

INCH-POUND

MIL-F-48370A (AR)
AMENDMENT 3
02 October 1999
SUPERSEDING
AMENDMENT 2
19 January 1990

MILITARY SPECIFICATION

FUZE, M934E6, HYBRID MICROCIRCUIT FOR

This amendment forms a part of Military Specification MIL-F-48370A, dated 1 July 1985, and is approved for use by the U.S. Army Armaments, Research, Development, and Engineering Center, and is available for use by all Departments and Agencies of the Department of Defense.

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* 2.1.1 Specifications and standards:

Specifications, Military:

Delete "MIL-C-26074" in its entirety.

Delete "MIL-M-38510" and substitute "MIL-PRF-38534 – Hybrid Microcircuits, General Specification for"

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* 2.1.1:

Federal Specifications, delete "QQ-S-766" in its entirety.

Standards, delete "MIL-STD-202" in its entirety.

* 2.1.2 Other Government documents, add the following:

"SAEAMS2404 – Nickel, Electroless, Plating

ASTM A 240 – Steel, Stainless, Plate, Sheet, and Strip for Pressure Vessels, Heat-Resisting Chromium and Chromium-Nickel"

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3.1.4a:

Delete first sentence and substitute “Iron, Nickel, Cobalt alloy (KOVAR) per MIL-I-23011, Class I, ASTM F-15.”

* Delete “MIL-C-26074” in its entirety and substitute “SAEAMS2404”

* 3.1.4b, Delete “QQ-S-766, Class 304” in its entirety and substitute “ASTM A240, Type 304”

3.1.5, Delete first sentence and substitute “The lead material shall consist of Iron, Nickel, Cobalt alloy (KOVAR) per MIL-I-23011, Class I, ASTM F-15.”

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3.2.3, Add the following sentence at the end of the paragraph “Aluminum shall be used for wire bonding on substrate interconnects.”

* 3.2.4, Delete in its entirety and substitute the following:

“3.2.4 Preseal bake. The hybrids shall be baked at a minimum of 150 degrees C in a vacuum/nitrogen atmosphere, min 0.04 Torr., for 24 hours minimum immediately prior to sealing.”

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* 3.3.11, Delete in its entirety.

* 3.4e, Delete “code identification” and substitute “CAGE Code”.

* 3.4.2, Delete “MIL-STD-202, method 215” and substitute “MIL-STD-883,method, 2015”.

* 3.5, Delete “MIL-M-38510” and substitute “MIL-PRF-38534”.

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* 3.7, Delete “MIL-M-38510” and substitute “MIL-PRF-38534”.

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- * 4.3.2, Fourth line, Delete "... except for bond strength and solderability as defined by the LTPD (Lot Tolerance Percent Defective)..." and substitute "... except for solderability as defined by the accept/reject limits...".

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- * Delete Table I in its entirety and substitute the following:

TABLE I. First article inspection

PARAGRAPH	TITLE Microcircuit, Digital – Firing Circuit Microcircuit, Digital – Safing & Arming		SHEET 1 OF 2		DRAWING NUMBER 9297034/9297063
					NEXT HIGHER ASSEMBLY
CLASSIFICATION	EXAMINATION/CHARACTERISTICS	NO. OF SAMPLE UNITS	VERIFICATION LEVEL	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE/INSPECTION METHOD
	<u>GROUP I – 1/, 5/</u> Physical Dimensions Marking Permanence External Visual Solderability Lead Integrity Seal Bond Strength	15	<u>2/</u>	3.1.1 3.4.2 3.3.13 3.3.3 3.3.8 3.3.4 3.3.9	Gage or Calipers MIL-STD-883 MIL-STD-883 MIL-STD-883 MIL-STD-883 MIL-STD-883 MIL-STD-883 4.5.1
	<u>GROUP II – 1/</u> Thermal Shock Temperature Cycling Seal External Visual Final Electrical	15	<u>3/</u>	3.3.5 3.3.2 3.3.4 3.3.13 3.3.16	MIL-STD-883 MIL-STD-883 MIL-STD-883 MIL-STD-883 Detailed drawing
NOTES: <u>1/</u> Each unit in the group shall be subjected to all the examinations or tests in that group unless otherwise specified. <u>2/</u> Accept/Reject limits applied to the hybrid lead solderability shall be 46 accept/4 reject. Sample size shall be 2 hybrids. <u>3/</u> A PDA of 7 per MIL-PRF-38534 (Appendix F) or 32 accept/0 reject applied to wirebounds shall be used for accept/reject limits. Equal number of wirebounds shall be tested of each hybrid. Sample size shall be 2 hybrids.					

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TABLE I. First article inspection

PARAGRAPH	TITLE		SHEET 2 OF 2		DRAWING NUMBER 9297034/9297063
	Microcircuit, Digital – Firing Circuit Microcircuit, Digital – Safing & Arming				NEXT HIGHER ASSEMBLY
CLASSIFICATION	EXAMINATION/CHARACTERISTICS	NO. OF SAMPLE UNITS	VERIFICATION LEVEL	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE/INSPECTION METHOD
	<u>GROUP III – 1/</u>	15		3.3.6 3.3.7 3.3.14 3.3.4	MIL-STD-883 MIL-STD-883 MIL-STD-883 MIL-STD-883
	Mechanical shock Vibration Constant Acceleration Seal Final Electrical Internal Visual			3.3.16 3.3.17	Detailed drawing 4.5.3
	<u>GROUP IV – 1/</u>	20		3.3.15 3.3.1 3.3.16	Detailed drawing MIL-STD-883 Detailed drawing
	End Point Electrical <u>4/</u> High Temperature Storage Final Electrical				
NOTES:					
<p><u>4/</u> Ten of the units shall be tested at high temperature; the other ten units shall be tested at low temperature.</p> <p><u>5/</u> Electrical rejects may be used provided their construction and processing through final seal is identical to that of the device.</p>					

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* 4.4.2.1, Classification of characteristics, delete major defect 102 in its entirety.

* 4.4.2.2, Classification of characteristics:

Delete minor defect 201 and 202 in their entirety and substitute the following:

Category	Exam or Test	“No of Sample Units	AQL or 100%	Req. Para.	Para. Ref/ Insp. Method
Minor					
201	Physical Dimensions	2		3.1.1	Gage or Calipers
202	Marking permanence	4		3.4.2	MIL-STD-883”

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Delete notes 3 and 4 and substitute the following:

“Note 3: A PDA of 7 per MIL-PRF-38534 (Appendix F) or 32 accept/0 reject applied to wirebounds shall be used for ACC/REJ limits. Equal number of wirebounds shall be tested of each hybrid. Sample size shall be 2 hybrids.

Note 4: Accept/Reject limits applied to the hybrid lead solderability shall be 46 accept/4 reject. Sample size shall be 2 hybrids.”

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* 4.5.2, Delete in its entirety.

* 6.2.1, Delete in its entirety and substitute the following:

“6.2.1 Contract data requirements. Data specified in 3.2.2 and 3.2.5 of this document and in paragraphs A.3.2.5 and A.3.3 of MIL-PRF-38534, Appendix A, will be required for data delivery as specified in section C of the contract.”

* 6.3, Delete in its entirety and substitute the following:

“6.3 Submission of designs for approval. See MIL-A-48078. Submit equipment designs, as required, to US Army Tank Automotive Command, Armament Research, Development, and Engineering Center, TACOM-ARDEC, ATTN: AMSTA-AR-QAA-R, Picatinny Arsenal, NJ 07806-5000.”

The margins of this amendment are marked with an asterisk or vertical line to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

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