Crimping process specification

Fideltronik

Original Woodward Document ID: 3-OF-02334, Rev. E

This document is an excerpt from the Woodward original document No.: 3-OF-02334, Rev. E related to crimping process, Cable Harnesses.

6.2.10 Crimping

Any crimp terminations used in Woodward EMSE products shall be performed and 100% visually inspected per IPC/WHMA-A-620 prior to insertion into the connector.

Three (3) samples shall be created per each batch to be used as "pre-connector" test coupons. For each batch, the samples shall be made for each contact/wire size combination (samples for each different wire color are not required).These test coupons shall be visually inspected per IPC/WHMA-A-620 and subjected to a “Pull and Break” test per IPC/WHMA-A-620; “Mechanical Test Methods – Pull Force (Tensile)”. The results of these evaluations shall be recorded on a test datasheet (refer to Figure 1 for the type of information that is required):

Crimped Contact Test Data Sheet

Work Order Number: _____ **WMPC Part Number:** _____

Crimped by: _____ **Date:** _____

Inspected by: _____

AWG Wire Size	Contact Barrel Size	Crimp Depth Setting	Crimp Tool calibration due date	Pull Test Separator Force (Lbs)	Pull Tester Calibration due Date	Type of separation*	Accept	
							Pre	Post (NASA REQ'T)

*TYPE OF SEPARATION CODE:

A) Conductor broken in crimp area(some or all)
B) Conductor broken outside of crimp area
C) Fray Break
D) Slip (pull –out)
E) Other (define)

NOTE: Staple both the pre-connector and post connector crimped contact sample plastic bags to this Test Data Sheet. Test Data Sheet to be attached and archived with operation sheet (router) or traveler.

Figure 1. Example of a Pull Force Test Datasheet

The test coupons and test data sheet shall be retained per the table in Section 7 “Retention of Data and Test Coupons”.

7.0 Process Records

7.1 Retention of Data and Test Coupons

The Woodward Supplier Quality Requirements (2-OF-01420) define what documentation and test coupons are required to be supplied with the product. This section refers to what documentation and test coupons are required to be retained at the supplier.

To support quality audits and to provide physical samples for future evaluation, it is critical that both data and test coupons be maintained for a predictable amount of time after the production of the PCBAs. The following table shall be used as minimum guidelines for the retention of these items.

Item	Type	Minimum Quantity per Lot	Minimum Retention Period
Bare PCB Coupon	Coupon	2	5 Years
Crimping Pull-Test Samples	Coupon	3	5 Years
In-process inspection data including, but not limited to: Manual Visual Inspection Staking Sample Data Crimping Sample Data Conformal Coating Sample Data Automatic Optical Inspection X-Ray Inspection Flying Probe Measurements In-Circuit Test Data Functional Test Data ESS Test Data	Data	1	15 Years
Equipment Calibration Data	Data	1	10 Years
Equipment Traceability Data	Data	per Serial Number	10 Years
Equipment Preventative Maintenance Logs	Data	per Item	2 Years
Work Instructions/Operation Routing Sheets	Data	per Serial Number	15 Years
PCBA Photographs	Data	per Serial Number	15 Years
Final Functional Test Data	Data	per Serial Number	15 Years
Material Traceability Data	Data	per Serial Number	15 Years
Shipping Records (CoC, Test Data, Traceability, S/N, …)	Data	per Serial Number	15 Years
First Article Records	Data	per Serial Number	15 Years
PPAP Records	Data	per Serial Number	15 Years
Supplier Records (CoC, test data, Concessions, …)	Data	per Serial Number	15 Years
Control Charts / Control Plans	Data	per Occurrence	1 years
Internal Audit Records (including RCCA)	Data	per Occurrence	7 years
Supplier Survey/Approvals	Data	per Occurrence	7 years
Supplier Corrective Actions	Data	per Occurrence	7 years
Training Records	Data	per Member	15 years

Important:
Crimping Sample Data shall be sent to Fideltronik with every batch alongside COC.