

MILITARY SPECIFICATION SHEET

DELAY LINES, ACTIVE

GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-D-83532, dated 31 March 1987, and is approved for use by all Departments and Agencies of the Department of Defense.

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1.2.1, part number example, add level "S" to product assurance level and add reference to "3.3".

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* 2.1.1, Insert the following between MIL-STD-1285 and MIL-STD-1772:

"MIL-STD-1686 - Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts."

3.3, delete in its entirety and substitute the following:

"3.3 Product assurance requirements. Three levels of delay line quality and reliability assurance are provided for in this specification. Levels A, B, and S delay lines shall be those which have been subjected to, and passed, all applicable requirements, tests, and inspections described herein, including qualification and quality conformance inspection requirements for the specified level."

3.3.1b, delete in its entirety and substitute the following:

"b. The manufacturer is required to document training."

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3.3.2c, delete in its entirety and substitute the following:

"c. Screen to level B, method 5008 of MIL-STD-883."

3.3.3, delete and substitute as follows:

"3.3.3 Product assurance (level S). A product assurance program for level S delay lines furnished under this specification shall be established and maintained, and shall meet the following requirements:

a. Certification to MIL-STD-1772.

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- b. Qualification to MIL-STD-1772.
- c. Class S requirements of method 5008 of MIL-STD-883.
- d. A quality assurance program in accordance with appendix A of MIL-M-38510."

Add new 3.3.4 as follows:

- * "3.3.4 Electronic sensitive device (ESD) control program. An ESD control program shall be established and maintained in accordance with MIL-STD-1686."

3.4.9, delete in its entirety and substitute the following:

"3.4.9 Passive circuit elements. Capacitors shall be qualified or screened to MIL-C-123 or MIL-C-55681. Resistors shall be qualified or screened to MIL-R-55342. The inductor shall be so designed as to allow the delay line to meet the requirements specified herein."

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- * 3.11.2, delete in its entirety and substitute the following:

"3.11.2 Rise time. When measured in accordance with 4.6.9.1.2, the rise time of pulses taken at the delay output shall be as specified (see 3.1)."

3.13, last line, delete "the delay time shall meet initial requirements." and substitute "there shall be no electrical discontinuity during the test."

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3.16, last sentence, delete "initial requirements." and substitute "initial requirements of the detail specification."

3.17, last sentence, delete "initial requirements." and substitute "initial requirements of the detail specification."

3.18, last sentence, delete "initial requirements." and substitute "initial requirements of the detail specification."

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4.1.3.2: Delete "Class B." and substitute "Levels B and S."

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- * 4.3.1.5a: Delete "3 ns ± 0.5 ns" and substitute "< 3 ns".
- * 4.3.1.5b: Delete "3.0 V ± 0.1 V" and substitute "3.3 V ± 0.5 V".

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* 4.4.4, delete in its entirety and substitute the following:

"4.4.4 Extent of qualification. Extent of qualification shall normally be applicable only for delay lines on the same specification sheet. However, where delay lines of a given minimum section requirement on one specification sheet are qualified, delay lines of a lesser minimum section requirement on another sheet shall, on the basis of greater design simplicity, be qualified, provided they are essentially equivalent in form, fit, and function to those on the first sheet. As a requisite for extension of qualification, the product involved must be manufactured using the same facilities, processes, and materials as the product originally submitted for qualification. Qualification of the lowest total delay time and highest total delay time for a given specification sheet will extend qualification for all intermediate total delay values. Lowest time delay shall have lowest impedance; highest time delay shall have highest impedance. Qualification shall not be extended from one product assurance level to another, nor from one case style to another."

4.5.1, add "Inspection of product for delivery for level S shall be in accordance with the quality conformance inspection of method 5008 of MIL-STD-883, class S."

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TABLE I, Group II, reverse the position of "Vibration" and "Shock" in the order of testing.

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4.5.2.1.1, delete in its entirety and substitute the following:

"4.5.2.1.1 Sampling plan. Every 12 months, 4 sample units of any total delay value of each specification sheet produced during the month prior to the annual inspection, shall be subjected to the inspection. If, during a 12-month period, qualification testing has been successfully completed on delay lines covered by extent of qualification (see 4.4.4), inspection may be omitted for that 12-month period."

4.5.3, delete in its entirety and substitute the following:

"4.5.3 Inspection of packaging. The sampling and inspection of the preservation, packing, and container marking shall be in accordance with the requirements of MIL-M-55565."

4.6.8, delete in its entirety and substitute the following:

"4.6.8 Seal (see 3.10)."

* Add 4.6.8.1 as follows:

"4.6.8.1 Level A. Delay lines shall be immersed for a minimum of two minutes in a bath of water, or any other suitable liquid of no greater density and surface tension, maintained at a temperature of at least 85°C. The temperature of the delay line shall not exceed 40°C at the time of immersion."

Add 4.6.8.2 as follows:

"4.6.8.2 Levels B and S. Levels B and S delay lines shall be tested in accordance with method 1014 of MIL-STD-883."

* 4.6.9.1.2, delete in its entirety and substitute the following:

"4.6.9.1.2 Rise time. The rise time of pulses taken at the output shall be measured to determine conformance with 3.11.2."

4.6.9.1.3, delete "The delay times shall be measured at the maximum and minimum operating temperatures." and substitute "The output of the delay line shall be measured at the maximum and minimum operating temperatures."

4.6.11, delete in its entirety and substitute the following:

"4.6.11 Vibration (see 3.13). Level A delay lines shall be tested in accordance with method 214 of MIL-STD-202. Levels B and S delay lines shall be tested in accordance with method 2007, condition A, of MIL-STD-883.

- a. Method of mounting: Delay lines shall be mounted by soldering to a printed wiring board.
- b. One test point.
- c. Test conditions I and K: Fifteen minutes.
- d. Measurements before and after: Delay time.
- e. There shall be no electrical discontinuity during the test."

4.6.15, delete "MIL-STD-202." and substitute "MIL-STD-202, except step 7b, which is not applicable."

5.1, delete in its entirety and substitute the following:

"5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-55565."

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- * Appendix, case style A, side view: Delete ".050 ±.010" standoff width dimension and substitute ".050 ±.020". Bottom view: Delete ".300 ±.010" dimension between lead rows and substitute ".300 -.010 +.020."

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- * Appendix, case style B, side view: Delete ".050 ±.010" standoff width dimension and substitute ".050 ±.020". Bottom view: Delete ".300 ±.010" dimension between lead rows and substitute ".300 -.010 +.020."

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- * Appendix, case style C, side view: Delete ".050 ±.010" standoff width dimension and substitute ".050 ±.020". Bottom view: Delete ".300 ±.010" dimension between lead rows and substitute ".300 -.010 +.020."

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- * Appendix, case style D, top view: Delete ".486 ±.005" case width dimension and substitute ".498 ±.005". Bottom view: Delete ".093 ±.005" lead center to case dimension and substitute ".099 ±.005". Bottom view: Delete ".300 ±.005" dimension between lead rows and substitute ".300 -.010 +.020".

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- * Case style D inch-metric conversion table: Delete ".093/2.36" and ".486/12.34". Add ".099/2.52" and ".498/12.65".

The margins of this amendment are marked with asterisks 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.

CONCLUDING MATERIAL

Custodians:

Army - ER
Navy - EC
Air Force - 85

Review activities:

Air Force - 11, 19, 99
DLA - ES

User activities:

Navy - AS, CG, MC, SH

Preparing activity:

Air Force - 85

Agent:

DLA - ES

(Project 5999-0269)