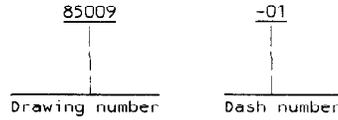


1. SCOPE

1.1 Scope. This drawing describes the requirements for a family of 14-pin delay Lines with two delay Lines per package.

1.2 Part or Identifying Number (PIN). The complete PIN shall be as shown in the following example:



2. APPLICABLE DOCUMENTS

2.1 Government documents

2.1.1 Government specifications and standard. The following specifications and standard form a part of this drawing to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

- DOD-D-1000 - Drawing, Engineering and Associated List.
- MIL-D-83532 - Delay Lines, Active, General specification for.

STANDARD

MILITARY

- MIL-STD-202 - Test Methods for Electronic and Electrical Component Parts.

(Copies of the specifications and standard required by contractors in connection with specific acquisition functions may be obtained from the DODSSP, Standardization Document Order Desk, 700 Robbins Avenue, Building 40, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence. Nothing in this drawing, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Drawing precedence. This drawing takes precedence over documents referred to herein and shall be interpreted in accordance with DOD-D-1000.

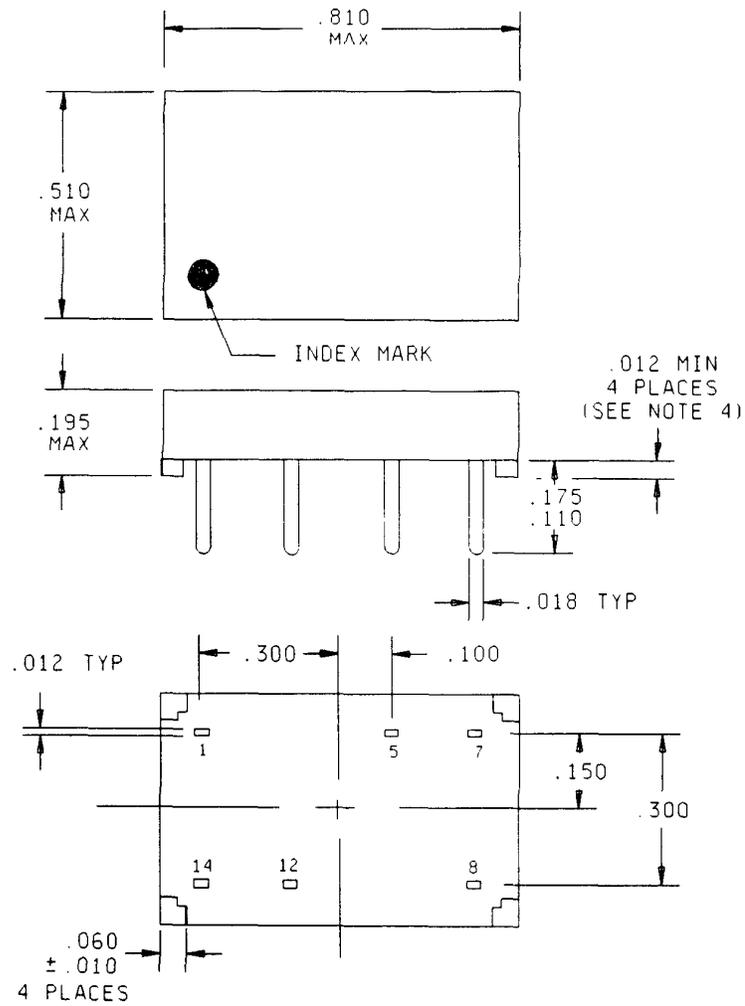
3.2 Case material. The case material shall be molded diallyl phthalate or encapsulated epoxy and shall be in accordance with MIL-D-83532.

3.3 Design and dimensions. The design and dimensions shall be in accordance with figure 1.

3.2 Terminals. The terminal material and finish shall be in accordance with MIL-D-83532.

3.5 Temperature coefficient of delay. The temperature coefficient of delay shall be +1200 ppm/°C maximum.

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Inches	mm
.012	0.30
.018	0.46
.060	1.52
.100	2.54
.110	2.79
.175	4.45
.195	4.95
.300	7.62
.510	12.95
.810	20.57

FIGURE 1. Design and dimensions.

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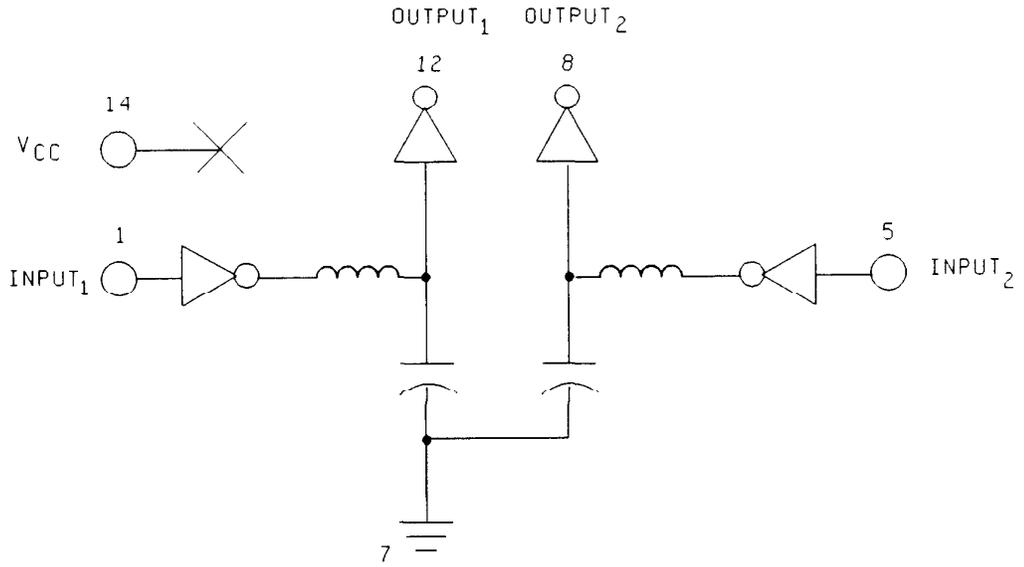
SIZE
A

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CIRCUIT DIAGRAM

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± 0.005 (0.13 mm).
4. Location, shape, and dimensions of standoffs are optional. Height shall be as indicated.
5. Leads shall be free of case meniscus and other foreign material and shall be solderable for a minimum of .010 inch (0.25 mm) above the seating plane of the delay line.

FIGURE 1. Design and dimensions - Continued.

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3.6 Total delay time. The total delay time shall be in accordance with table I.

TABLE I. PIN's and delay times.

DESC PIN 85009-	Delay per line (ns)	DESC PIN 85009-	Delay per line (ns)
01	5	22	30
02	6	23	35
03	7	24	40
04	8	25	45
05	9	26	50
06	10	27	55
07	11	28	60
08	12	29	65
09	13	30	70
10	14	31	75
11	15	32	80
12	16	33	85
13	17	34	90
14	18	35	95
15	19	36	100
16	20	37	125
17	21	38	150
18	22	39	175
19	23	40	200
20	24	41	225
21	25	42	250

3.7 Delay tolerance. The delay tolerance shall be ± 2 ns or ± 5 percent, whichever is greater (at $+25^{\circ}\text{C}$ with $V_{CC} = 5.0$ V dc).

3.8 Rise time. The rise time shall be 4 ns maximum.

3.9 Pulse width. The minimum input pulse width shall be 100 percent of the total delay.

3.10 Supply voltage (V_{CC}). The supply voltage shall be 4.75 V dc to 5.25 V dc.

3.11 Supply current:

- a. Constant "0" in 60 mA maximum.
- b. Constant "1" in 20 mA maximum.

3.12 Logic 1 input. The logic 1 input shall be 50 μA maximum at 2.4 volts or 1.0 mA maximum at 5.5 volts.

3.13 Logic 0 input. The logic 0 input shall be -2 mA maximum at 0.8 volt maximum.

3.14 Logic 1, V_{OUT} . The logic 1, V_{OUT} shall be 2.4 volts minimum.

3.15 Logic 0, V_{OUT} . The logic 0, V_{OUT} shall be 0.4 volt minimum.

3.16 Fan-out. The fan-out shall be 10 maximum (each delay line is capable of driving 10 TTL).

3.17 Thermal shock. The thermal shock test shall be in accordance with method 107, test condition A, of MIL-STD-202, 5 minutes at temperature extremes and as specified in MIL-D-83532.

3.18 Seal. The seal test shall be in accordance with MIL-D-83532.

3.19 Terminal strength. The terminal strength test shall be in accordance with method 211, test condition C of MIL-STD-202, and as specified in MIL-D-83532.

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3.20 Vibration. The vibration test shall be in accordance with method 204, test condition B of MIL-STD-202, and as specified in MIL-D-83532.

3.21 Shock. The shock test shall be in accordance with method 213, test condition D of MIL-STD-202 and as specified in MIL-D-83532.

3.22 Immersion. The immersion test shall be in accordance with method 104, test condition A of MIL-STD-202, and as specified in MIL-D-83532.

3.23 Moisture resistance. The moisture resistance test shall be as specified in MIL-D-83532.

3.24 Solderability. The solderability test shall be as specified in MIL-D-83532.

3.25 Resistance to solvents. The resistance to solvents test shall be as specified in MIL-D-83532.

3.26 Check for internal shorts. When a test signal is applied to any input, a delay signal should be detected at the output for that line only. For example, when input 1 is tested, there shall be no signal detected at output 2. Both inputs shall be checked in this manner to ensure there are no shorts between lines.

3.27 Temperature range. The operating temperature range shall be -55°C to $+125^{\circ}\text{C}$.

3.28 Marking. Marking shall be in accordance with MIL-D-83532, except that the military PIN shall be as specified in 1.2.

3.29 Workmanship. Parts shall be free of flash pits, voids, excessive mold marks, and other defects that could affect the performance of the parts. Visible parting line is acceptable.

3.30 Certificate of compliance. Each manufacturer desiring to be listed as a suggested source of supply (see 6.3) shall submit a certificate of compliance to DESC-EMM. The certificate shall state that the manufacturer's product meets all the requirements of this drawing.

4. QUALITY ASSURANCE PROVISIONS

4.1 Quality conformance inspection.

4.1.1 Inspection of product for delivery. Inspection of product for delivery shall consist of compliance with the group A inspection for level A of MIL-D-83532.

4.1.2 Certification. The acquiring activity, at its discretion, may accept a statement of compliance with the group A requirements in lieu of the manufacturer performing the group A tests (see 6.2.c).

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be as specified in the acquisition document.

6. NOTES

6.1 Intended use. Devices conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application.

6.2 Ordering data. The acquisition document should specify the following as a minimum:

- a. Complete DESC PIN (see 1.2).
- b. Requirement for the manufacturer to deliver one copy of the quality conformance inspection data with each shipment of parts.
- c. Whether the manufacturer performs the group A test or provides a statement of compliance with the group A requirements (see 4.1.2).
- d. Requirement for the manufacturer to notify the acquiring activity in the event of a change in product.
- e. Requirements for packaging and packing.

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6.3 Assistance. Questions or comments pertaining to this drawing should be addressed to DESC-EMM, 1507 Wilmington Pike, Dayton, OH 45444-5270. telephone (513) 296-5255.

6.4 Suggested sources of supply. Suggested sources of supply are listed below. Additional sources will be added as they become available. This table is not a qualified products list or an approved source list. The vendors indicated have submitted certificates of compliance to DESC; however, parts may be ordered from any manufacturer who agrees to supply components which conform to all the requirements of this drawing.

DESC PIN 85009-	Similar vendor PIN and CAGE code 1/				
	CAGE 00222	CAGE 22519	CAGE 20933	CAGE 16714	CAGE 50965
01	96-75-1	MDU2-8513-1	00T238	DSP009-01	8009-01
02	96-75-2	MDU2-8513-2	00T239	DSP009-02	8009-02
03	96-75-3	MDU2-8513-3	00T240	DSP009-03	8009-03
04	96-75-4	MDU2-8513-4	00T241	DSP009-04	8009-04
05	96-75-5	MDU2-8513-5	00T242	DSP009-05	8009-05
06	96-75-6	MDU2-8513-6	00T243	DSP009-06	8009-06
07	96-75-7	MDU2-8513-7	00T244	DSP009-07	8009-07
08	96-75-8	MDU2-8513-8	00T245	DSP009-08	8009-08
09	96-75-9	MDU2-8513-9	00T246	DSP009-09	8009-09
10	96-75-10	MDU2-8513-10	00T247	DSP009-10	8009-10
11	96-75-11	MDU2-8513-11	00T248	DSP009-11	8009-11
12	96-75-12	MDU2-8513-12	00T249	DSP009-12	8009-12
13	96-75-13	MDU2-8513-13	00T250	DSP009-13	8009-13
14	96-75-14	MDU2-8513-14	00T251	DSP009-14	8009-14
15	96-75-15	MDU2-8513-15	00T252	DSP009-15	8009-15
16	96-75-16	MDU2-8513-16	00T253	DSP009-16	8009-16
17	96-75-17	MDU2-8513-17	00T254	DSP009-17	8009-17
18	96-75-18	MDU2-8513-18	00T255	DSP009-18	8009-18
19	96-75-19	MDU2-8513-19	00T256	DSP009-19	8009-19
20	96-75-20	MDU2-8513-20	00T257	DSP009-20	8009-20
21	96-75-21	MDU2-8513-21	00T258	DSP009-21	8009-21
22	96-75-22	MDU2-8513-22	00T259	DSP009-22	8009-22
23	96-75-23	MDU2-8513-23	00T260	DSP009-23	8009-23
24	96-75-24	MDU2-8513-24	00T261	DSP009-24	8009-24
25	96-75-25	MDU2-8513-25	00T262	DSP009-25	8009-25
26	96-75-26	MDU2-8513-26	00T263	DSP009-26	8009-26
27	96-75-27	MDU2-8513-27	00T264	DSP009-27	8009-27
28	96-75-28	MDU2-8513-28	00T265	DSP009-28	8009-28
29	96-75-29	MDU2-8513-29	00T266	DSP009-29	8009-29
30	96-75-30	MDU2-8513-30	00T267	DSP009-30	8009-30
31	96-75-31	MDU2-8513-31	00T268	DSP009-31	8009-31

See footnote at end of table.

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DESC PIN 85009-	Similar vendor PIN and CAGE code 1/				
	CAGE 00222	CAGE 22519	CAGE 20933	CAGE 16714	CAGE 50965
32	96-75-32	MDU2-8513-32	00T269	DSP009-32	8009-32
33	96-75-33	MDU2-8513-33	00T270	DSP009-33	8009-33
34	96-75-34	MDU2-8513-34	00T271	DSP009-34	8009-34
35	96-75-35	MDU2-8513-35	00T272	DSP009-35	8009-35
36	96-75-36	MDU2-8513-36	10T414	DSP009-36	8009-36
37	96-75-37	MDU2-8513-37	10T415	DSP009-37	8009-37
38	96-75-38	MDU2-8513-38	10T416	DSP009-38	8009-38
39	96-75-39	MDU2-8513-39	10T417	DSP009-39	8009-39
40	96-75-40	MDU2-8513-40	10T418	DSP009-40	8009-40
41	96-75-41	MDU2-8513-41	10T419	DSP009-41	8009-41
42	96-75-42	MDU2-8513-42	10T420	DSP009-42	8009-42

1/ CAUTION: Do not use vendor PIN's for item acquisition or marking.

<u>Vendor CAGE number</u>	<u>Vendor name and address</u>
00222	ESC Electronics Corporation 534 Bergen Boulevard Palisades Park, NJ 07650 (201) 947-0400
22519	Data Delay Devices, Incorporated 3 Mt. Prospect Avenue Clifton, NJ 07013 (201) 773-2299
20933	Kappa Technologies, Incorporated 1443 Pinewood Street Rahway, NJ 07065 (908) 396-9400
16714	Rhombus Industries, Incorporated 15801 Chemical Lane Huntington Beach, CA 92649 (714) 898-0960
50965	Princeton Advanced Components, Incorporated 860 State Road Princeton, NJ 08540 (609) 924-2444

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