[INCH-POUND]
A-A-59465/1
15 July 1999

COMMERCIAL ITEM DESCRIPTION
SPECIFICATION SHEET

DELAY LINE, ACTIVE, 14 PIN SURFACE MOUNT, 5 TAP, 5 TO 500 NANOSECONDS

The General Services Administration has authorized the use of this commercial item description (CID) for all federal agencies.

1. SCOPE. This CID covers the general requirements for active delay lines. Active delay lines covered by this CID are intended for commercial/industrial applications.

2. CLASSIFICATION. This CID uses a classification system which is included in the Part Identification Number (PIN) as shown in the following example (see 7.1).

AA59465	/01	-	001
CID number	Applicable CID sheet (two digits)		Dash number (see applicable CID sheet)

3. SALIENT CHARACTERISTICS.

3.1 Interface and physical dimensions. Active delay lines supplied to this CID shall be as specified herein (see figure 1).

3.2 Electrical characteristics. Electrical characteristics shall be as specified in Table I and II.

3.3 Operating temperature range: -55°C to +125°C.

3.4 Storage temperature range: -65°C to +130°C.

3.4 Terminal material: Material shall be copper, nickel; tin plated or solder dipped with a minimum lead content of 3 percent.

3.5 Delay tolerance: See Table I and II.

3.6 Tap delays: See Table I and II.

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any data which may improve this document should be sent to: Defense Supply Center, Columbus, ATTN: DSCC VAM, 3990 East Broad Street, Columbus OH 43213-1199, or telephone (614)692-0542, or facsimile (FAX) (614) 692-6939.

3.7 Delay times: Delay time from input to all taps shall be as specified in Table I and II.

3.8 Input pulse characteristics: Delay lines shall be capable of meeting applicable Table I and II requirements with an input pulse having the following characteristics:

a. leading edge of a positive-going pulse.

b. minimum pulse width of 50 percent of total delay time.

c. fixed pulse repetition rate equal to ten times the total delay time.

d. duty cycle not to exceed 50 percent.

3.9 Output rise time (applied to leading edge only): 4 ns maximum for dash numbers 001 through 025; 5 ns maximum for dash numbers 026 through 031. Measurement conditions ($-55°C \leq T_C \leq +125°C$): V_{CC} = 5.0 V dc; $TR_I \leq 3$ ns; C_L = 50 pF; R_L = 500Ω.

3.10 DC parameters (over operating temperature range): See table III.

3.11 Rated maximum load (fan-out): Ten TTL Schottky loads per tap (no more than 20 TTL Schottky loads per unit).

3.12 Number of sections: Five sections minimum, except for dash numbers 001 through 005 which shall have four sections minimum.

3.13 Power dissipation. 385 mW maximum at any tap.

3.14 Marking. Active delay lines supplied to this CID shall be marked with the manufacturer's (MFGR) standard commercial PIN.

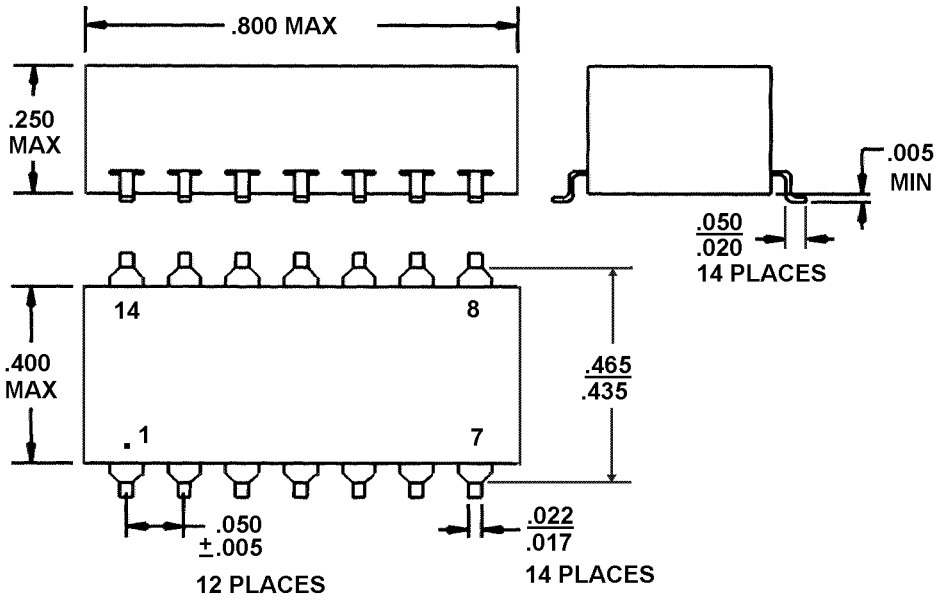
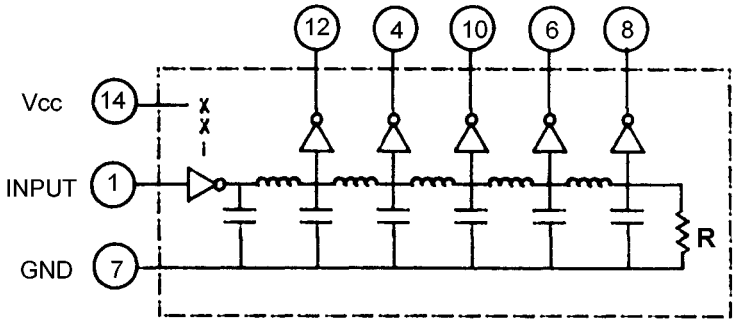


FIGURE 1. Interface and physical dimensions.



NOTES:
1. Dimensions are in inches.

Inches	mm
.005	0.13
.017	0.43
.020	0.51
.022	0.56
.050	1.27
.250	6.35
.400	10.16
.435	11.05
.465	11.81
.800	20.32

FIGURE 1. Interface and physical dimensions. - Continued

TABLE I. Dash numbers and delay characteristics at +25°C, V_{CC} = 5.00 +/- .01 volts.

Dash Number	Delay and tolerances (ns)				
	Tap 1 Pin 12	Tap 2 Pin 4	Tap 3 Pin 10	Tap 4 Pin 6	Output Pin 8
001	5.0 ±2 ns	10 ±2 ns	15 ±2 ns	20 ±2 ns	25 ±2 ns
002	6.0 ±2 ns	12 ±2 ns	18 ±2 ns	24 ±2 ns	30 ±2 ns
003	7.0 ±2 ns	14 ±2 ns	21 ±2 ns	28 ±2 ns	35 ±2 ns
004	8.0 ±2 ns	16 ±2 ns	24 ±2 ns	32 ±2 ns	40 ±2 ns
005	9.0 ±2 ns	18 ±2 ns	27 ±2 ns	36 ±2 ns	45 ±5%
006	10 ±2 ns	20 ±2 ns	30 ±2 ns	40 ±2 ns	50 ±5%
007	11 ±2 ns	22 ±2 ns	33 ±2 ns	44 ±5%	55 ±5%
008	12 ±2 ns	24 ±2 ns	36 ±2 ns	48 ±5%	60 ±5%
009	13 ±2 ns	26 ±2 ns	39 ±2 ns	52 ±5%	65 ±5%
010	14 ±2 ns	28 ±2 ns	42 ±5%	56 ±5%	70 ±5%
011	15 ±2 ns	30 ±2 ns	45 ±5%	60 ±5%	75 ±5%
012	16 ±2 ns	32 ±2 ns	48 ±5%	64 ±5%	80 ±5%
013	18 ±2 ns	36 ±2 ns	54 ±5%	72 ±5%	90 ±5%
014	20 ±2 ns	40 ±2 ns	60 ±5%	80 ±5%	100 ±5%
015	25 ±2 ns	50 ±5%	75 ±5%	100 ±5%	125 ±5%
016	30 ±2 ns	60 ±5%	90 ±5%	120 ±5%	150 ±5%
017	35 ±2 ns	70 ±5%	105 ±5%	140 ±5%	175 ±5%
018	40 ±2 ns	80 ±5%	120 ±5%	160 ±5%	200 ±5%
019	45 ±5%	90 ±5%	135 ±5%	180 ±5%	225 ±5%
020	50 ±5%	100 ±5%	150 ±5%	200 ±5%	250 ±5%
021	55 ±5%	110 ±5%	165 ±5%	210 ±5%	275 ±5%
022	60 ±5%	120 ±5%	180 ±5%	240 ±5%	300 ±5%
023	70 ±5%	140 ±5%	210 ±5%	280 ±5%	350 ±5%
024	80 ±5%	160 ±5%	240 ±5%	320 ±5%	400 ±5%
025	90 ±5%	180 ±5%	270 ±5%	360 ±5%	450 ±5%
026	100 ±5%	200 ±5%	300 ±5%	400 ±5%	500 ±5%
027	120 ±5%	240 ±5%	360 ±5%	480 ±5%	600 ±5%
028	140 ±5%	280 ±5%	420 ±5%	560 ±5%	700 ±5%
029	160 ±5%	320 ±5%	480 ±5%	640 ±5%	800 ±5%
030	180 ±5%	360 ±5%	540 ±5%	720 ±5%	900 ±5%
031	200 ±5%	400 ±5%	600 ±5%	800 ±5%	1000 ±5%

TABLE II. Dash numbers and delay characteristics at -55°C and +125°C, V_{CC} = 5.00 +/- .01 volts.

Dash number	Delay and tolerances (ns)				
	Tap 1 Pin 12	Tap 2 Pin 4	Tap 3 Pin 10	Tap 4 Pin 6	Output Pin 8
001	5.0 ±3 ns	10 ±3 ns	15 ±3 ns	20 ±3 ns	25 ±3 ns
002	6.0 ±3 ns	12 ±3 ns	18 ±3 ns	24 ±3 ns	30 ±3 ns
003	7.0 ±3 ns	14 ±3 ns	21 ±3 ns	28 ±3 ns	35 ±3 ns
004	8.0 ±3 ns	16 ±3 ns	24 ±3 ns	32 ±3 ns	40 ±3 ns
005	9.0 ±3 ns	18 ±3 ns	27 ±3 ns	36 ±3 ns	45 ±8%
006	10 ±3 ns	20 ±3 ns	30 ±3 ns	40 ±3 ns	50 ±8%
007	11 ±3 ns	22 ±3 ns	33 ±3 ns	44 ±8%	55 ±8%
008	12 ±3 ns	24 ±3 ns	36 ±3 ns	48 ±8%	60 ±8%
009	13 ±3 ns	26 ±3 ns	39 ±3 ns	52 ±8%	65 ±8%
010	14 ±3 ns	28 ±3 ns	42 ±%	56 ±8%	70 ±8%
011	15 ±3 ns	30 ±3 ns	45 ±8%	60 ±8%	75 ±8%
012	16 ±3 ns	32 ±3 ns	48 ±8%	64 ±8%	80 ±8%
013	18 ±3 ns	36 ±3 ns	54 ±8%	72 ±8%	90 ±8%
014	20 ±3 ns	40 ±3 ns	60 ±8%	80 ±8%	100 ±8%
015	25 ±3 ns	50 ±%	75 ±8%	100 ±8%	125 ±8%
016	30 ±3 ns	60 ±8%	90 ±8%	120 ±8%	150 ±8%
017	35 ±3 ns	70 ±8%	105 ±8%	140 ±8%	175 ±8%
018	40 ±3 ns	80 ±8%	120 ±8%	160 ±8%	200 ±8%
019	45 ±8%	90 ±8%	135 ±8%	180 ±8%	225 ±8%
020	50 ±8%	100 ±8%	150 ±8%	200 ±8%	250 ±8%
021	55 ±8%	110 ±8%	165 ±8%	210 ±8%	275 ±8%
022	60 ±8%	120 ±8%	180 ±8%	240 ±8%	300 ±8%
023	70 ±8%	140 ±8%	210 ±8%	280 ±8%	350 ±8%
024	80 ±8%	160 ±8%	240 ±8%	320 ±8%	400 ±8%
025	90 ±8%	180 ±8%	270 ±8%	360 ±8%	450 ±8%
026	100 ±8%	200 ±8%	300 ±8%	400 ±8%	500 ±8%
027	120 ±8%	240 ±8%	360 ±8%	480 ±8%	600 ±8%
028	140 ±8%	280 ±8%	420 ±8%	560 ±8%	700 ±8%
029	160 ±8%	320 ±8%	480 ±8%	640 ±8%	800 ±8%
030	180 ±8%	360 ±8%	540 ±8%	720 ±8%	900 ±8%
031	200 ±8%	400 ±8%	600 ±8%	800 ±8%	1000 ±8%

TABLE III. DC characteristics.

Test	Symbol	Conditions $-55°C \leq T_C \leq +125°C$	Limits		Unit
			Min	Max	
High level output voltage	V_{OH}	V_{CC} = 4.5 V V_{IH} = 2.0 V I_{OH} = -1 mA	2.5		V
Low level output voltage	V_{OL}	V_{CC} = 4.5 V V_{IL} = 0.8 V I_{OL} = 20 mA		0.5	V
Input clamp voltage	V_{IC}	V_{CC} = 4.5 V I_I = -18 mA T_C = +25°C		-1.2	V
High level input current	I_{IH1}	V_{CC} = 5.5 V, V_{IH} = 2.7 V		50	µA
	I_{IH2}	V_{CC} = 5.5 V, V_{IH} = 5.5 V		1000	µA
Low level input current	I_{IL}	V_{CC} = 5.5 V, V_{IL} = 0.5		-2.0	mA
Short circuit output current	I_{OS}	V_{CC} = 5.5 V, V_{OS} = 0.0 V |(not more than one output shorted at a time)	-40	-150	mA
Low level supply current	I_{CCL}	V_{CC} = 5.5 V V_I = 0.0 V		75	mA

4. REGULATORY REQUIREMENTS. This section is not applicable to this CID sheet.

5. QUALITY ASSURANCE PROVISIONS. Quality assurance provisions shall be as specified in A-A-59465.

6. PACKAGING. Packaging shall be as specified in A-A-59465.

7. NOTES.

7.1 PIN. The PIN should be used for Government purposes to buy commercial products to this CID. See section 2 for PIN format example.

7.2 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of these active delay lines to DSCC under the Military Parts Control Advisory Group (MPCAG) evaluation program, CAGE code 58536 should be used.

7.3 Source of documents.

Commercial Item Description

A-A-59465 - Delay Line, Active, General Requirements for.

7.4 Ordering data. Ordering data shall be as specified in A-A-59465.

7.5 Commercial products. As part of the market analysis and research effort, this CID was coordinated with the following manufacturers of commercial products. At the time of CID preparation and coordination, these manufacturers were known to have commercial products that would meet the requirements of this CID. (NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict procurement to only the manufacturers shown.)

MFGR's CAGE	MFGR's name and address
22519	Data Delay Devices, Incorporated 3 Mount Prospect Avenue Clifton, NJ 07013-1915 Phone: (201) 773-2299
50965	Princeton Advanced Components, Incorporated 860 State Road Princeton, NJ 08540 Phone: (609) 924-2444
90095	Pulse Components Division A Technitrol Company 2 Pearl Buck Court Bristol, PA 19007-6812 Phone: (215) 781-6400

7.6 Part number (P/N) supersession data. This CID supersedes the following manufacturer's P/N's as shown. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE II. P/N supersession data.

CID Dash number (see table I)	Vendor commercial P/N 1/	Vendor commercial P/N 1/	Vendor commercial P/N 1/
AA59465/1-	MFGR's CAGE 00222	MFGR's CAGE 50965	MFGR's CAGE 90095
001	DDU4F-5025MA2	4701	TTLDL025
002	DDU4F-5030MA2	4702	
003	DDU4F-5035MA2	4703	
004	DDU4F-5040MA2	4704	
005	DDU4F-5045MA2	4705	
006	DDU4F-5050MA2	4706	TTLDL050
007	DDU4F-5055MA2	4707	
008	DDU4F-5060MA2	4708	
009	DDU4F-5065MA2	4709	
010	DDU4F-5070MA2	4710	
011	DDU4F-5075MA2	4711	TTLDL075
012	DDU4F-5080MA2	4712	
013	DDU4F-5090MA2	4713	
014	DDU4F-5100MA2	4714	TTLDL100
015	DDU4F-5125MA2	4715	TTLDL125
016	DDU4F-5150MA2	4716	TTLDL150
017	DDU4F-5175MA2	4717	
018	DDU4F-5200MA2	4718	TTLDL200
019	DDU4F-5225MA2	4719	
020	DDU4F-5250MA2	4720	TTLDL250
021	DDU4F-5275MA2	4721	
022	DDU4F-5300MA2	4722	
023	DDU4F-5350MA2	4723	
024	DDU4F-5400MA2	4724	
025	DDU4F-5450MA2	4725	
026	DDU4F-5500MA2	4726	TTLDL500
027	DDU4F-5600MA2	4727	
028	DDU4F-5700MA2	4728	
029	DDU4F-5800MA2	4729	
030	DDU4F-5900MA2	4730	
031	DDU4F-51000MA2	4731	

1/ The manufacturer's P/N shall not be used for procurement to the requirements of this CID. At the time of preparation of this CID, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown.

7.7 Government users. To acquire information on obtaining these active delay lines from the Government inventory system, contact Defense Supply Center, Columbus, ATTN: DSCC-CNBG, P.O. Box 3990, Columbus, OH 43216-5000, or telephone (614) 692-7926.

MILITARY INTERESTS

Custodians:
Army - CR
Navy – EC
Air Force - 11
DLA-CC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - 7FXE

Preparing Activity:
DLA - CC

Project 5999-0345-001