

Power Supply Failure Analysis Worksheet

Structured Investigation Form for AC/DC Power Adapters,
Battery Chargers and OEM/ODM Power Solutions

YHYadapter

Document ID: YHY-FAW-001 | Version 1.0 -- 2026

www.yhpoweradapter.com

Document Control

Document Title	Power Supply Failure Analysis Worksheet
Document ID	YHY-FAW-001
Version	1.0
Year	2026
Company	YHYadapter
Website	www.yhypoweradapter.com
Type	Engineering Investigation Worksheet
Intended Use	Failure Investigation, RMA Analysis, Customer Complaint, CAPA Input
Status	Public Engineering Resource

Revision History

Version 1.0, 2026	Initial public release YHYadapter Engineering Content Team
-------------------	--

Table of Contents

Cover Page

1. Case Identification

2. Product Identification

3. Application & Environment

4. Customer-Reported Failure

5. Safety Triage

6. Evidence & Sample Receipt

7. External Visual Inspection

8. Pre-Power Electrical Inspection

9. Controlled Power-Up Test

10. Failure Reproduction

11. Internal Inspection & Teardown

12. Component-Level Analysis

13. Failure Classification

14. Root Cause Analysis

15. Containment Action

16. Corrective & Preventive Action

17. Verification of Effectiveness

18. Final Summary

19. Approval & Closure

20. Disclaimer

Section 1 -- Case Identification

Case Number

RMA Number

Customer Complaint #

NCR Number

8D Report #

Customer Name

Customer Contact

Country/Region

Date Reported

Date Sample Received

Date Analysis Started

Required Completion

Analysis Owner

Project Manager

Quality Engineer

Hardware Engineer

Sales Contact

Priority ☐ P1 Critical ☐ P2 High ☐ P3 Medium ☐ P4 Low

Section 2 -- Product Identification

Product Family	☐ Desktop ☐ Wall ☐ Interchangeable ☐ Charger ☐ Other
Product Model	
Customer Part Number	
YHYadapter Part Number	
Input Rating	
Output Rating	
Rated Power	
DC Connector Type	
Polarity	☐ Center + ☐ Center -
Cable Length	
Cable AWG	
Serial Number	
Lot Number	
Date Code	
Production Date	
Factory Line	
PCB Revision	
BOM Revision	
Warranty	☐ In Warranty ☐ Out ☐ Unknown

Section 3 -- Application and Operating Environment

End Application

Load Device

Indoor/Outdoor

☐ Indoor ☐ Outdoor ☐ Unknown

Operating Condition

☐ Continuous ☐ Intermittent

Daily Operating Hours

Service Time Before Failure

Ambient Temperature

Humidity

Input Voltage (site)

Load Current

Application Category

Within Product Spec?

☐ Yes ☐ No ☐ Unknown ☐ Evidence Required

Section 4 -- Customer-Reported Failure

Customer's Original Failure Description (verbatim):

Symptoms

Intermit. Out ☐ Low Out ☐ High Out ☐ Shutdown ☐ Ripple ☐ Overheat ☐ Noise ☐ Smoke ☐ Other ☐

Safety Incident?

☐ Yes ☐ No ☐ Unknown

Recoverable after power cycle?

☐ Yes ☐ No

Units Affected / Total in Use

____ / ____

Section 5 -- Safety Triage

SAFETY WARNING: Do not energize a failed unit when there is evidence of fire, severe insulation damage, liquid contamination, exposed primary conductors or an unknown short-circuit condition. Use appropriate isolation, current limiting and laboratory safety procedures.

Swollen capacitor	☐ Normal ☐ Abnormal ☐ N/A
Burn marks	☐ Normal ☐ Abnormal ☐ N/A
Cracked enclosure	☐ Normal ☐ Abnormal ☐ N/A
Exposed conductor	☐ Normal ☐ Abnormal ☐ N/A
Damaged insulation	☐ Normal ☐ Abnormal ☐ N/A
Melted connector	☐ Normal ☐ Abnormal ☐ N/A
Strong burning odor	☐ Normal ☐ Abnormal ☐ N/A
Evidence of fire	☐ Normal ☐ Abnormal ☐ N/A
Unauthorized repair	☐ Normal ☐ Abnormal ☐ N/A
Power-Up Clearance	☐ Safe for controlled power-up ☐ Restricted ☐ DO NOT ENERGIZE

Section 6 -- External Visual Inspection

Housing condition	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
Label condition	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
AC inlet	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
DC cable	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
DC connector	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
Strain relief	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
Overheating marks	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
Corrosion	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
Deformation	☐ Normal ☐ Abnormal ☐ N/A Notes: _____
Unauthorized modification	☐ Normal ☐ Abnormal ☐ N/A Notes: _____

Photo References: Front ☐ Rear ☐ Label ☐ AC ☐ DC ☐ Damage ☐

Section 7 -- Pre-Power Electrical Inspection

Input resistance	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
Output resistance	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
Fuse continuity	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
Bridge rectifier check	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
MOSFET D-S short check	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
Bulk capacitor short check	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
Output capacitor short	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
Cable continuity	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A
Cable short	Expected: _____ Measured: _____ ☐ Pass ☐ Fail ☐ N/A

Section 8 -- Controlled Power-Up Test

Test Equipment: Isolation XFMR: _____ Load: _____ Scope: _____ Multi: _____ Thermal: _____

STOP CRITERIA: Rapid current increase ☐ Smoke ☐ Arcing ☐ Odor ☐ Noise ☐ Fast temp rise ☐ Overvoltage ☐

Input Voltage	_____
Input Current	_____
Output V (no-load)	_____
Output V (full-load)	_____
Ripple (no-load)	_____
Ripple (full-load)	_____
Startup Time	_____
Case Temperature	_____
Efficiency	_____

Section 9 -- Failure Reproduction

Failure reproduced?	☐ Consistently ☐ Intermittently ☐ Not reproduced ☐ Abnormal conditions only
Reproduction method	_____
Attempts / Successful	____ / ____

Section 10 -- Internal Inspection and Teardown

PCB discoloration	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Burn marks	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Cracked solder	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Capacitor bulging	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Capacitor venting	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Electrolyte leakage	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Transformer discoloration	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
MOSFET damage	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Fuse open	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
MOV damage	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Contamination	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____
Corrosion	☐ Normal ☐ Abnormal ☐ Suspect Photo: _____

Section 11 -- Component-Level Analysis

Ref: _____ Component: _____ Mfr: _____ P/N: _____ Meas: _____	☐ Failed ☐ Suspect ☐ NFF
Ref: _____ Component: _____ Mfr: _____ P/N: _____ Meas: _____	☐ Failed ☐ Suspect ☐ NFF
Ref: _____ Component: _____ Mfr: _____ P/N: _____ Meas: _____	☐ Failed ☐ Suspect ☐ NFF
Ref: _____ Component: _____ Mfr: _____ P/N: _____ Meas: _____	☐ Failed ☐ Suspect ☐ NFF

Section 12 -- Failure Classification

Failure Source ☐ Design ☐ Component ☐ Supplier ☐ MFG ☐ Process ☐ Application ☐ NFF ☐ Unknown

Failure Type ☐ Open ☐ Short ☐ Parametric ☐ Thermal ☐ Insulation ☐ EOS ☐ Wear-out ☐ Intermittent

Failure Level ☐ Primary ☐ Secondary Damage ☐ Contributing Factor ☐ Observation

Section 13 -- Root Cause Analysis

13.1 Problem Statement

13.2 5 Why Analysis

Why 1: _____

Why 2: _____

Why 3: _____

Why 4: _____

Why 5: _____

13.3 Root Cause Statement

Confirmed evidence _____

Physical mechanism _____

Technical root cause _____

Process root cause _____

Escape point _____

Why not detected earlier _____

Conclusion Level ☐ Confirmed ☐ Highly Probable ☐ Probable ☐ Possible ☐ Inconclusive ☐ NFF

Evidence Strength ☐ Direct physical ☐ Reproduction ☐ Measurement ☐ Supplier ☐ Statistical ☐ Circumstantial

RC Code: _____ FM Code: _____

Section 14 -- Containment Action

Action: _____ Owner: _____ Start: ____ Complete: ____ Qty: ____ ☐ Open ☐ Done ☐ Verified

Action: _____ Owner: _____ Start: ____ Complete: ____ Qty: ____ ☐ Open ☐ Done ☐ Verified

Action: _____ Owner: _____ Start: ____ Complete: ____ Qty: ____ ☐ Open ☐ Done ☐ Verified

Section 15 -- Corrective and Preventive Action

Correction (fix immediate):

Corrective Action (fix root cause):

Preventive Action (prevent recurrence):

Action type: ☐ Design ☐ Component ☐ Process ☐ Supplier ☐ Training ☐ Other Owner: ____ Due: ____ ☐ Open ☐ Completed ☐ Verified

Action type: ☐ Design ☐ Component ☐ Process ☐ Supplier ☐ Training ☐ Other Owner: ____ Due: ____ ☐ Open ☐ Completed ☐ Verified

Action type: ☐ Design ☐ Component ☐ Process ☐ Supplier ☐ Training ☐ Other Owner: ____ Due: ____ ☐ Open ☐ Completed ☐ Verified

Section 16 -- Verification of Effectiveness

Sample quantity _____

Test duration _____

Acceptance criteria _____

Result ☐ Effective ☐ Partially Effective ☐ Ineffective ☐ Monitoring Required

Section 17 -- Final Failure Analysis Summary

Section 18 -- Approval and Closure

Analysis Engineer: Name: _____ Signature: _____ Date: _____ Comments: _____

Quality Engineer: Name: _____ Signature: _____ Date: _____ Comments: _____

Project Manager: Name: _____ Signature: _____ Date: _____ Comments: _____

Customer Representative: Name: _____ Signature: _____ Date: _____ Comments: _____

Final Status ☐ Closed - Confirmed ☐ Closed - CA Verified ☐ NFF ☐ Customer Issue ☐ Monitoring

Closure Date _____

Section 19 -- Disclaimer

This worksheet is intended to support structured technical investigation of power supply failures. It does not replace applicable safety procedures, regulatory requirements, customer-specific quality processes, laboratory controls or qualified engineering judgment. Failure conclusions should be based on documented evidence, reproducible testing and appropriate technical review. Suspected causes must not be presented as confirmed root causes without sufficient supporting evidence. Do not energize damaged equipment unless an authorized engineer has completed the required safety assessment and appropriate laboratory protection measures are in place.

YHYadapter

Power Adapter & Battery Charger Manufacturer
Founded in 2010 | OEM/ODM Power Solutions

www.yhyadapter.com

Discuss Your Power Supply Project