

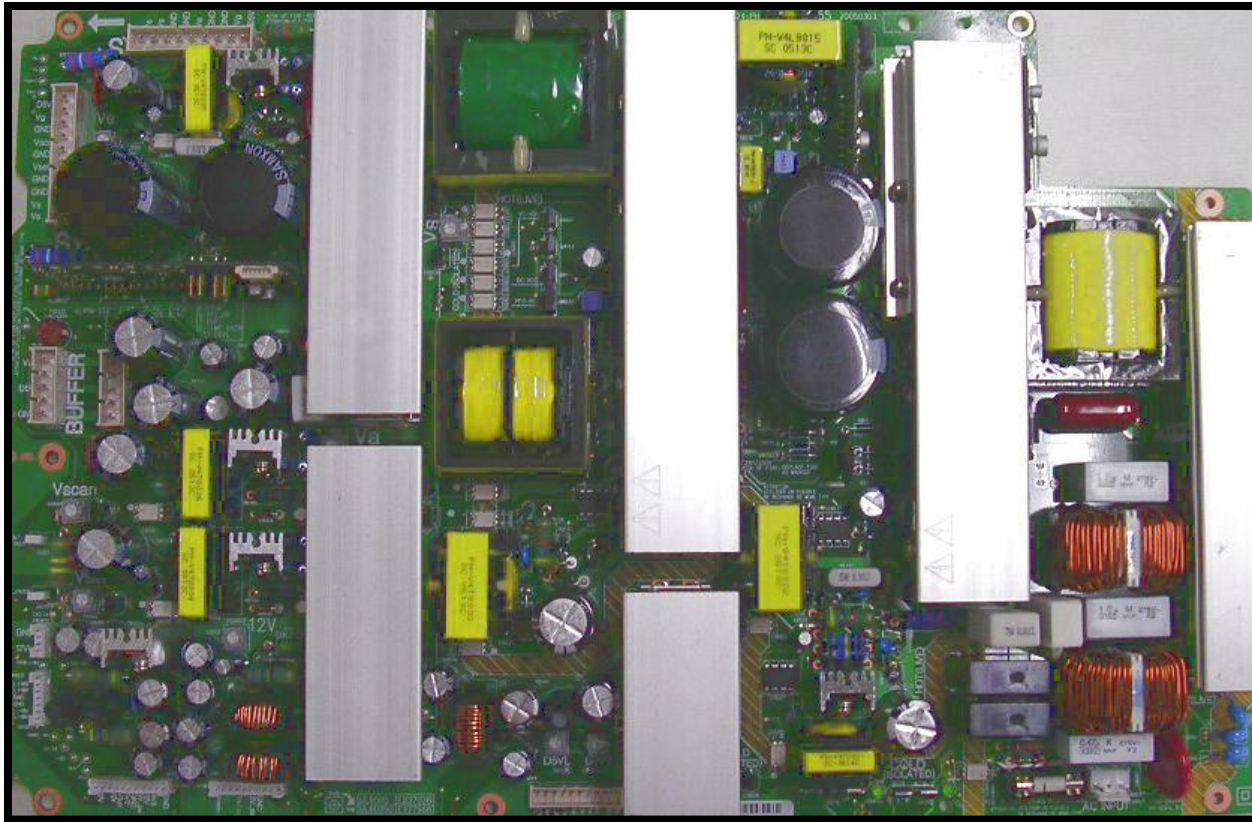
PHILIPS

sense **and** simplicity

996500033880 SDI PSU (LJ44-00101C) repair tips

May 21, 2009

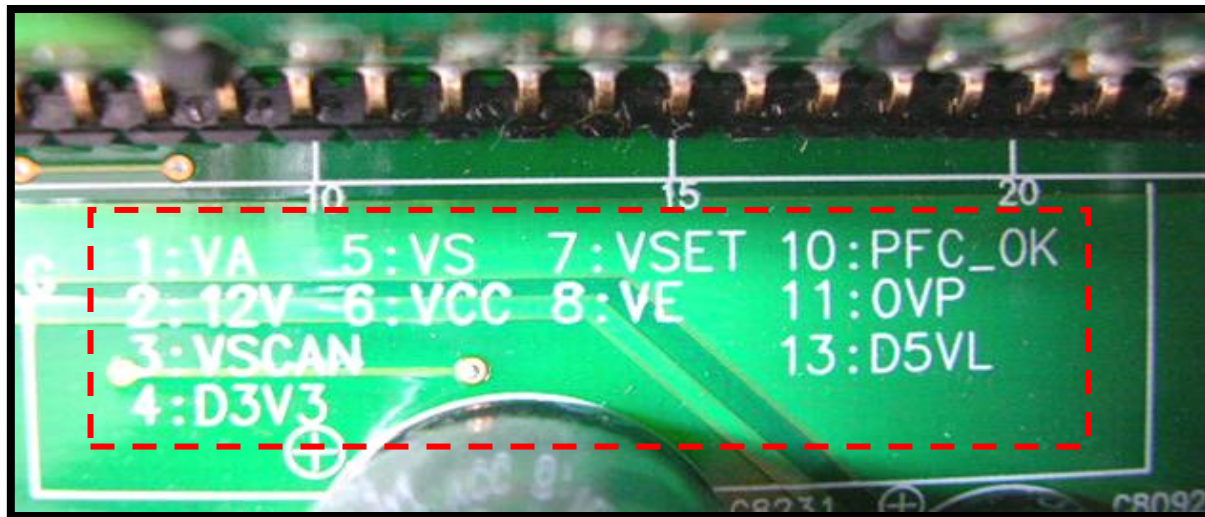
SDI PSU (LJ44-00101C)



SDI PSU (LJ44-00101C)

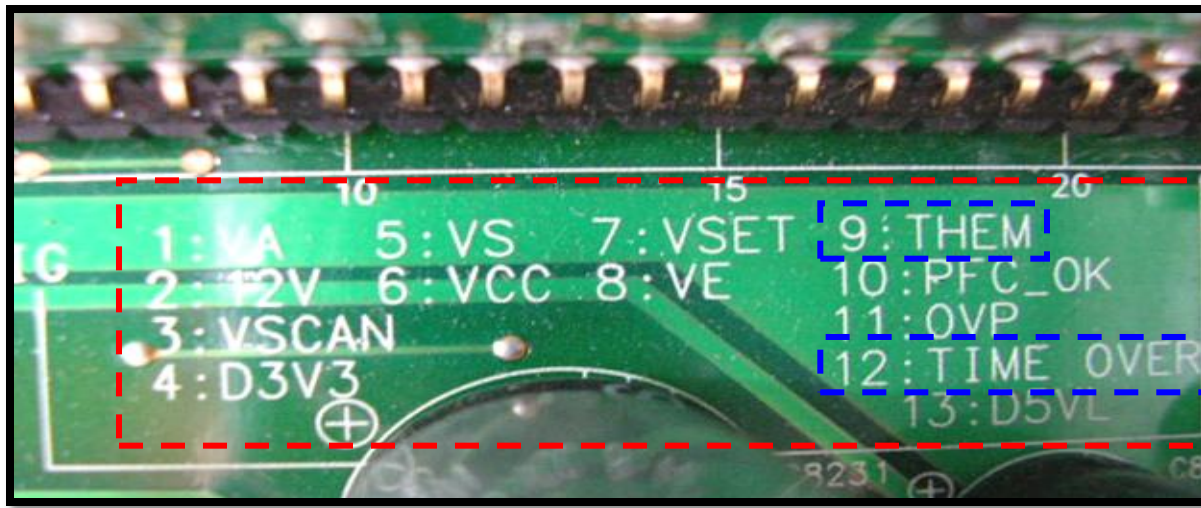
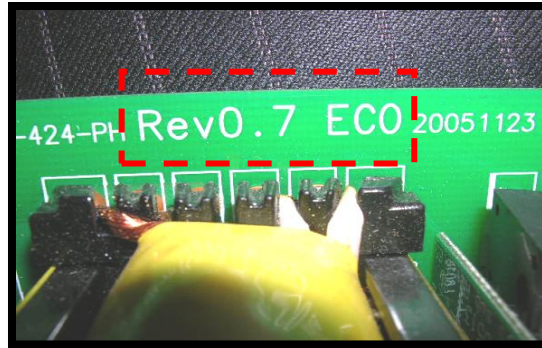
- This document describes how to activate error codes in stand alone mode and what to check based on the errors observed.

Difference between Rev 0.65 and Rev 0.7



7 types
of errors
could be
detected
by Alarm
board

Difference between Rev 0.65 and Rev 0.7



Two extra errors
detected by
Alarm board

PHILIPS

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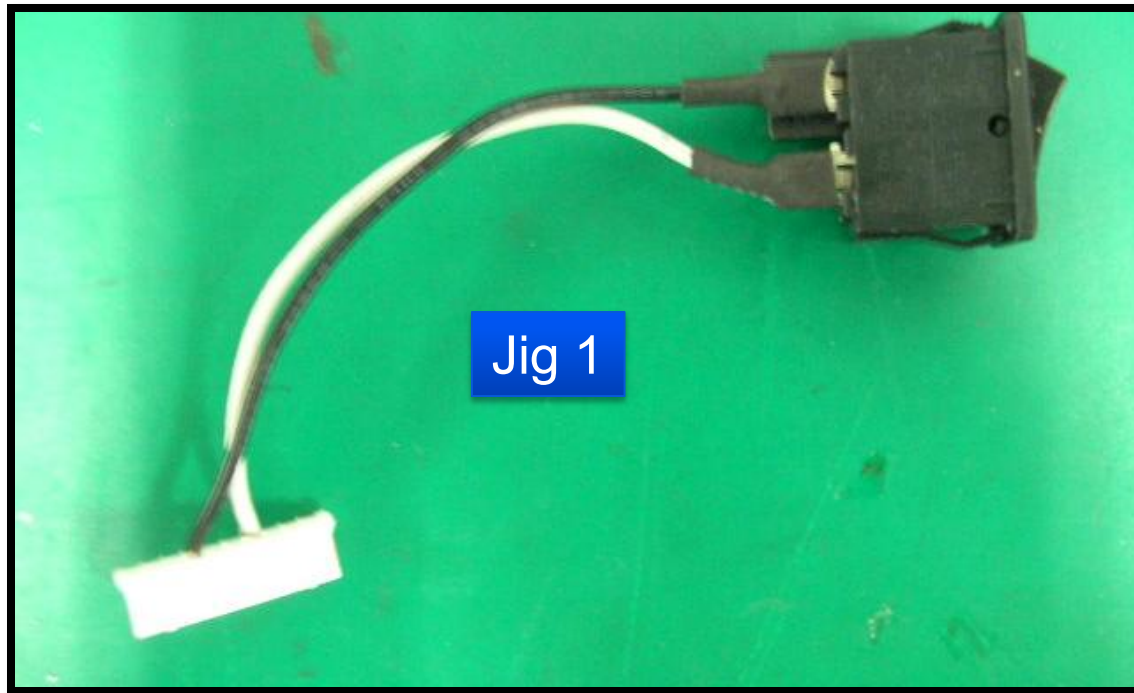
Preparation

May 21, 2009

Jigs required to activate error codes

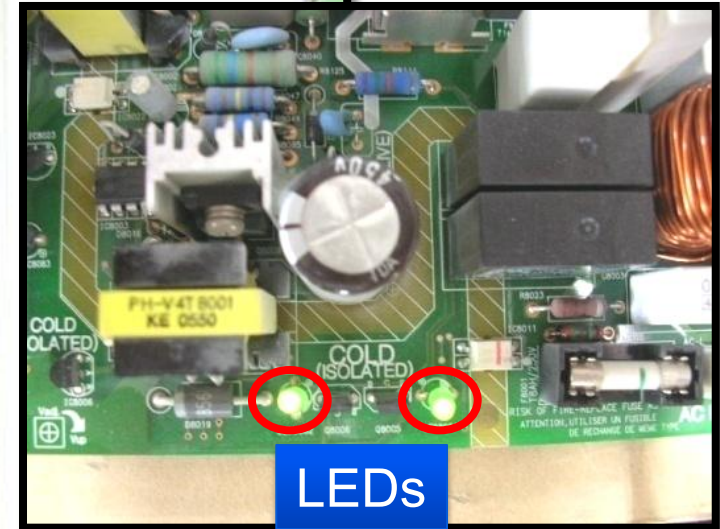
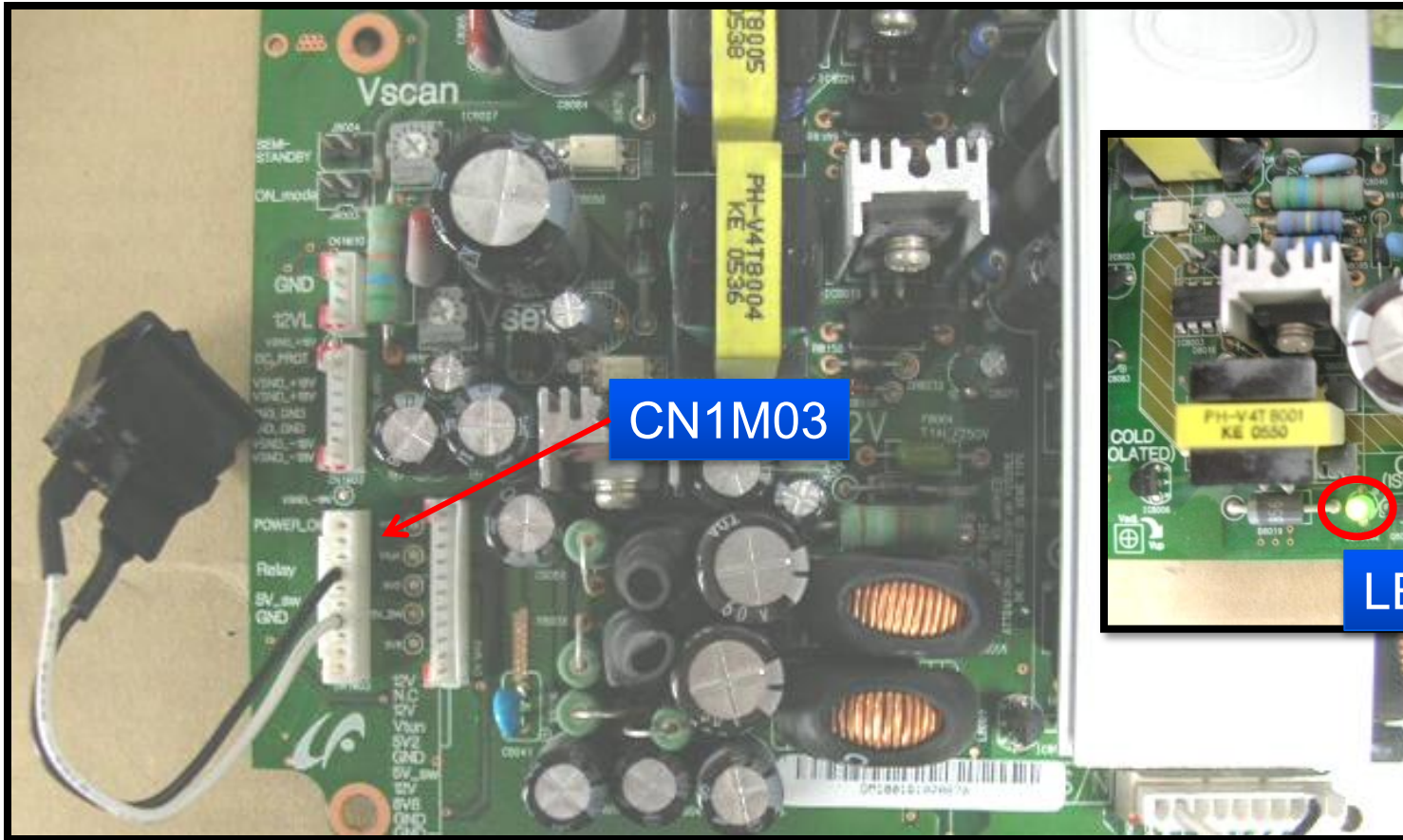
Jig 1 is connected to socket CN1M03

Pin 7 and pin 4 are connected to the switch as shown below:



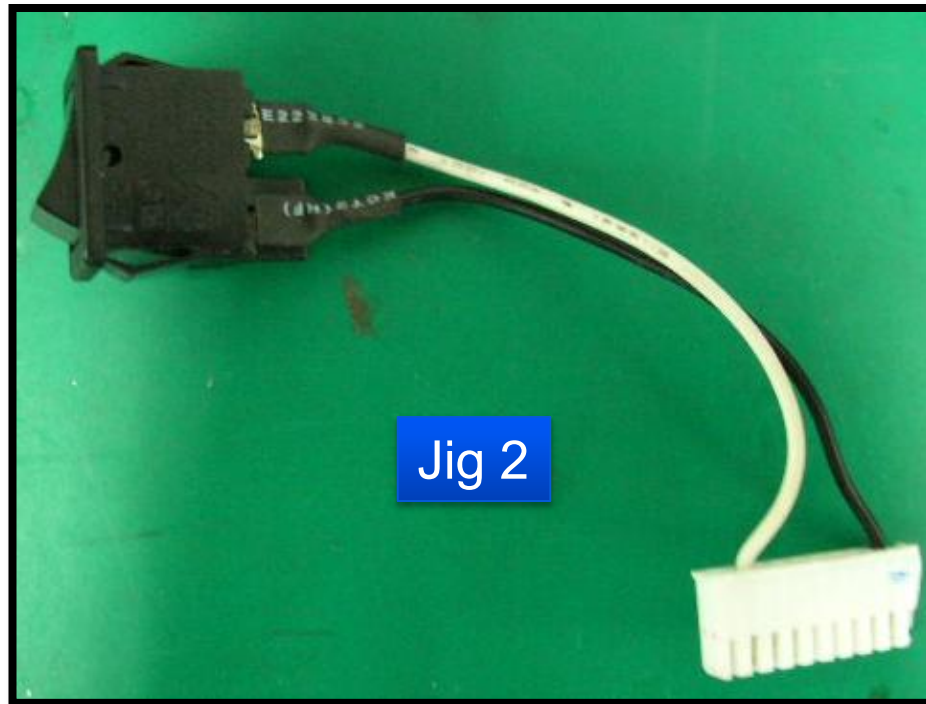
Function of jig 1

- When this switch is turned on, relay should give click sound
- LED8001 and LED8002 should turn ON



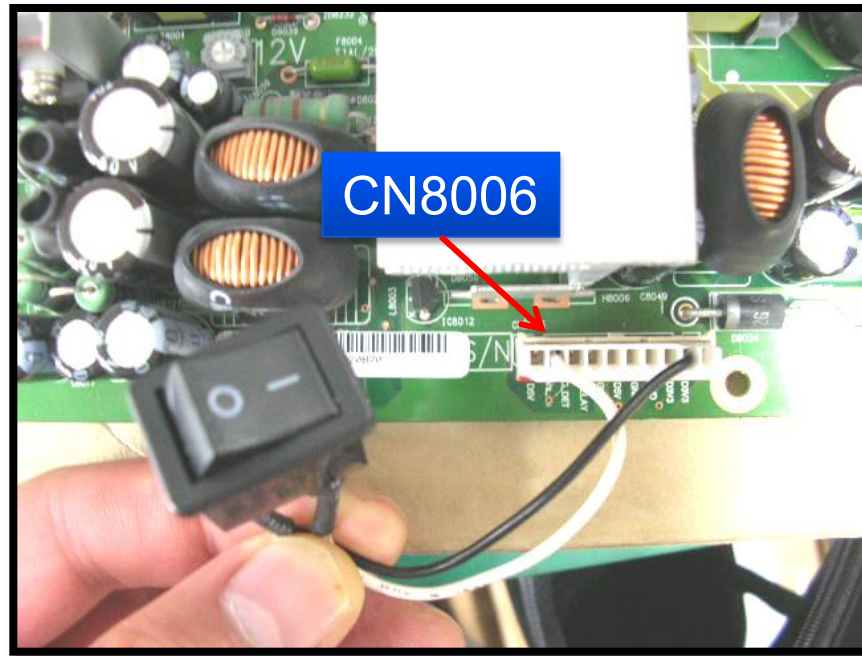
Jigs required to activate error codes

Jig 2 is connected to socket CN8006 to short circuit Vs_On (pin 9) and D3V3 (pin 2) together.



Function of jig 2

- When jig 1 and jig 2 are switched on, alarm board can be activated to generate error codes via LED BD8903 on alarm board.

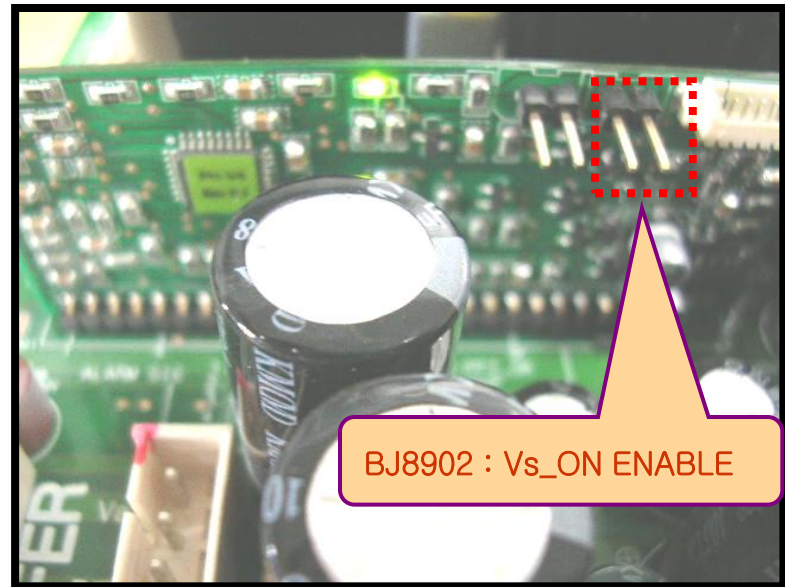


Jigs required to activate error codes

Jig 3 is connected on alarm board to short circuit two pins located on right hand side

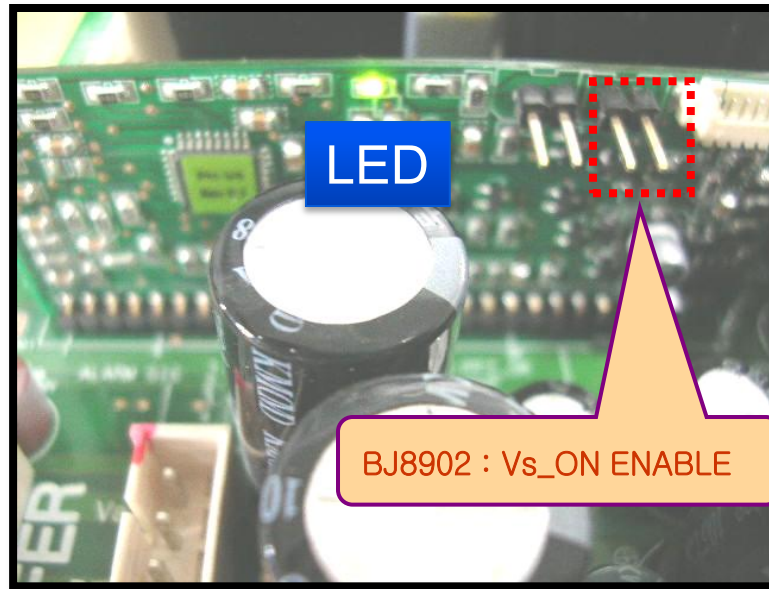


Jig 3



Function of jig 3

- When jig 1 and jig 2 and jig 3 are switched on, LED on alarm board would generate error code if PSU is faulty



What is next?

- Remove all the plugs from PSU
- Insert the three jigs which you made
- Apply power
- Look for LED on alarm board
- If LED is blinking, count the number of blinks and see relevant repair tip

Error codes

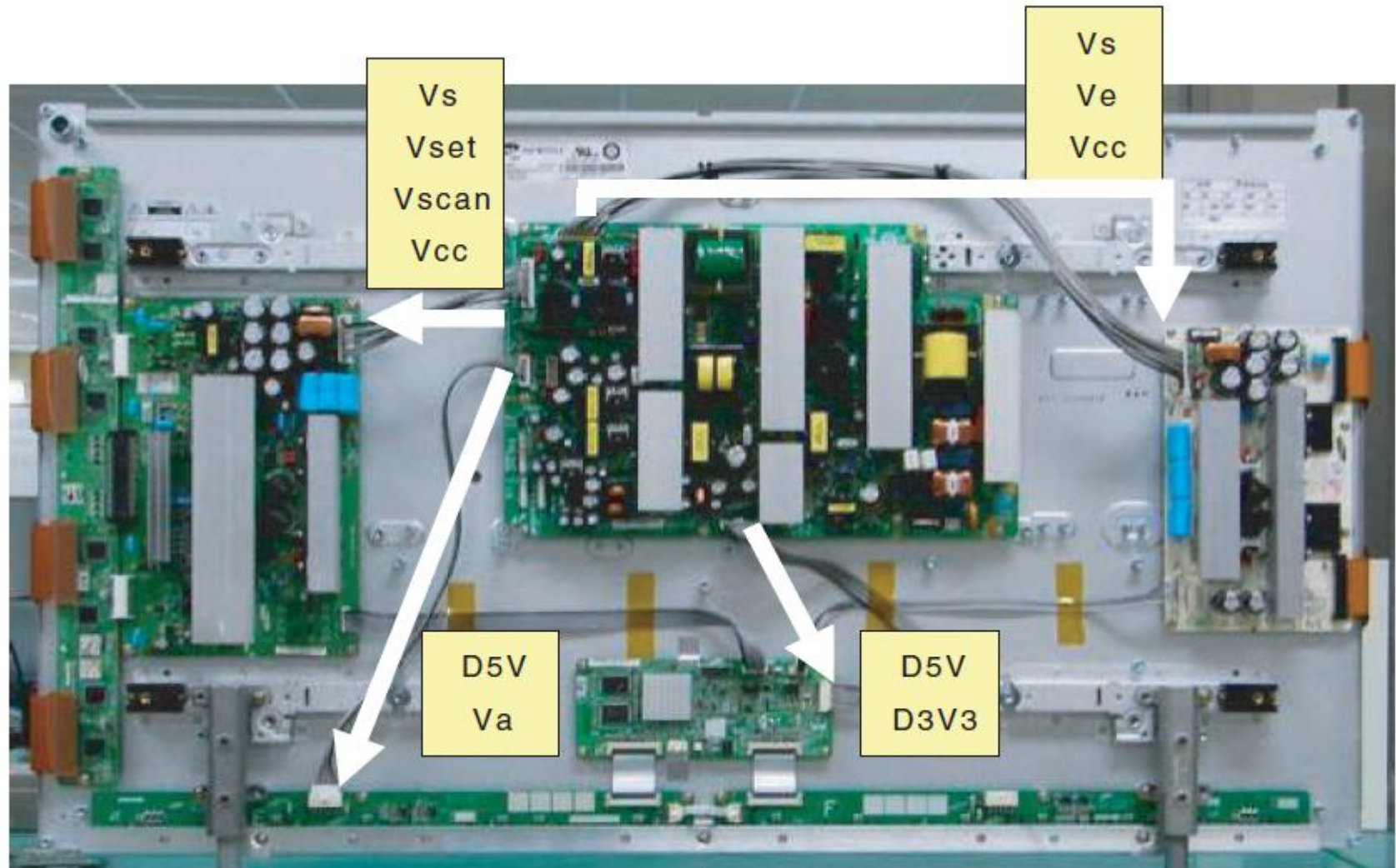
Error detection condition	No. of times LED blinking
VA OVP, UVP	1
12V OVP, UVP	2
VSCAN OVP, UVP	3
D3V3 OVP, UVP	4
VS OVP, UVP	5
Vg OVP, UVP	6
VSET OVP, UVP	7
VE OVP, UVP	8
Over Temperature	9
PFC_OK UVP	10
5V2 OVP or Active DC_PROT	11
Time Over	12
D5VL OVP, UVP	13

OVP: Over Voltage Protection
UVP: Under Voltage Protection

Protection Circuit Specification

	HIC8001 PIN	Low level	High level	Normal level	Output UVP	Output OVP	Normal	Error
Relay	14	Below 1.56V	Above 3.64V	Normal High (5.2V \pm 0.1V) Active Low (Below 0.9V)				
PFC_OK	15	Below 1.56V	Above 3.64V	Normal High (5.2V \pm 0.1V) Active Low (Below 0.3V)	330V		380V	10
D5V	9	Below 1.68V	Above 3.36V	2.49V	3.5V	7.0V	5.2V	13
D3V3	7	Below 1.91V	Above 3.45V	2.53V	2.5V	4.5V	3.3V	4
Vg	8	Below 1.66V	Above 3.58V	2.5V	10V	21.5V	15.0V	6
Va	2	Below 1.74V	Above 3.35V	3.04V	40V	77V	70.0V	1
12V	5	Below 2.00V	Above 3.00V	2.5V	9.6V	14.4V	12V	2
Ve	4	Below 1.79V	Above 3.08V	2.69V	70V	120V	105V	8
Vset	3	Below 1.92V	Above 3.20V	2.5V	150V	250V	195V	7
Vscan	6	Below 3.25V	Above 1.91V	2.58V	140V	240V	190V	3
Vs	1	Below 1.90V	Above 2.79V	2.5V	160V	235V	210V	5
Vs_on	17	Below 0.60V	Above 2.00V	Active High (Above 2.5V)				
Temp	16	Below 1.56V	Above 3.64V	Active Low				9
DC_Prot	10	Below 0.40V	Above 0.60V	Active High				11
5V2	10	Below 6.40V	Above 7.15V	Active High		6.8V	5.2V	11

Location of supply voltages from PSU to the boards





Voltage outputs

42" SD v5, 42" HD w1, 50" HD w1

No	Output voltage (V)	Voltage Setting (Normal Load)	Output Voltage Variable Point
1	VS	207V \pm 1%	195V ~ 215V
2	VA	70V \pm 1.5%	50V ~ 70V
3	VE	110V \pm 1.5%	70V ~ 110V
4	VSET	198V \pm 1.5%	180V ~ 210V
5	VSCAN	-185V \pm 1.5%	-170V ~ -190V
6	VSb	5V \pm 5%	Fixed
7	VG	15V \pm 5%	Fixed
8	D5VL	5.2V \pm 5%	Fixed
9	D3V3	3.3V \pm 5%	Fixed
Check voltage label on the PDP for correct values.			

PHILIPS

sense and simplicity

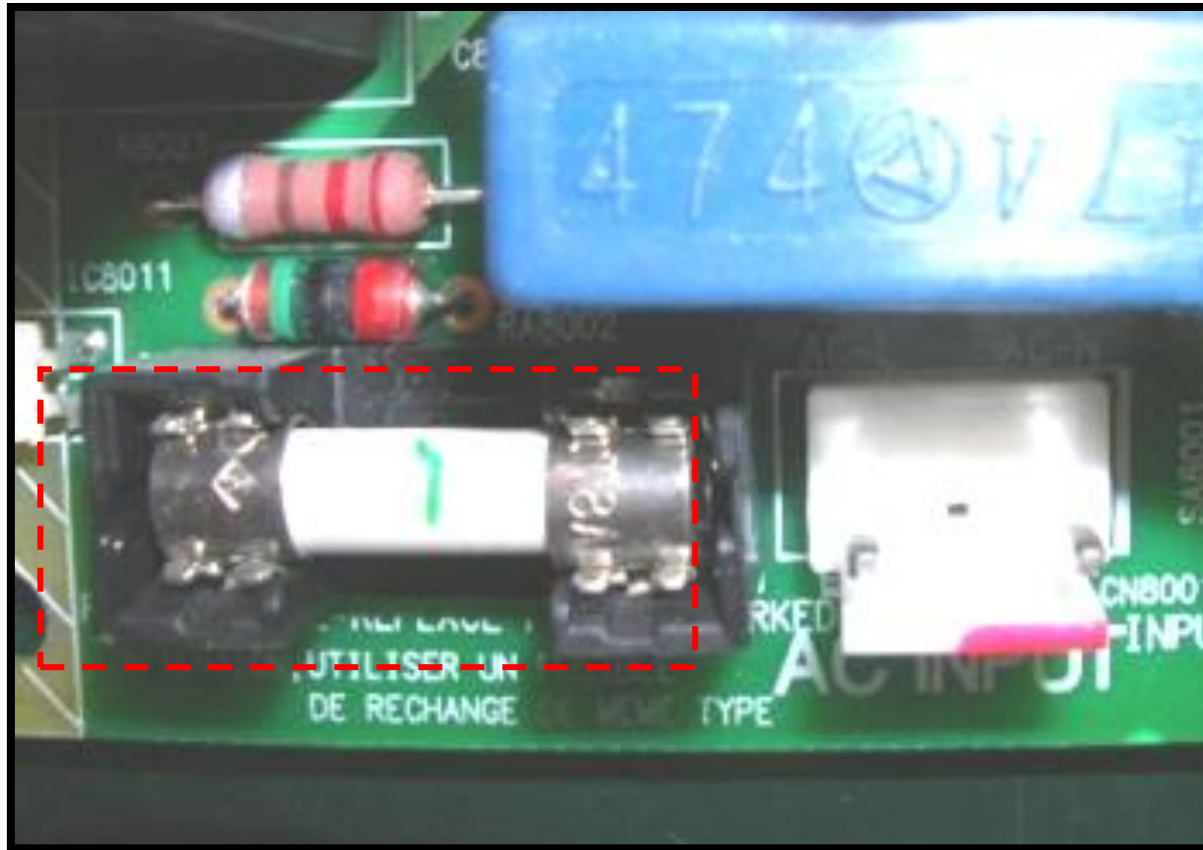
Repair tips

May 21, 2009

Symptom 1: NO POWER

■ Check or change:

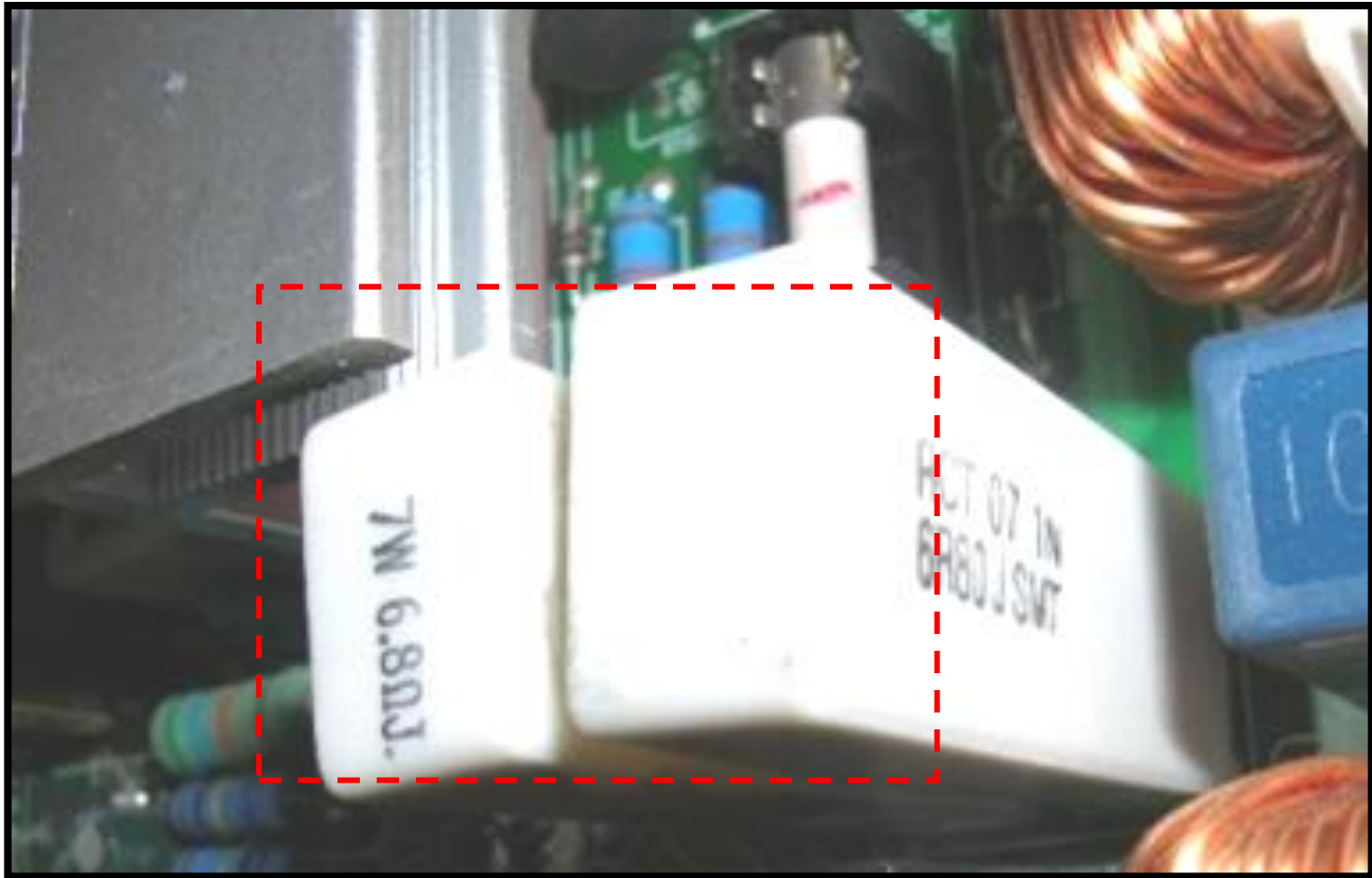
1. F8001(250V/8A) OPEN



Symptom 1: NO POWER

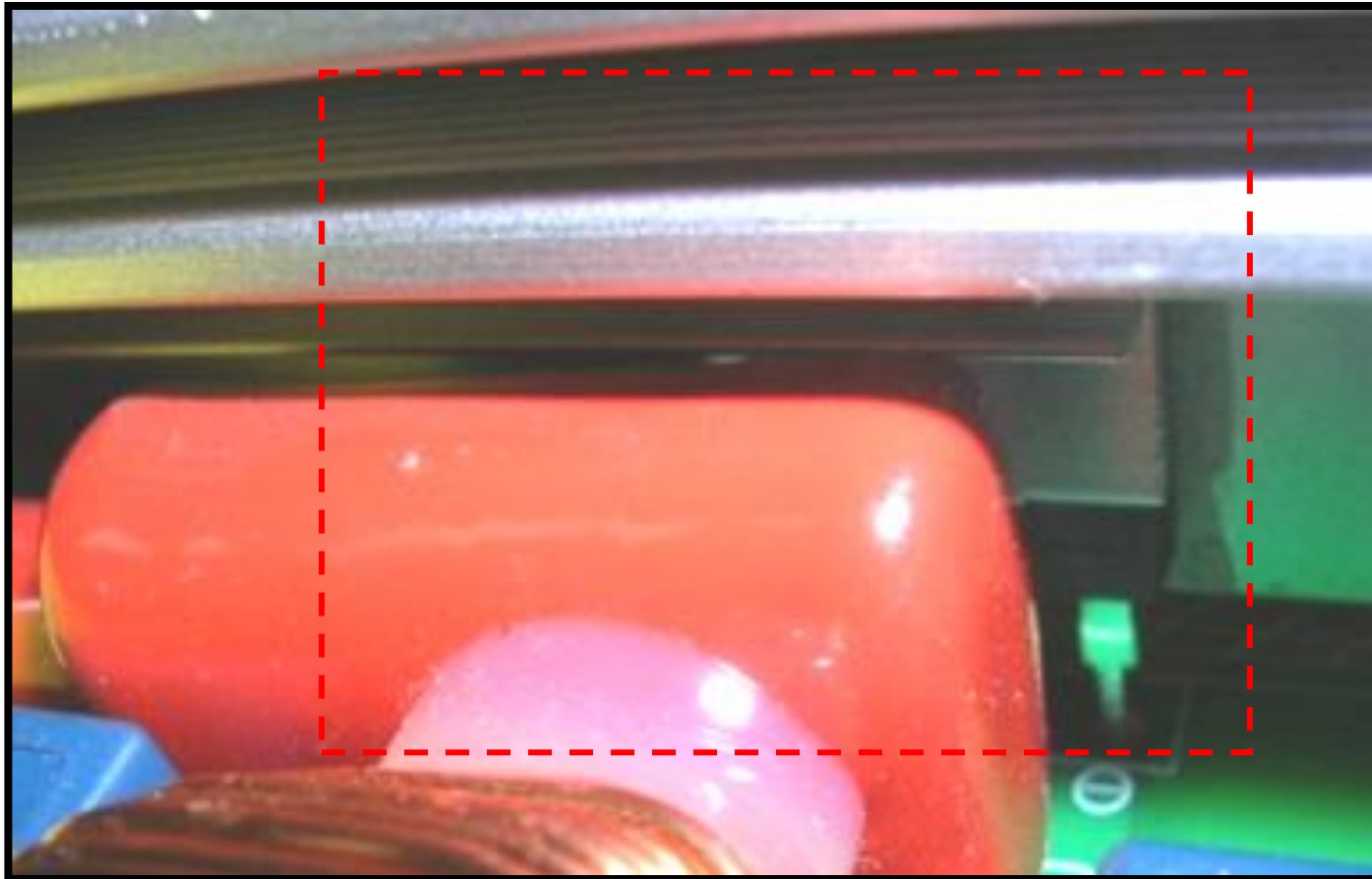
■ Check or change:

2. R8012, R8013 OPEN



Symptom 1: NO POWER

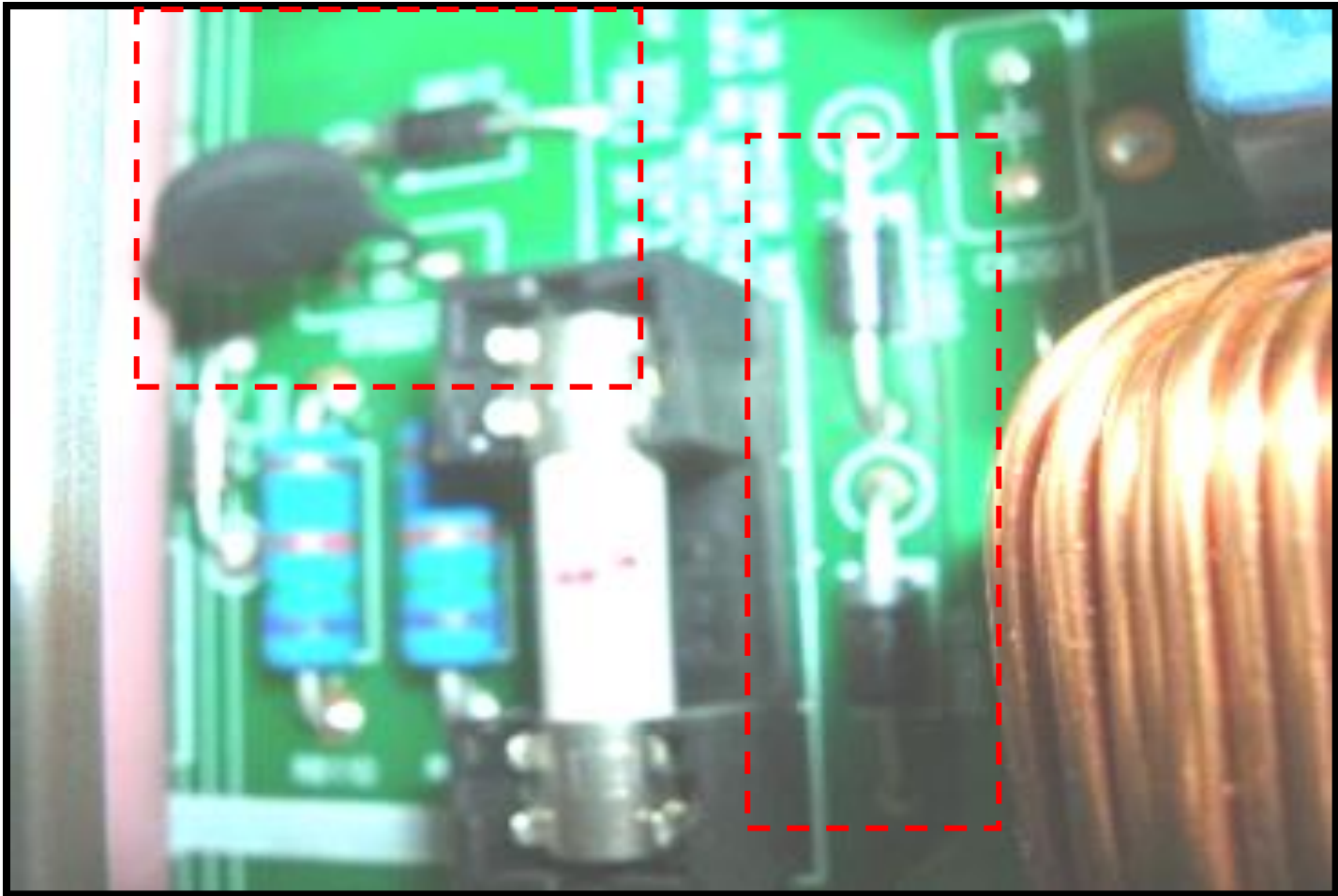
- Check or change:
3. D8006 SHORT



Symptom 1: NO POWER

■ Check or change:

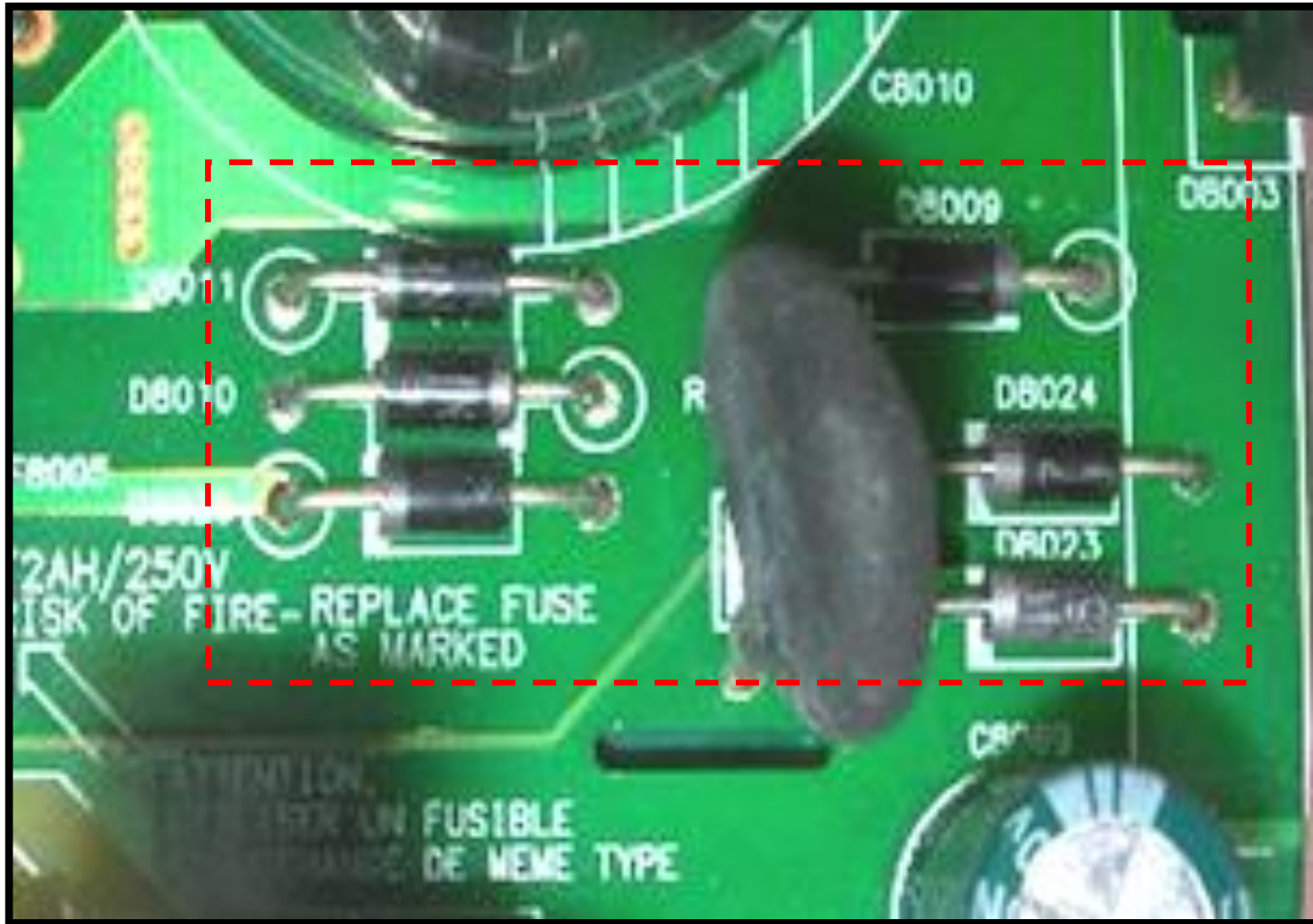
4. D8009, D8010, D8011, RT8001 SHORT/OPEN



Symptom 1: NO POWER

■ Check or change:

5. D8013, D8014, D8015, D8023, D8024, D8025, RT8002 SHORT/OPEN



Symptom 1: NO POWER

■ Check or change:

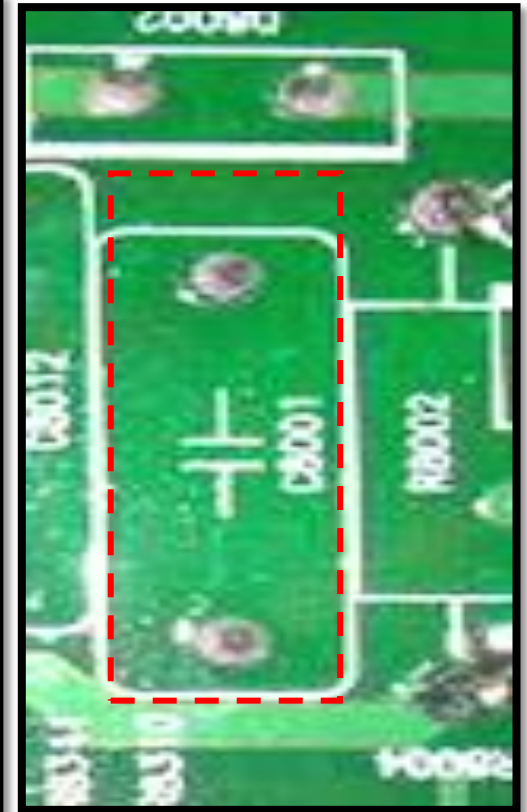
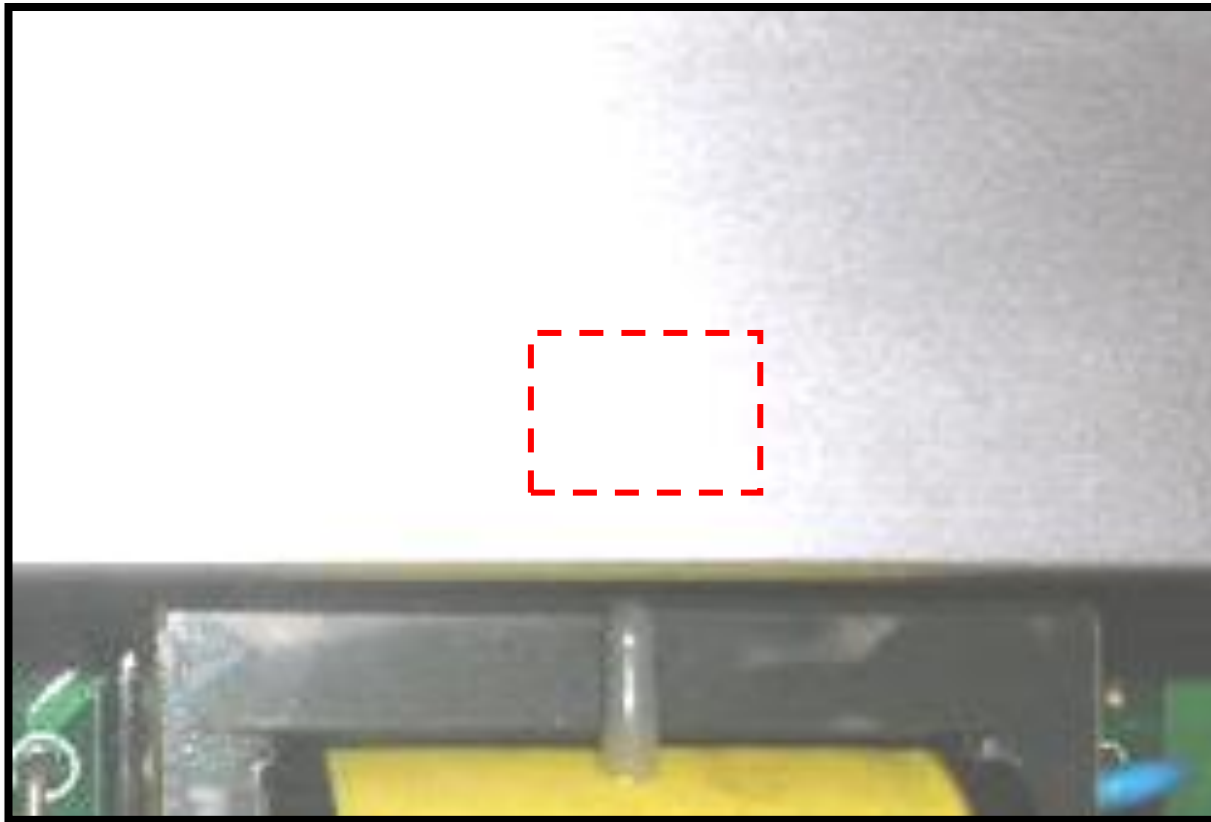
6. D8001, D8002, D8003, D8004 SHORT/OOPEN



Symptom 1: NO POWER

■ Check or change:

7. C8001 OPEN/SHORT/BURST (Under heat sink H8002 - only applicable to REV 0.55 OR REV 0.65)



Symptom 1: NO POWER

■ Check or change:

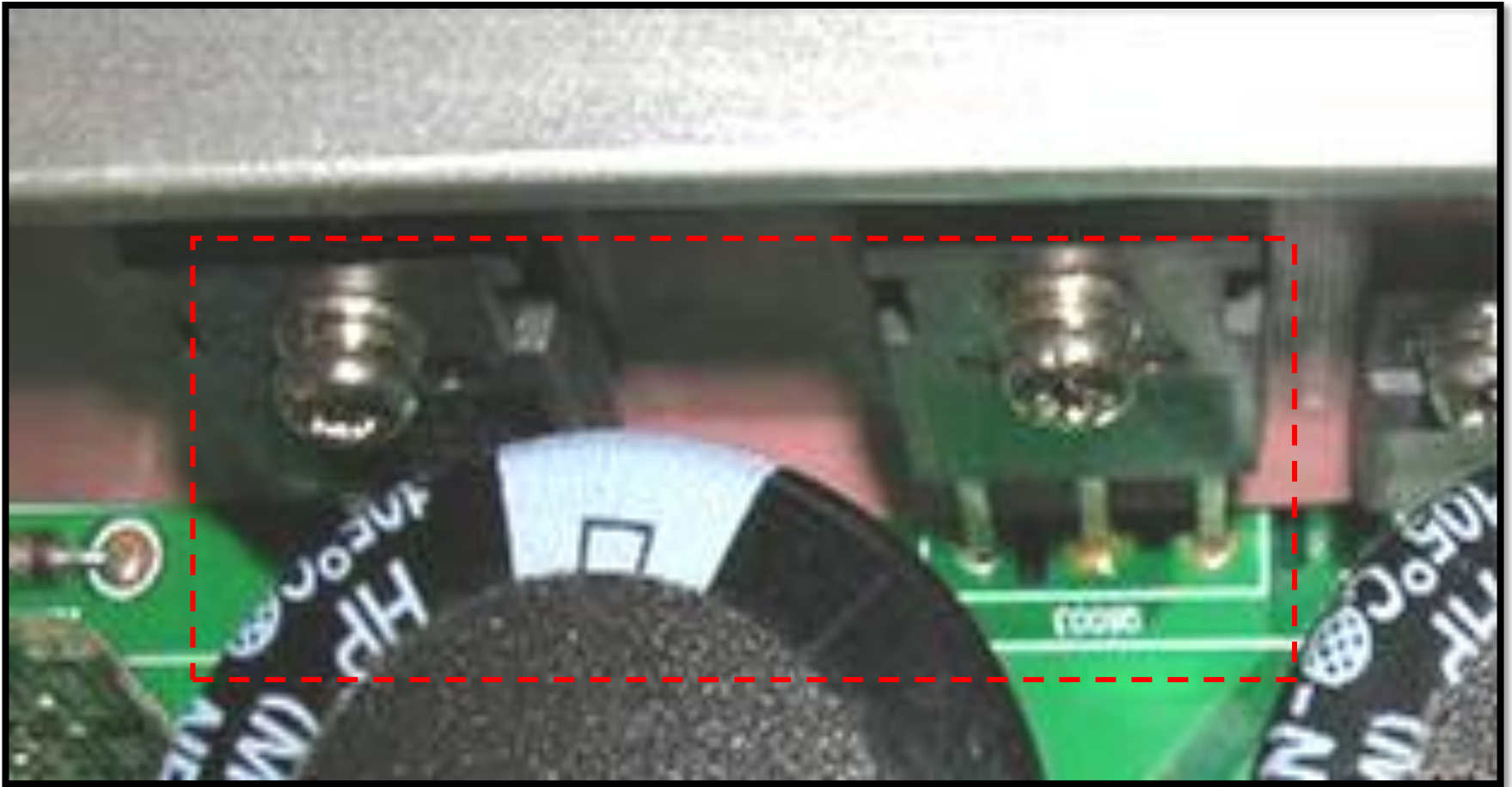
8. C8007, C8010 OPEN/SHORT/BURST



Symptom 1: NO POWER

■ Check or change:

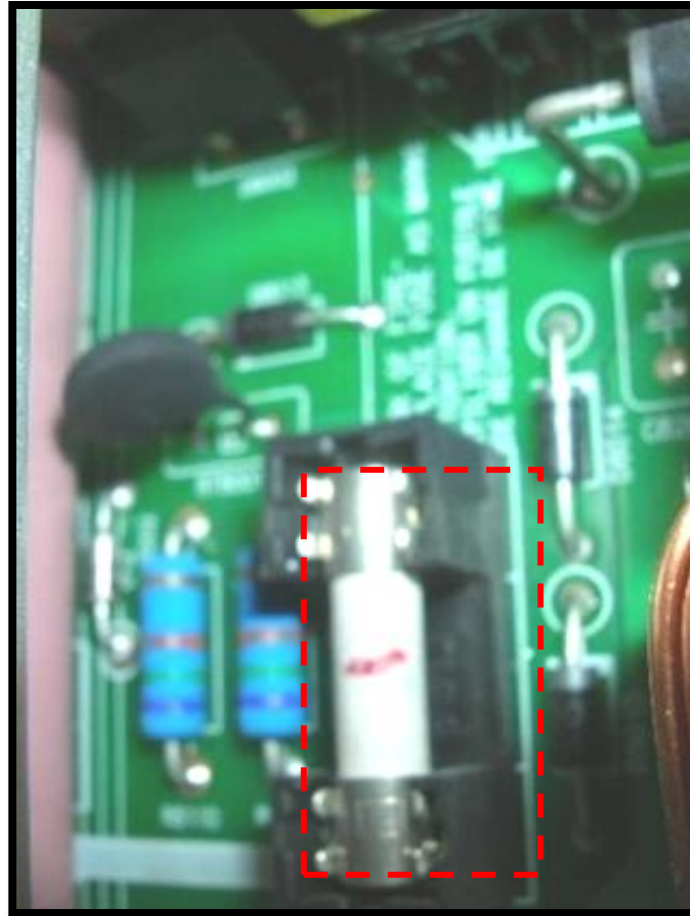
9. Q8001, Q8003 SHORT



Symptom 2: No 5V2

■ Check or change:

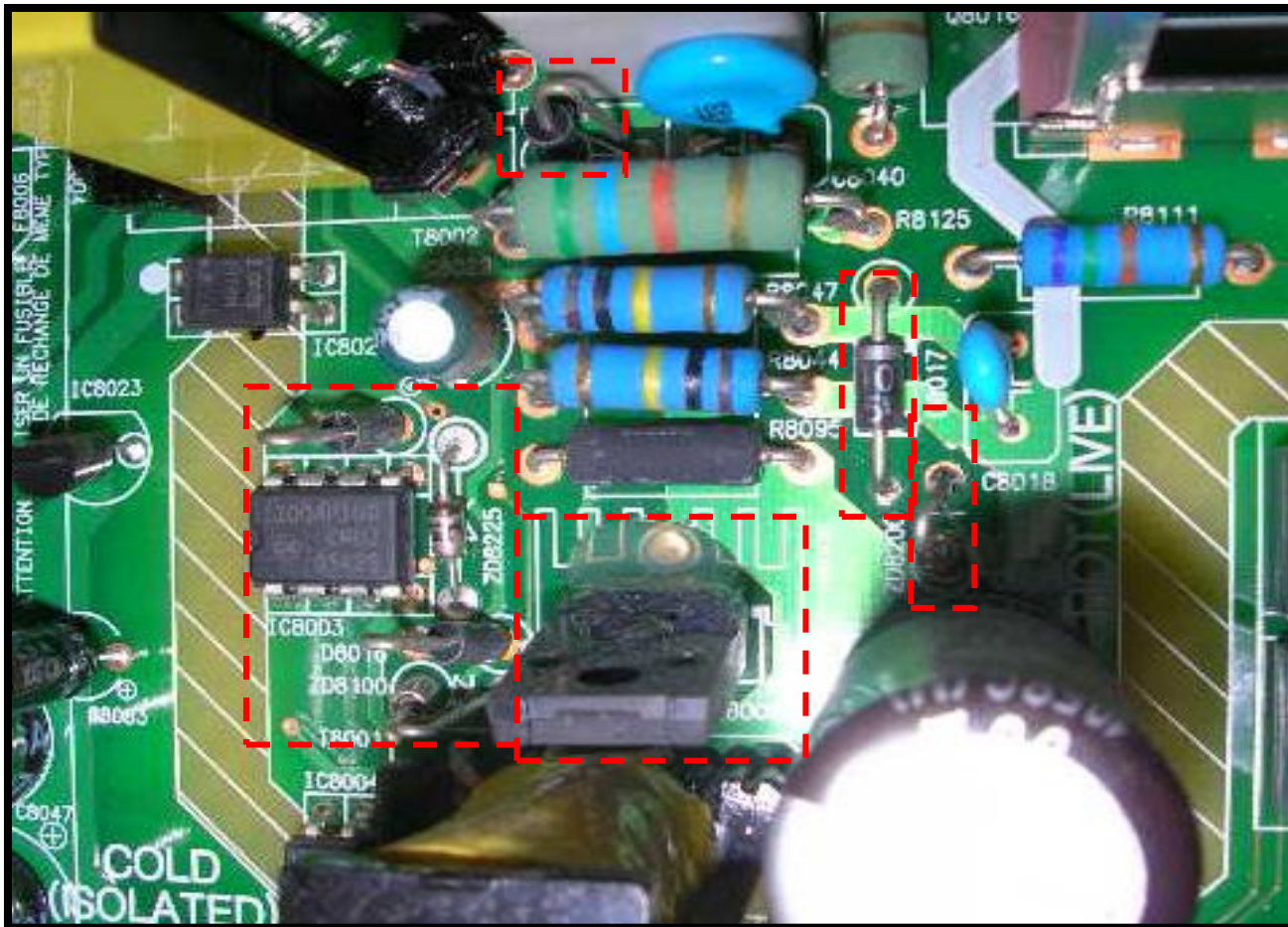
1. F8001(250V/8A) OPEN



Symptom 2: No 5V2

■ Check or change:

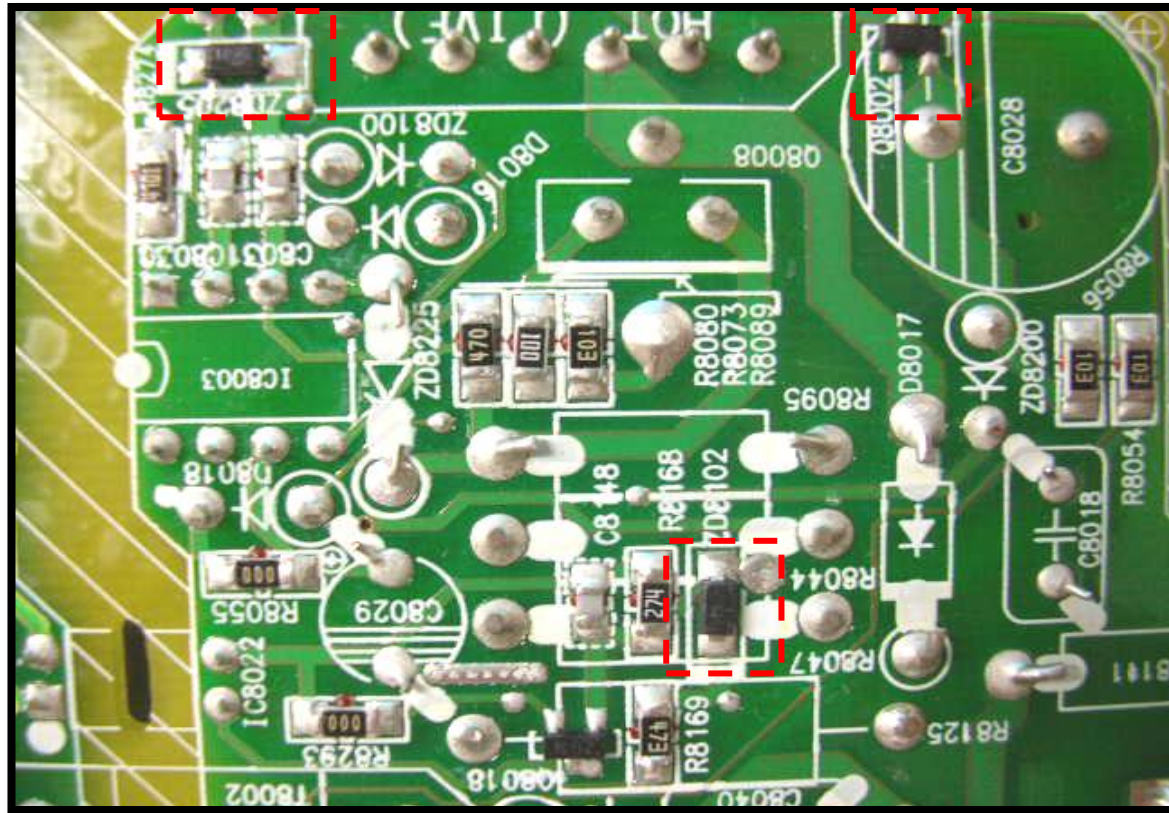
2. IC8003, Q8008, D8018, ZD8225, D8016, ZD8100 , D8017, ZD8200



Symptom 2: No 5V2

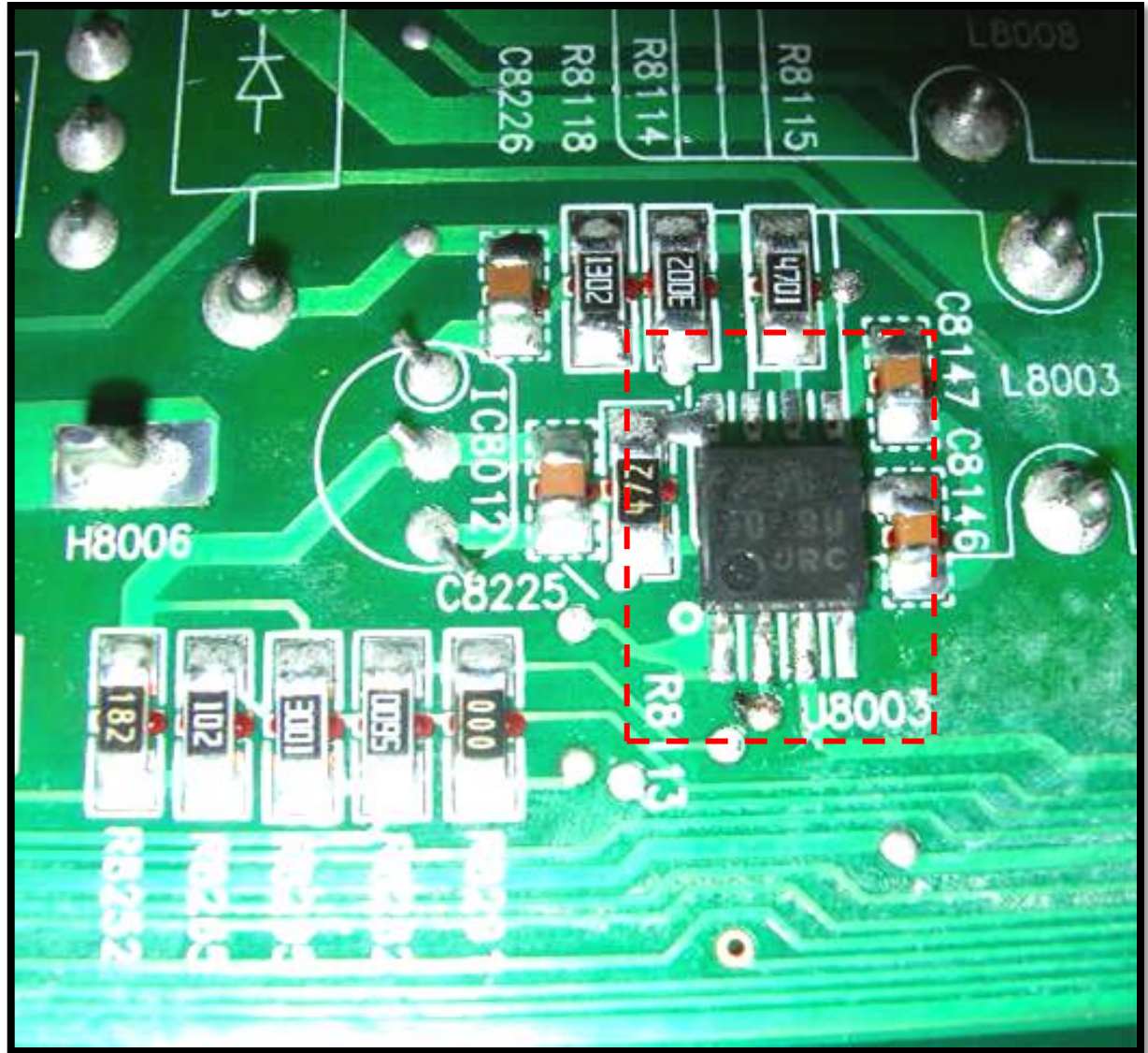
- Check or change:

3. Copper side: Q8002, ZD8205, ZD8102



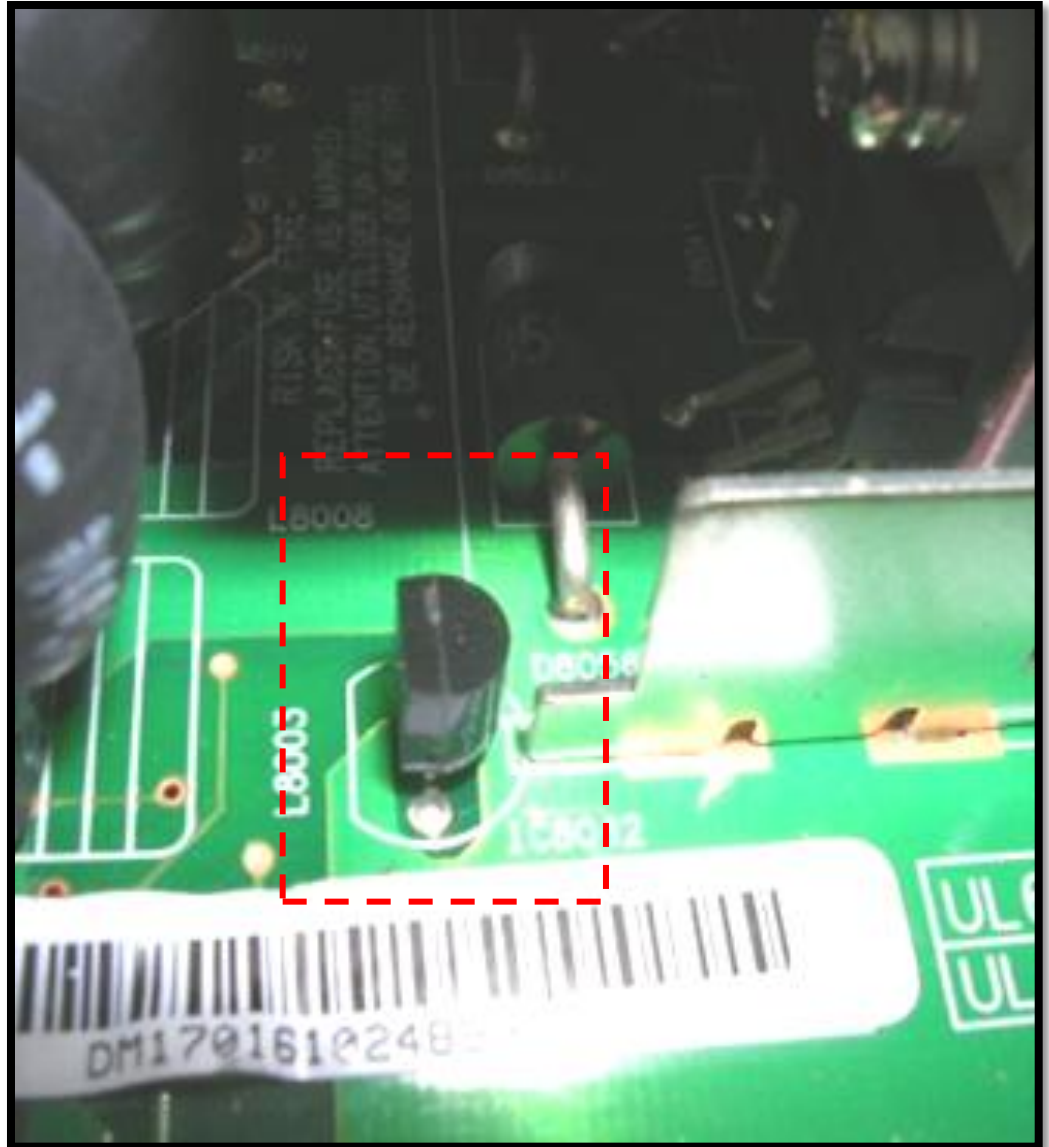
Symptom 3: Abnormal relay On/Off

- Check or change:
1) U8003 DEAD



Symptom 3: Abnormal relay On/Off

- Check or change:
2) IC8012 DEAD



Symptom 3: Abnormal relay On/Off

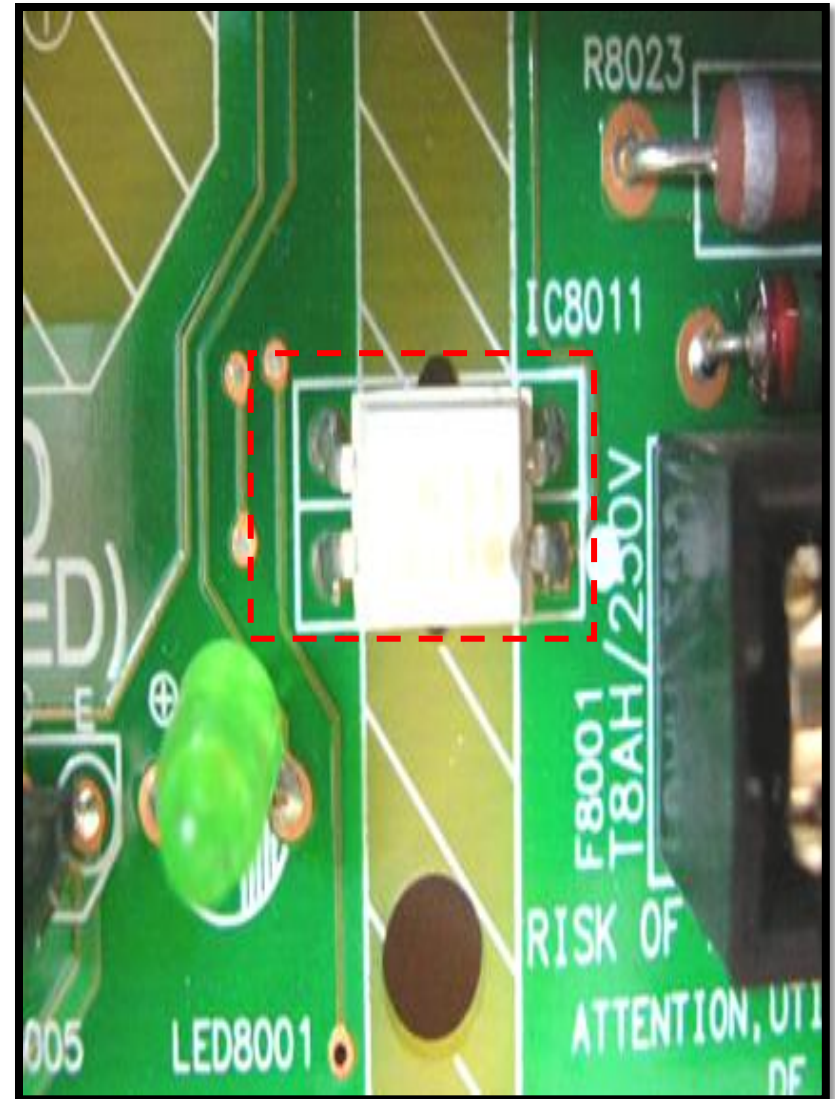
■ Check or change:

3) HIC8001 ALARM BOARD



Symptom 3: Abnormal relay On/Off

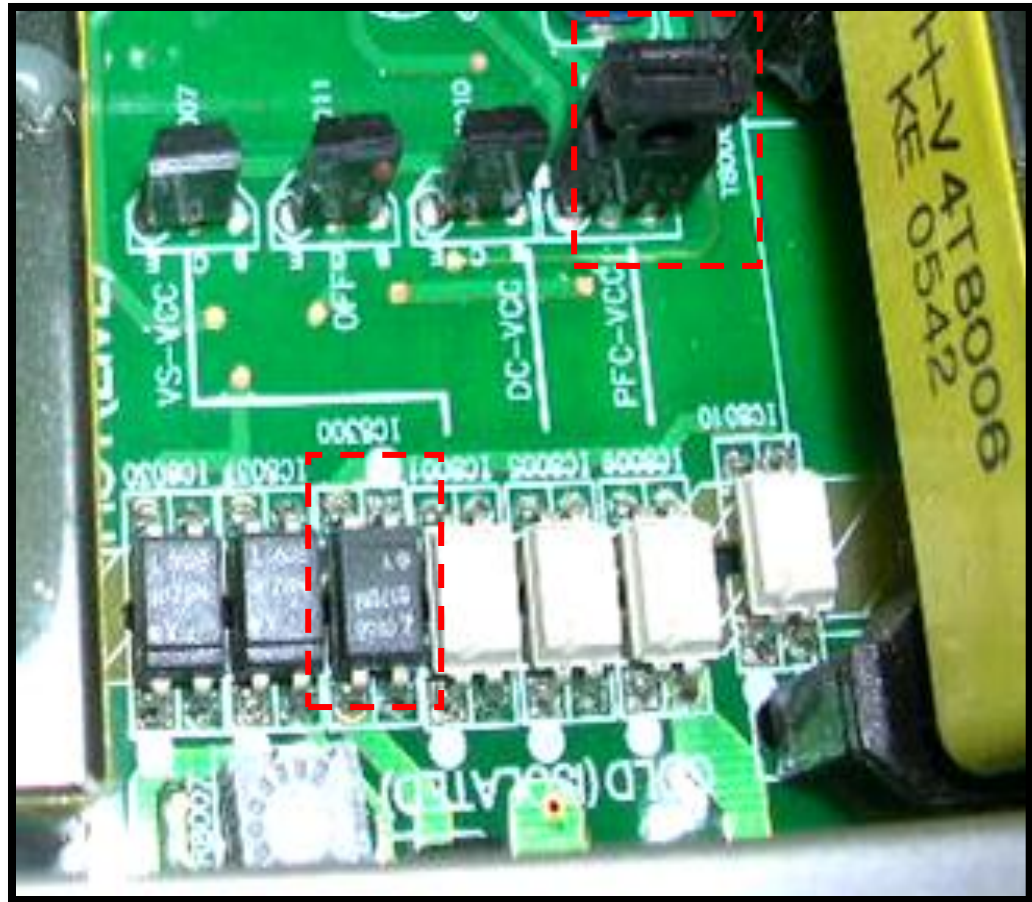
- Check or change:
 - 4) IC8011 DEAD



Symptom 4: Error 10 (PFC_OK Protection)

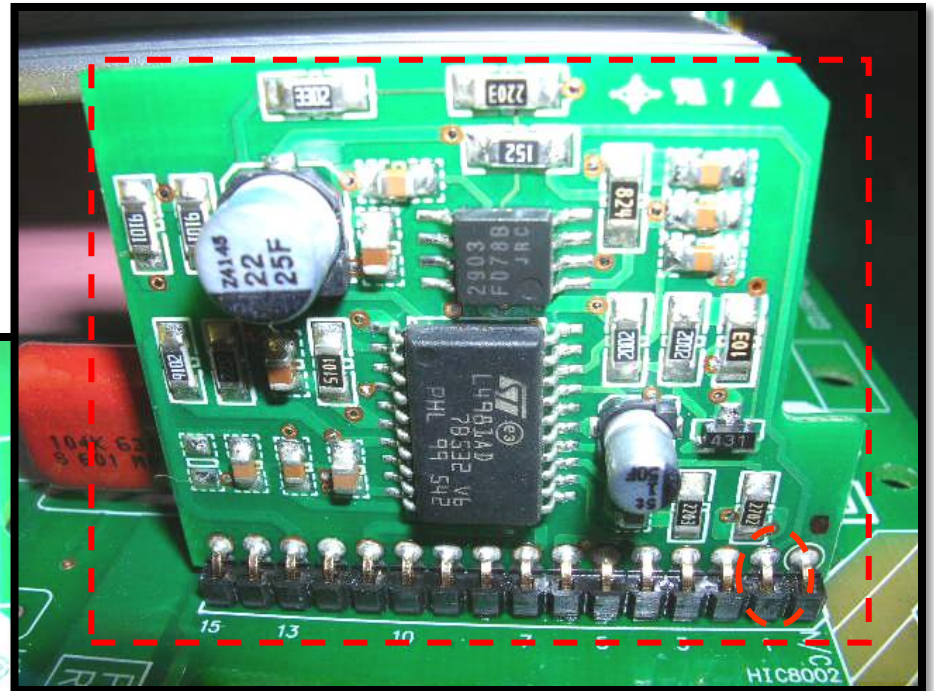
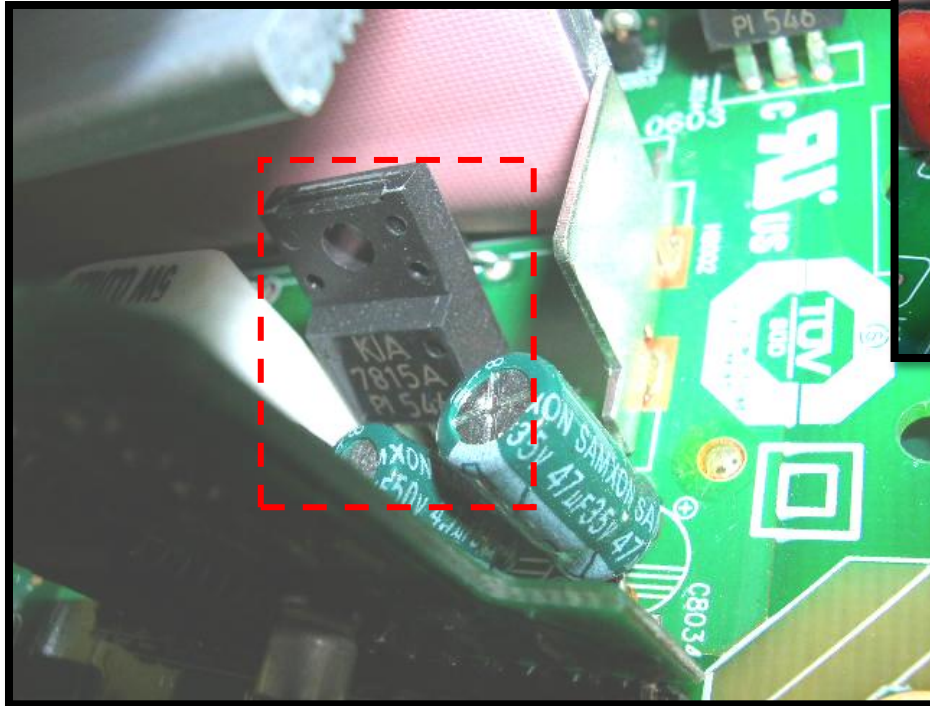
■ Check or change:

1) IC8007 and/or Q8013



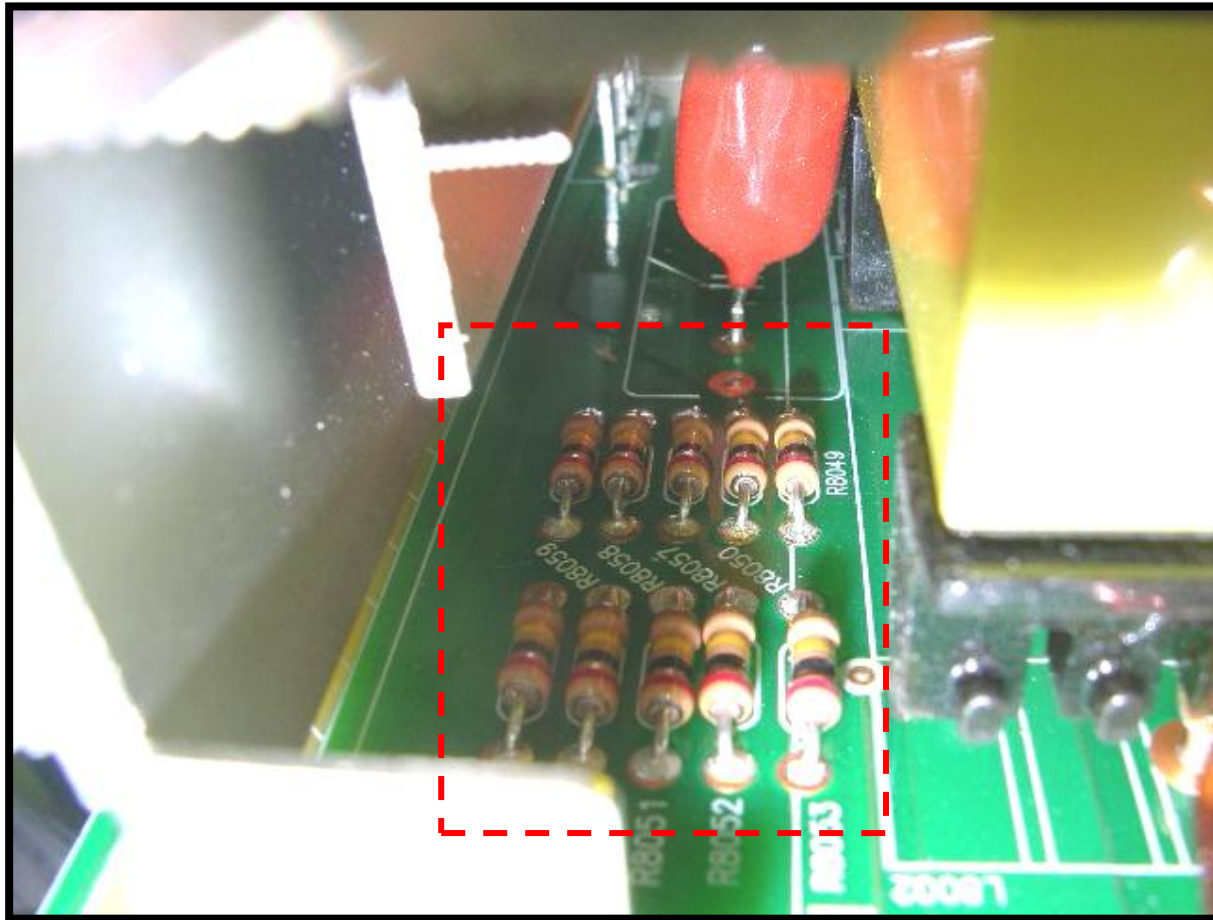
Symptom 4: Error 10 (PFC_OK Protection)

- Check or change:
- 2) HIC8002 PIN 1 or IC8007



Symptom 4: Error 10 (PFC_OK Protection)

- Check or change:
3) PFC Feedback resistors



Symptom 5: Error 6 and/or Error 12

■ Check or change:

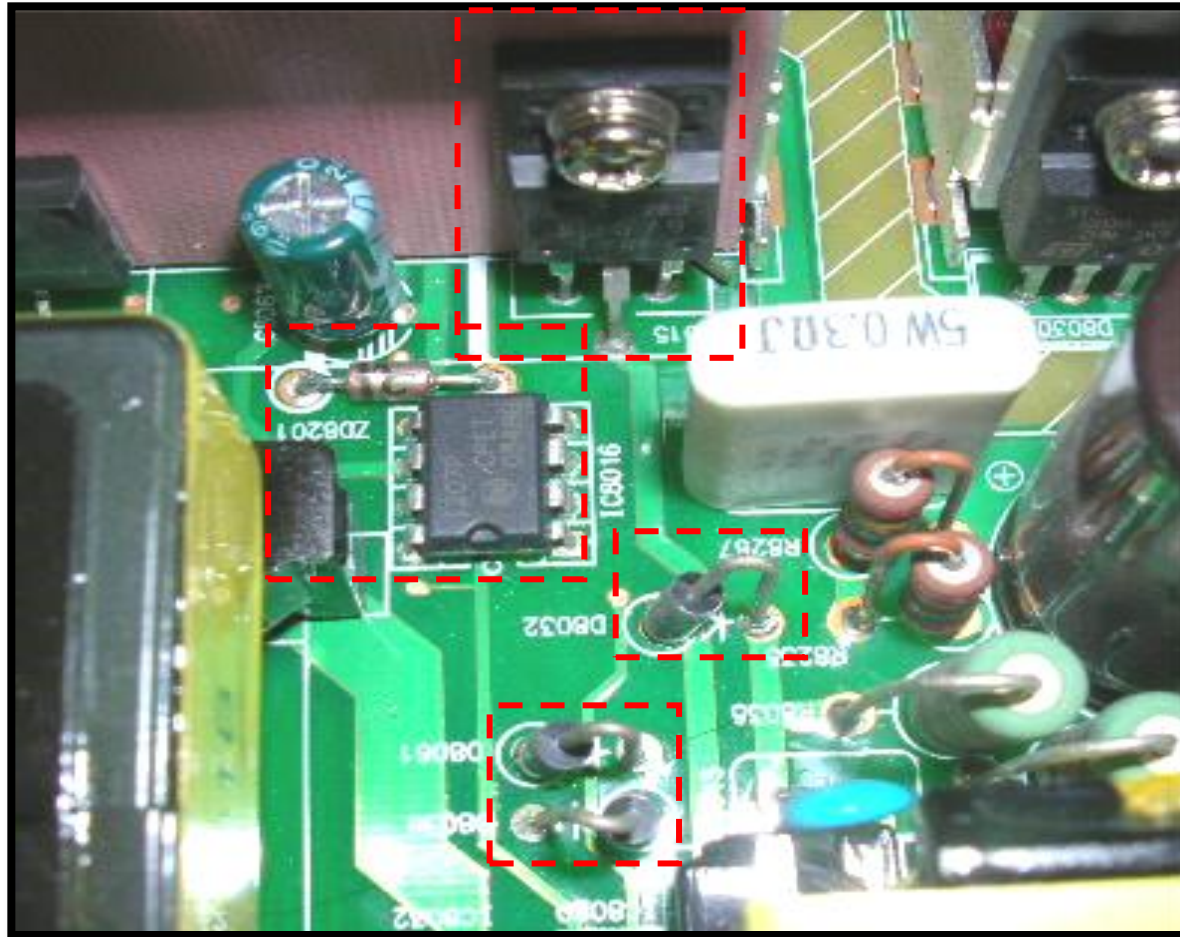
1) F8005(250V/2A) OPEN



Symptom 5: Error 6 and/or Error 12

■ Check or change:

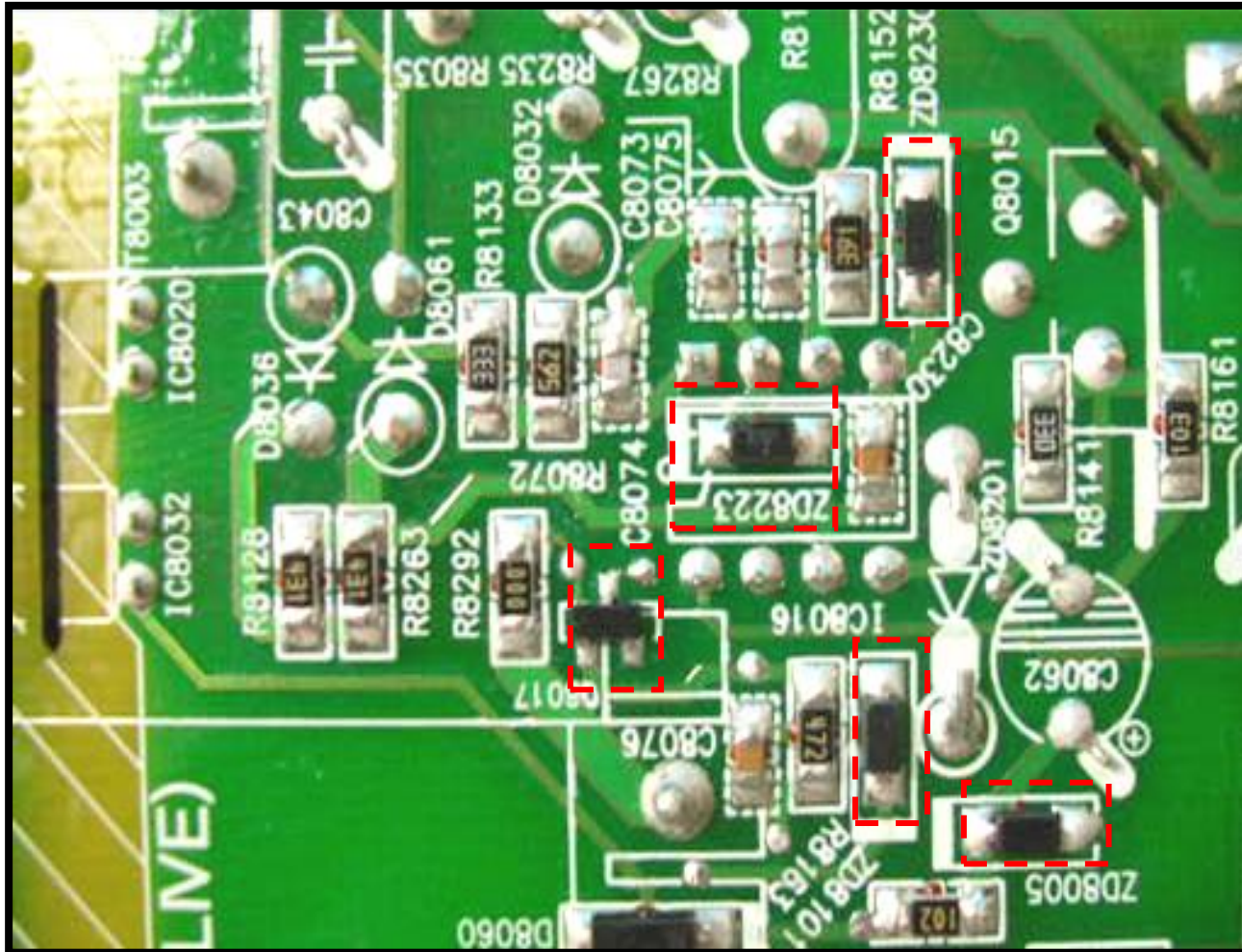
2a) TOP SIDE: IC8016, Q8015, D8032, D8036, D8061, ZD8201



Symptom 5: Error 6 and/or Error 12

■ Check or change:

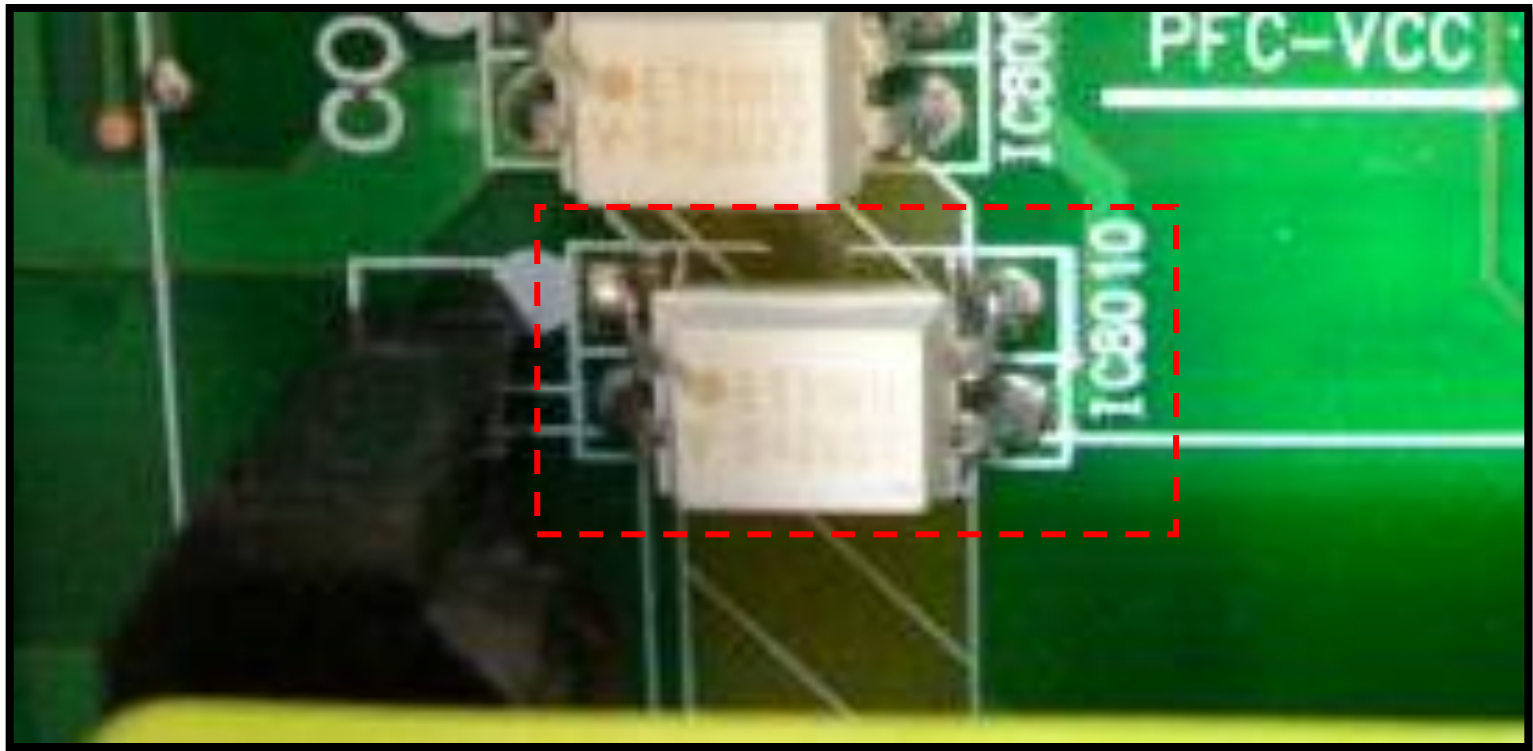
2b) BOTTOM SIDE: ZD8223, ZD8230, Q8017, ZD8101, ZD8005



Symptom 5: Error 6 and/or Error 12

■ Check or change:

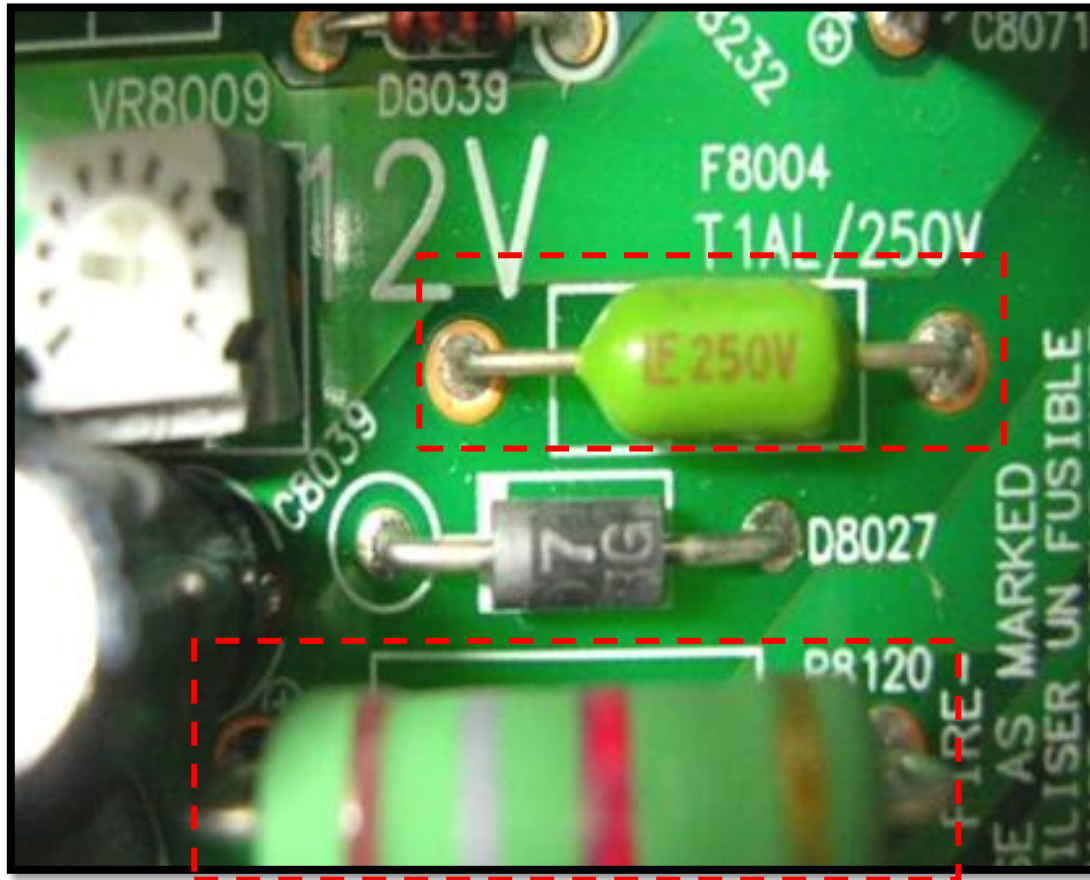
3) IC8010



Symptom 5: Error 6 and/or Error 12

■ Check or change:

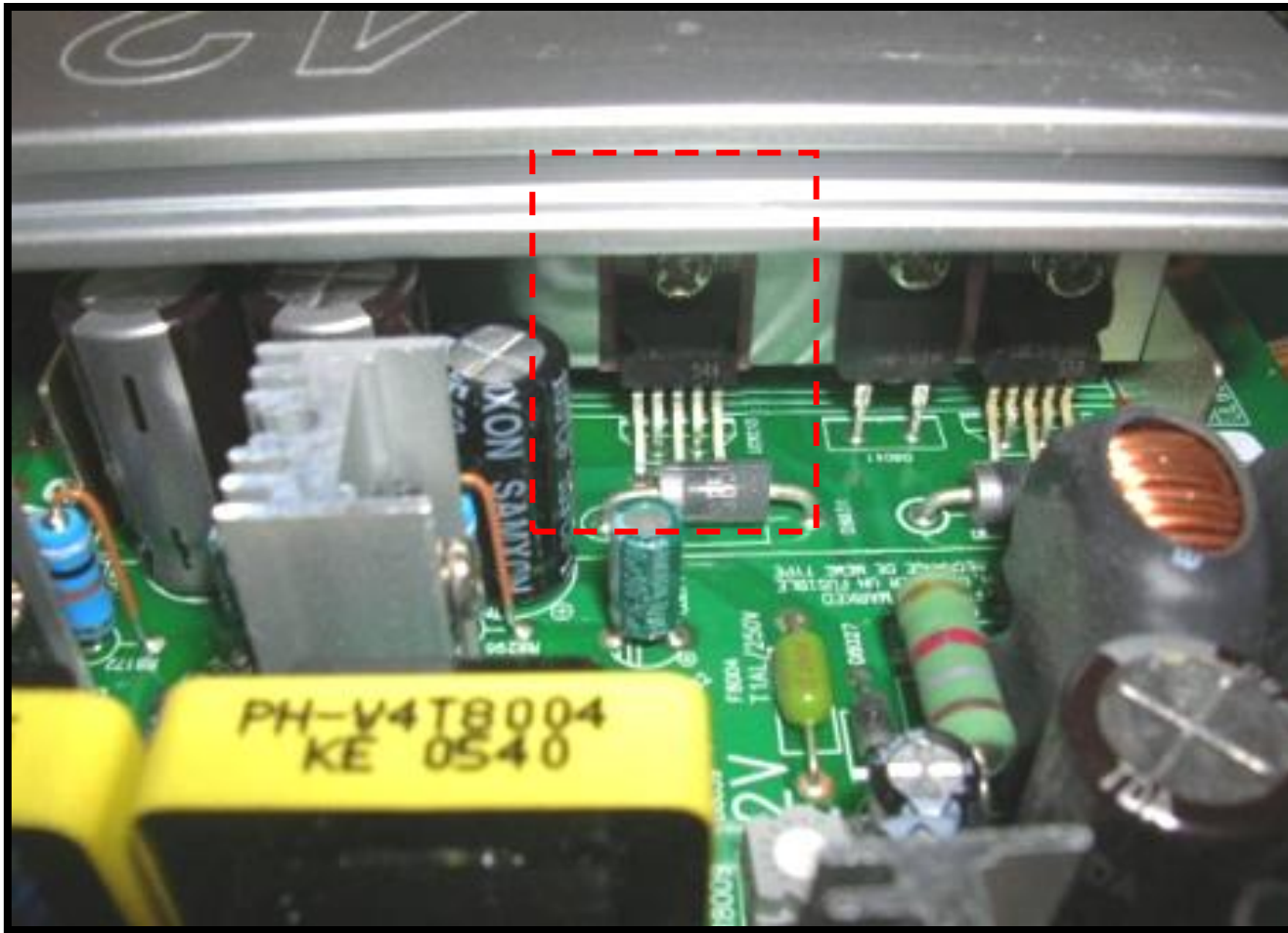
4) Vtun NO VOLTAGE → F8004 OPEN, R8120 OPEN



Symptom 5: Error 6 and/or Error 12

■ Check or change:

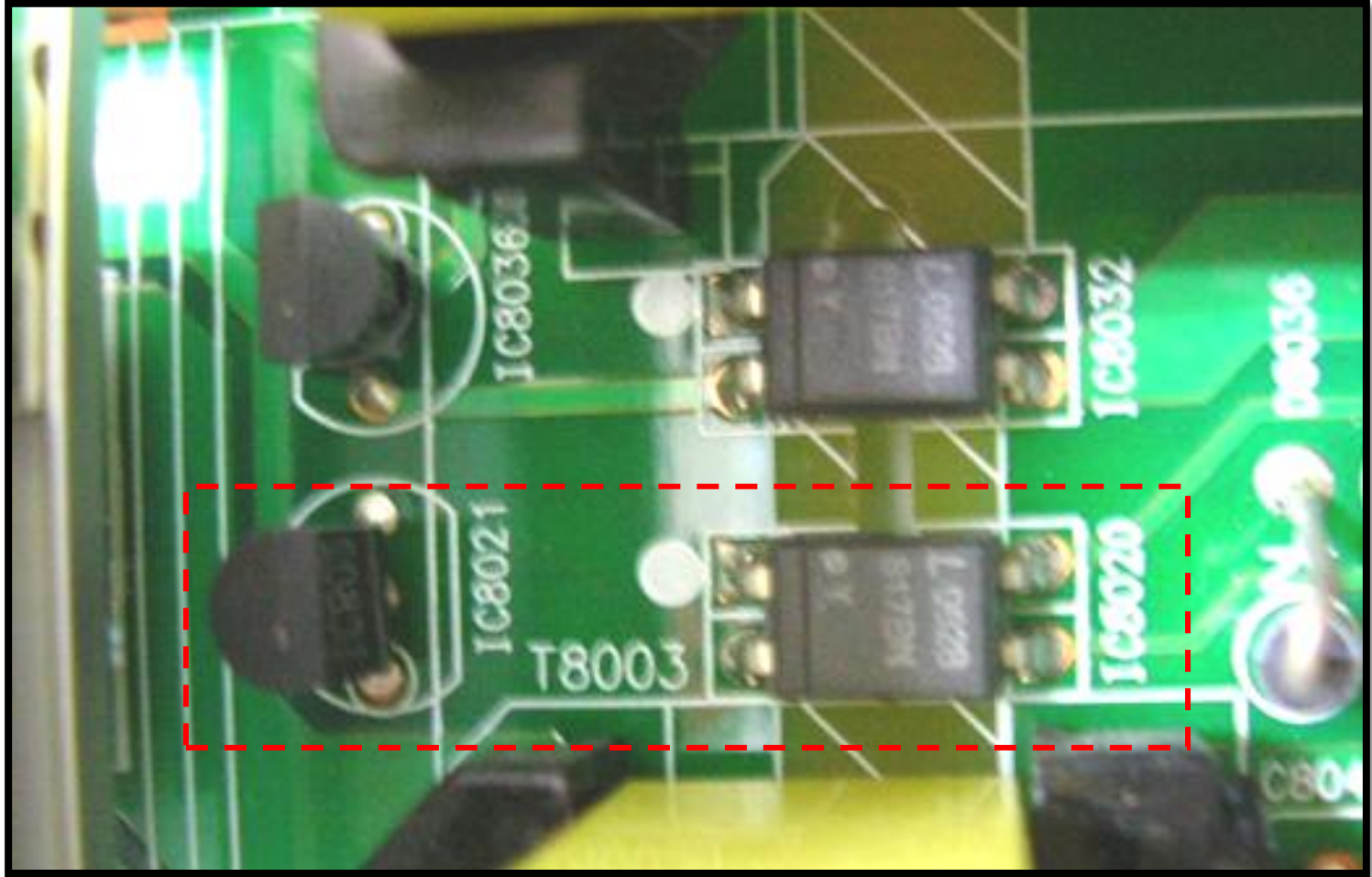
5) 5V_SW NO VOLTAGE → IC8013



Symptom 5: Error 6 and/or Error 12

■ Check or change:

6) 12V NO VOLTAGE → IC8020, IC8021



Symptom 5: Error 6 and/or Error 12

■ Check or change:

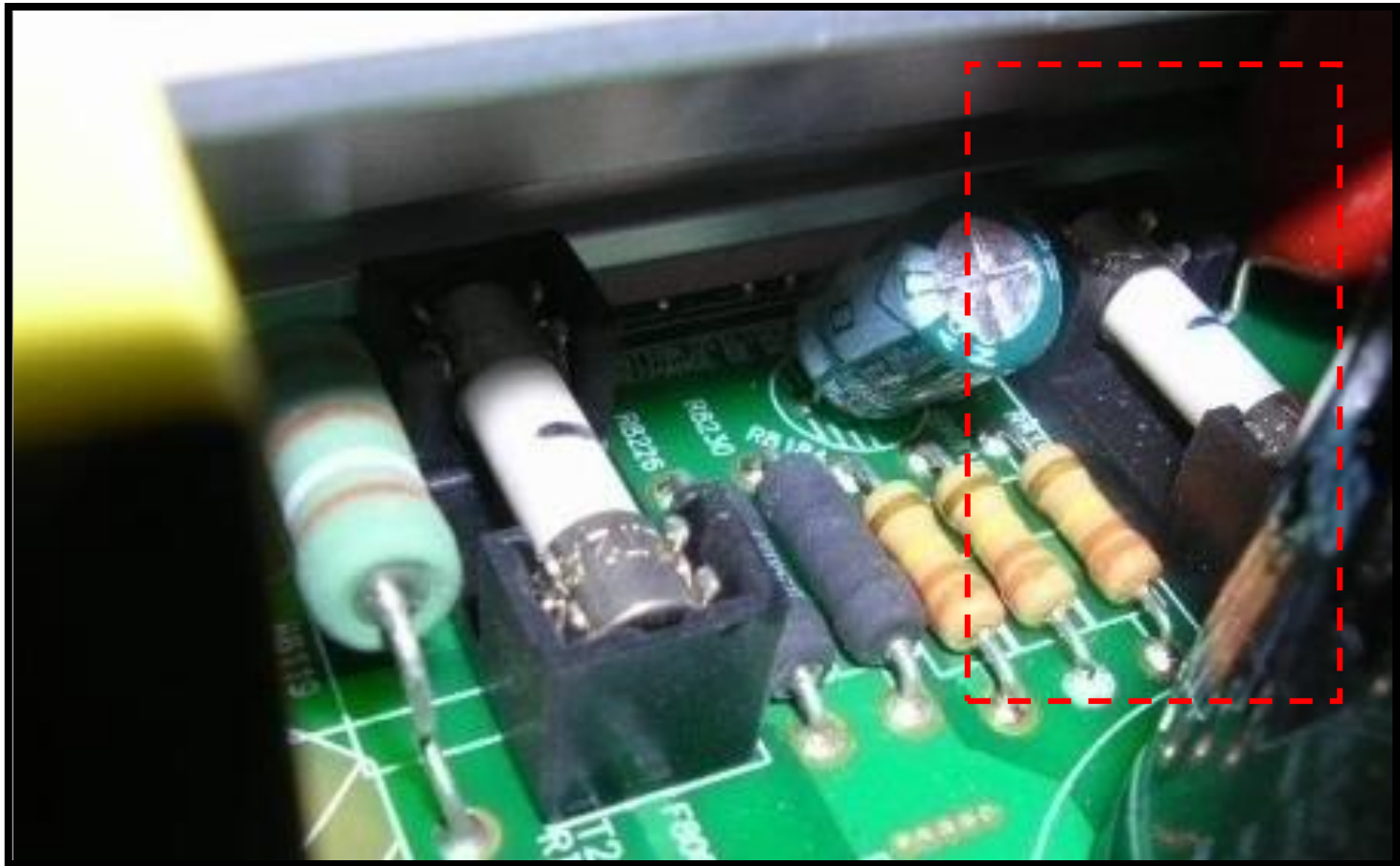
7) 12VL NO VOLTAGE → Q8220



Symptom 6: Error 13 and/or Error 4

■ Check or change:

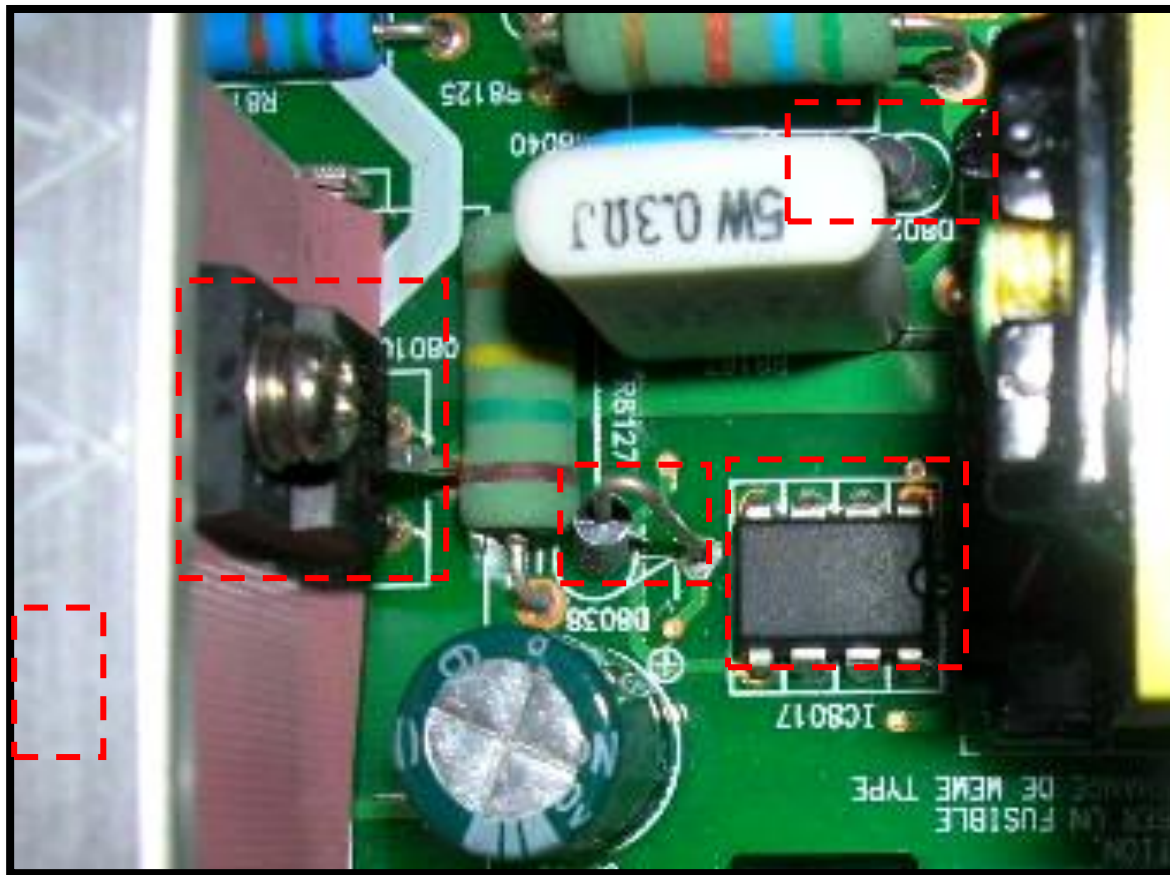
1) F8007 (250V/4A) OPEN



Symptom 6: Error 13 and/or Error 4

■ Check or change:

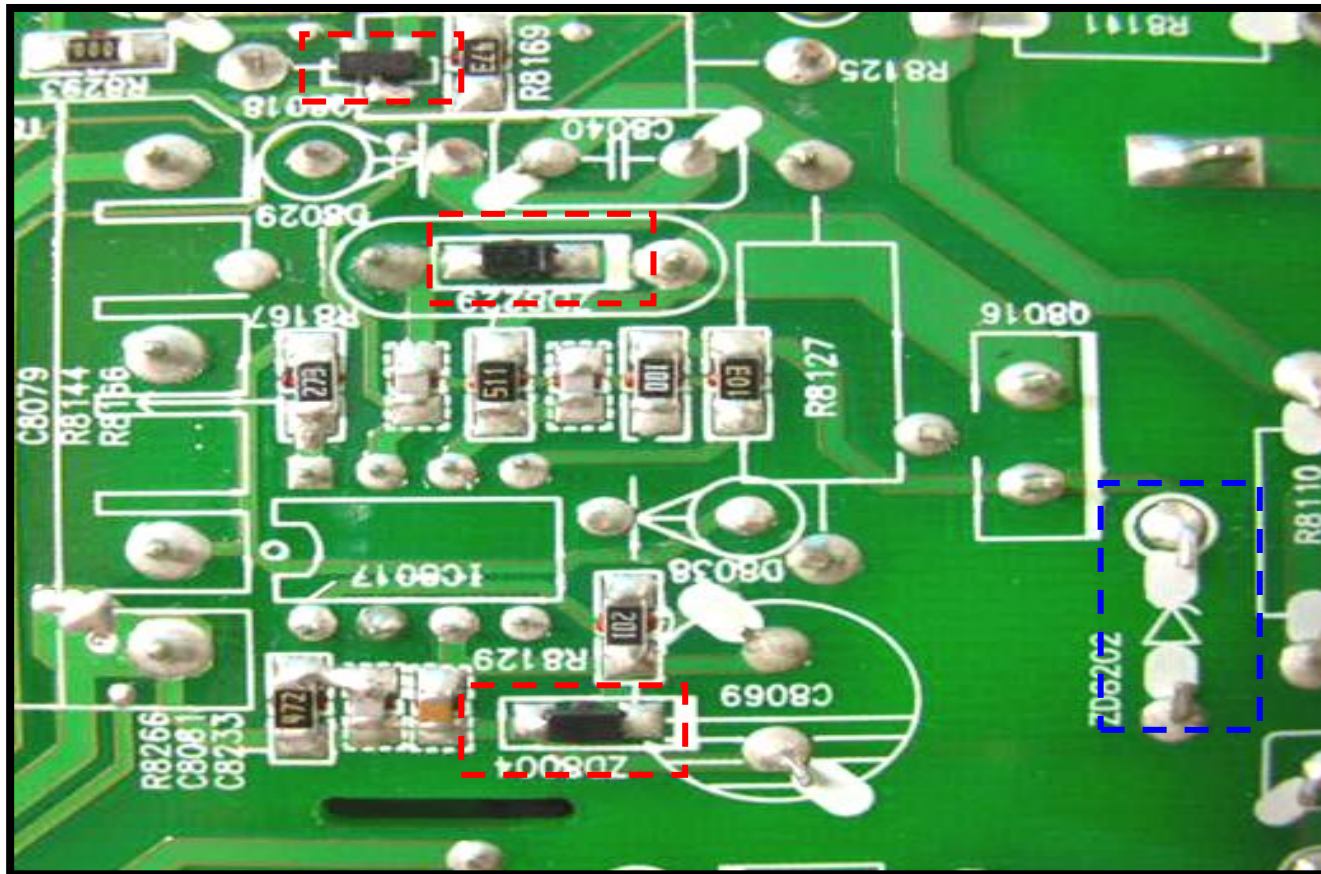
2a) IC8017, Q8016, D8038, D8029, ZD8202(Below heat sink H8002)



Symptom 6: Error 13 and/or Error 4

- Check or change:

2b) ZD8004, ZD8229, Q8018



Symptom 6: Error 13 and/or Error 4

■ Check or change:

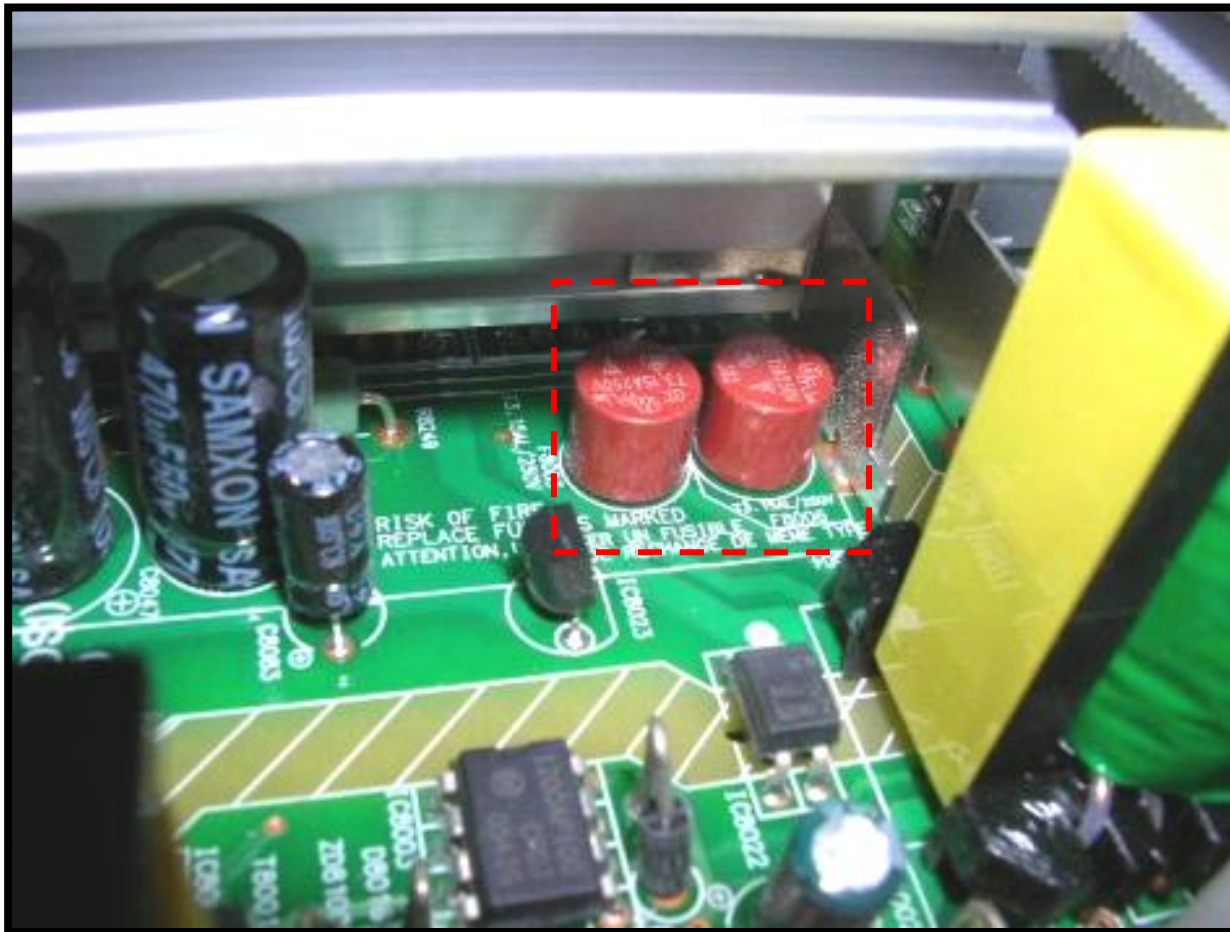
3) SEQUENCE VOLTAGE “B” 18V CHECK (IC8005)

I couldn't find the IC8005
in Rev 0.7 PSU. If you
find it in other Revisions,
please let me know

Symptom 6: Error 13 and/or Error 4

■ Check or change:

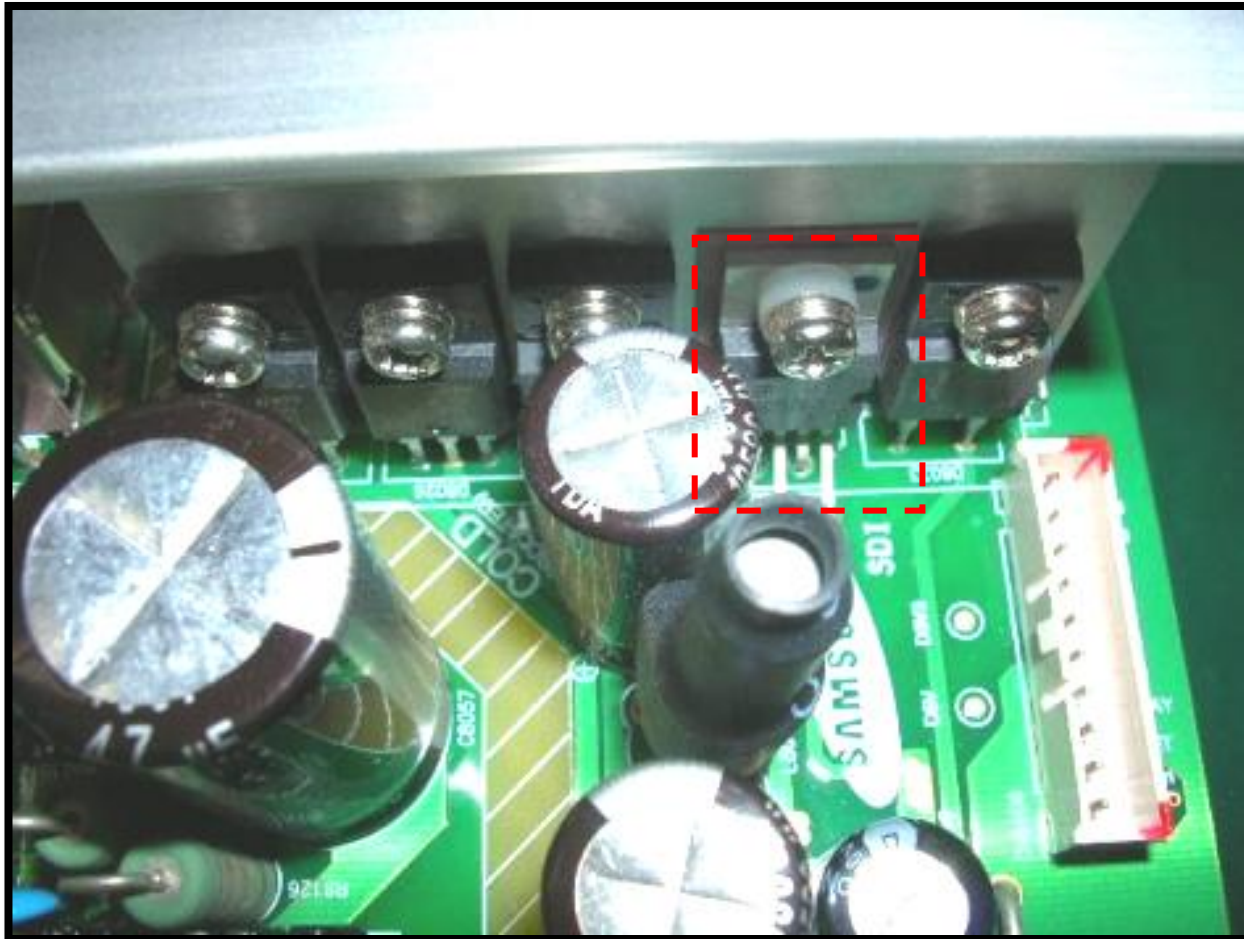
4) $V_{snd} \pm 18V$ NO VOLTAGE → F8003(250V/3.15A) OR F8006(250V/3.15A) OPEN



Symptom 6: Error 13 and/or Error 4

■ Check or change:

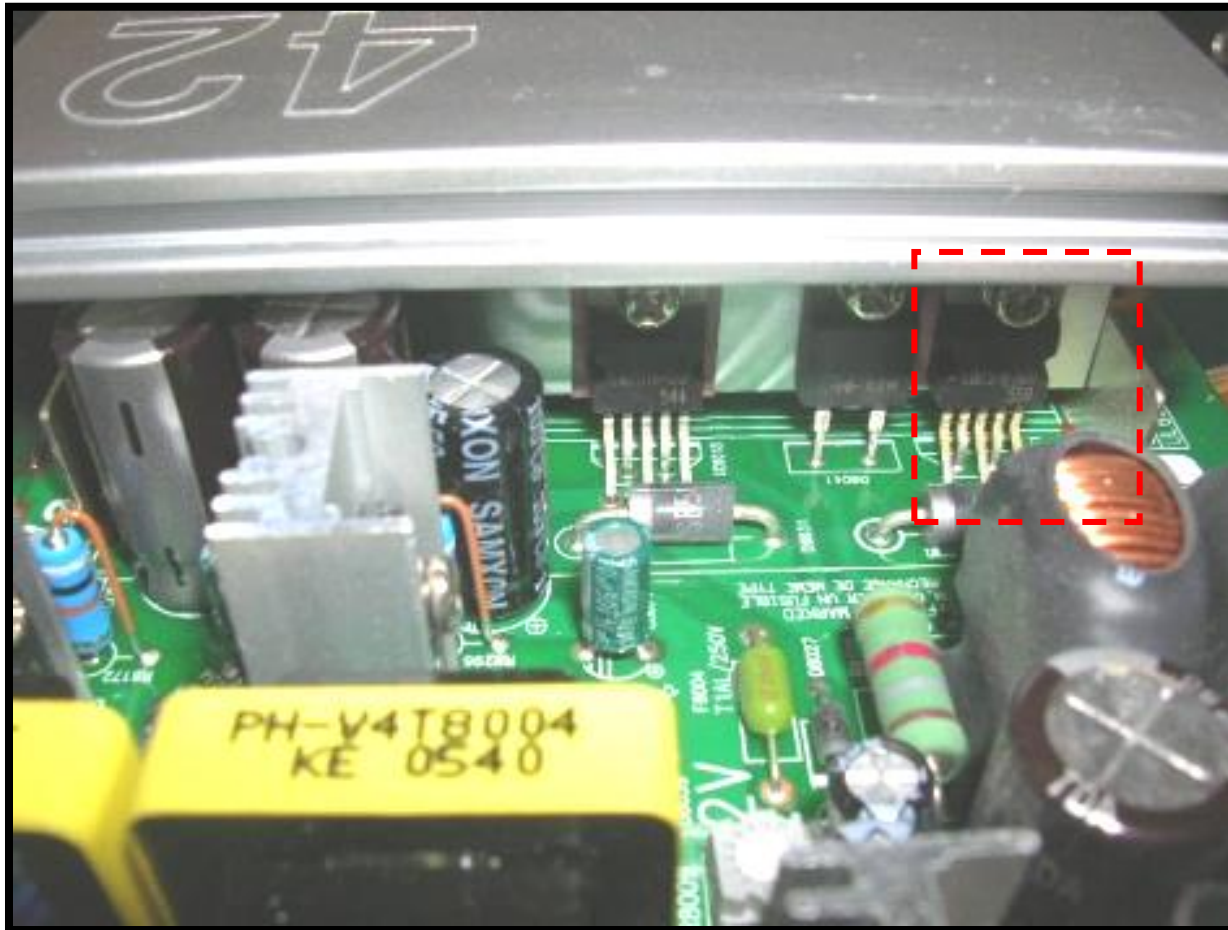
5) D5V NO VOLTAGE → IC8014 CHANGE



Symptom 6: Error 13 and/or Error 4

■ Check or change:

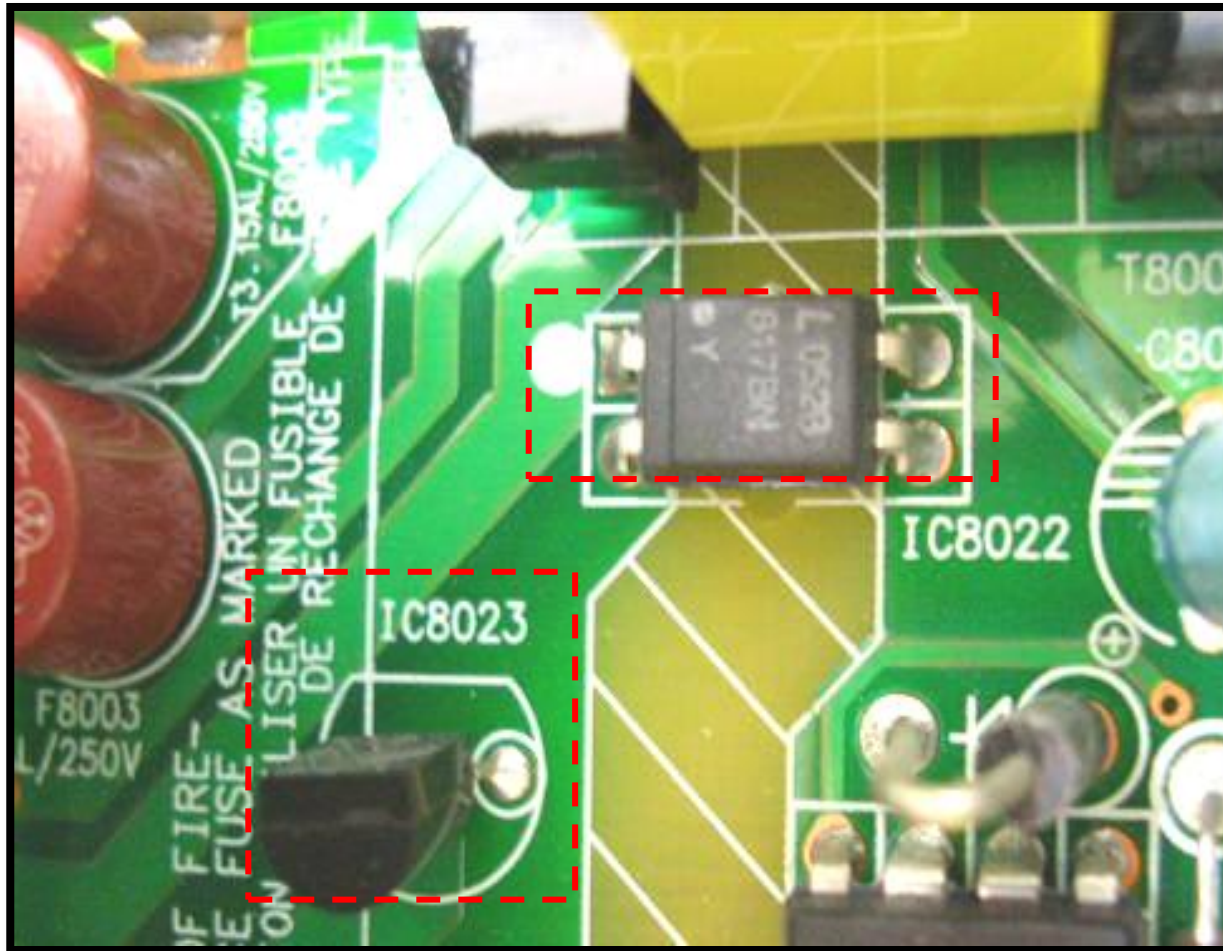
6) 8V6 NO VOLTAGE → IC8041 CHANGE



Symptom 6: Error 13 and/or Error 4

■ Check or change:

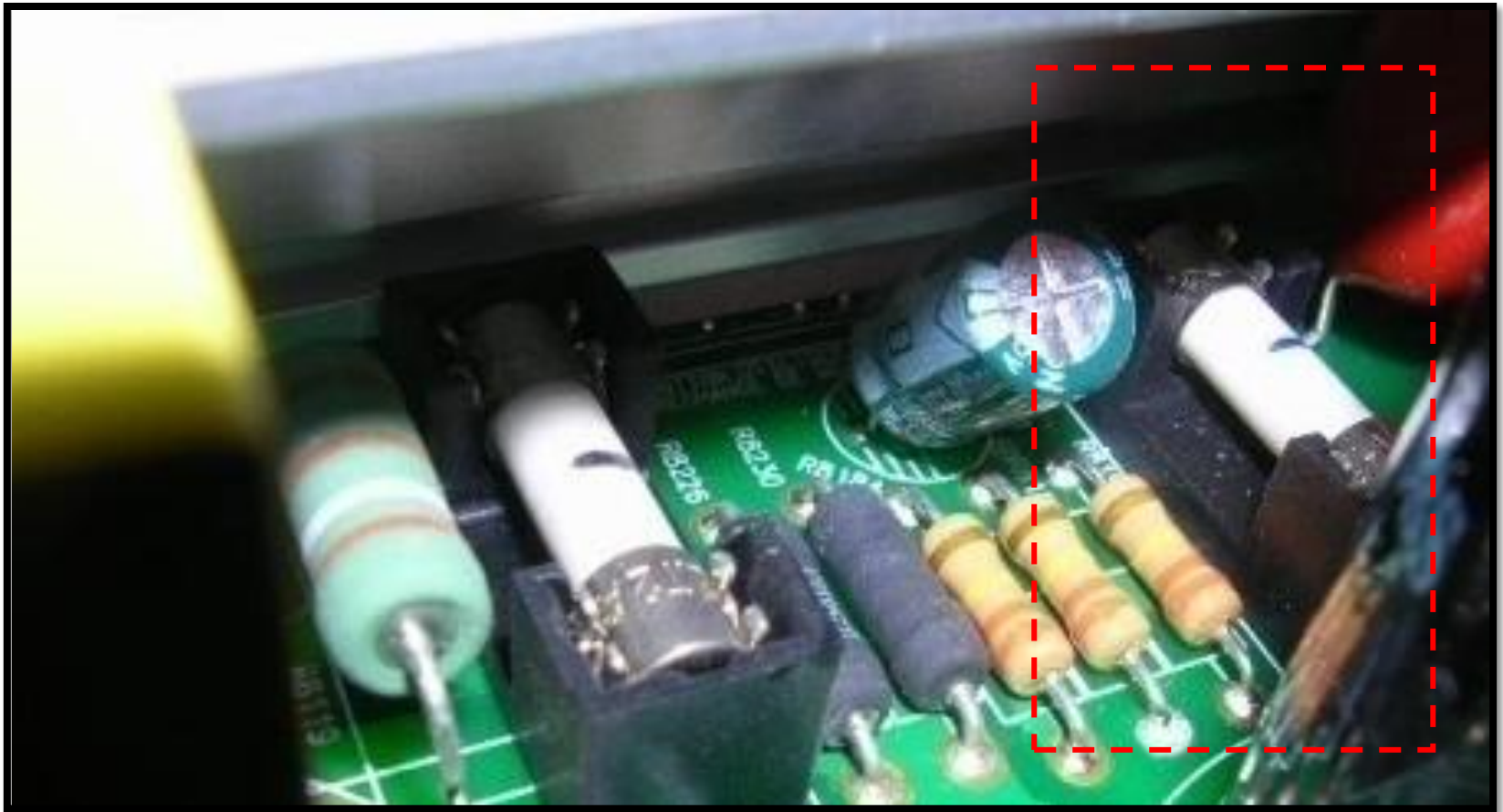
7) D3VD NO VOLTAGE → IC8022, IC8023



Symptom 7: Error 1 (Va Protection)

■ Check or change:

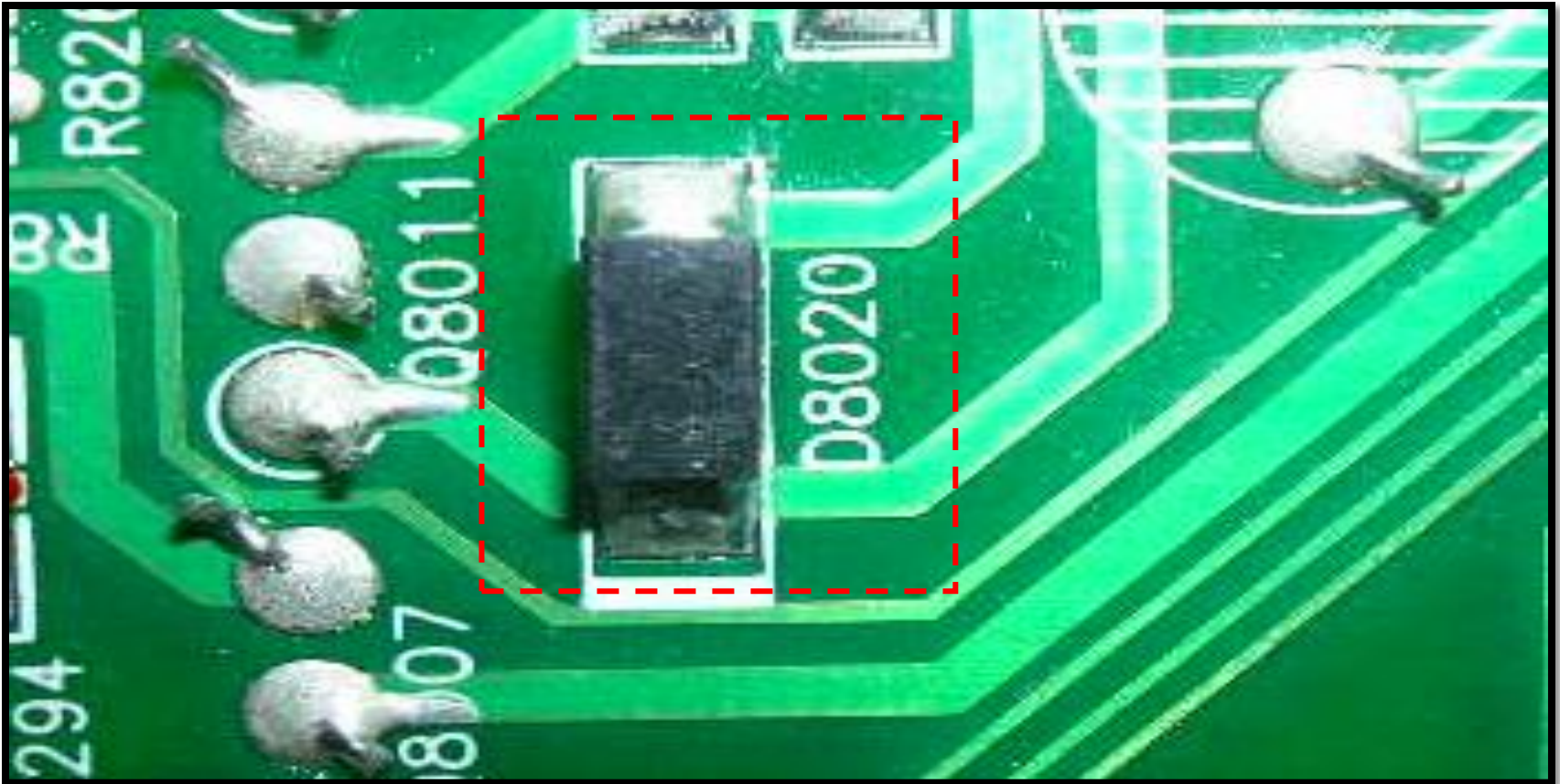
1) F8007 (250V/4A) OPEN



Symptom 7: Error 1 (Va Protection)

■ Check or change:

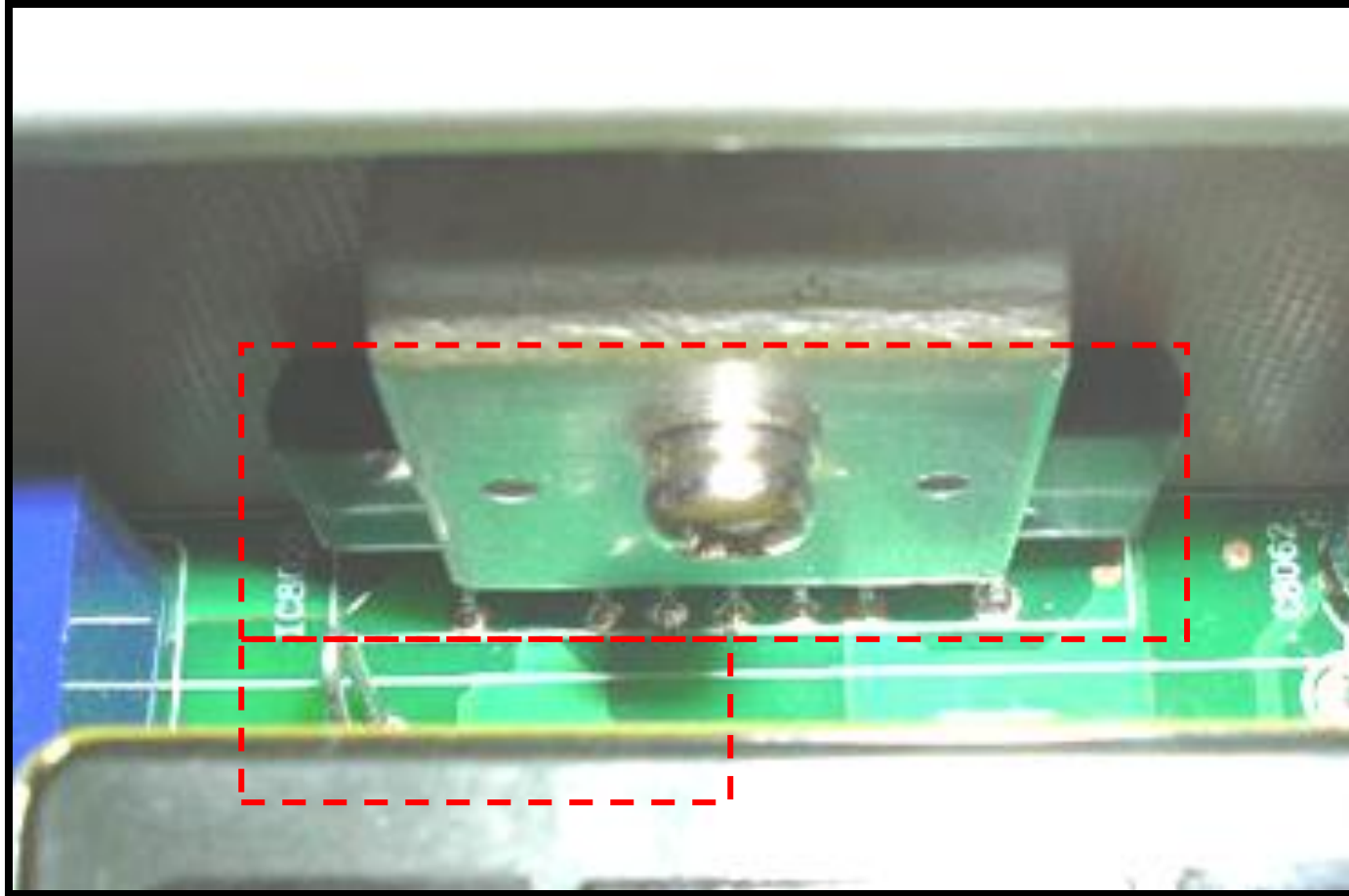
2) SEQUENCE VOLTAGE “DC_VCC” 18V: CHECK (D8020)



Symptom 7: Error 1 (Va Protection)

■ Check or change:

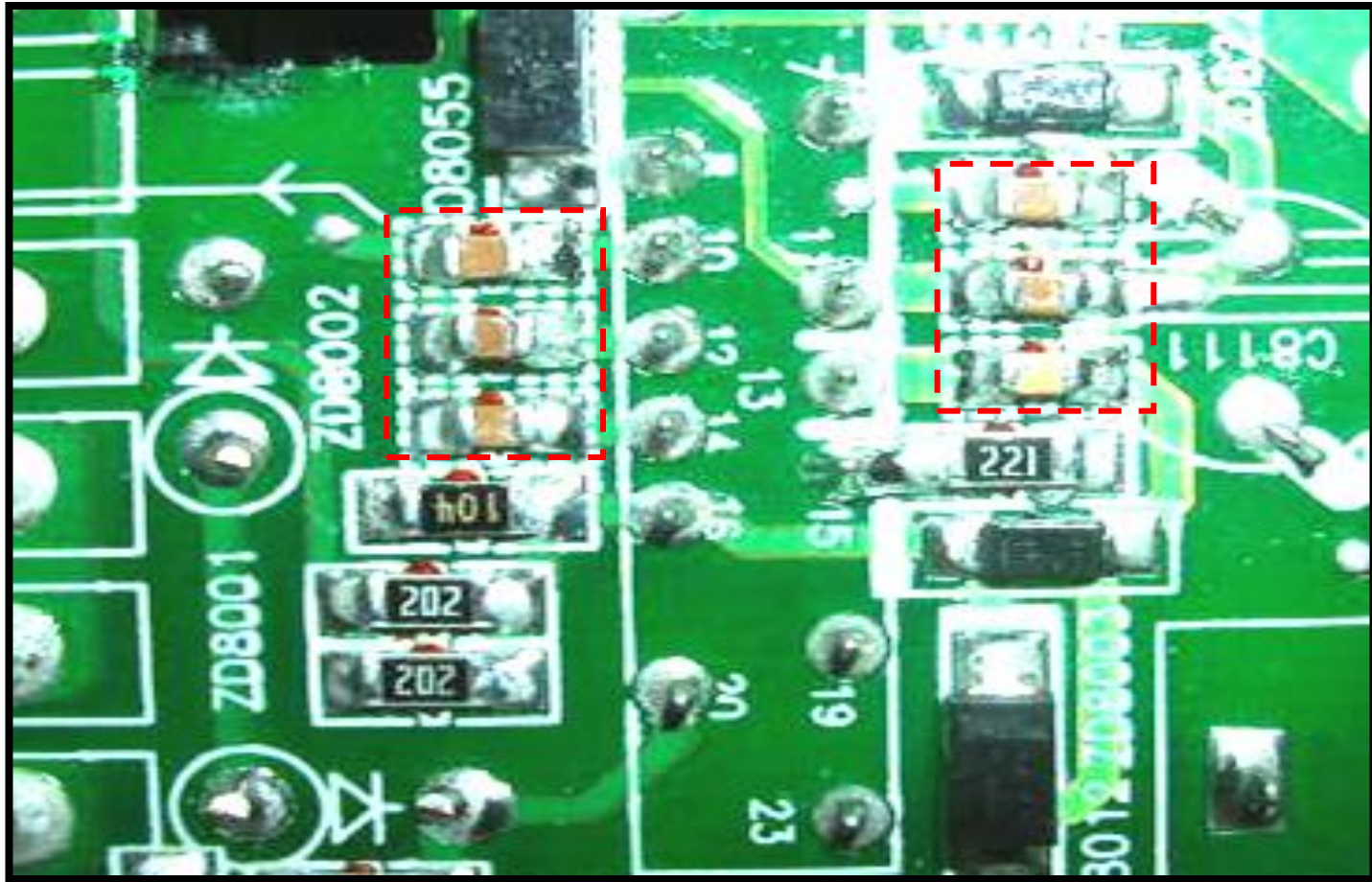
3) IC8028, ZD8001, ZD8002



Symptom 7: Error 1 (Va Protection)

■ Check or change:

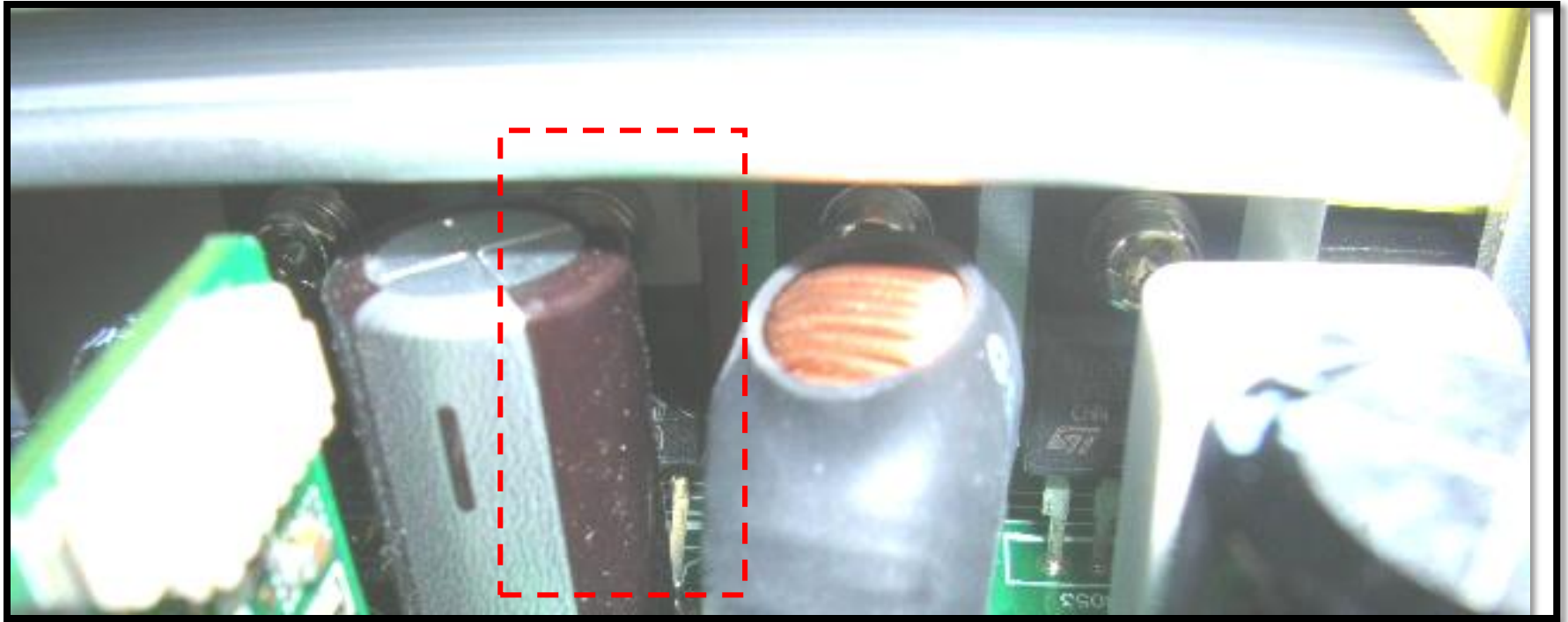
4) C8112, C8107, C8102, C8116, C8103, C8110



Symptom 7: Error 1 (Va Protection)

■ Check or change:

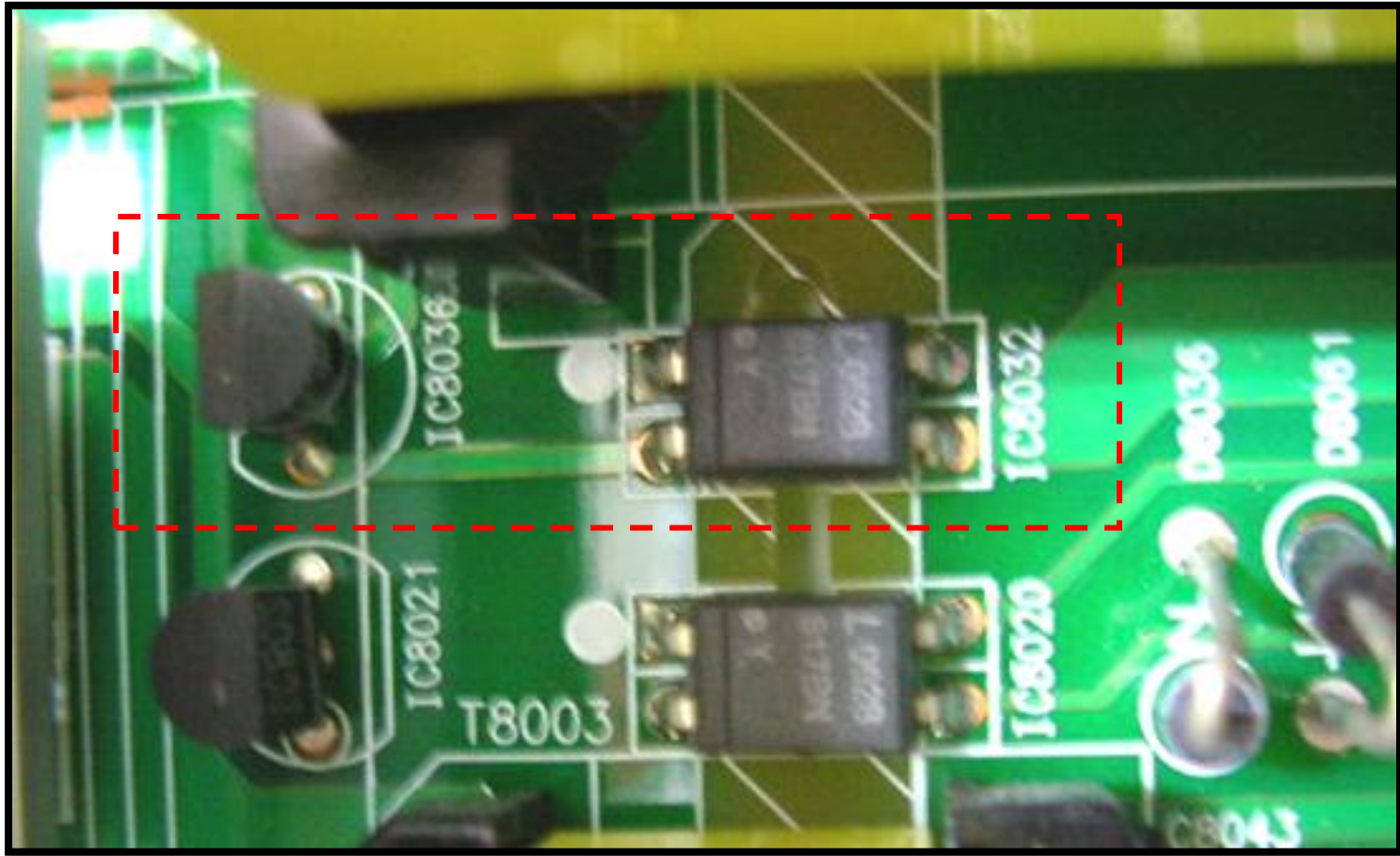
5) VG NO VOLTAGE OR VA 90V \uparrow → Change IC8026



Symptom 7: Error 1 (Va Protection)

■ Check or change:

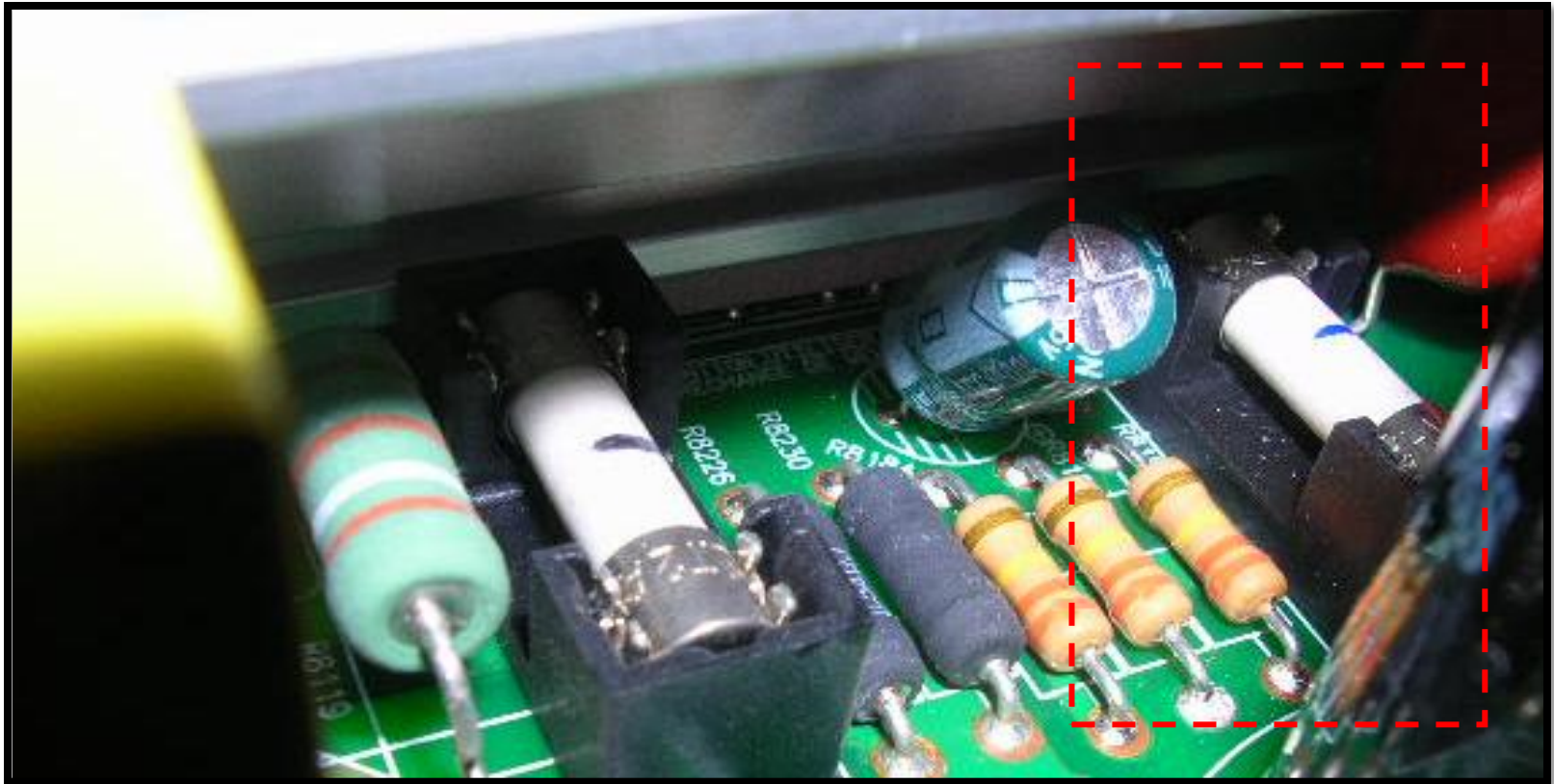
6) VA NO VOLTAGE → IC8032, IC8036



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

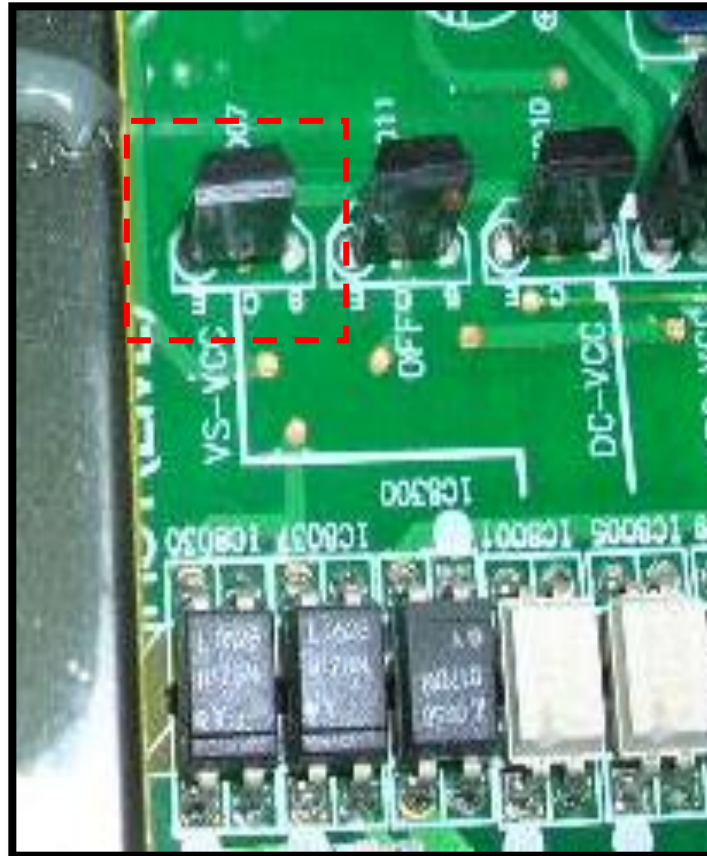
1) F8007(250V/4A) OPEN



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

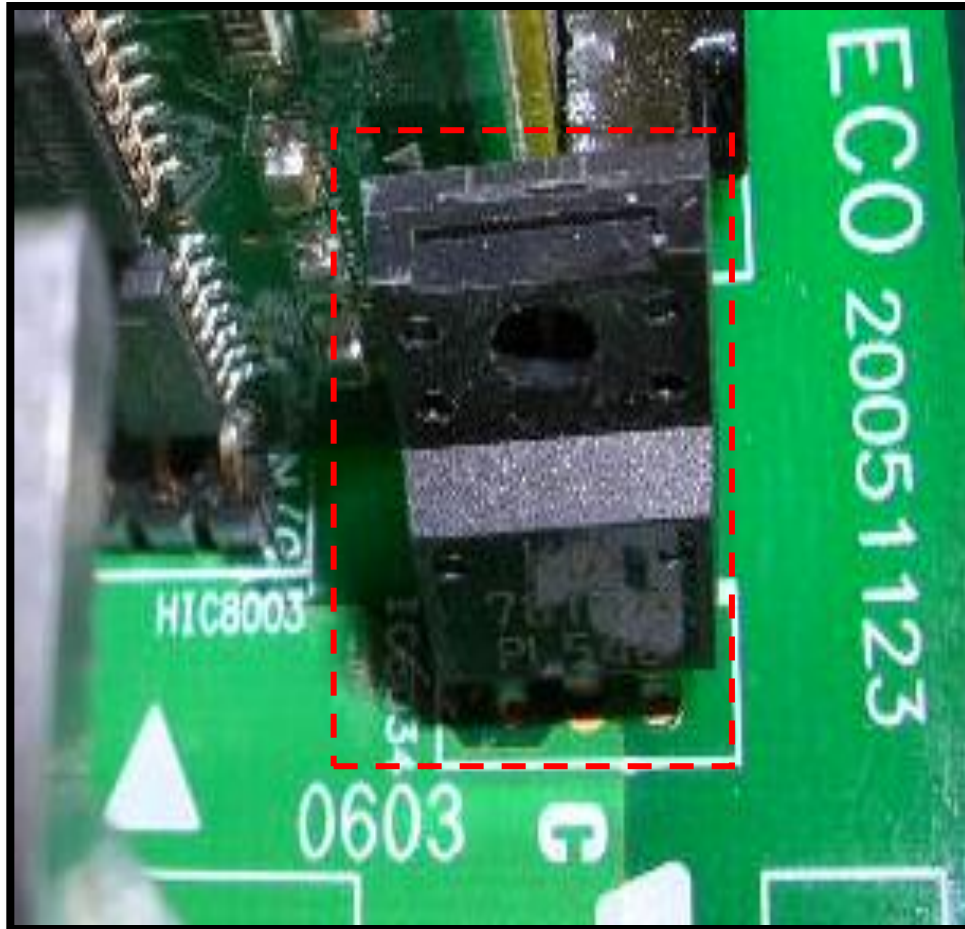
2) SEQUENCE VOLTAGE VS_VCC 18V: Q8007



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

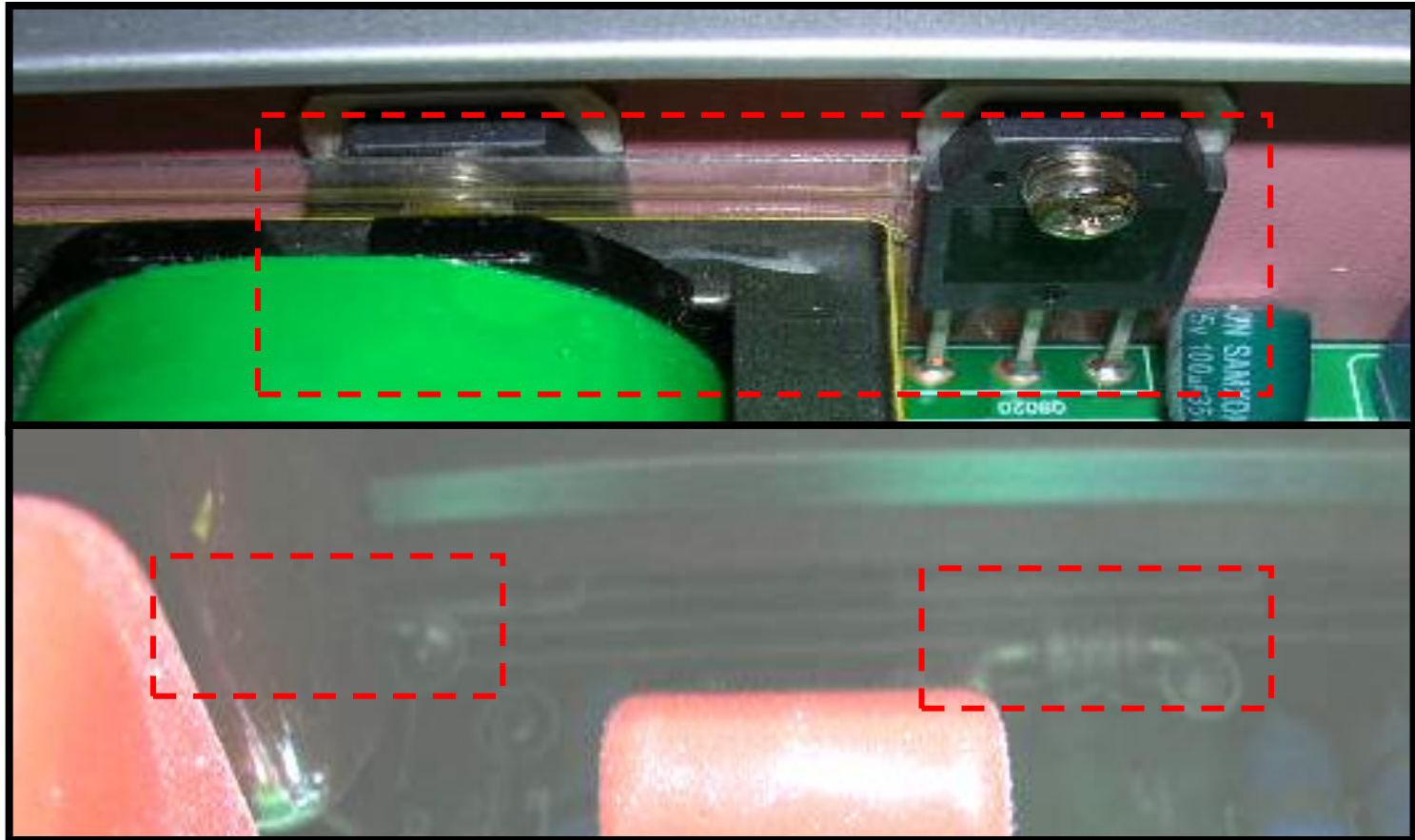
3) VSVCC 15V: IC8034



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

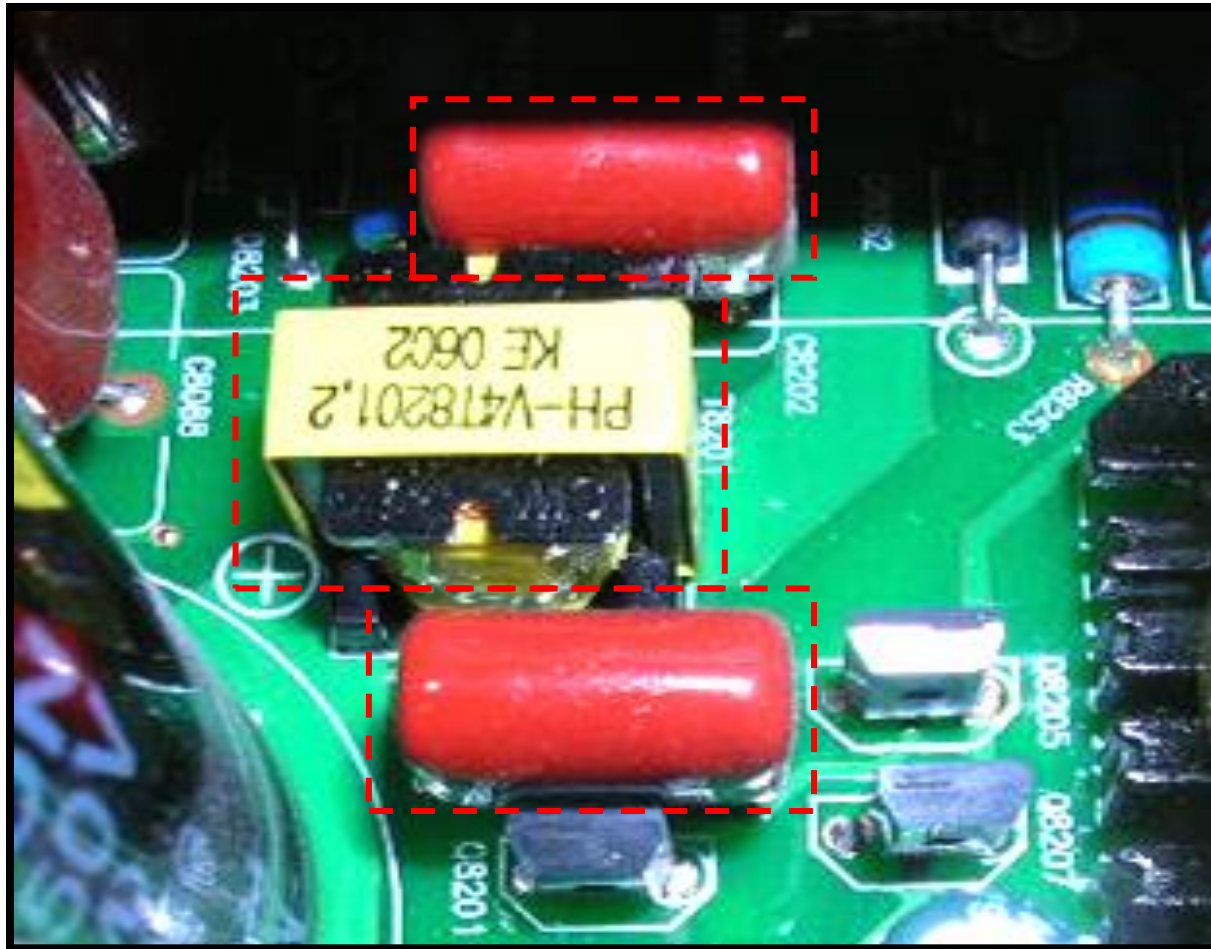
4) Q8020, Q8022, ZD8203, ZD8204



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

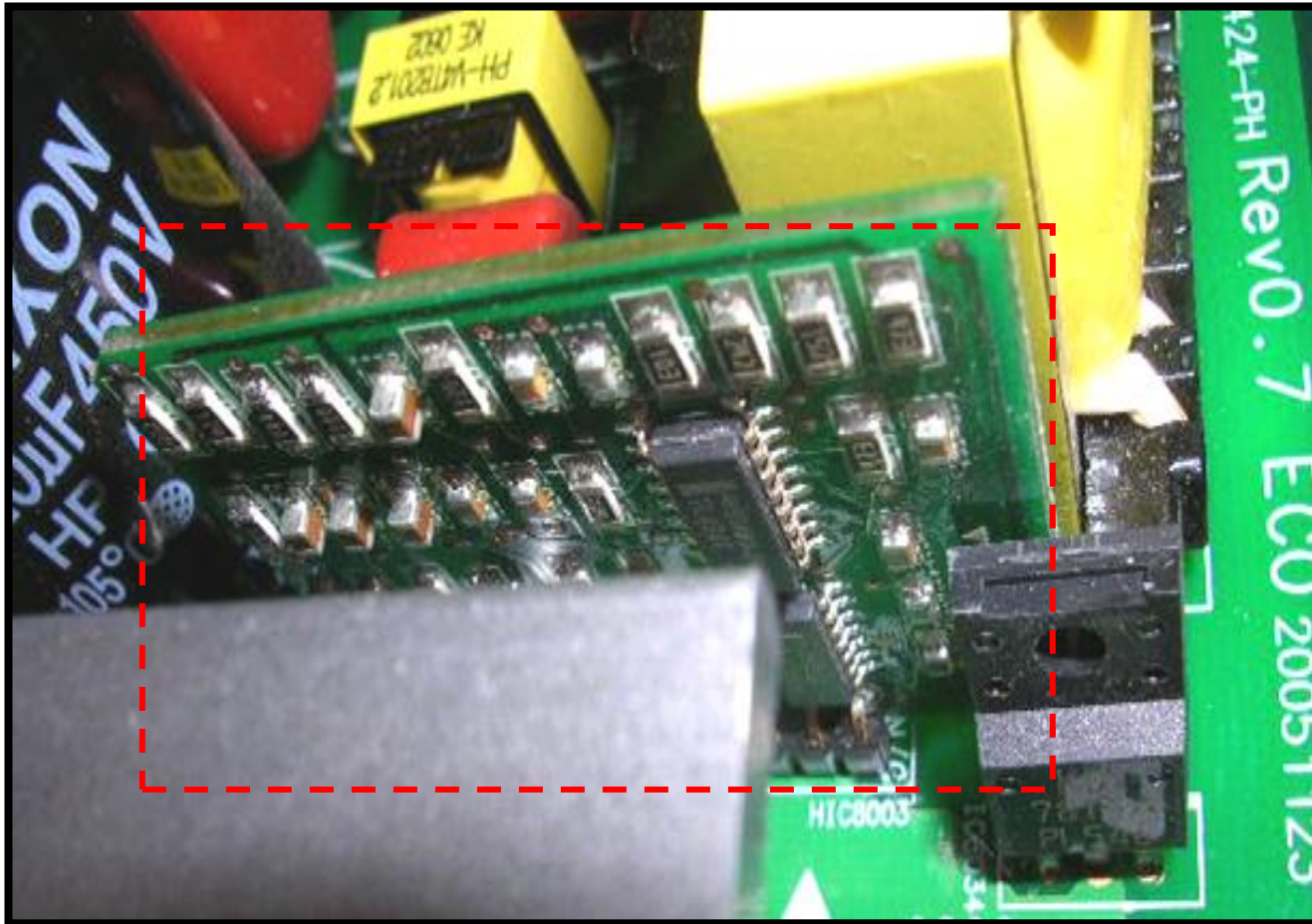
5) T8201, C8202, C8203



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

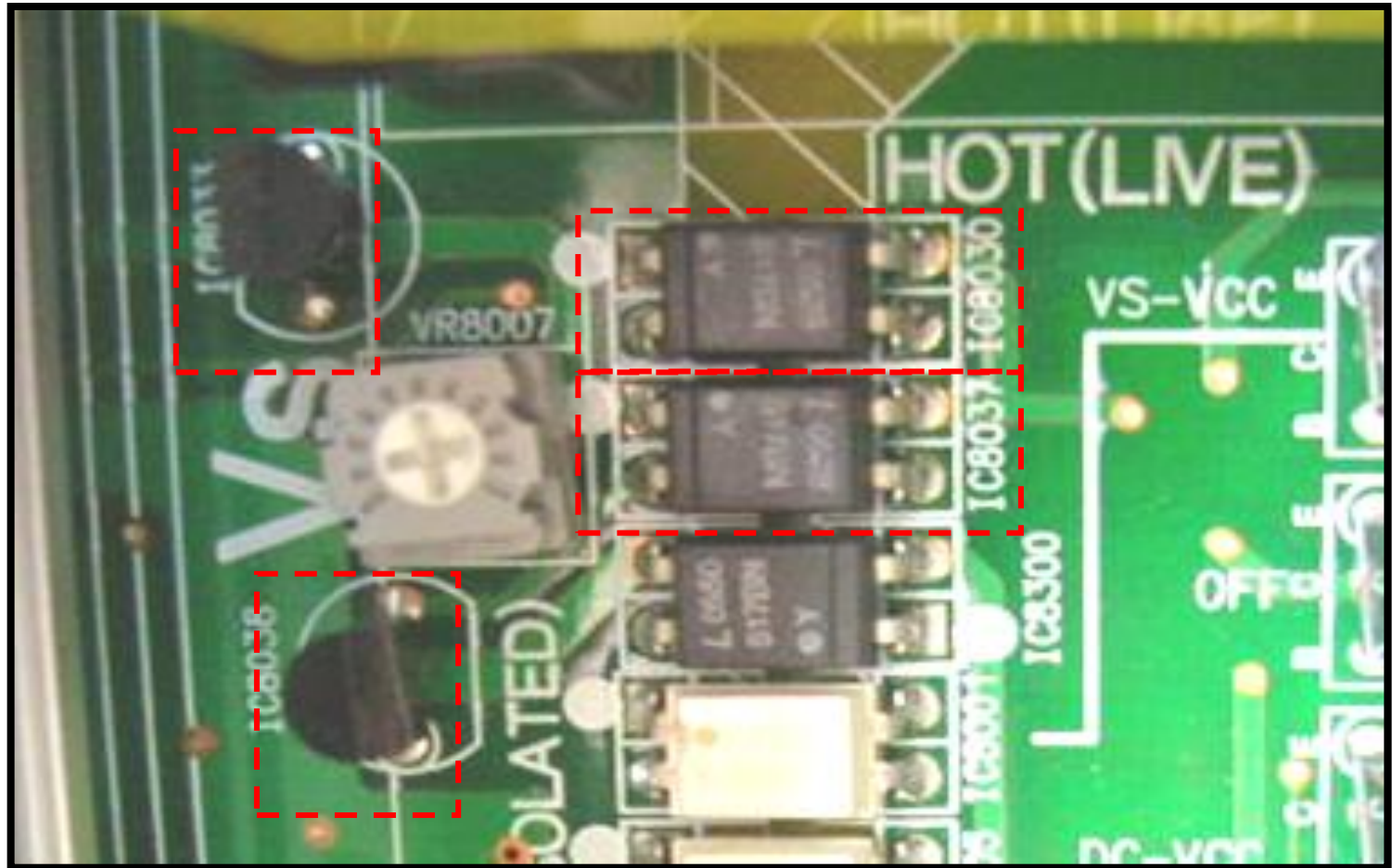
6) PWM Board HIC8003



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

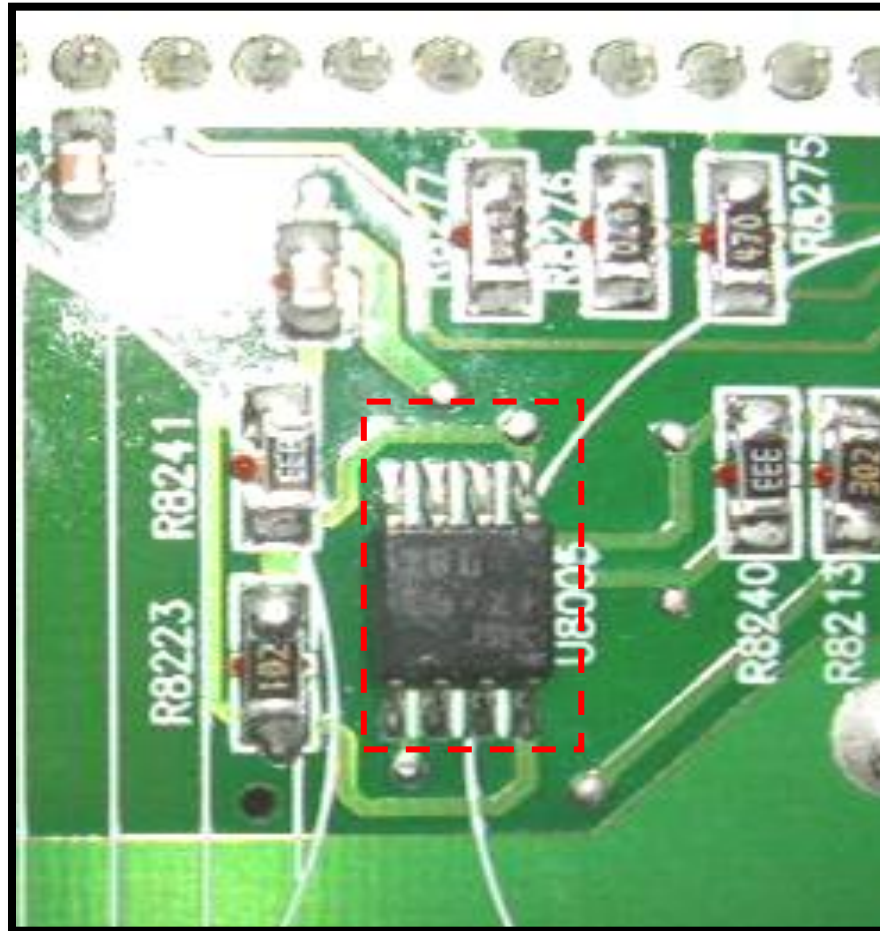
7) IC8030, IC8033, IC8037, IC8038



Symptom 8: Error 5 (Vs Protection)

■ Check or change:

8) U8005



Symptom 9: Error 7, 3, 8

■ Check or change:

1. VSET, VSCAN PROTECTION

a) F8008 (250V/1A) OPEN

b) VSET NO VOLTAGE

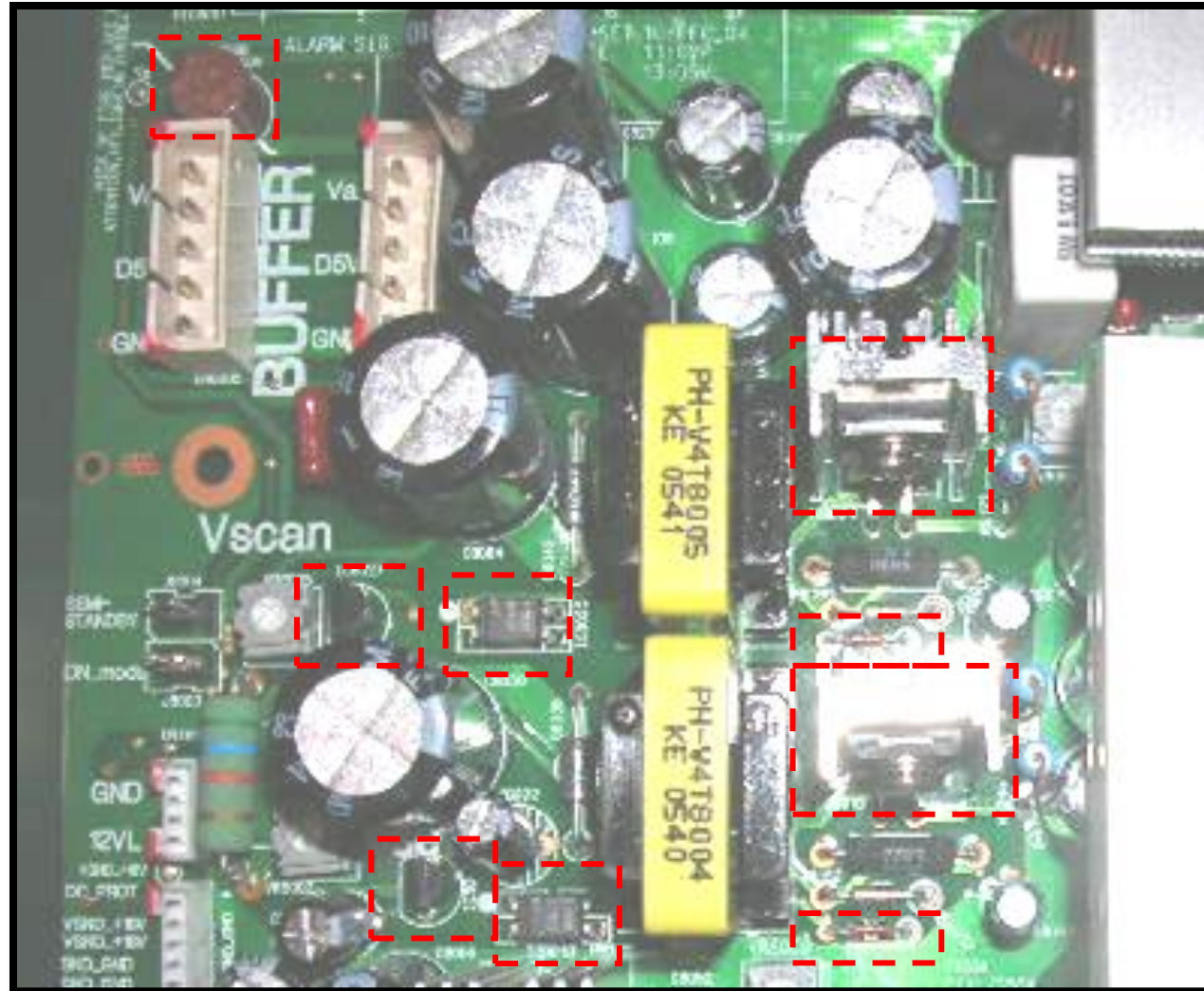
→ IC8015, D8039

→ IC8018, IC8019

c) VSCAN NO VOLTAGE

→ IC8024, D8044

→ IC8025, IC8027



Symptom 9: Error 7, 3, 8

■ Check or change:

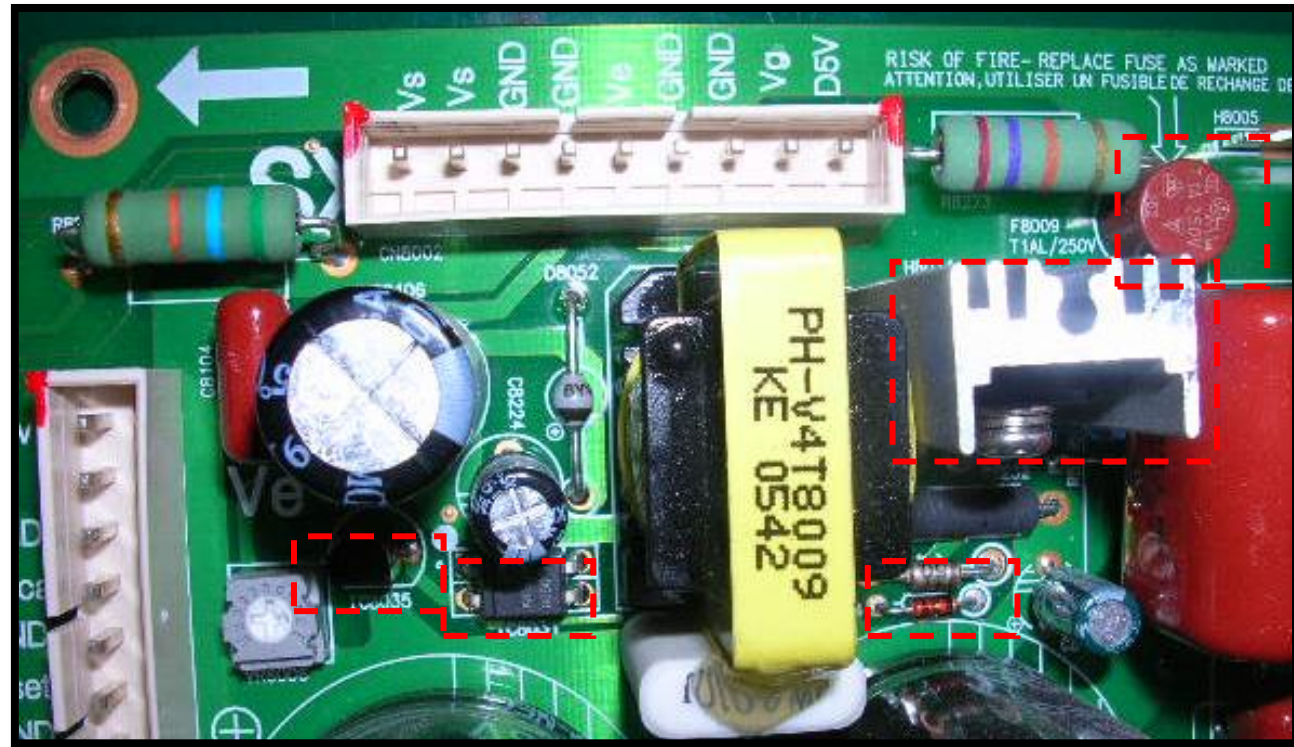
2. VE PROTECTION

a) F8009(250V/1A) OPEN

b) VE NO VOLTAGE

→ IC8029, D8054

→ IC8031, IC8035



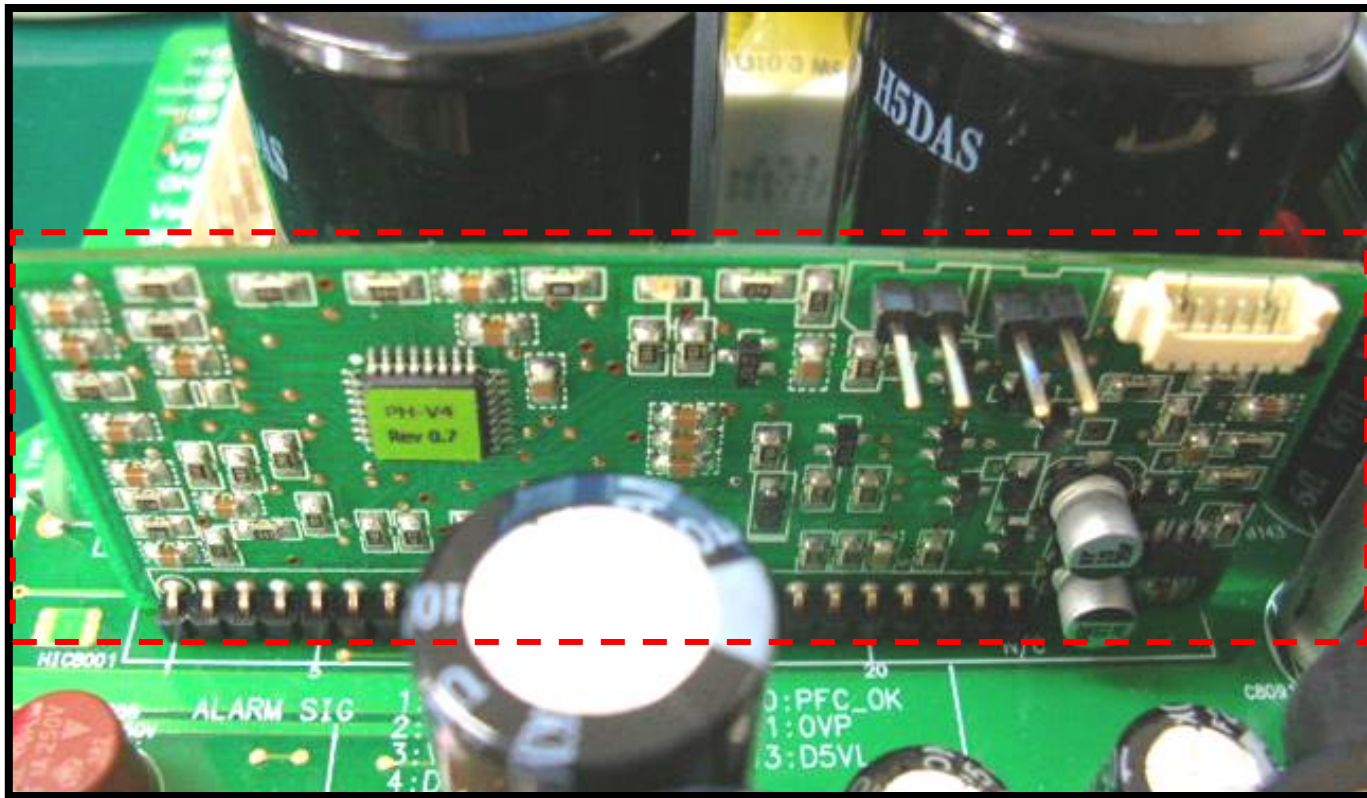
Symptom 10: Error 11 (5V2 Over voltage protection)

■ Check or change:

5V2 OVP PROTECTION or Active DC protection

a) HIC8001 Change Alarm board

b) Check STANDBY OUTPUT section

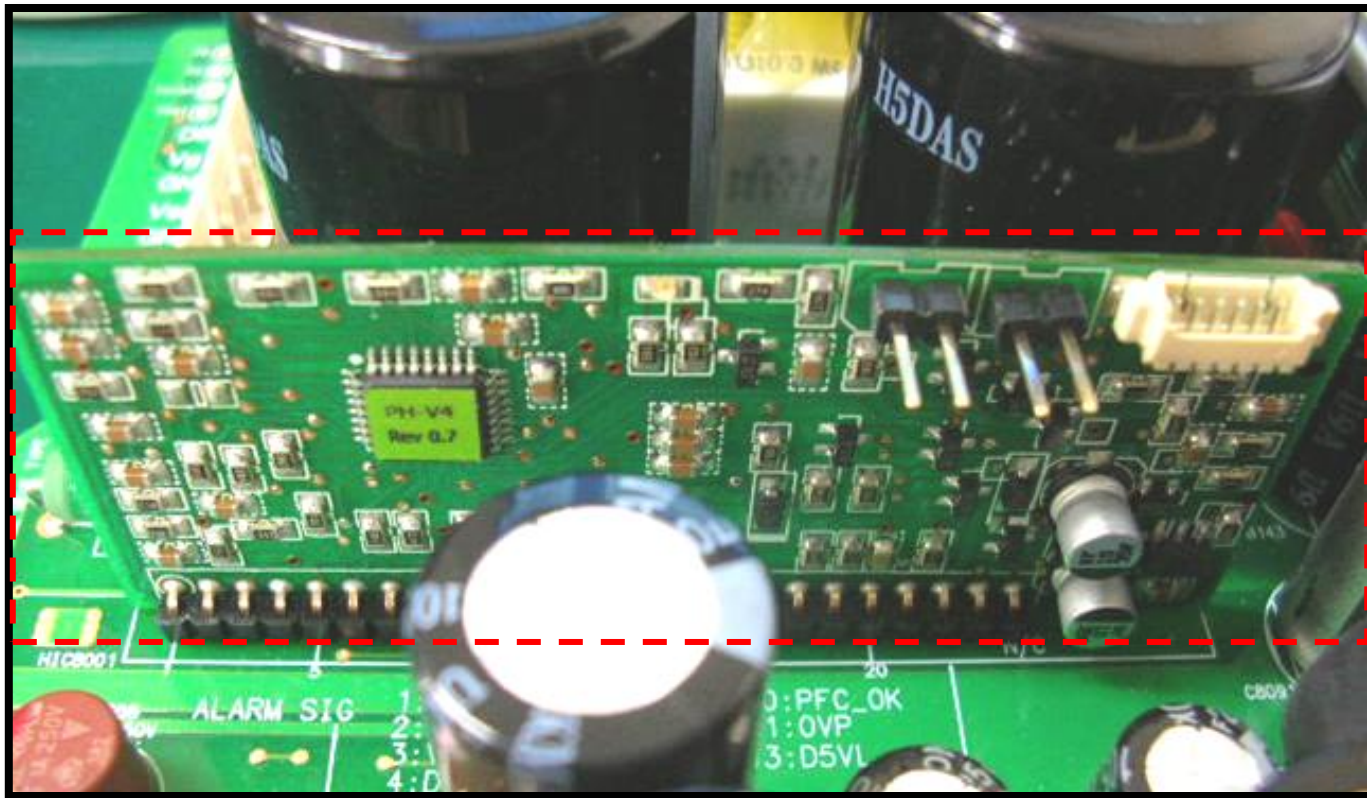


Symptom 11: Error 12 (Time over protection)

- Check or change:

TIME OVER PROTECTION (REV 0.7 EXCEPTION)

➔ Change alarm board HIC8001

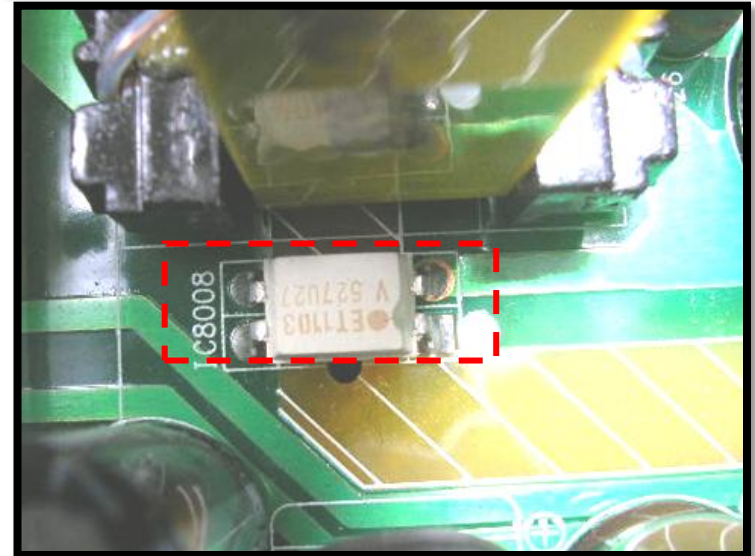
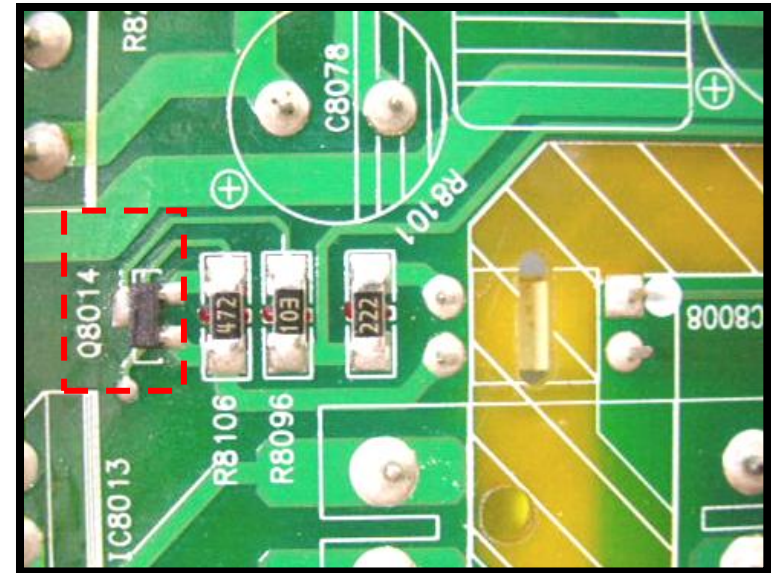
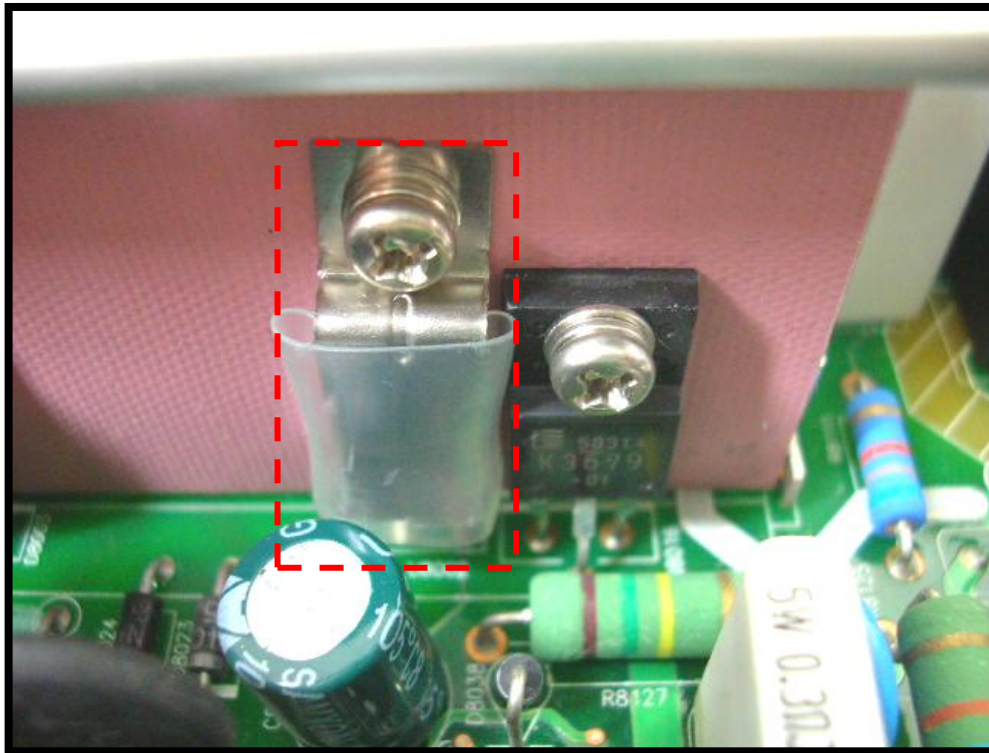


Symptom 12: Error 9 (Thermal protection)

■ Check or change:

THERMAL PROTECTION (REV 0.7 EXCEPTION)

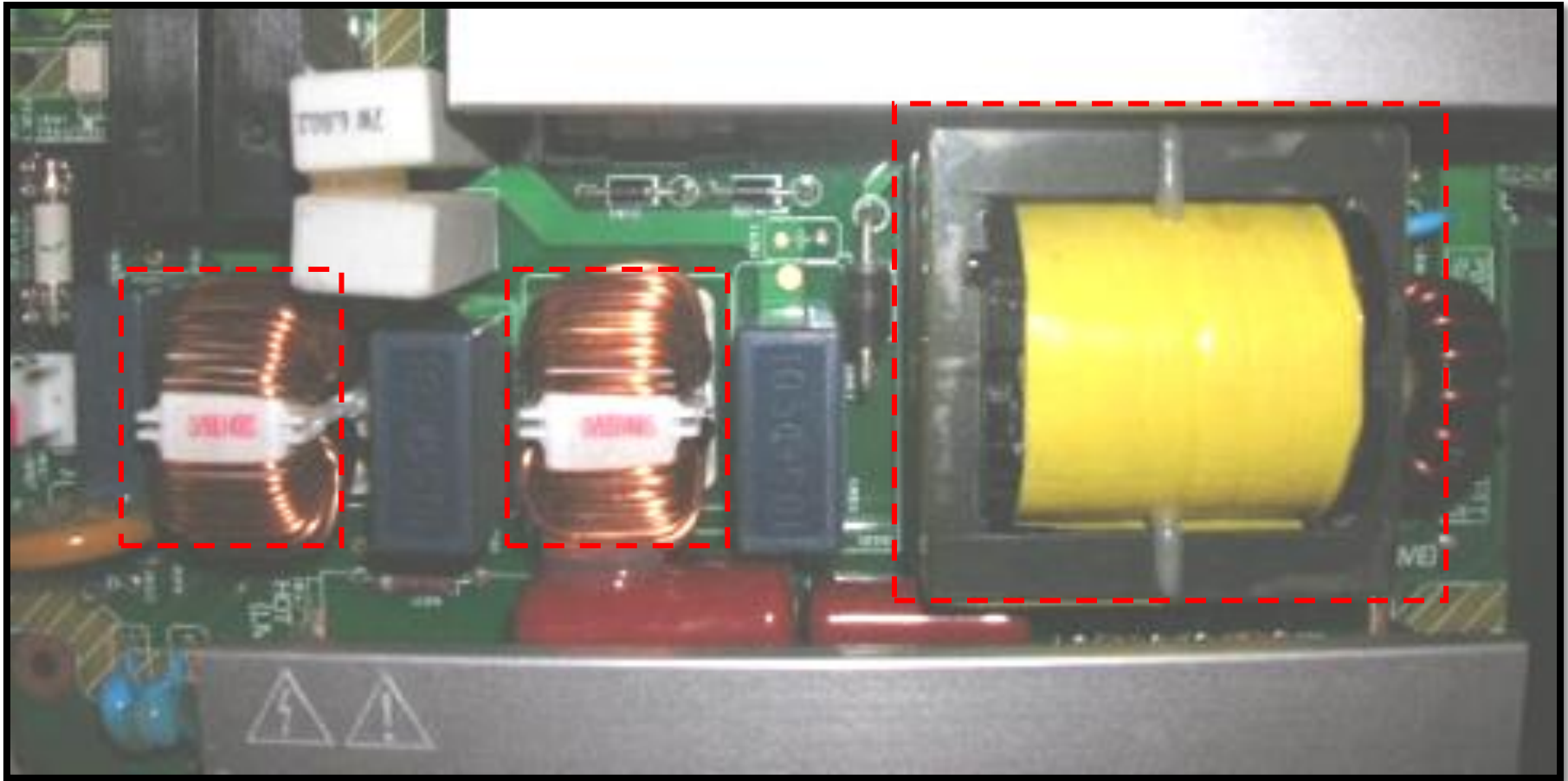
- 1) U8002
- 2) IC8008, Q8014



Symptom 13: Noise from inductors

■ Check or change:

L8002, L8005, L8006



Symptom 14: Intermittently, TV Auto off after some time, error 8 or error 13 via alarm board

- Cure: Replace following items:
 - C8059 3300uF/10V [Becomes dry or burst]
 - C8060 3300uF/10V [Becomes dry or burst]
 - R8094 1M Ω SMD resistor [If you find 910K then change to 1M Ω 1%]

