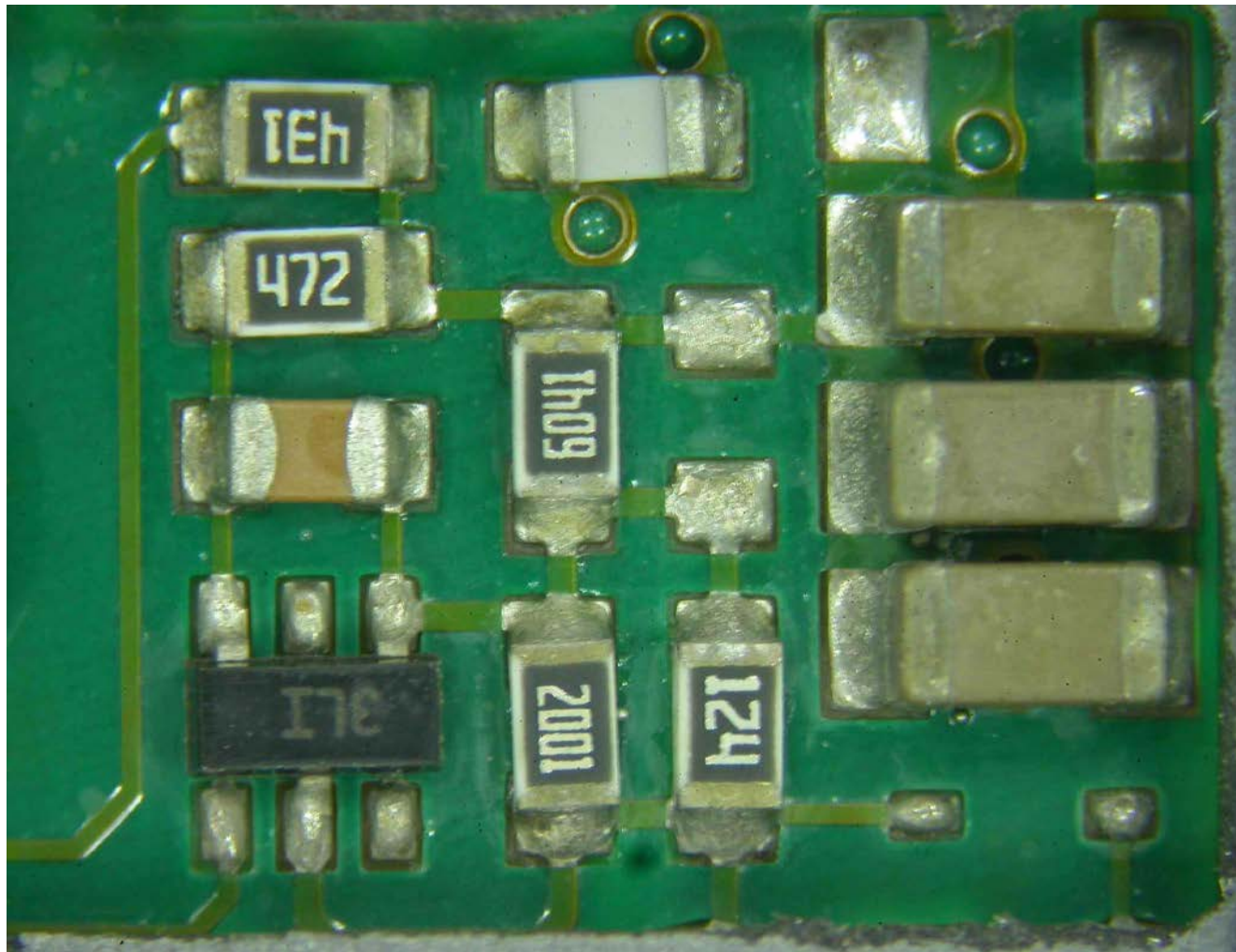


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Bottom Side-B

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Bottom Side-C

## Conclusion

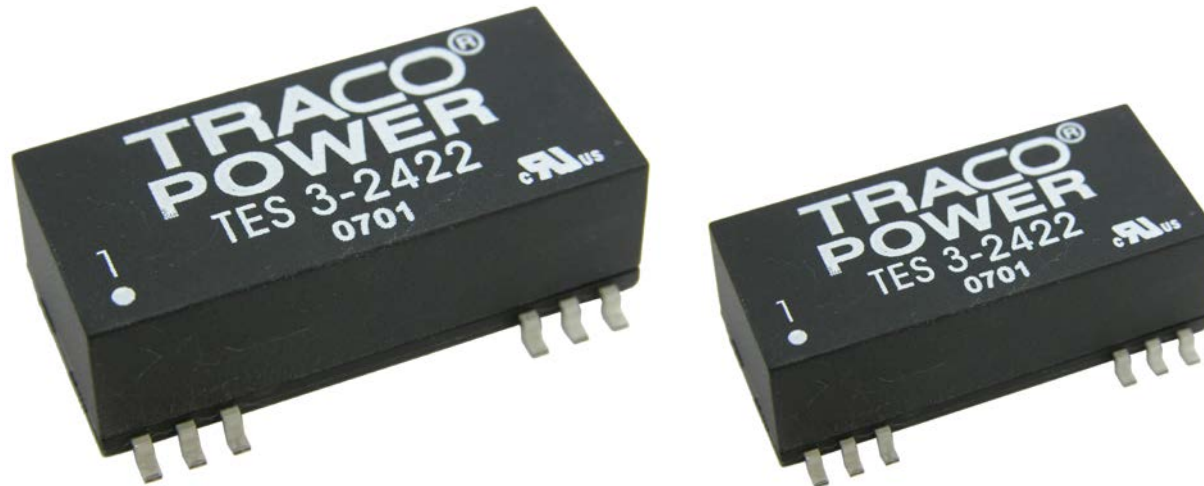
After above test process, there's no abnormal situation found and all tested units meet electrical characteristics. The products meet MSL Level 1 as per IPC/JEDEC J-STD-020C.

Date : #####

**TRACO  
POWER**

Product: **TES 3 Series**  
Dual Output Models

Moisture Sensitivity Level (MSL) Test Report  
as per IPC/JEDEC J-STD-020C

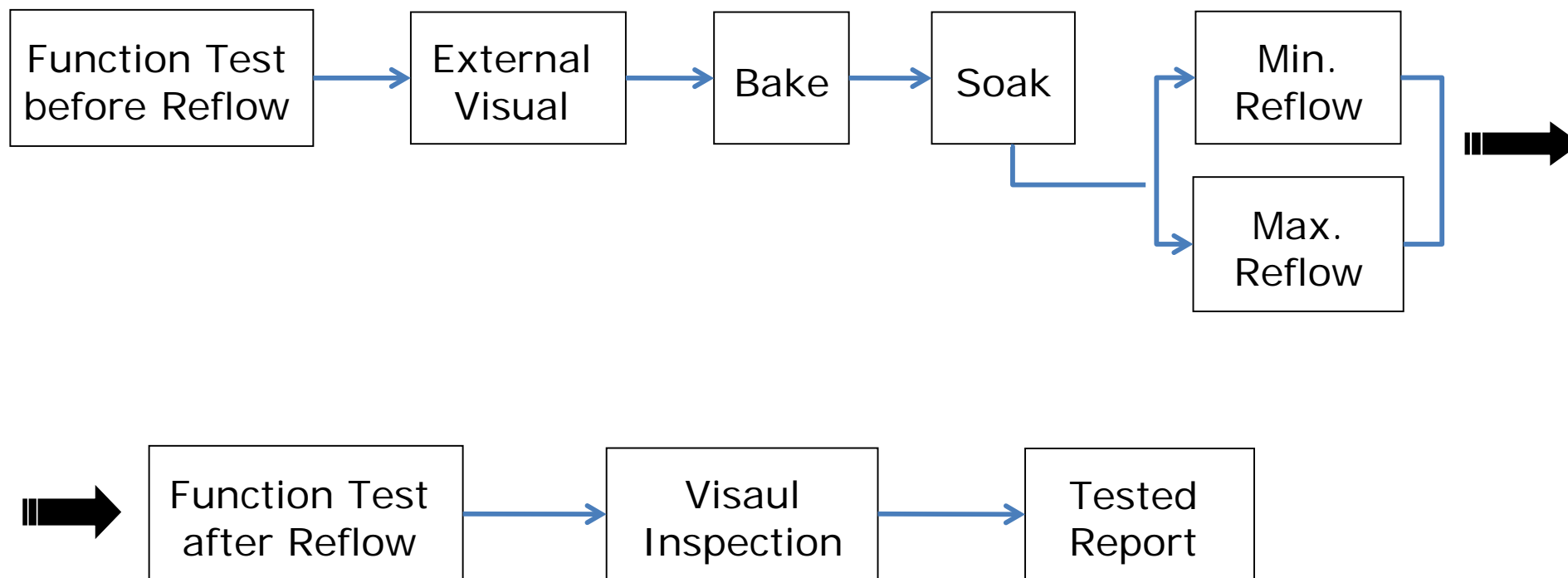




## Table of Contents

	<u>Page</u>
Tested Flowchart	<u>1</u>
Tested Data before Min.Reflow	<u>2</u>
Min. Temperature Reflow Profile	<u>3</u>
Tested Data after Min.Reflow	<u>4-6</u>
Tested Data before Max.Reflow	<u>7</u>
Max. Temperature Reflow Profile	<u>8</u>
Tested Data after Max.Reflow	<u>9-11</u>
Pictures	<u>12-46</u>
Conclusion	<u>47</u>

# Tested Flowchart for Open-Frame Products



# Test Report

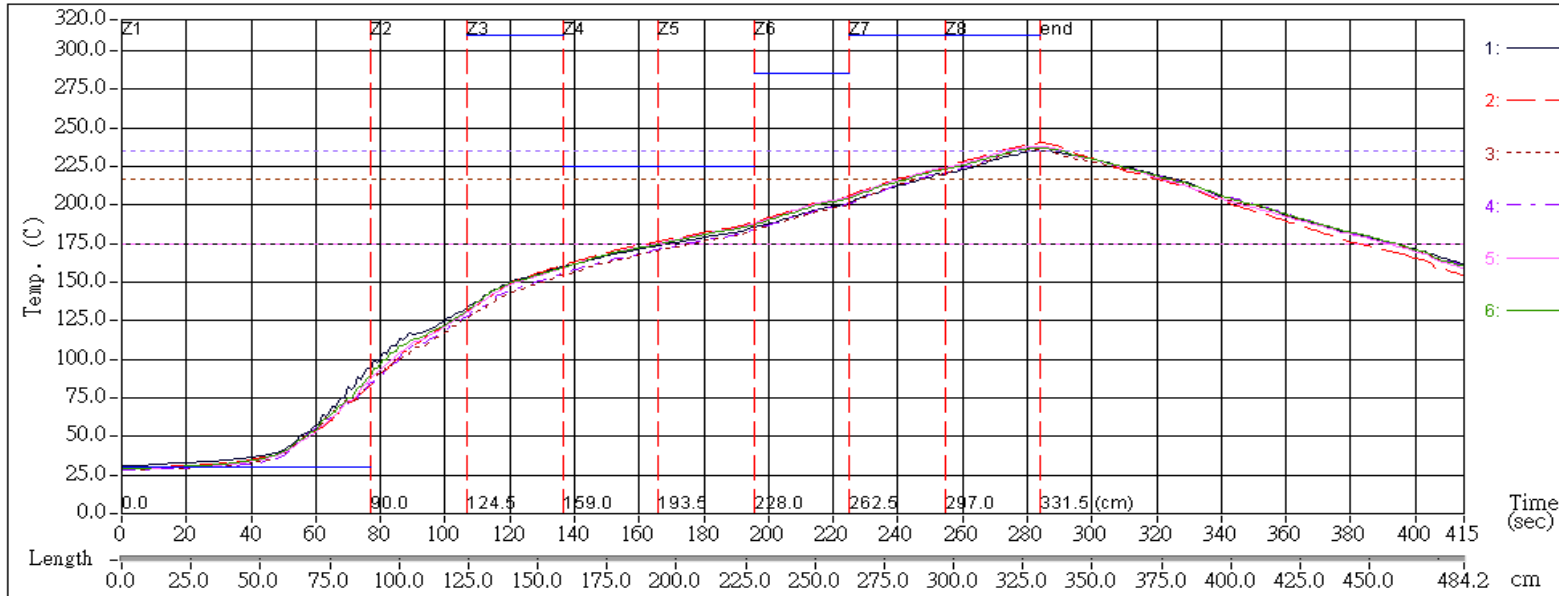
Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

Before Reflow Process

Date: 13.12.2006  
Tested By: Jordan ou

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp- p)		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
1	24	153.40	81.763	12.054	12.036	17.6	15.2	-0.02	0.04	0.06	0.13	OK	pass
2		152.90	81.877	12.054	11.991	25.6	21.6	0.03	0.01	0.08	0.00	OK	pass
3		153.40	81.621	12.056	11.992	26.4	20.0	0.03	0.00	0.09	0.01	OK	pass
4		152.90	81.820	12.011	12.017	21.6	19.2	0.01	0.00	0.05	0.02	OK	pass
5		153.00	81.745	12.001	12.021	12.8	10.4	-0.04	0.07	0.12	0.18	OK	pass
6		153.50	81.751	12.076	12.026	24.8	21.6	0.03	0.00	0.09	0.02	OK	pass
7		153.00	81.800	12.014	12.024	18.4	15.2	0.01	0.03	0.03	0.07	OK	pass
8		153.40	81.688	12.010	12.058	13.6	11.2	-0.06	0.08	0.11	0.20	OK	pass
9		153.00	81.868	11.992	12.066	12.0	10.4	-0.08	0.09	0.17	0.26	OK	pass
10		153.10	81.610	12.030	11.968	29.6	25.6	0.06	-0.05	0.18	0.09	OK	pass
11		153.80	81.591	12.054	12.048	17.6	16.0	-0.01	0.03	0.03	0.11	OK	pass
12		153.70	81.641	12.073	12.028	29.6	24.8	0.07	-0.04	0.17	0.08	OK	pass
13		153.10	81.614	11.999	12.000	21.6	19.2	0.02	0.01	0.08	0.01	OK	pass
14		153.70	81.641	12.053	12.048	16.8	13.6	-0.01	0.04	0.03	0.10	OK	pass
15		153.10	81.719	12.014	12.016	16.8	14.4	0.01	0.02	0.02	0.10	OK	pass
16		152.60	81.775	11.994	11.974	11.2	9.6	-0.04	0.07	0.13	0.36	OK	pass
17		153.30	81.879	12.059	12.049	20.8	14.4	0.01	0.01	0.05	0.03	OK	pass
18		154.50	81.392	12.064	12.088	18.4	12.8	0.03	0.03	0.06	0.08	OK	pass
19		153.00	81.679	12.000	12.002	16.0	12.0	0.00	0.03	0.02	0.11	OK	pass
20		153.30	81.825	12.060	12.032	36.0	28.0	0.05	-0.03	0.21	0.12	OK	pass
21		153.50	81.793	12.047	12.067	14.4	9.6	-0.03	0.04	0.03	0.12	OK	pass
22		153.30	81.577	12.016	12.003	20.0	14.4	-0.01	0.03	0.02	0.09	OK	pass
23		153.60	81.428	12.002	12.020	16.0	12.0	0.03	0.03	0.04	0.11	OK	pass
24		152.60	81.858	11.991	12.001	15.2	12.0	-0.02	0.05	0.02	0.10	OK	pass
25		153.00	81.740	11.994	12.026	12.0	10.4	-0.07	0.10	0.18	0.25	OK	pass
26		153.30	81.574	12.008	12.010	17.6	12.8	0.01	0.01	0.03	0.06	OK	pass
27		153.00	81.849	12.030	12.022	14.4	14.4	-0.01	0.05	0.05	0.15	OK	pass
28		153.20	81.691	12.033	12.004	24.0	20.0	0.04	-0.01	0.12	0.07	OK	pass
29		152.60	81.927	12.046	11.966	36.0	26.4	0.08	-0.08	0.24	0.16	OK	pass
30		152.90	81.783	12.008	12.009	22.4	15.2	0.03	-0.01	0.08	0.01	OK	pass

## THERMOTRACKER Report



<b>Date(dd/mm/yy)</b>	08/01/2007
<b>Company</b>	TRACO
<b>Product</b>	TES 3-2422
<b>Line Speed</b>	70.00 cm/Min
<b>Down Load Information</b>	
Scan Rate(mm:ss):	00:01.0
Date(dd/mm/yy):	05/01/07
Time(hh:mm:ss):	18:54:56
<b>Data File</b>	TES 3-2422

**Zone Set Value(C)and Length (cm)**

Zone	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
TOP	30	330	310	225	225	285	310	310
BOTTOM	30	330	310	225	225	285	310	310
Length	90.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5

**Comment**

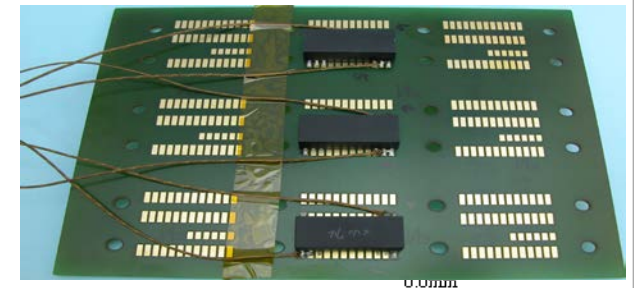
**Sensor Description and Max./Threshold Information**

Sensor Name	Max. Temp. (C)	At Time (sec)	Time(sec) above175.0C	Time(sec) above217.0C	Time(sec) above235.0C
	234.9	286.00	224.00	77.00	0.00
	240.1	285.00	218.00	78.00	21.00
	235.5	284.00	215.00	76.00	6.00
	236.8	285.00	218.00	78.00	15.00
	238.0	283.00	224.00	78.00	17.00
	236.7	284.00	226.00	79.00	14.00

**Sensor Location  
X mm, Ymm**

- 1: -----, -----  
 2: -----, -----  
 3: -----, -----  
 4: -----, -----  
 5: -----, -----  
 6: -----, -----

**Workpiece  
Move Direction**





# Test Report

Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

1st Reflow Process  
at min. temperature profile

Date: 08.01.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp-p)		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
1	24	153.60	81.654	12.052	12.035	16.8	15.2	-0.02	0.04	0.03	0.14	OK	pass
2		153.20	81.701	12.049	11.989	22.4	19.2	0.03	-0.01	0.08	0.01	OK	pass
3		153.80	81.435	12.057	11.997	26.4	20.8	0.03	0.00	0.09	0.02	OK	pass
4		153.10	81.716	12.010	12.017	21.6	20.0	0.02	0.00	0.04	0.01	OK	pass
5		153.30	81.576	11.998	12.019	12.8	10.4	-0.04	0.08	0.10	0.18	OK	pass
6		153.60	81.705	12.077	12.025	24.0	21.6	0.03	0.00	0.09	0.01	OK	pass
7		153.10	81.765	12.016	12.025	17.6	14.4	0.01	0.03	0.03	0.07	OK	pass
8		153.70	81.580	12.015	12.065	12.8	11.2	-0.04	0.07	0.12	0.18	OK	pass
9		153.40	81.742	12.003	12.078	11.2	12.0	-0.07	0.08	0.16	0.27	OK	pass
10		153.20	81.570	12.031	11.968	28.0	23.2	0.05	-0.04	0.18	0.09	OK	pass
11		154.00	81.544	12.060	12.056	17.6	16.0	0.00	0.03	0.01	0.10	OK	pass
12		153.80	81.615	12.075	12.031	27.2	22.4	0.07	-0.04	0.18	0.09	OK	pass
13		153.30	81.534	12.000	12.004	21.6	17.6	0.03	0.01	0.09	0.02	OK	pass
14		153.90	81.561	12.056	12.050	17.6	15.2	-0.02	0.04	0.03	0.11	OK	pass
15		153.10	81.732	12.014	12.017	16.0	13.6	0.01	0.03	0.03	0.09	OK	pass
16		152.90	81.709	11.995	11.997	12.0	12.0	-0.03	0.05	0.13	0.18	OK	pass
17		153.40	81.860	12.063	12.052	23.2	19.2	0.02	0.03	0.06	0.04	OK	pass
18		154.50	81.394	12.062	12.088	18.4	16.0	0.03	0.03	0.06	0.07	OK	pass
19		153.10	81.666	12.004	12.007	15.2	12.8	-0.01	0.03	0.03	0.11	OK	pass
20		153.30	81.793	12.054	12.026	32.8	24.8	0.05	-0.03	0.20	0.13	OK	pass
21		153.60	81.732	12.045	12.064	15.2	12.0	-0.02	0.05	0.04	0.12	OK	pass
22		153.60	81.410	12.013	12.001	19.2	16.0	-0.01	0.03	0.02	0.10	OK	pass
23		153.70	81.384	12.002	12.020	17.6	14.4	0.00	0.03	0.04	0.09	OK	pass
24		152.60	81.864	11.992	11.999	16.0	13.6	-0.02	0.03	0.04	0.10	OK	pass
25		153.00	81.704	11.987	12.020	12.8	12.0	-0.06	0.09	0.18	0.25	OK	pass
26		153.40	81.515	12.006	12.008	18.4	16.0	0.02	0.02	0.04	0.06	OK	pass
27		152.90	81.897	12.027	12.021	15.2	12.0	-0.02	0.04	0.05	0.14	OK	pass
28		153.20	81.679	12.030	12.001	24.8	24.0	0.03	-0.02	0.13	0.06	OK	pass
29		152.80	81.808	12.043	11.963	30.4	26.4	0.10	-0.08	0.22	0.16	OK	pass
30		152.90	81.734	12.000	12.000	22.4	17.6	0.03	0.00	0.08	0.01	OK	pass

# Test Report

Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

2nd Reflow Process  
at min. temperature profile

Date: 08.01.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp- p)		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
1	24	153.60	81.653	12.052	12.035	16.8	12.8	-0.01	0.04	0.03	0.14	OK	pass
2		153.20	81.706	12.050	11.990	24.0	20.0	0.03	-0.01	0.08	0.01	OK	pass
3		153.80	81.439	12.058	11.997	27.2	20.8	0.03	-0.01	0.08	0.02	OK	pass
4		153.10	81.735	12.013	12.020	20.8	20.0	0.01	-0.01	0.05	0.01	OK	pass
5		153.20	81.648	12.002	12.021	12.8	10.4	-0.05	0.08	0.12	0.20	OK	pass
6		153.70	81.658	12.078	12.026	24.0	21.6	0.03	-0.01	0.09	0.00	OK	pass
7		153.00	81.820	12.016	12.026	20.0	16.0	0.01	0.03	0.04	0.07	OK	pass
8		153.70	81.569	12.014	12.064	13.6	10.4	-0.06	0.08	0.11	0.19	OK	pass
9		153.40	81.756	12.006	12.080	11.2	10.4	-0.08	0.09	0.15	0.27	OK	pass
10		153.30	81.527	12.033	11.970	27.2	23.2	0.07	-0.04	0.18	0.09	OK	pass
11		154.00	81.556	12.064	12.057	17.6	15.2	-0.02	0.02	0.02	0.10	OK	pass
12		154.00	81.509	12.075	12.032	28.0	22.4	0.08	-0.04	0.17	0.08	OK	pass
13		153.30	81.534	12.001	12.004	21.6	17.6	0.03	0.01	0.09	0.02	OK	pass
14		153.90	81.537	12.053	12.047	16.8	16.0	-0.02	0.03	0.03	0.10	OK	pass
15		153.20	81.692	12.017	12.019	17.6	15.2	0.00	0.03	0.02	0.08	OK	pass
16		152.80	81.746	11.994	11.995	12.8	10.4	-0.05	0.06	0.13	0.18	OK	pass
17		153.50	81.831	12.067	12.057	22.4	18.4	0.02	0.03	0.06	0.03	OK	pass
18		154.50	81.383	12.062	12.086	17.6	16.0	0.03	0.03	0.07	0.08	OK	pass
19		153.20	81.617	12.006	12.008	16.8	13.6	-0.02	0.02	0.03	0.11	OK	pass
20		153.40	81.745	12.056	12.027	31.2	25.6	0.06	-0.04	0.21	0.13	OK	pass
21		153.50	81.774	12.044	12.063	14.4	12.8	-0.02	0.05	0.04	0.12	OK	pass
22		153.50	81.455	12.012	12.001	20.8	17.6	-0.01	0.03	0.01	0.09	OK	pass
23		153.60	81.453	12.004	12.024	18.4	15.2	0.01	0.02	0.04	0.09	OK	pass
24		152.70	81.807	11.991	12.000	16.0	14.4	0.00	0.03	0.03	0.10	OK	pass
25		153.00	81.710	11.988	12.022	12.0	12.0	-0.07	0.08	0.17	0.24	OK	pass
26		153.40	81.504	12.005	12.007	19.2	14.4	0.01	0.02	0.04	0.06	OK	pass
27		153.10	81.793	12.028	12.022	16.8	13.6	-0.02	0.05	0.06	0.15	OK	pass
28		153.40	81.585	12.032	12.004	24.8	20.8	0.03	-0.02	0.13	0.06	OK	pass
29		152.70	81.860	12.044	11.963	32.0	26.4	0.10	-0.06	0.22	0.16	OK	pass
30		152.80	81.776	11.999	11.999	20.8	18.4	0.03	0.01	0.08	0.01	OK	pass

# Test Report

Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

3th Reflow Process  
at min. temperature profile

Date: 08.01.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp p)		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
1	24	153.60	81.662	12.051	12.035	16.0	13.6	-0.02	0.04	0.04	0.13	OK	pass
2		153.20	81.720	12.049	11.990	24.8	20.0	0.03	-0.01	0.08	0.00	OK	pass
3		154.00	81.360	12.059	11.999	25.6	22.4	0.03	-0.01	0.09	0.02	OK	pass
4		153.30	81.664	12.016	12.022	21.6	17.6	0.01	-0.01	0.05	0.00	OK	pass
5		153.40	81.565	12.003	12.022	13.6	11.2	-0.03	0.08	0.11	0.19	OK	pass
6		153.70	81.698	12.081	12.030	23.2	19.2	0.02	0.00	0.09	0.01	OK	pass
7		153.20	81.732	12.018	12.025	18.4	16.0	0.01	0.03	0.03	0.08	OK	pass
8		153.70	81.582	12.013	12.064	13.6	11.2	-0.05	0.07	0.11	0.18	OK	pass
9		153.50	81.719	12.007	12.079	10.4	10.4	-0.07	0.09	0.16	0.27	OK	pass
10		153.30	81.562	12.036	11.972	27.2	22.4	0.07	-0.03	0.18	0.08	OK	pass
11		154.10	81.520	12.063	12.058	16.8	16.0	0.01	0.03	0.01	0.09	OK	pass
12		154.00	81.516	12.074	12.030	26.4	22.4	0.06	-0.06	0.18	0.08	OK	pass
13		153.40	81.511	12.002	12.006	22.4	16.8	0.03	0.00	0.09	0.01	OK	pass
14		154.00	81.552	12.061	12.053	17.6	14.4	-0.01	0.03	0.04	0.11	OK	pass
15		153.30	81.655	12.016	12.019	17.6	13.6	0.01	0.02	0.03	0.09	OK	pass
16		152.90	81.723	11.996	11.997	13.6	12.0	-0.03	0.07	0.13	0.19	OK	pass
17		153.60	81.807	12.070	12.057	21.6	19.2	0.01	0.01	0.05	0.06	OK	pass
18		154.50	81.397	12.061	12.086	18.4	16.8	0.02	0.03	0.07	0.07	OK	pass
19		153.20	81.635	12.005	12.009	16.0	13.6	-0.01	0.03	0.01	0.12	OK	pass
20		153.40	81.794	12.060	12.032	32.8	26.4	0.05	-0.03	0.20	0.14	OK	pass
21		153.60	81.759	12.047	12.066	16.8	12.8	-0.02	0.05	0.04	0.12	OK	pass
22		153.60	81.422	12.013	12.001	20.0	16.0	-0.02	0.03	0.01	0.10	OK	pass
23		153.70	81.440	12.008	12.027	18.4	16.0	0.02	0.02	0.04	0.09	OK	pass
24		152.80	81.786	11.994	12.002	16.0	14.4	-0.02	0.03	0.02	0.12	OK	pass
25		153.20	81.627	11.990	12.022	12.0	9.6	-0.07	0.11	0.18	0.26	OK	pass
26		153.50	81.474	12.007	12.007	18.4	16.0	0.00	0.01	0.04	0.07	OK	pass
27		153.10	81.813	12.028	12.023	16.0	16.8	-0.01	0.04	0.05	0.14	OK	pass
28		153.30	81.667	12.033	12.005	25.6	22.4	0.03	-0.01	0.13	0.06	OK	pass
29		152.80	81.837	12.045	11.965	30.4	28.0	0.09	-0.08	0.22	0.16	OK	pass
30		153.00	81.720	12.003	12.004	21.6	20.8	0.02	-0.01	0.07	0.00	OK	pass

# Test Report

Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

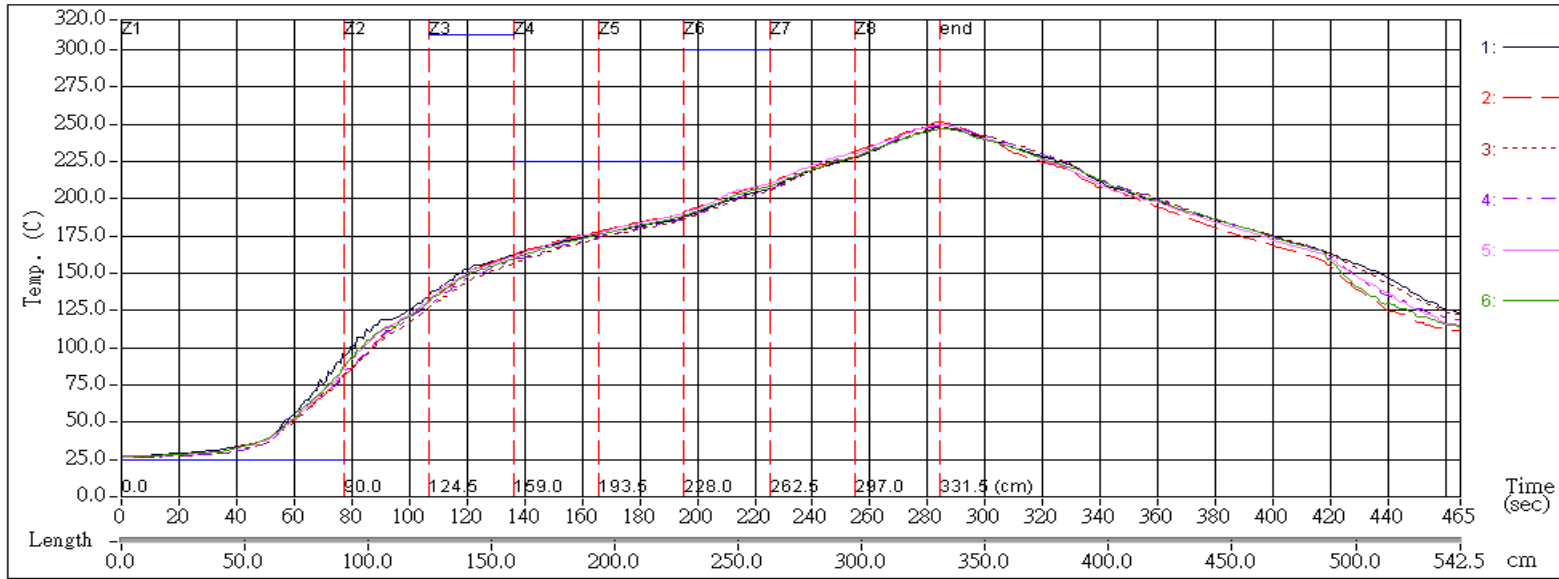
Before Reflow Process

Date: 13.12.2006  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp- p)`		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
31	24	152.40	81.716	11.969	11.950	24.8	20.8	0.03	-0.03	0.13	0.09	OK	pass
32		153.90	81.395	12.026	12.033	18.4	20.8	-0.02	0.04	0.06	0.13	OK	pass
33		153.10	81.816	12.041	12.017	18.4	14.4	0.01	0.02	0.03	0.07	OK	pass
34		153.20	81.807	12.041	12.030	16.0	14.4	-0.03	0.04	0.04	0.14	OK	pass
35		152.60	81.804	11.983	11.993	16.8	11.2	0.00	0.04	0.01	0.13	OK	pass
36		153.00	81.838	12.020	12.029	12.0	11.2	-0.06	0.08	0.14	0.23	OK	pass
37		152.60	81.879	11.992	12.006	15.2	10.4	-0.02	0.03	0.00	0.10	OK	pass
38		153.20	81.895	12.046	12.051	20.0	15.2	0.02	0.00	0.07	0.03	OK	pass
39		153.10	81.602	11.993	12.002	17.6	14.4	0.02	0.01	0.04	0.04	OK	pass
40		153.80	81.488	12.046	12.025	28.8	22.4	0.03	-0.02	0.14	0.04	OK	pass
41		153.30	81.607	12.013	12.015	20.8	15.2	0.02	0.02	0.08	0.03	OK	pass
42		153.50	81.688	12.003	12.080	12.8	11.2	-0.04	0.08	0.11	0.19	OK	pass
43		153.80	81.519	12.040	12.040	16.8	15.2	0.03	0.02	0.07	0.08	OK	pass
44		152.60	81.868	11.997	11.998	20.0	14.4	0.02	0.01	0.06	0.05	OK	pass
45		153.00	81.863	12.040	12.016	32.8	25.6	0.06	-0.03	0.18	0.11	OK	pass
46		152.70	81.911	12.027	11.996	23.2	19.2	0.03	0.01	0.06	0.03	OK	pass
47		153.30	81.761	12.016	12.057	13.6	10.4	-0.07	0.08	0.13	0.21	OK	pass
48		152.60	81.862	12.046	11.947	34.4	27.2	0.10	-0.08	0.22	0.14	OK	pass
49		152.80	81.871	12.040	11.987	28.8	23.2	0.05	-0.03	0.16	0.08	OK	pass
50		152.70	82.197	12.054	12.053	17.6	13.6	-0.01	0.03	0.03	0.09	OK	pass
51		152.80	82.096	12.038	12.055	13.6	9.6	-0.06	0.08	0.12	0.22	OK	pass
52		152.60	81.859	11.995	11.997	20.8	16.8	0.03	0.00	0.07	0.01	OK	pass
53		152.70	81.955	12.011	12.025	15.2	12.0	0.01	0.02	0.00	0.11	OK	pass
54		153.60	81.685	12.049	12.049	16.8	11.2	0.00	0.03	0.00	0.08	OK	pass
55		153.30	81.614	12.022	12.008	19.2	15.2	0.02	0.02	0.07	0.07	OK	pass
56		152.90	81.784	11.978	12.039	12.8	10.4	-0.05	0.08	0.14	0.20	OK	pass
57		153.50	81.674	12.010	12.069	14.4	9.6	-0.03	0.06	0.04	0.12	OK	pass
58		153.00	81.689	12.001	12.004	12.8	12.0	-0.05	0.05	0.10	0.18	OK	pass
59		153.20	81.831	12.033	12.045	11.2	12.0	-0.06	0.09	0.17	0.30	OK	pass
60		152.80	81.905	12.015	12.022	19.2	14.4	-0.01	0.02	0.03	0.04	OK	pass



## THERMOTRACKER Report



Date(dd/mm/yy)

11/01/2007

Company

TRACO

Product

TES 3-2422

Line Speed

70.00 cm/Min

Down Load Information

Scan Rate(mm:ss): 00:01.0

Date(dd/mm/yy): 10/01/07

Time(hh:mm:ss): 10:51:51

Data File

TES 3-2422

Zone Set Value(C)and Length (cm)

Zone	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
TOP	25	330	310	225	225	300	320	330
BOTTOM	25	330	310	225	225	300	320	330
Length	90.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5

Comment

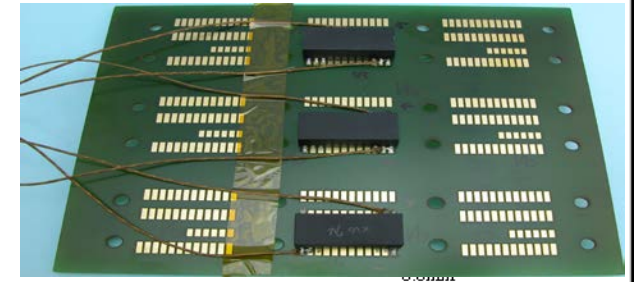
Sensor Description and Max./Threshold Information

Sensor Name	Max. Temp. (C)	At Time (sec)	Time(sec) above175.0C	Time(sec) above217.0C	Time(sec) above245.0C
	247.4	283.00	236.00	98.00	13.00
	251.0	283.00	230.00	97.00	21.00
	248.1	287.00	230.00	97.00	16.00
	249.1	287.00	231.00	98.00	19.00
	249.4	285.00	236.00	98.00	19.00
	246.7	286.00	234.00	98.00	11.00

Sensor Location  
X mm, Ymm

- 1: -----, -----
- 2: -----, -----
- 3: -----, -----
- 4: -----, -----
- 5: -----, -----
- 6: -----, -----

Workpiece  
Move Direction



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# Test Report

Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

1st Reflow Process  
at max. temperature profile

Date: 11.01.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp- p)`		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
31	24	151.50	82.096	11.949	11.936	26.4	23.2	0.03	-0.03	0.11	0.07	OK	pass
32		153.20	81.685	12.007	12.025	16.8	13.6	-0.01	0.03	0.05	0.13	OK	pass
33		152.30	82.177	12.026	12.009	19.2	19.2	0.02	0.02	0.00	0.07	OK	pass
34		152.50	82.169	12.034	12.030	17.6	14.4	-0.03	0.03	0.05	0.13	OK	pass
35		151.80	82.146	11.966	11.981	17.6	15.2	-0.01	0.04	0.01	0.13	OK	pass
36		152.50	82.035	12.003	12.022	12.0	12.8	-0.05	0.08	0.13	0.23	OK	pass
37		151.90	82.164	11.973	11.995	16.8	13.6	0.00	0.03	0.01	0.10	OK	pass
38		152.70	82.157	12.040	12.052	20.0	18.4	0.02	0.02	0.08	0.04	OK	pass
39		152.40	81.867	11.971	11.989	20.8	16.8	0.03	-0.01	0.04	0.03	OK	pass
40		153.20	81.831	12.045	12.030	25.6	21.6	0.03	-0.02	0.13	0.05	OK	pass
41		152.60	81.729	11.996	11.955	21.6	16.8	0.03	-0.06	0.10	0.43	OK	pass
42		152.60	82.040	11.979	12.063	12.8	12.8	-0.05	0.07	0.10	0.19	OK	pass
43		153.00	81.818	12.023	12.017	18.4	19.2	0.02	0.03	0.07	0.20	OK	pass
44		151.80	82.228	11.983	11.988	20.0	17.6	0.02	0.01	0.07	0.05	OK	pass
45		152.10	82.251	12.019	12.006	29.6	24.0	0.05	-0.03	0.20	0.12	OK	pass
46		151.80	82.293	12.006	11.984	23.2	21.6	0.02	0.01	0.08	0.04	OK	pass
47		152.90	81.947	12.007	12.055	12.8	11.2	-0.05	0.07	0.13	0.20	OK	pass
48		151.90	82.194	12.035	11.942	31.2	24.0	0.09	-0.07	0.21	0.13	OK	pass
49		152.20	82.132	12.024	11.982	28.0	22.4	0.06	-0.03	0.16	0.07	OK	pass
50		152.10	82.442	12.037	12.044	16.0	19.2	0.00	0.03	0.01	0.09	OK	pass
51		152.20	82.296	12.015	12.039	13.6	11.2	-0.05	0.08	0.12	0.22	OK	pass
52		151.80	82.200	11.977	11.986	24.0	20.8	0.02	0.00	0.07	0.01	OK	pass
53		152.00	82.249	11.994	12.015	17.6	16.0	0.01	0.03	0.01	0.09	OK	pass
54		153.10	81.914	12.039	12.045	16.8	16.8	-0.01	0.03	0.00	0.09	OK	pass
55		152.60	81.954	12.012	12.005	21.6	16.8	0.01	0.02	0.06	0.08	OK	pass
56		152.30	82.019	11.960	12.029	13.6	13.6	-0.06	0.08	0.14	0.19	OK	pass
57		152.80	82.027	12.002	12.068	16.0	12.8	-0.03	0.03	0.05	0.12	OK	pass
58		152.40	81.982	11.992	12.002	12.0	13.6	-0.03	0.05	0.11	0.18	OK	pass
59		152.60	82.080	12.016	12.038	11.2	12.8	-0.06	0.10	0.16	0.30	OK	pass
60		152.20	82.190	12.005	12.018	19.2	16.0	-0.01	0.01	0.03	0.06	OK	pass

# Test Report

Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

2nd Reflow Process  
at max. temperature profile

Date: 11.01.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp- p)`		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
31	24	151.80	82.018	11.962	11.948	26.4	24.0	0.03	-0.02	0.13	0.08	OK	pass
32		153.40	81.598	12.012	12.026	15.2	12.8	-0.02	0.03	0.06	0.12	OK	pass
33		152.60	82.045	12.032	12.012	20.8	16.8	0.01	0.02	0.00	0.07	OK	pass
34		152.80	82.051	12.042	12.035	17.6	15.2	-0.03	0.03	0.05	0.13	OK	pass
35		152.00	82.034	11.967	11.979	16.0	15.2	-0.01	0.05	0.01	0.13	OK	pass
36		152.70	81.962	12.010	12.025	12.8	12.0	-0.06	0.08	0.13	0.23	OK	pass
37		152.20	82.028	11.979	11.997	16.0	13.6	-0.03	0.03	0.02	0.10	OK	pass
38		152.90	82.059	12.044	12.051	20.0	16.8	0.02	0.01	0.08	0.05	OK	pass
39		152.60	81.790	11.976	11.993	19.2	16.0	0.02	0.01	0.03	0.02	OK	pass
40		153.50	81.681	12.047	12.031	27.2	24.0	0.03	-0.02	0.14	0.05	OK	pass
41		153.00	81.730	12.003	12.011	22.4	19.2	0.03	0.02	0.11	0.06	OK	pass
42		153.20	81.835	11.996	12.080	14.4	12.8	-0.06	0.09	0.10	0.19	OK	pass
43		153.30	81.707	12.028	12.026	18.4	16.8	0.03	0.00	0.09	0.16	OK	pass
44		152.10	82.111	11.989	11.995	20.8	16.8	0.00	0.02	0.06	0.03	OK	pass
45		152.60	82.067	12.033	12.017	29.6	24.8	0.06	-0.02	0.20	0.12	OK	pass
46		152.30	82.092	12.018	11.992	23.2	22.4	0.03	0.01	0.08	0.03	OK	pass
47		153.10	81.867	12.012	12.058	13.6	12.0	-0.06	0.08	0.11	0.21	OK	pass
48		152.10	82.127	12.042	11.947	30.4	24.8	0.10	-0.06	0.22	0.13	OK	pass
49		152.50	81.984	12.028	11.982	28.0	24.0	0.06	-0.03	0.15	0.08	OK	pass
50		152.40	82.318	12.044	12.048	17.6	15.2	0.00	0.03	0.00	0.10	OK	pass
51		152.70	82.088	12.025	12.047	13.6	12.8	-0.04	0.07	0.11	0.21	OK	pass
52		152.40	81.966	11.991	11.998	24.0	18.4	0.02	-0.01	0.08	0.02	OK	pass
53		152.30	82.136	12.004	12.019	17.6	15.2	0.00	0.04	0.01	0.09	OK	pass
54		153.30	81.825	12.042	12.047	16.0	13.6	0.00	0.03	0.00	0.08	OK	pass
55		152.90	81.818	12.017	12.007	20.0	16.8	0.02	0.02	0.07	0.08	OK	pass
56		152.50	81.947	11.966	12.033	13.6	12.8	-0.07	0.09	0.14	0.19	OK	pass
57		153.00	81.955	12.007	12.073	16.0	12.8	-0.03	0.05	0.05	0.09	OK	pass
58		152.70	81.846	11.997	12.004	13.6	12.8	-0.03	0.05	0.10	0.19	OK	pass
59		152.90	81.988	12.026	12.048	10.4	11.2	-0.05	0.09	0.16	0.29	OK	pass
60		152.50	82.049	12.010	12.019	18.4	13.6	0.00	0.01	0.03	0.07	OK	pass

# Test Report

Model Number : TES 3-2422(date code : 0701)  
Q'TY : 30 pcs

3th Reflow Process  
at max. temperature profile

Date: 11.01.2007  
Tested By: *Jordan ou*

Sample	Input Voltage	Input Current Full Load (mA)	Efficiency (%)	Output Voltage (V)		Ripple&Noise (mVp- p)`		Line Regulation (%)		Load Regulation (%)		Isolation Voltage	Result
No	(Vdc)	< 155.3	> 80.5	11.88 ~ 12.12		< 75		-0.3 ~ 0.3		-1 ~ 1			
31	24	152.10	81.824	11.958	11.942	25.6	24.0	0.03	-0.02	0.14	0.07	OK	pass
32		153.60	81.528	12.018	12.030	14.4	12.8	-0.03	0.03	0.05	0.12	OK	pass
33		152.60	82.051	12.033	12.012	20.0	18.4	0.01	0.03	0.00	0.07	OK	pass
34		152.80	82.053	12.043	12.034	16.8	13.6	-0.02	0.03	0.05	0.13	OK	pass
35		152.20	81.937	11.968	11.981	16.8	12.0	-0.01	0.03	0.02	0.13	OK	pass
36		152.80	81.927	12.013	12.027	12.8	11.2	-0.06	0.09	0.13	0.22	OK	pass
37		152.40	81.950	11.983	12.000	16.8	12.0	-0.02	0.03	0.02	0.11	OK	pass
38		153.10	81.976	12.047	12.054	21.6	18.4	0.02	0.02	0.08	0.06	OK	pass
39		152.80	81.696	11.979	11.993	20.0	16.0	0.01	0.01	0.04	0.03	OK	pass
40		153.70	81.601	12.051	12.034	25.6	22.4	0.02	-0.03	0.15	0.05	OK	pass
41		153.10	81.702	12.008	12.013	21.6	17.6	0.02	0.02	0.08	0.05	OK	pass
42		153.20	81.843	11.998	12.080	13.6	12.8	-0.05	0.07	0.11	0.18	OK	pass
43		153.60	81.627	12.035	12.042	16.8	16.0	0.02	0.02	0.08	0.08	OK	pass
44		152.30	82.015	11.993	11.994	21.6	16.8	0.01	0.01	0.05	0.04	OK	pass
45		152.60	82.072	12.035	12.016	30.4	24.0	0.06	-0.03	0.19	0.11	OK	pass
46		152.40	82.066	12.023	11.995	24.0	20.8	0.03	0.00	0.08	0.03	OK	pass
47		153.20	81.845	12.017	12.062	13.6	9.6	-0.06	0.07	0.12	0.20	OK	pass
48		152.20	82.050	12.040	11.942	30.4	25.6	0.10	-0.07	0.22	0.13	OK	pass
49		152.50	81.985	12.029	11.981	28.0	24.0	0.05	-0.03	0.14	0.08	OK	pass
50		152.50	82.265	12.045	12.047	17.6	14.4	0.00	0.03	0.01	0.09	OK	pass
51		152.80	82.060	12.030	12.049	13.6	11.2	-0.05	0.08	0.13	0.21	OK	pass
52		152.40	81.971	11.993	11.997	23.2	19.2	0.02	0.00	0.08	0.03	OK	pass
53		152.60	82.005	12.009	12.022	16.0	15.2	-0.01	0.03	0.00	0.09	OK	pass
54		153.50	81.743	12.047	12.049	16.8	13.6	0.01	0.03	0.00	0.09	OK	pass
55		153.10	81.725	12.020	12.008	20.0	17.6	0.01	0.02	0.05	0.07	OK	pass
56		152.60	81.873	11.964	12.029	14.4	9.6	-0.07	0.08	0.15	0.19	OK	pass
57		153.20	81.866	12.010	12.075	15.2	11.2	-0.03	0.03	0.04	0.12	OK	pass
58		152.80	81.831	12.003	12.009	12.0	11.2	-0.03	0.06	0.11	0.18	OK	pass
59		153.10	81.867	12.026	12.044	12.0	12.8	-0.07	0.09	0.16	0.30	OK	pass
60		152.50	82.057	12.010	12.021	19.2	16.0	0.00	0.03	0.06	0.06	OK	pass



Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 After 3th Reflow Process

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**

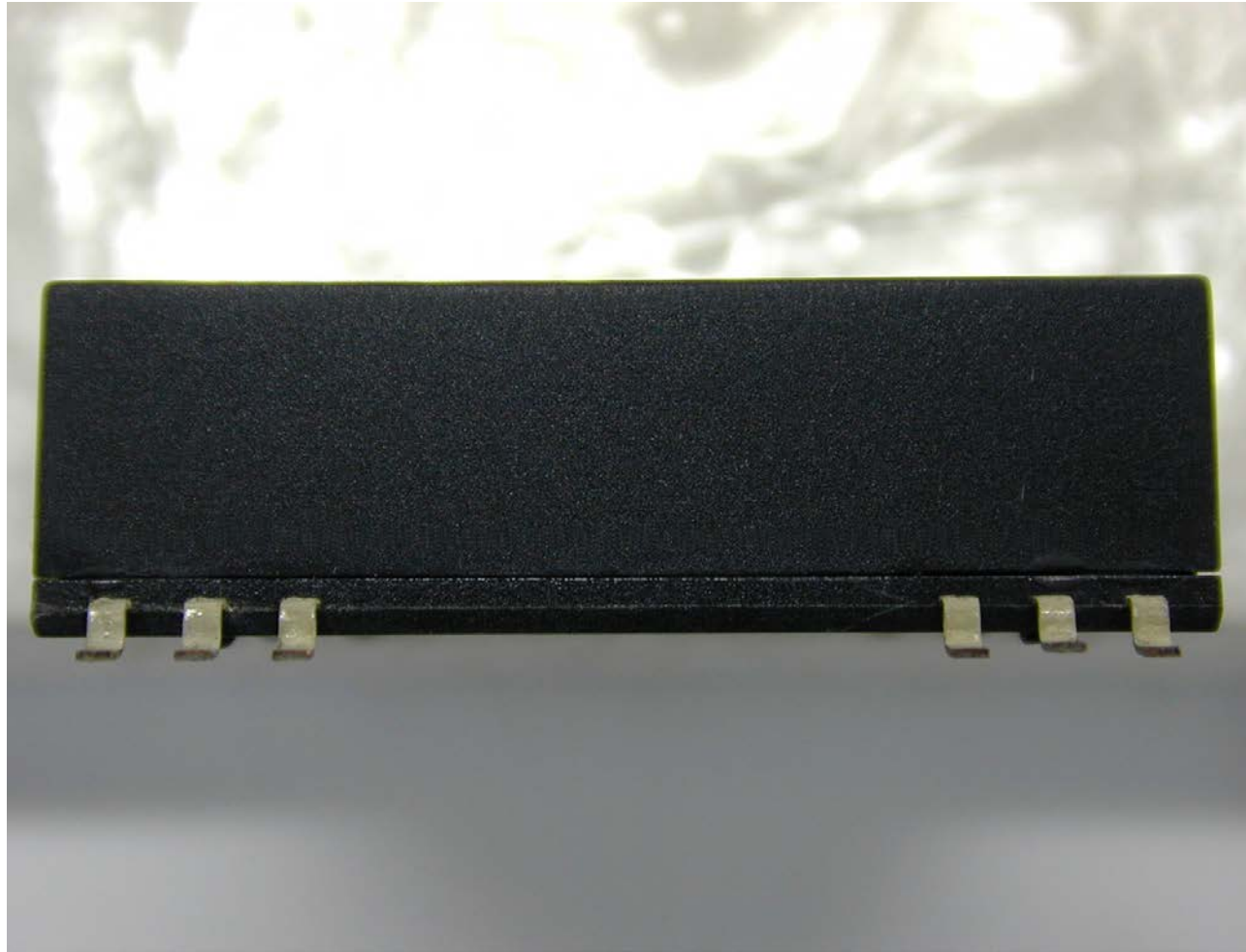
**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 31】 After 3th Reflow Process**

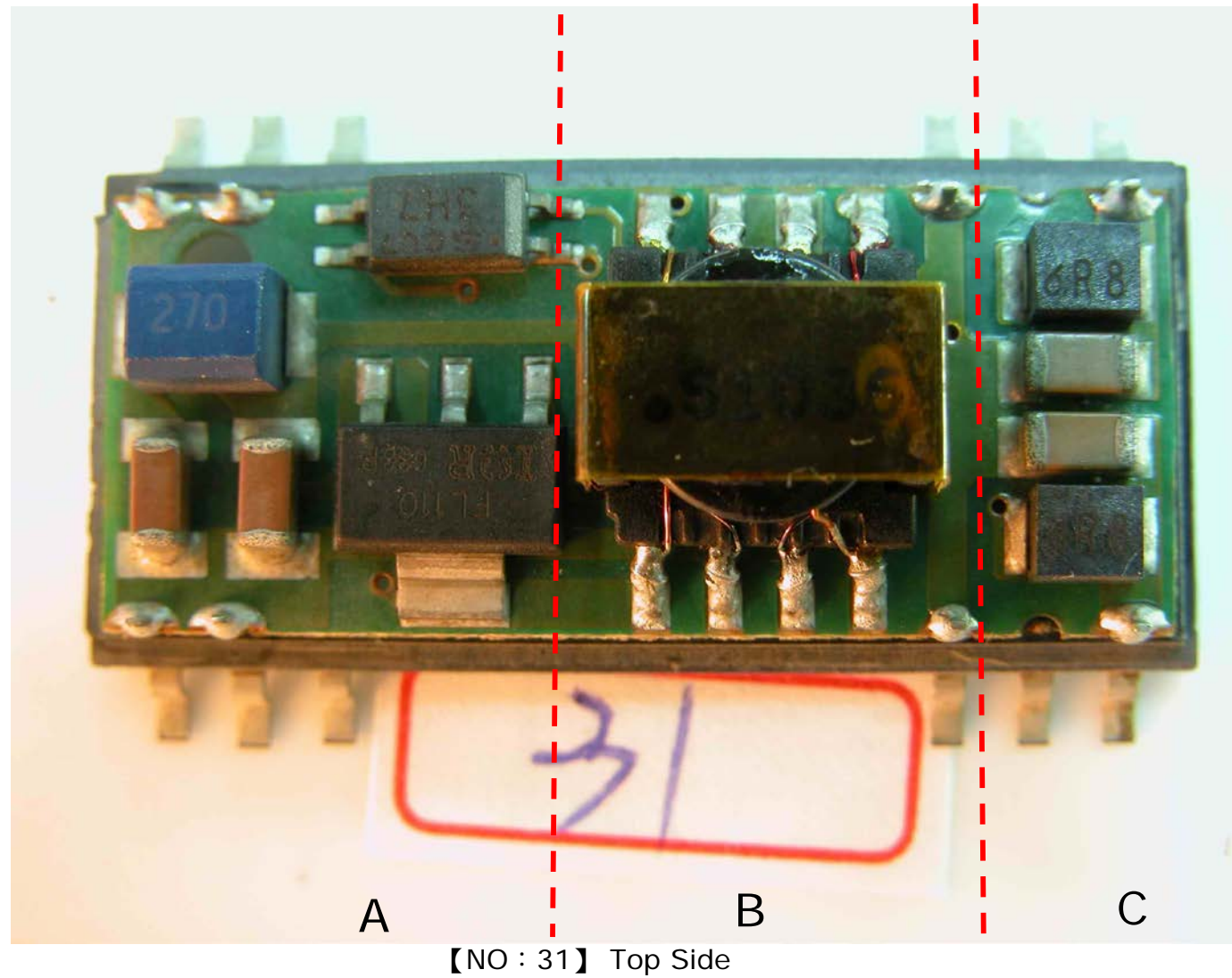


**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**

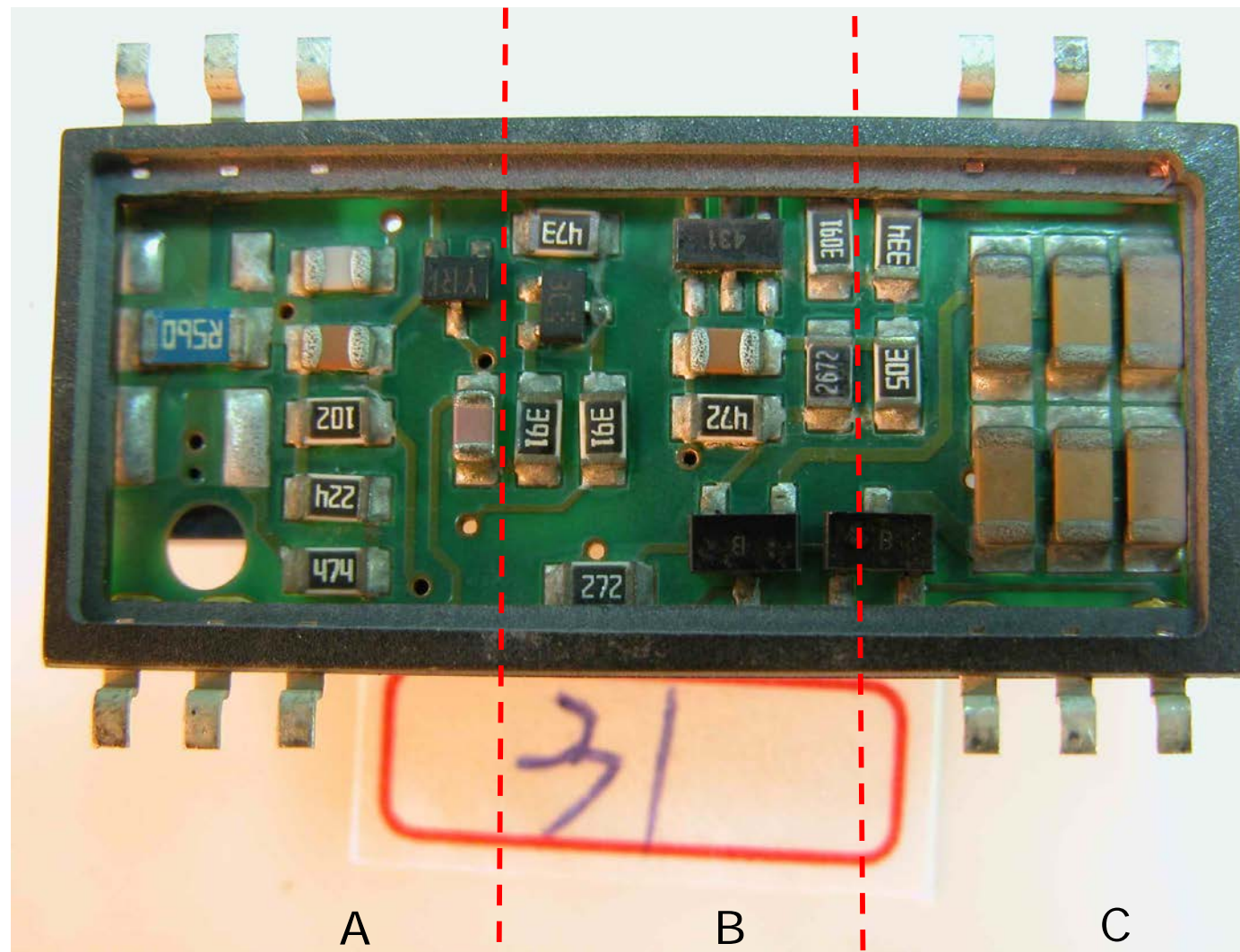


**【NO : 31】 After 3th Reflow Process**

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard

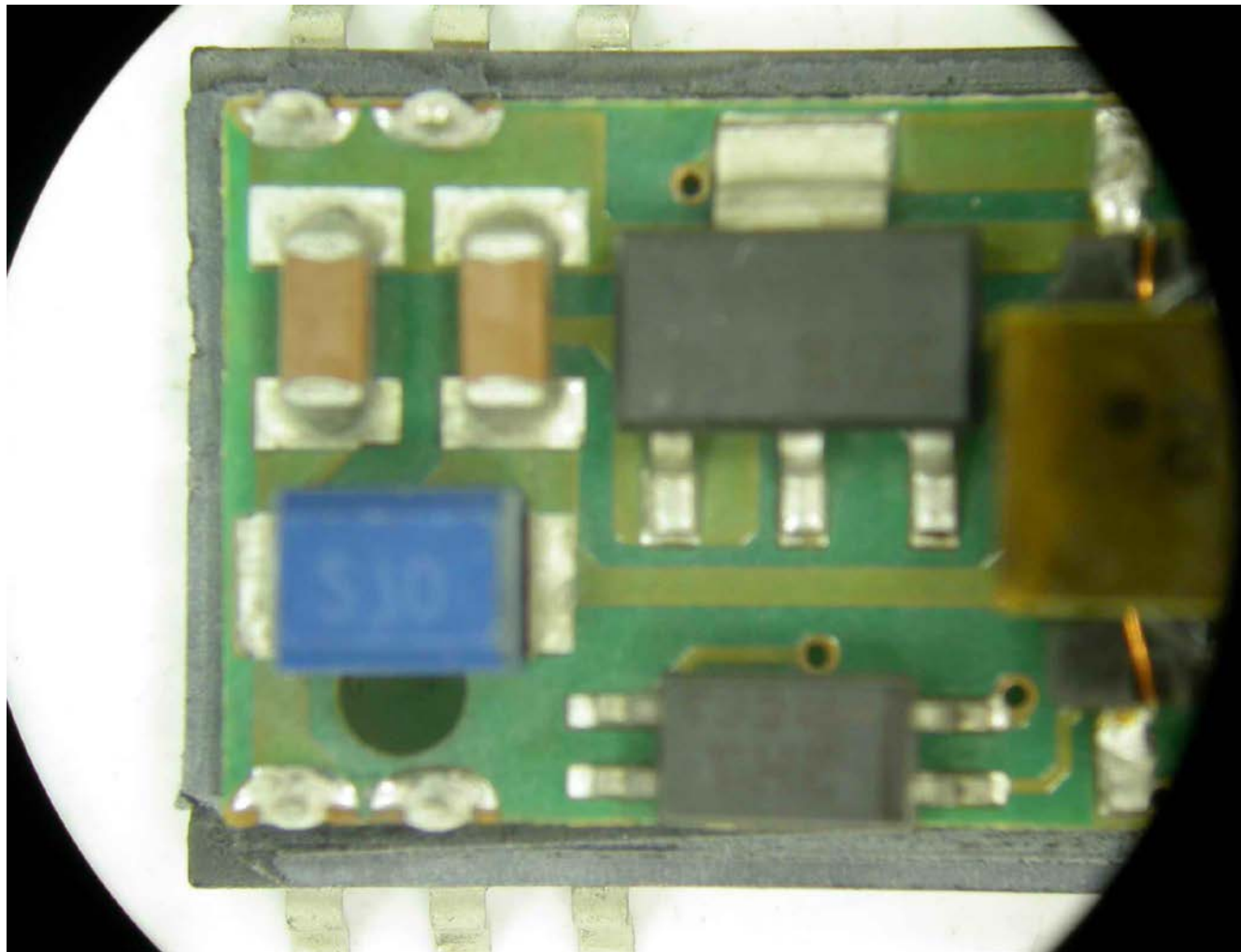


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Bottom Side

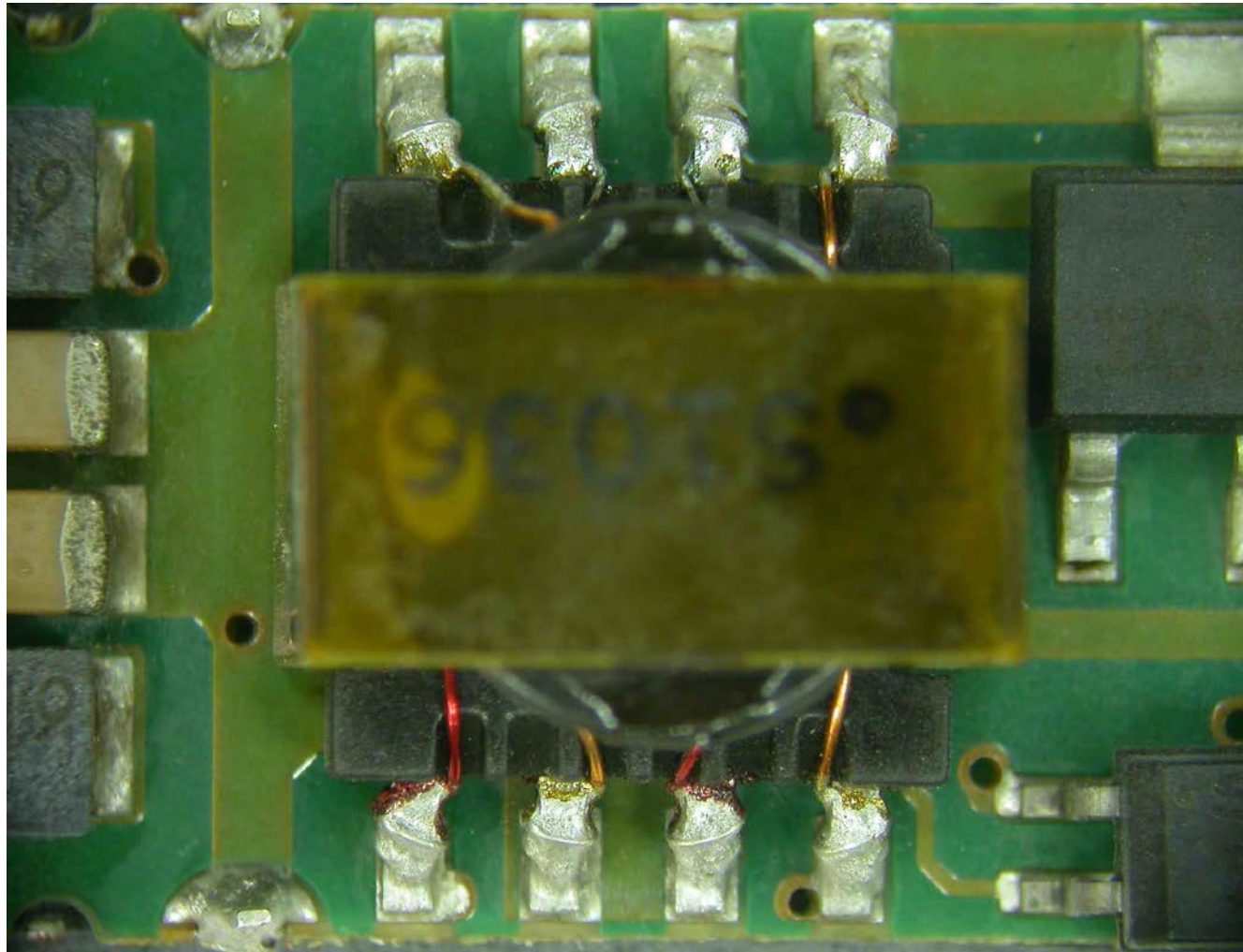
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Top Side-A

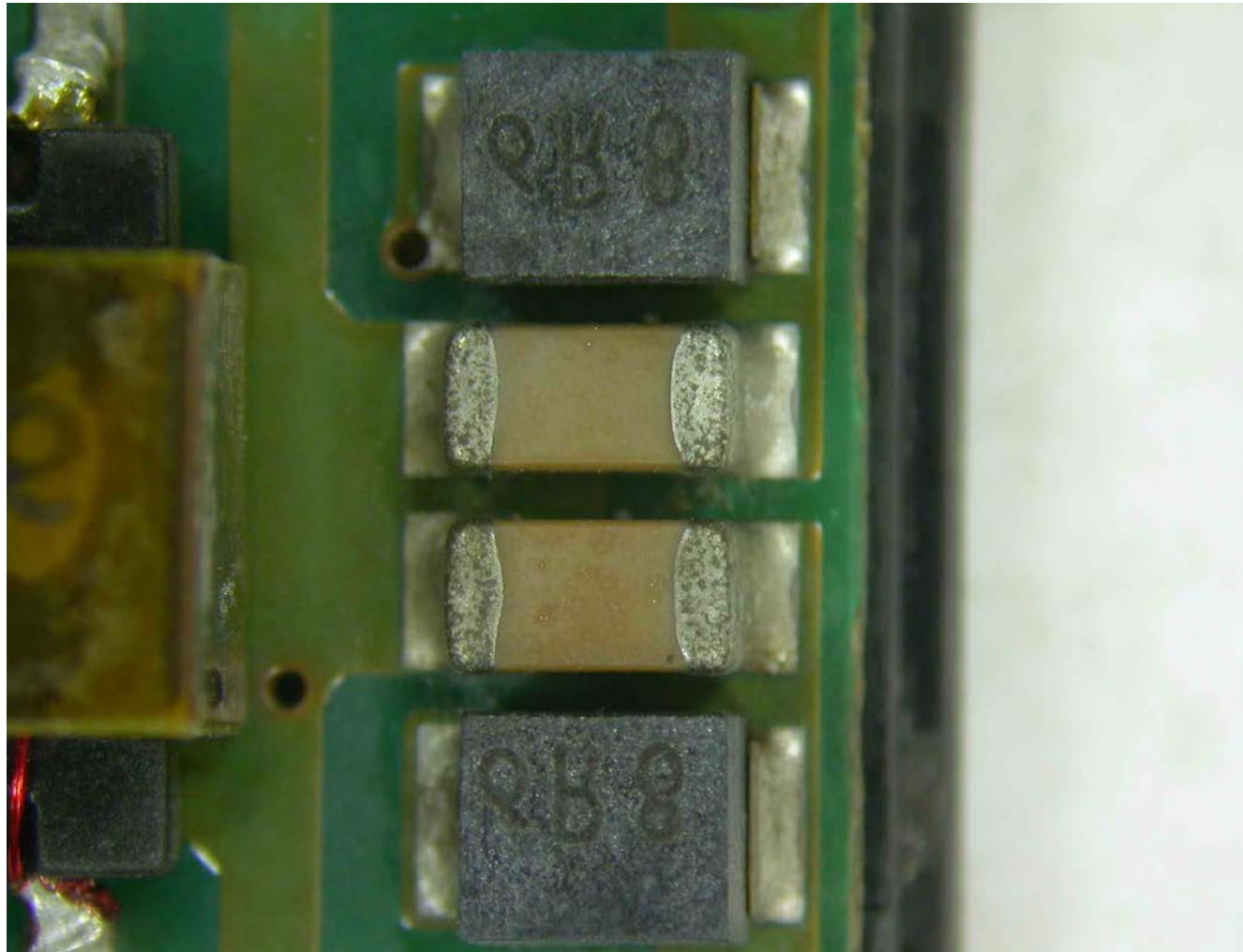


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



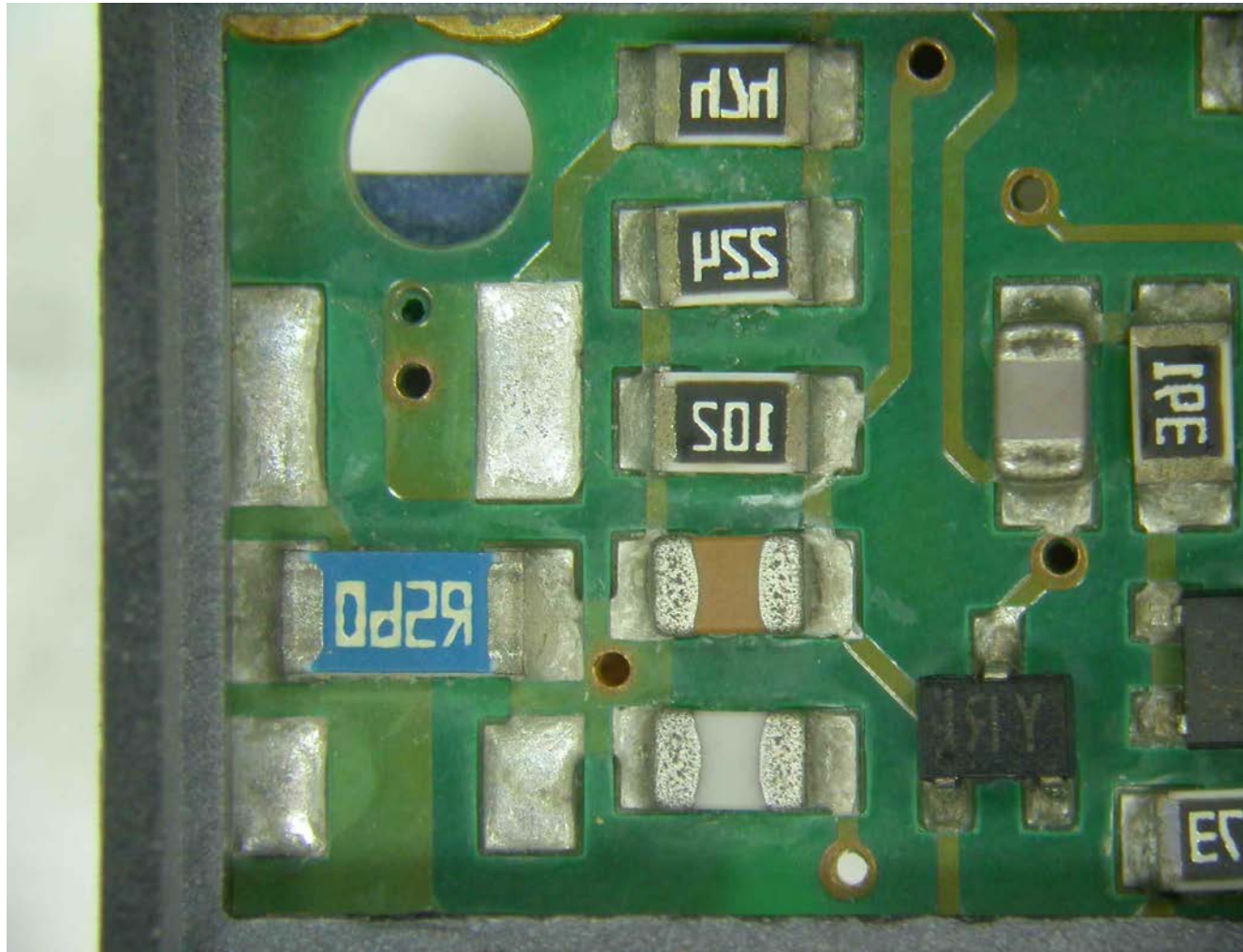
【NO : 31】 Top Side-B

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Top Side-C

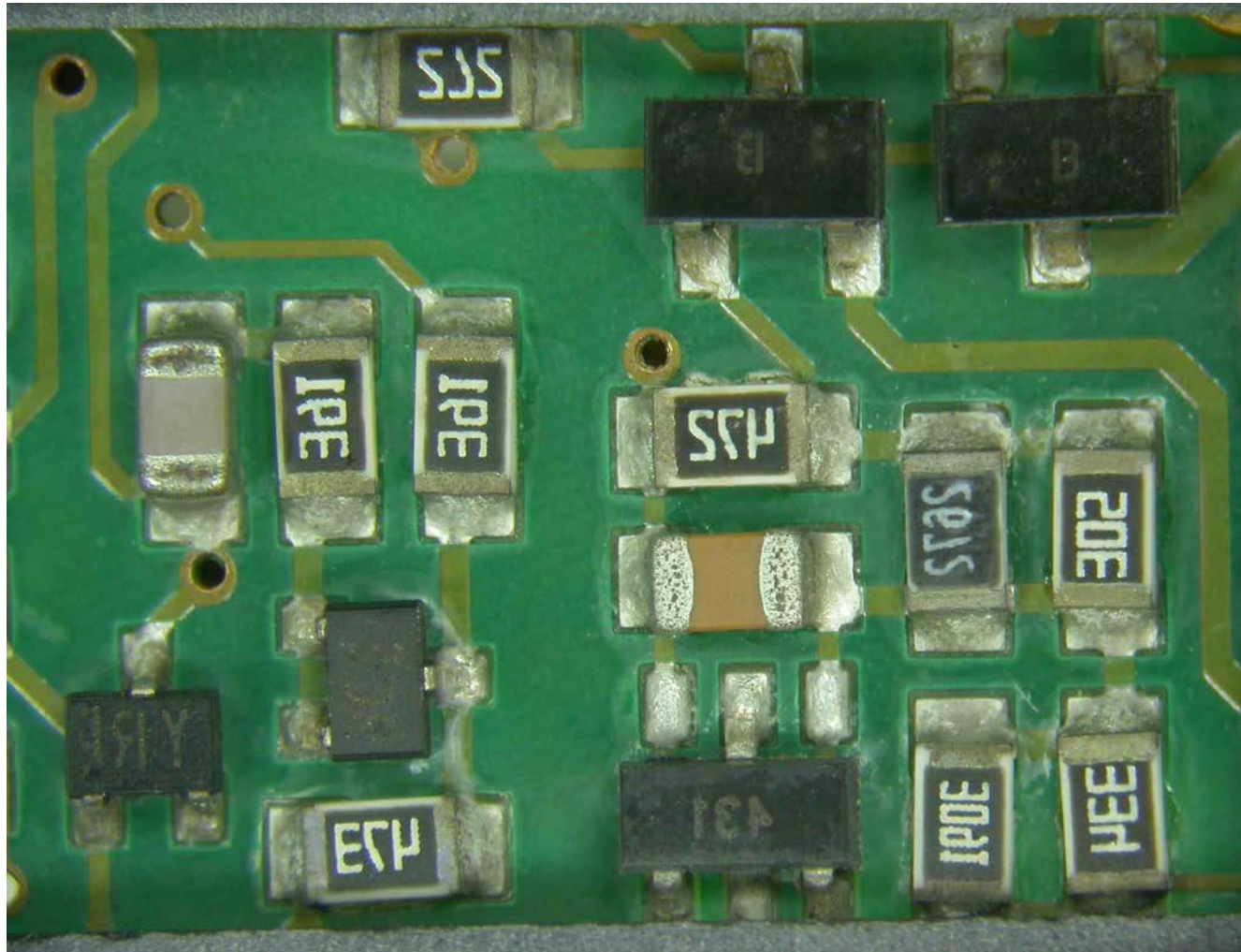
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Bottom Side-A



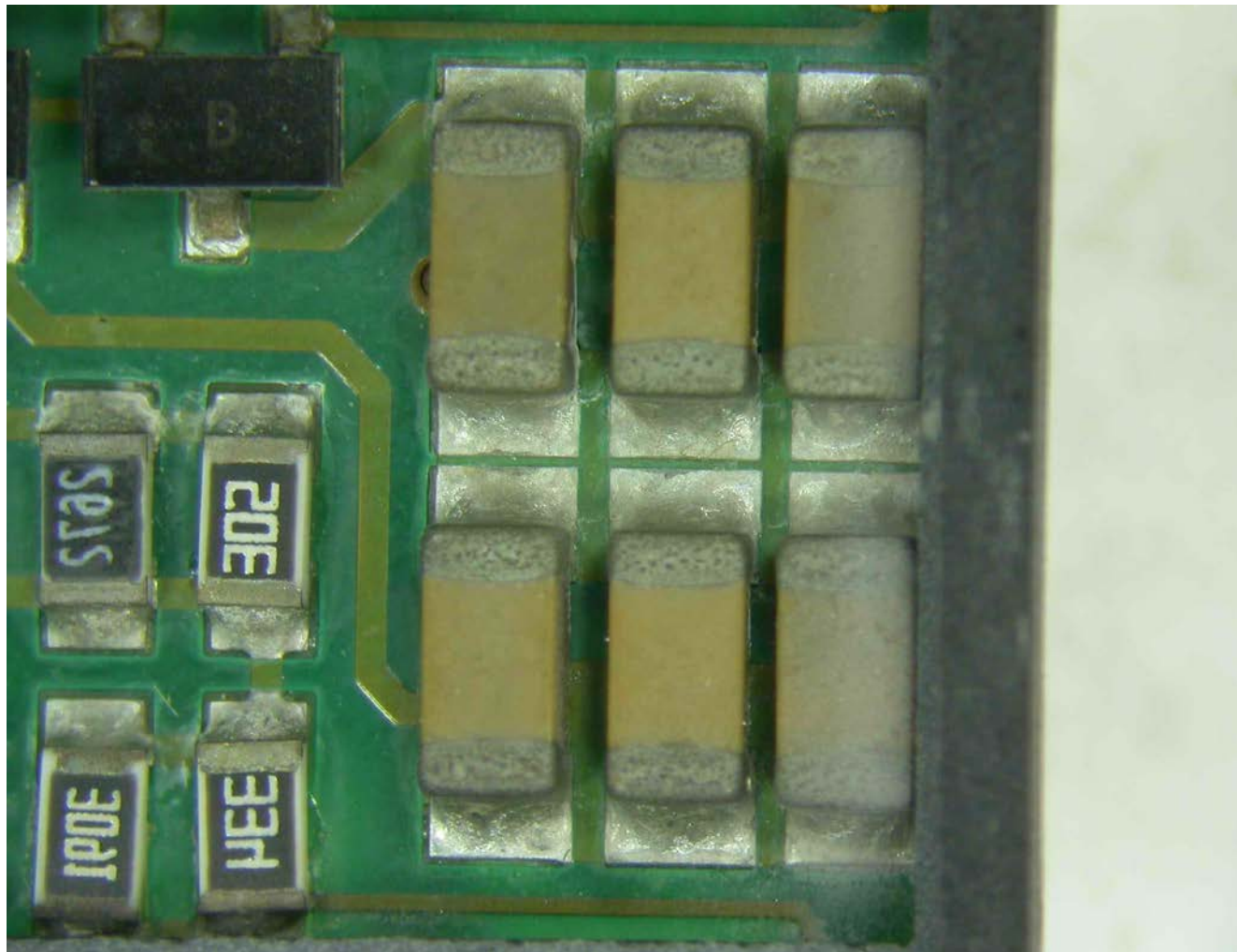
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Bottom Side-B

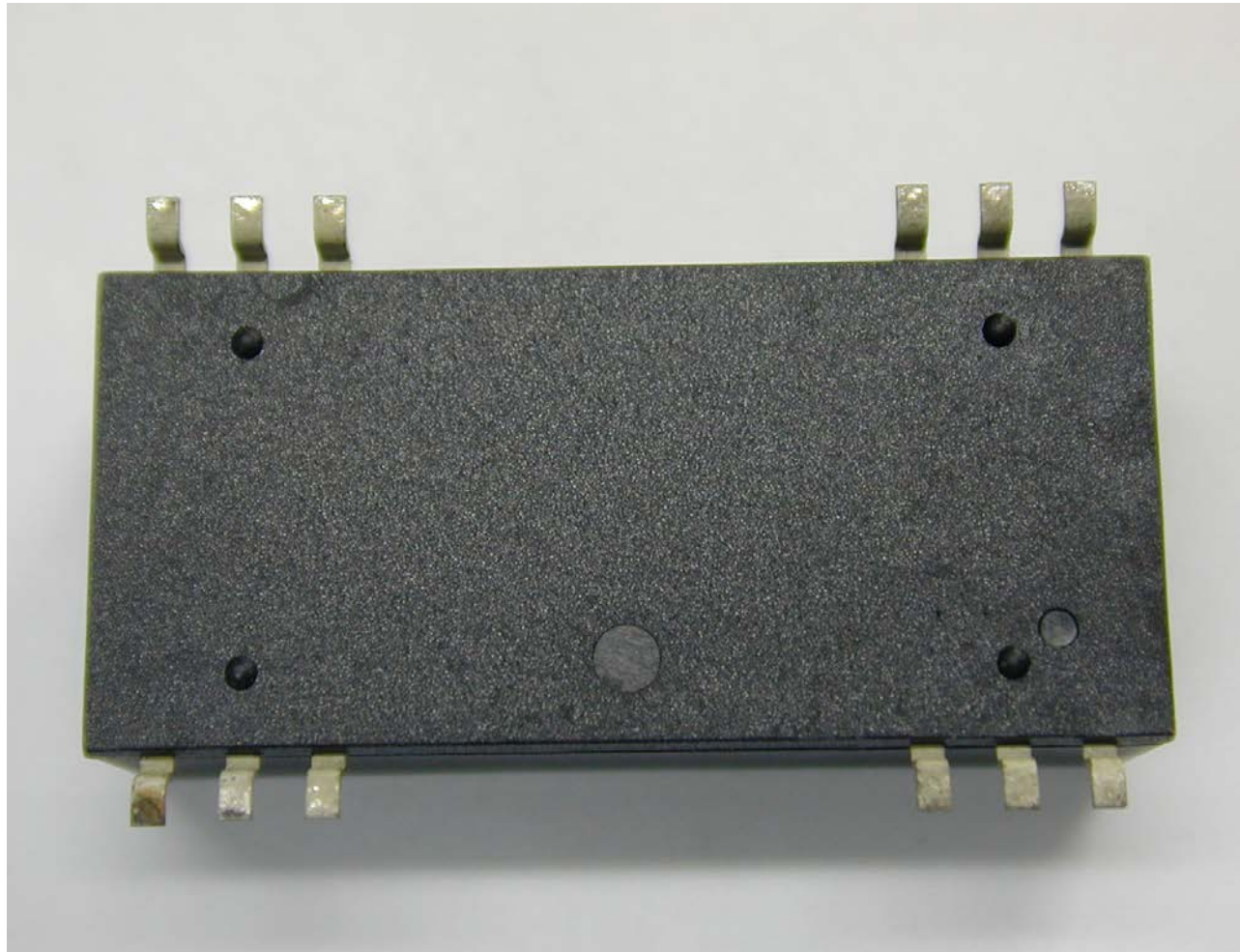


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 31】 Bottom Side-C

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 32】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 32】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 32】 After 3th Reflow Process**



**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



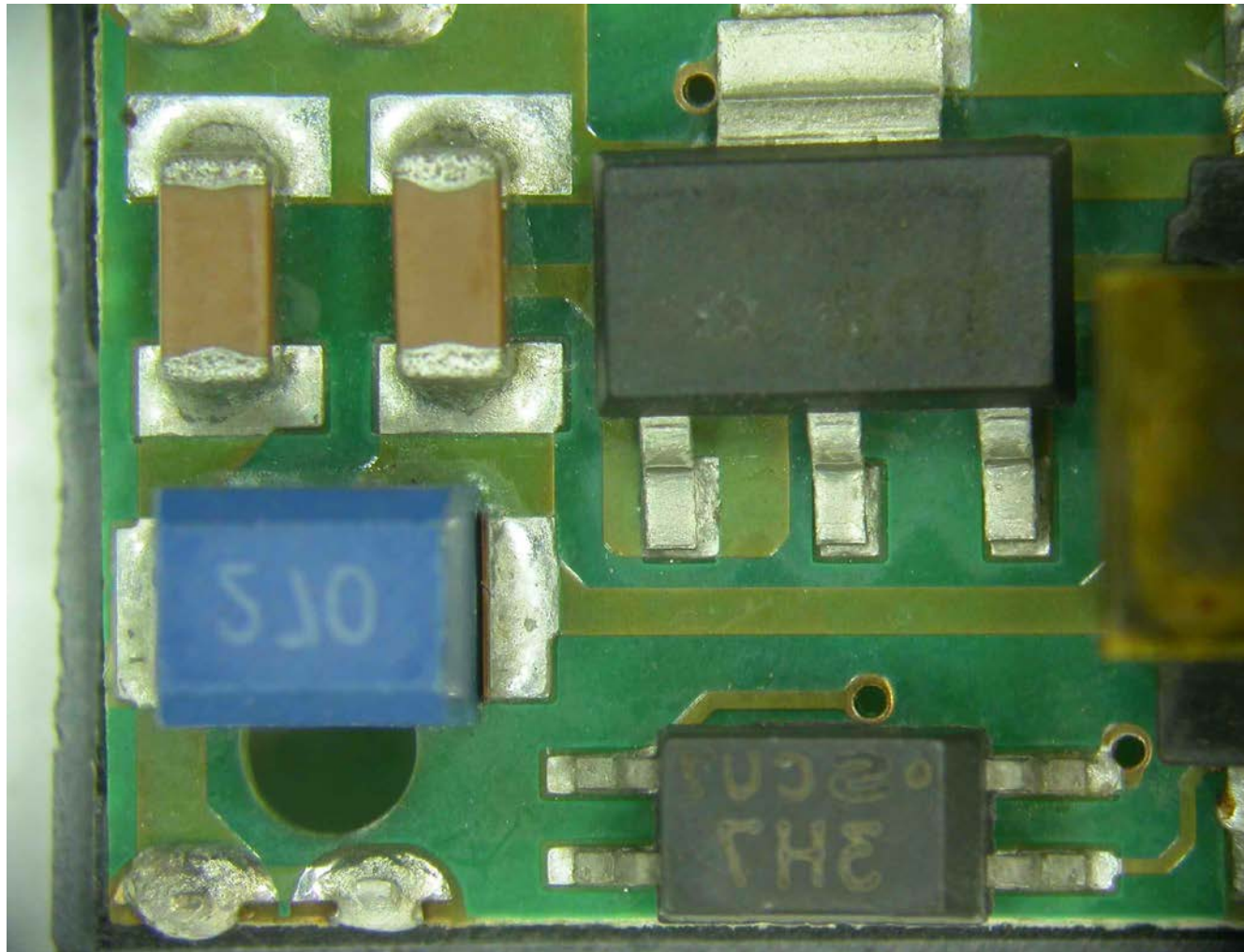
**【NO : 32】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



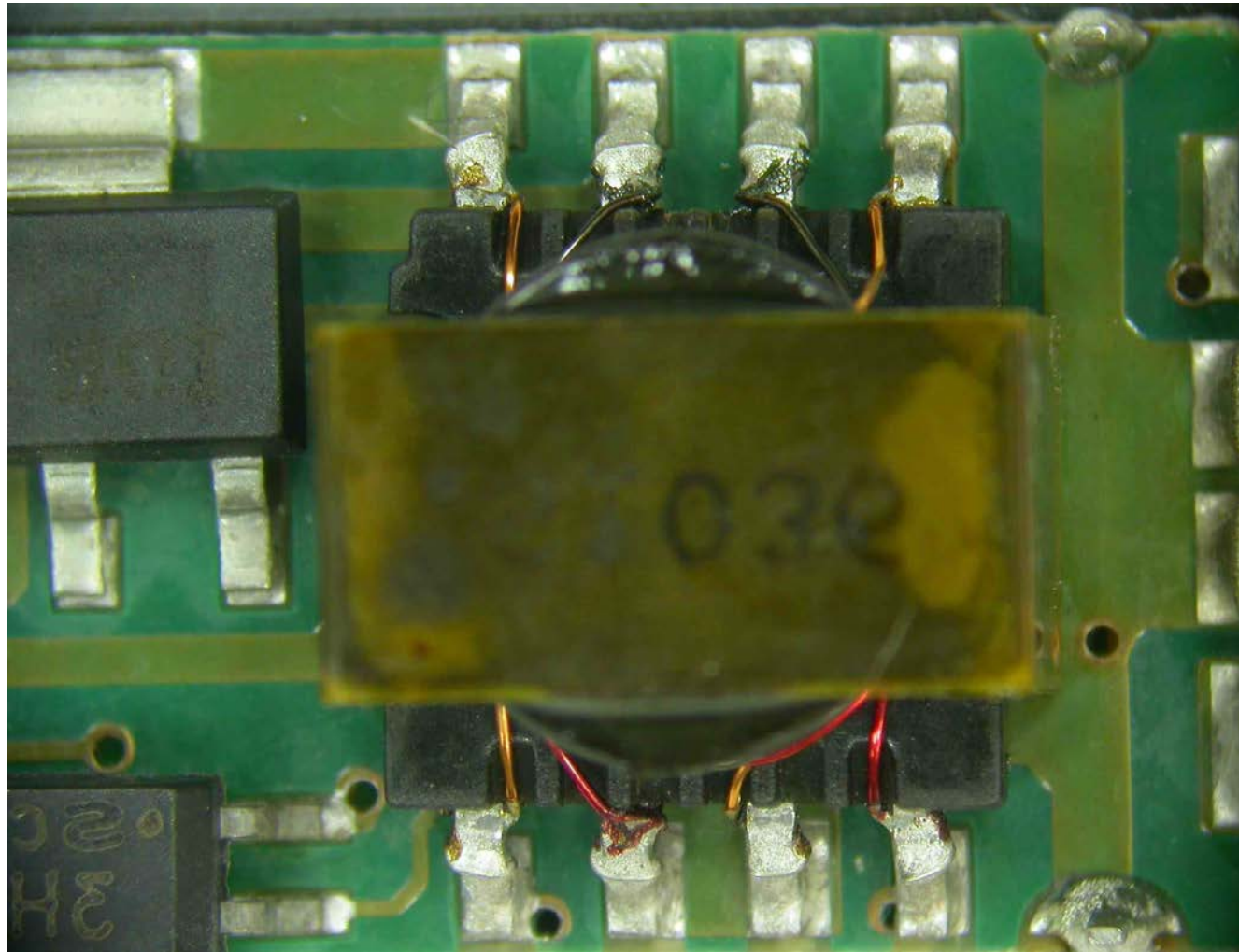
**【NO : 32】 After 3th Reflow Process**

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Top Side-A

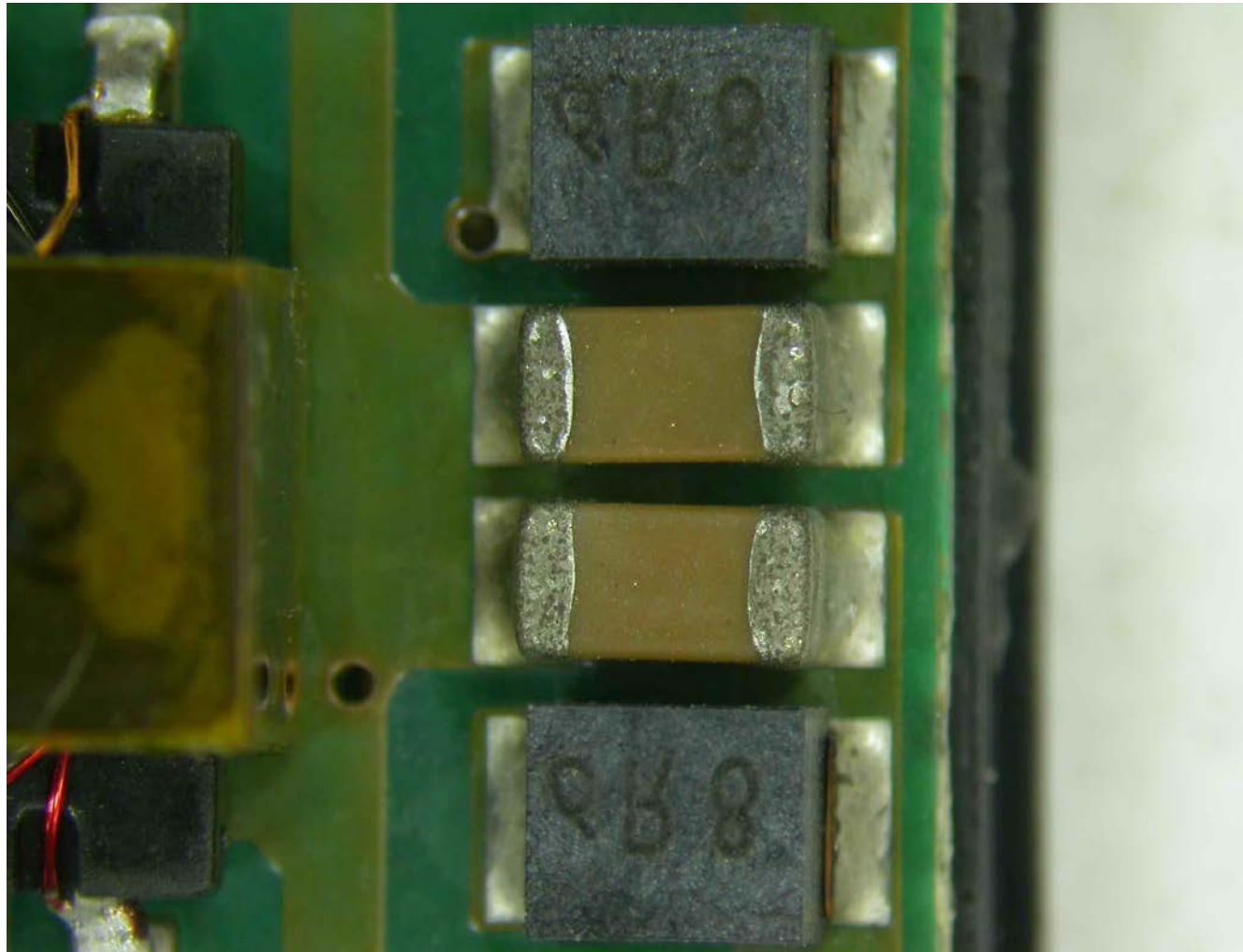
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Top Side-B

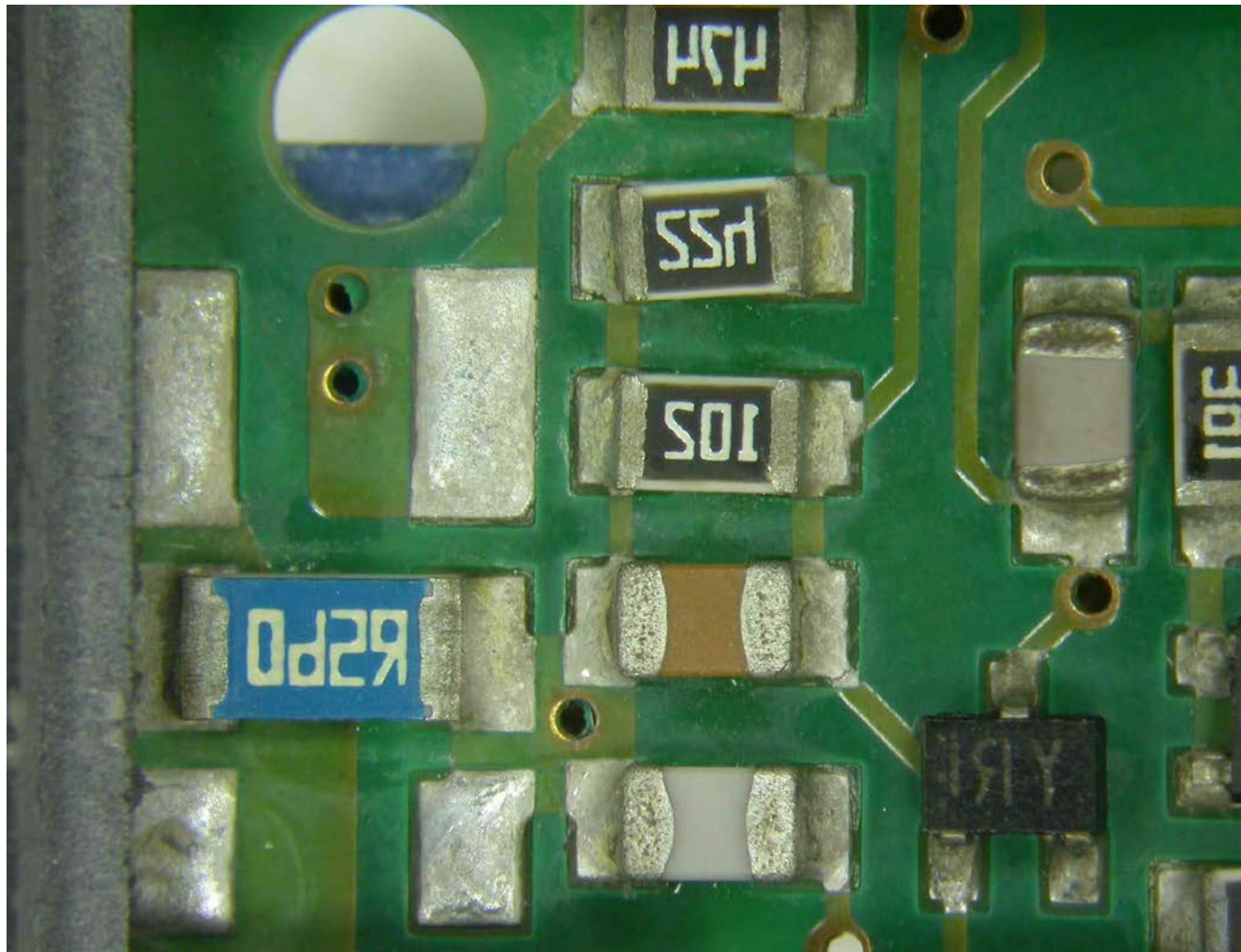


Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



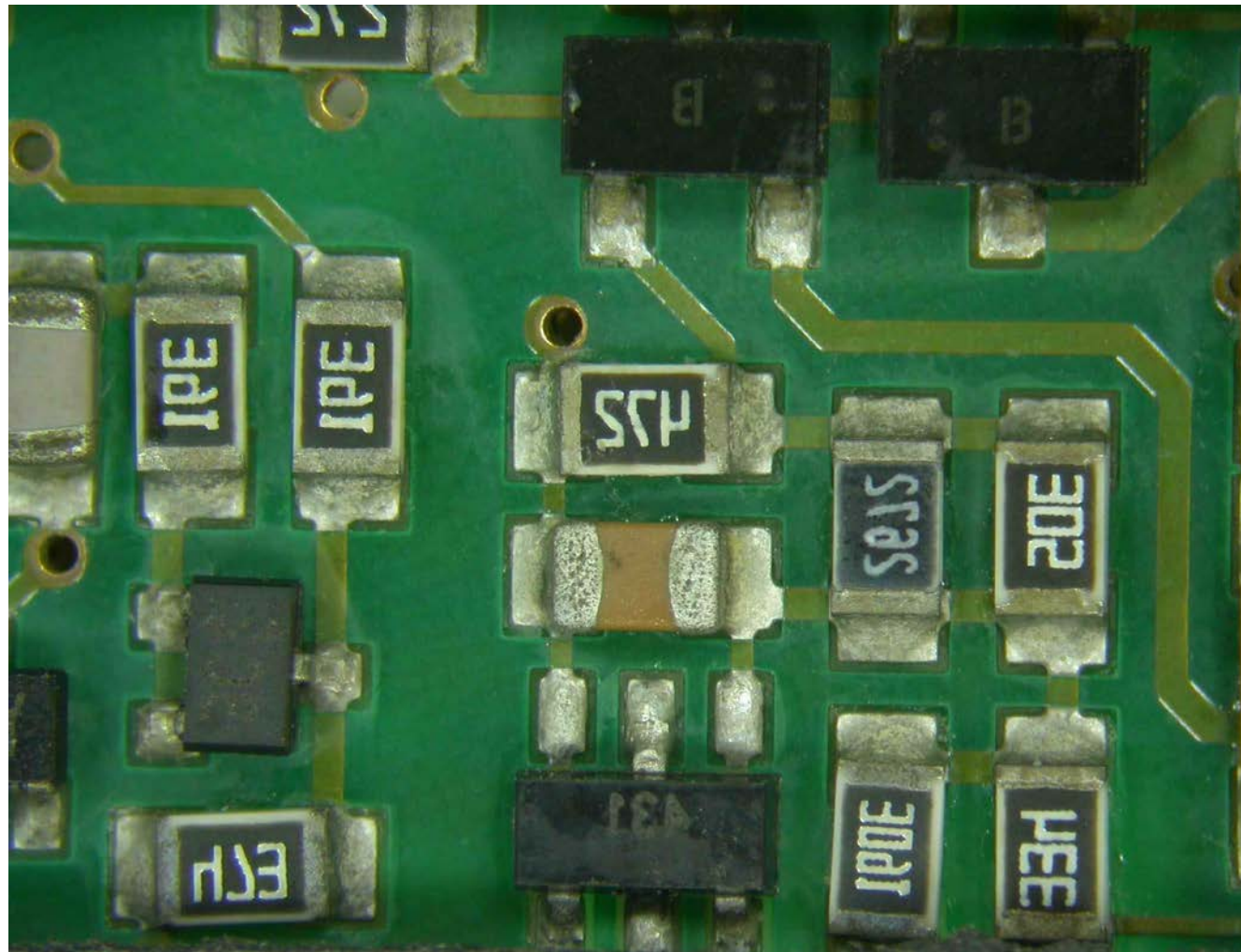
【NO : 32】 Top Side-C

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Bottom Side-A

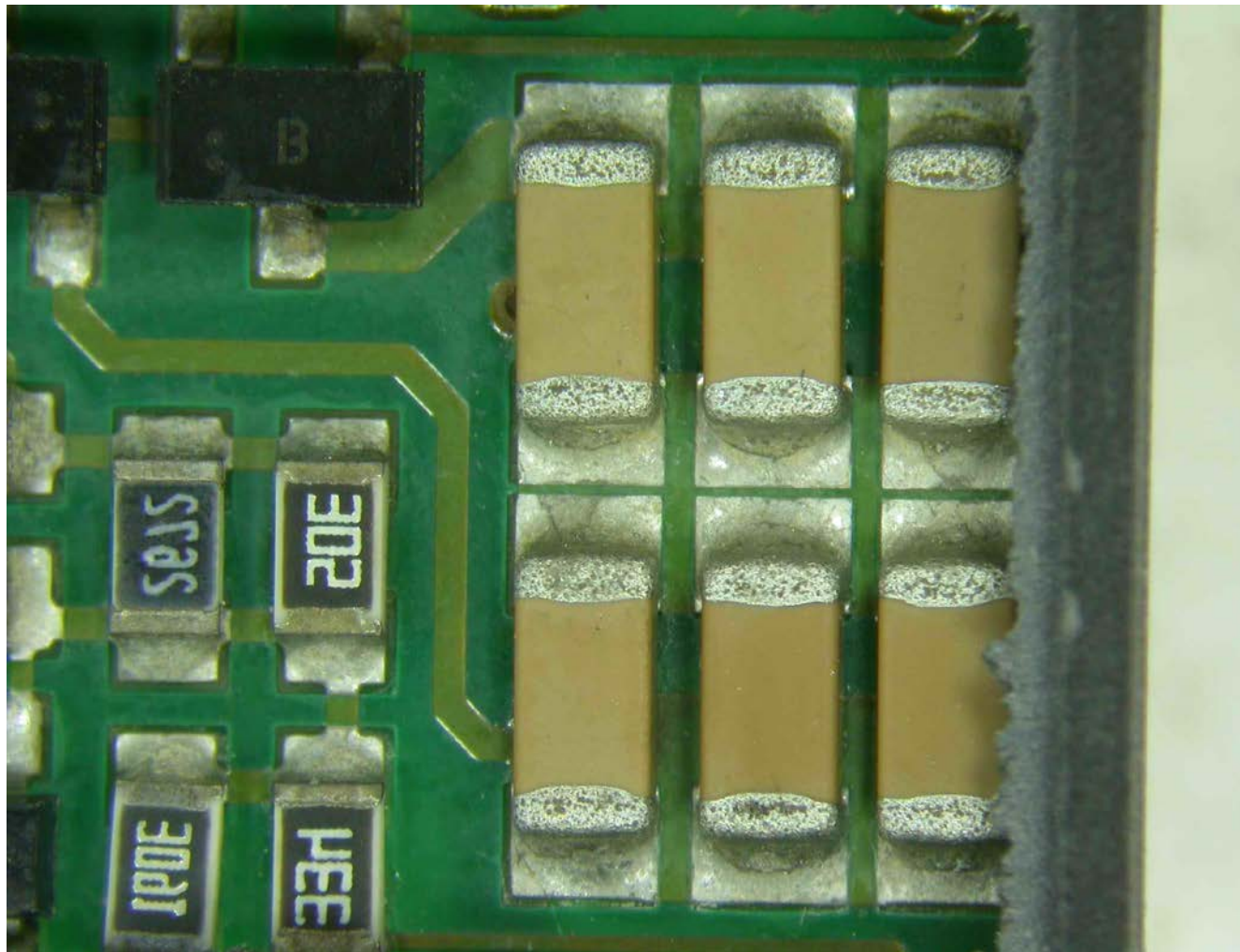
**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



【NO : 32】 Bottom Side-B



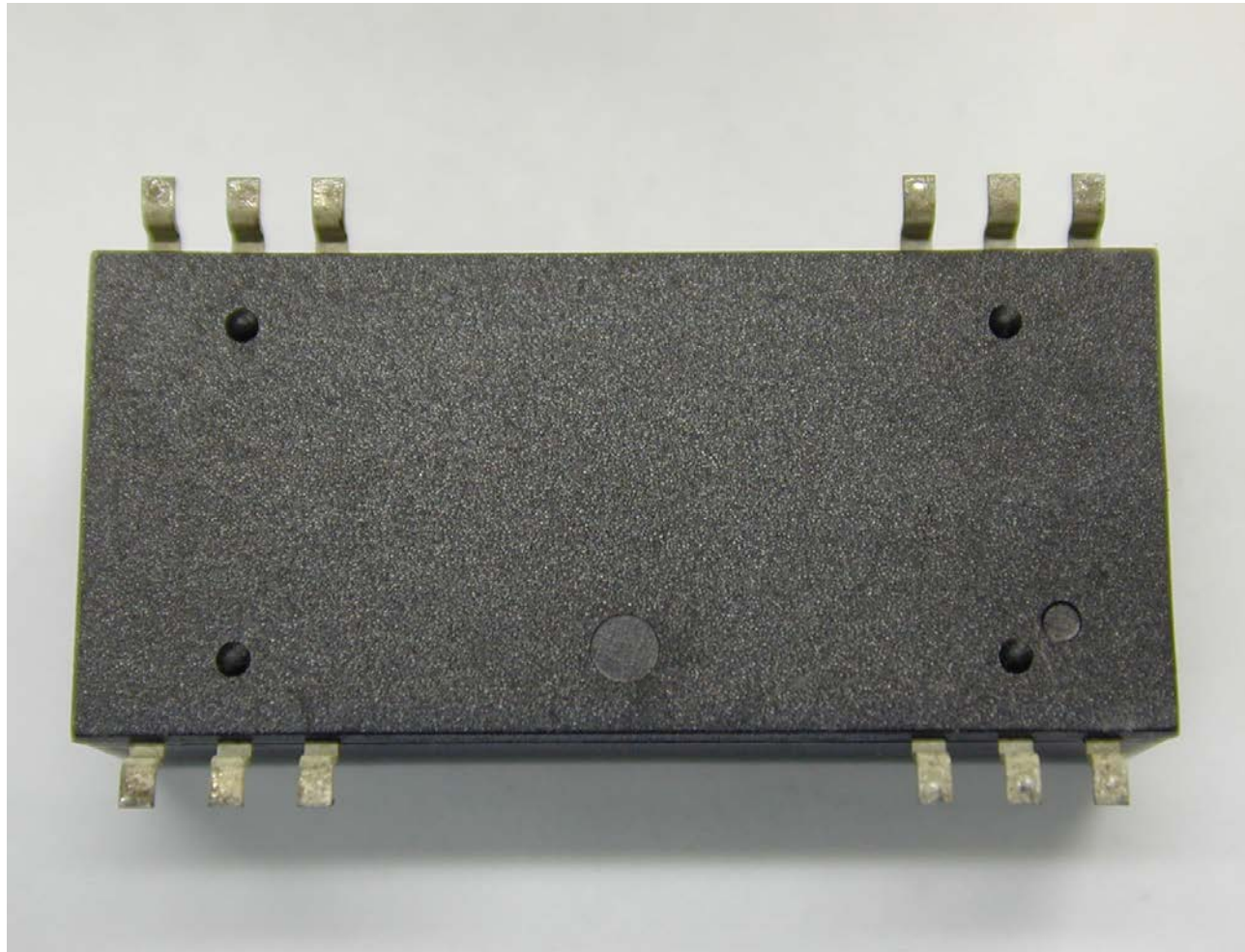
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 32】 Bottom Side-C



**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



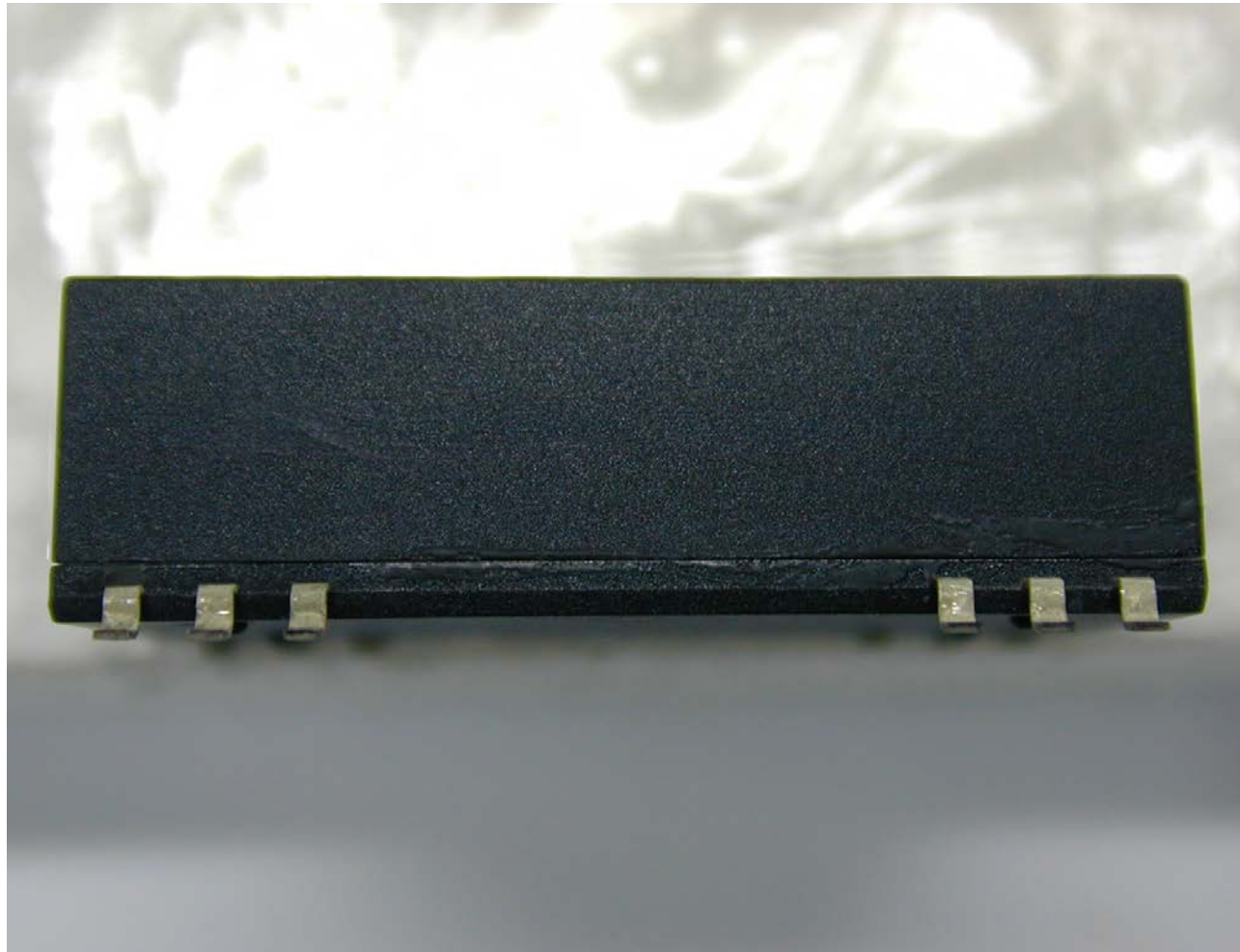
**【NO : 33】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**

**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



**【NO : 33】 After 3th Reflow Process**

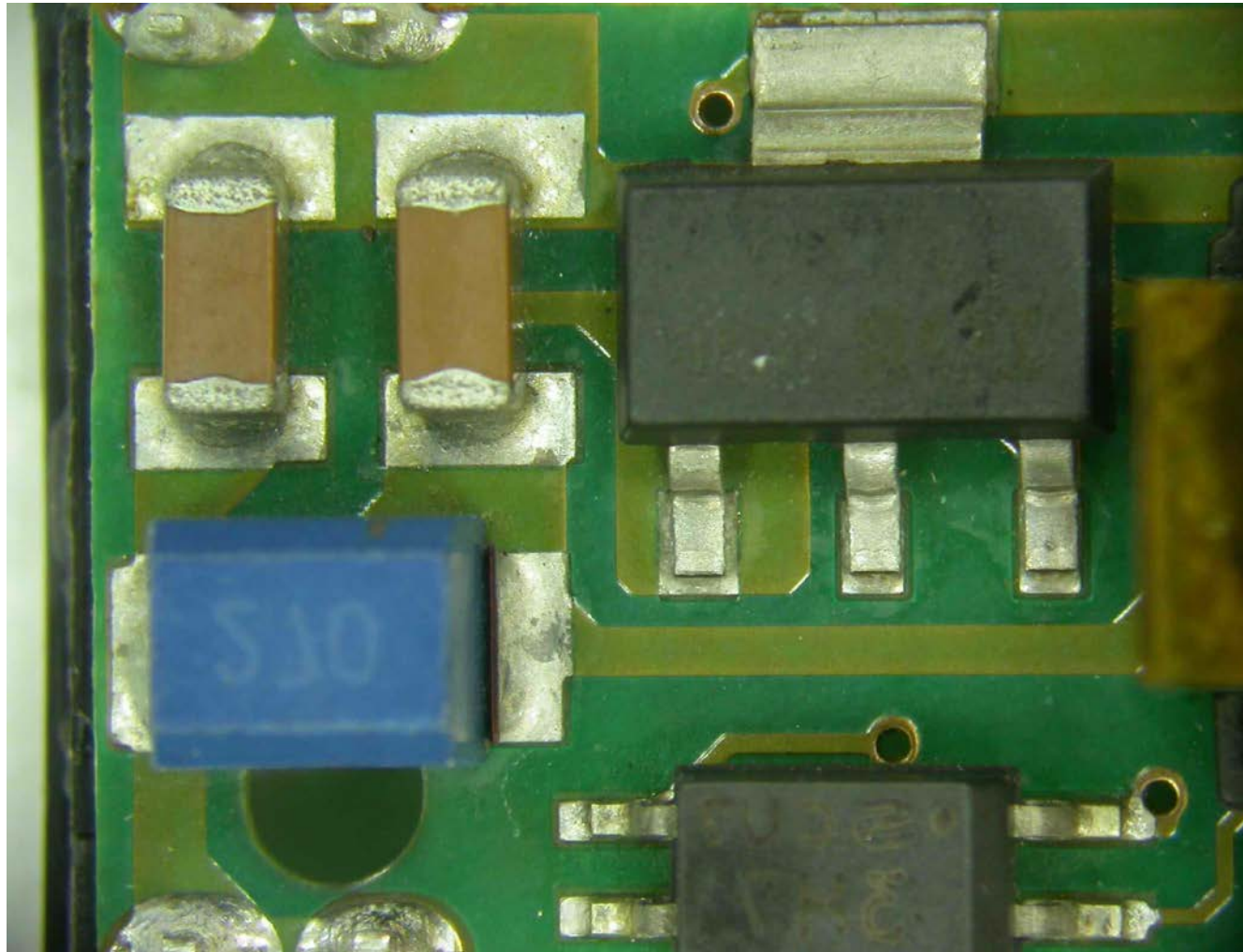


**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



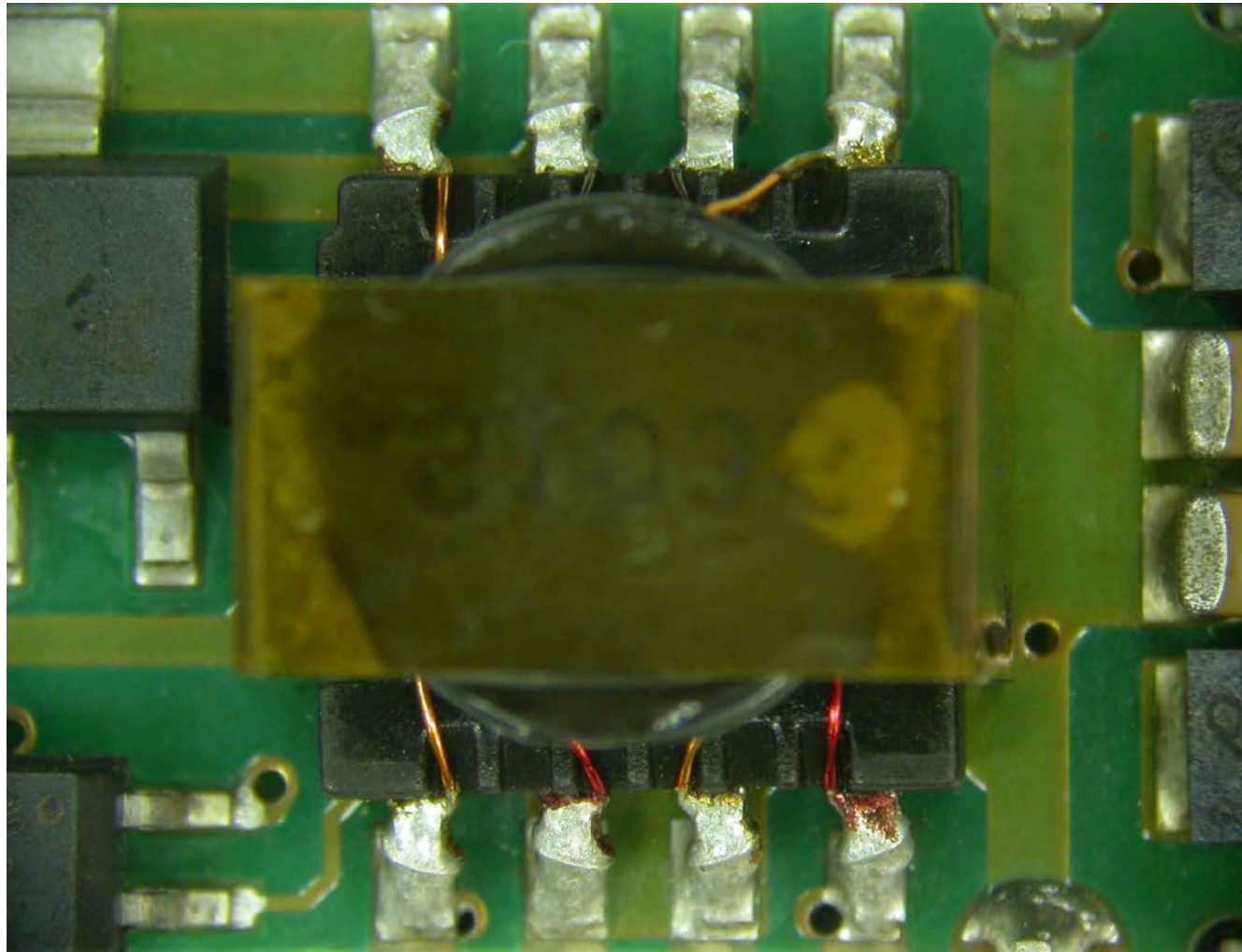
**【NO : 33】 After 3th Reflow Process**

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Top Side-A

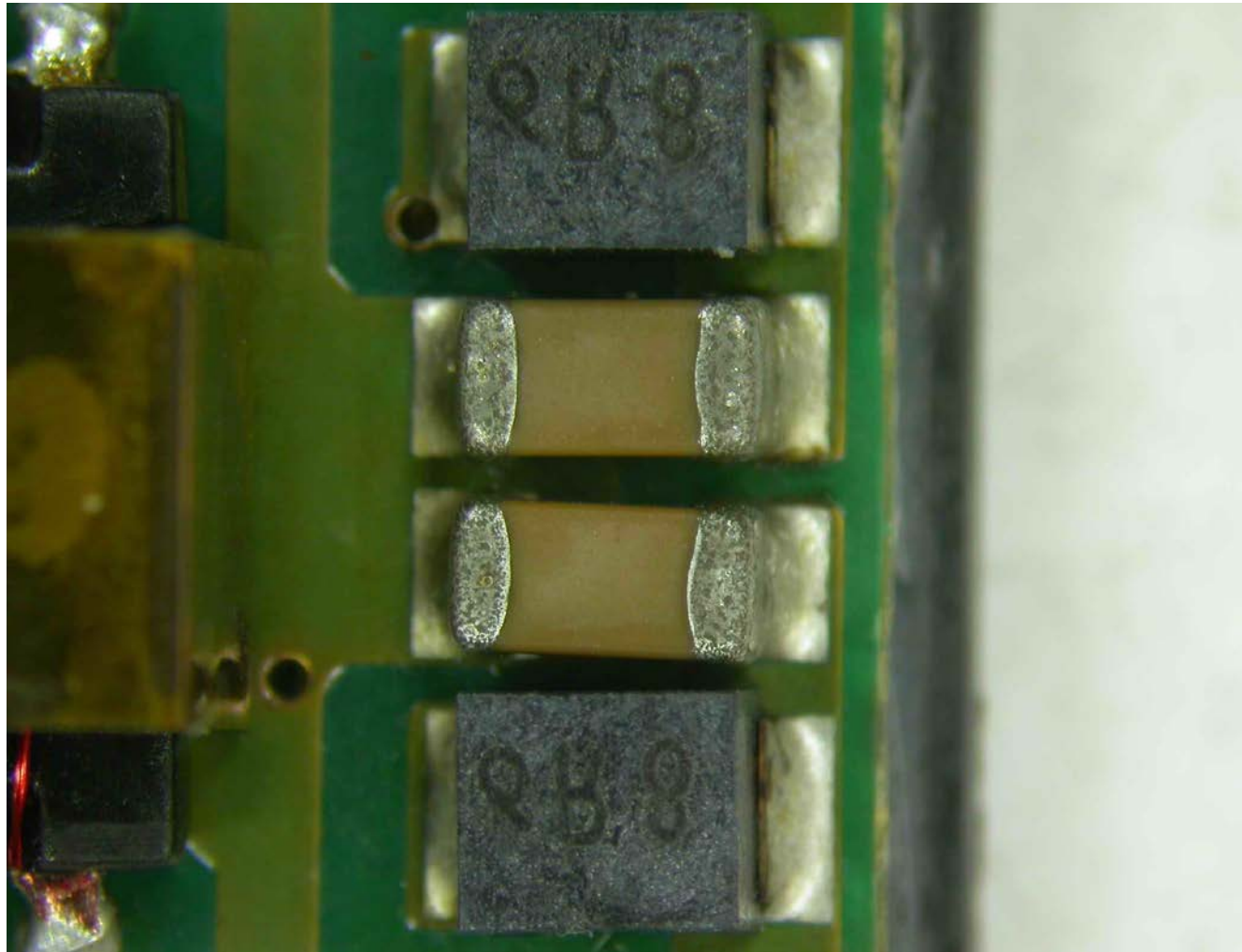
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Top Side-B



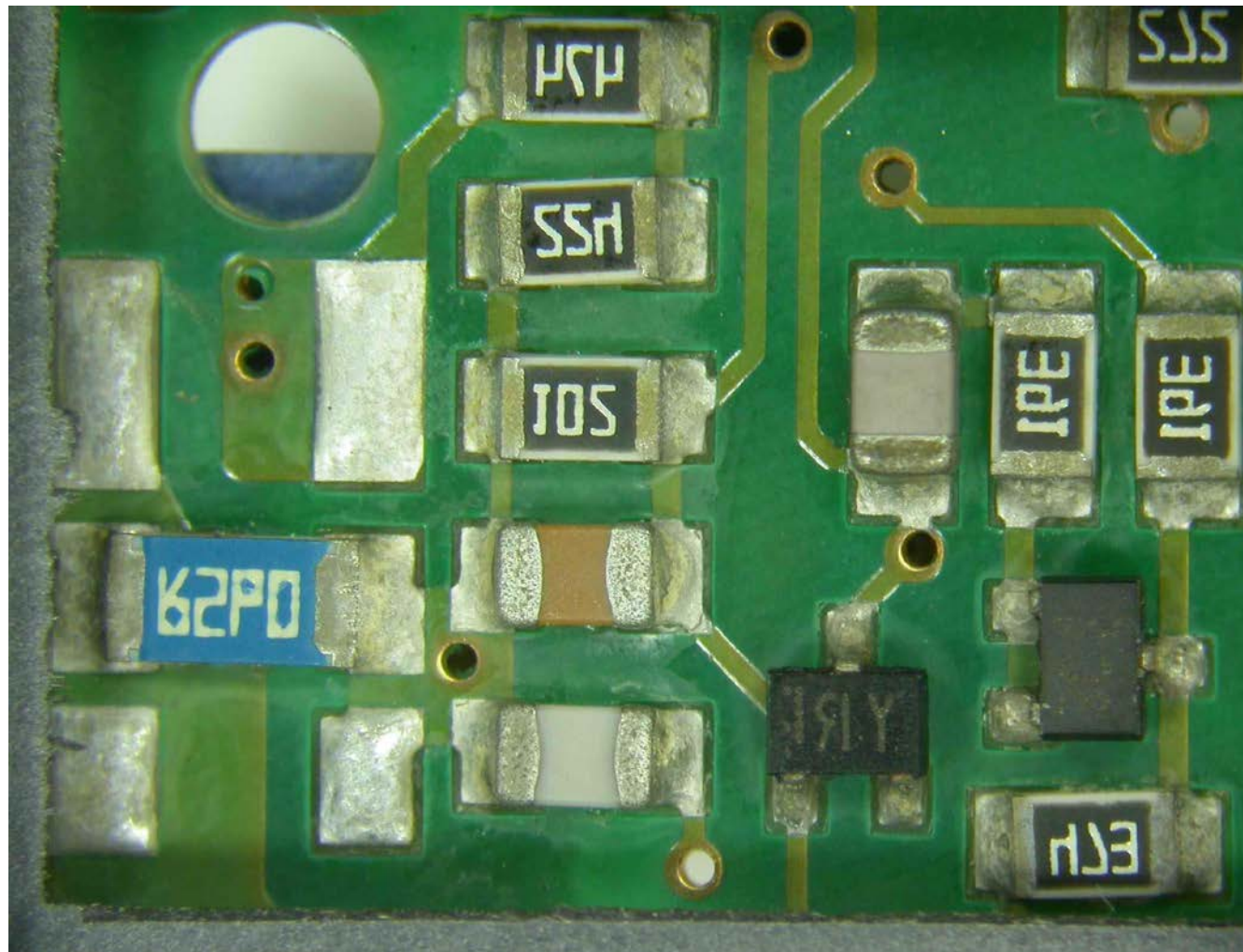
Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Top Side-C

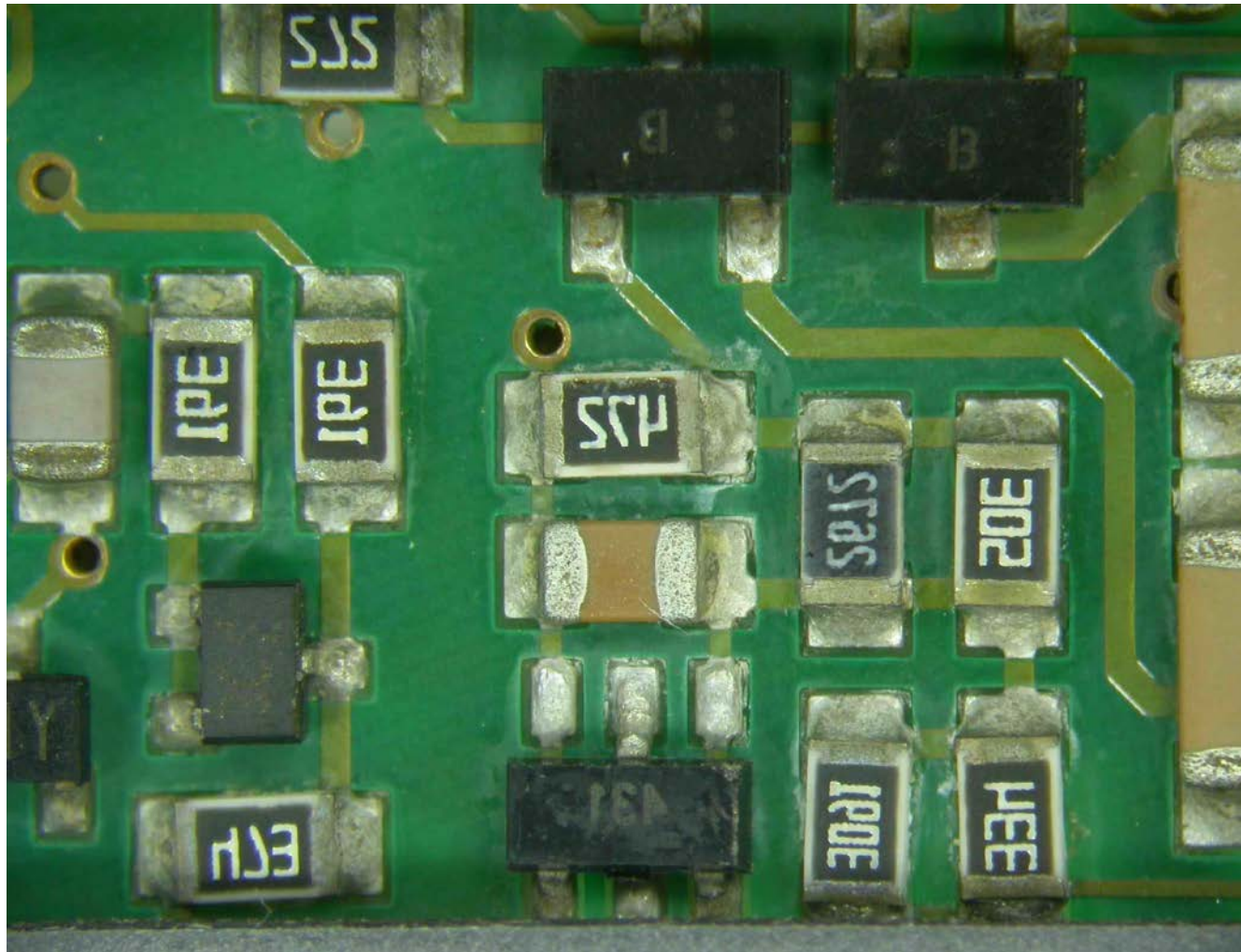


**Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard**



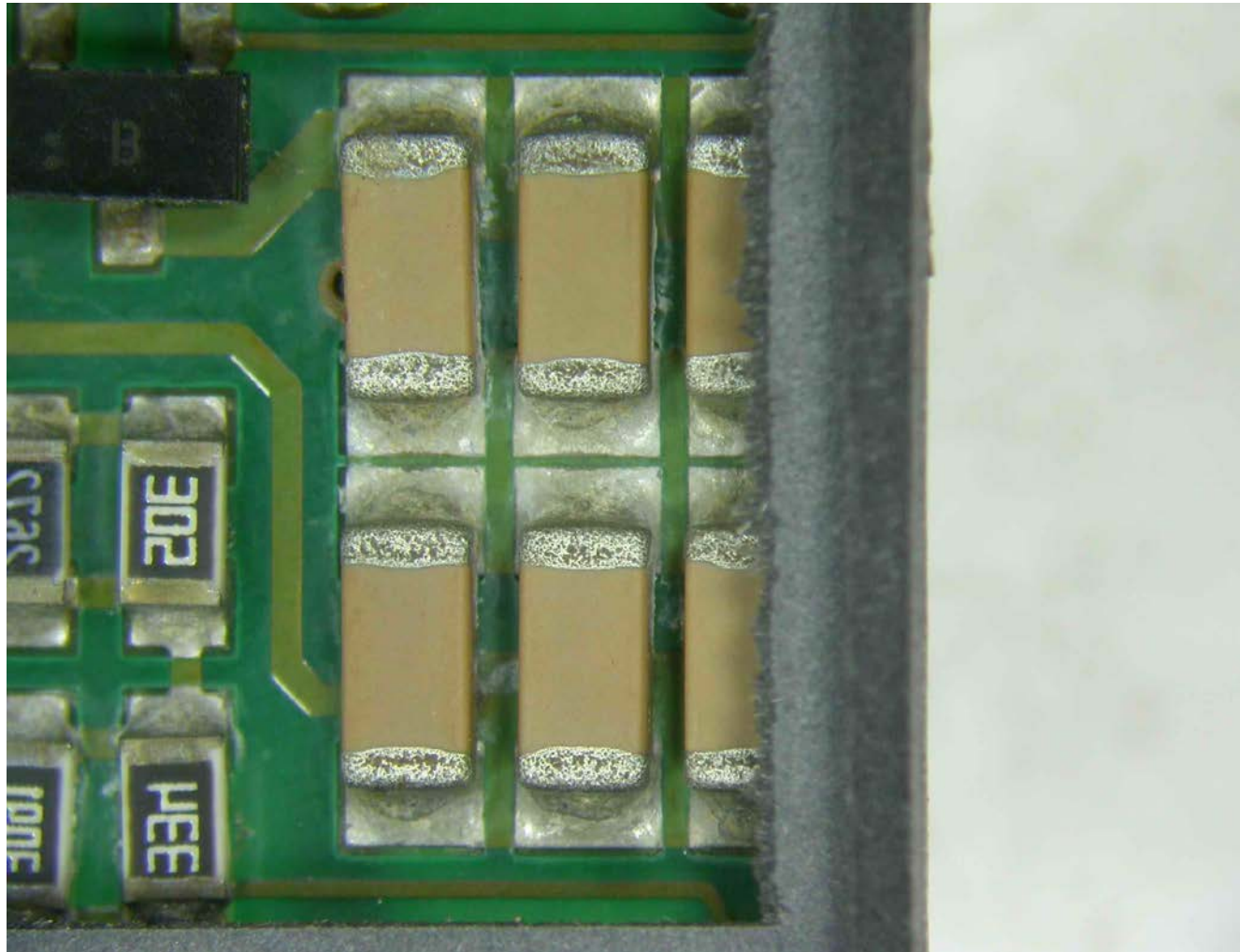
【NO : 33】 Bottom Side-A

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Bottom Side-B

Visual Inspection after Reflow solder Process at maximum Temperature Profile as per IPC/JEDEC J-STD-020C Standard



【NO : 33】 Bottom Side-C



## Conclusion

After above test process, there's no abnormal situation found and all tested units meet electrical characteristics. The products meet MSL Level 1 as per IPC/JEDEC J-STD-020C.

Date : 30.01.2007