

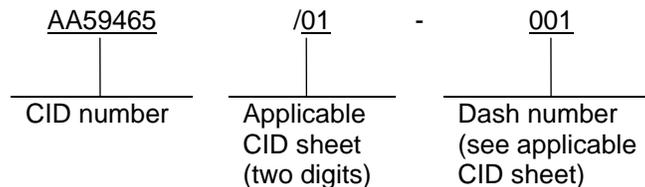
COMMERCIAL ITEM DESCRIPTION
SPECIFICATION SHEET

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.

The complete requirements for procuring the active delay lines described herein shall consist of this document and the issue in effect of CID [A-A-59465](#).

CLASSIFICATION OR PART IDENTIFICATION NUMBER (PIN). This commercial item description (CID) specification sheet uses a classification system which is included in the PIN as shown in the following example (see [NOTES](#)).



SALIENT CHARACTERISTICS.

Interface and physical dimensions. Active delay lines supplied to this CID specification sheet shall be as specified herein (see [figure 1](#)).

Electrical characteristics. Electrical characteristics shall be as specified in Table [I](#) and [II](#).

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

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

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

Delay tolerance. See Table [I](#) and [II](#).

Tap delays. See Table [I](#) and [II](#).

Delay times. Delay time from input to all taps shall be as specified in Table [I](#) and [II](#).

AMSC N/A

FSC 5999



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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.

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 ($-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$): $V_{CC} = 5.0 \text{ V dc}$; $TR_I \leq 3 \text{ ns}$; $C_L = 50 \text{ pF}$; $R_L = 500\Omega$.

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

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

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

Power dissipation. 385 mW maximum at any tap.

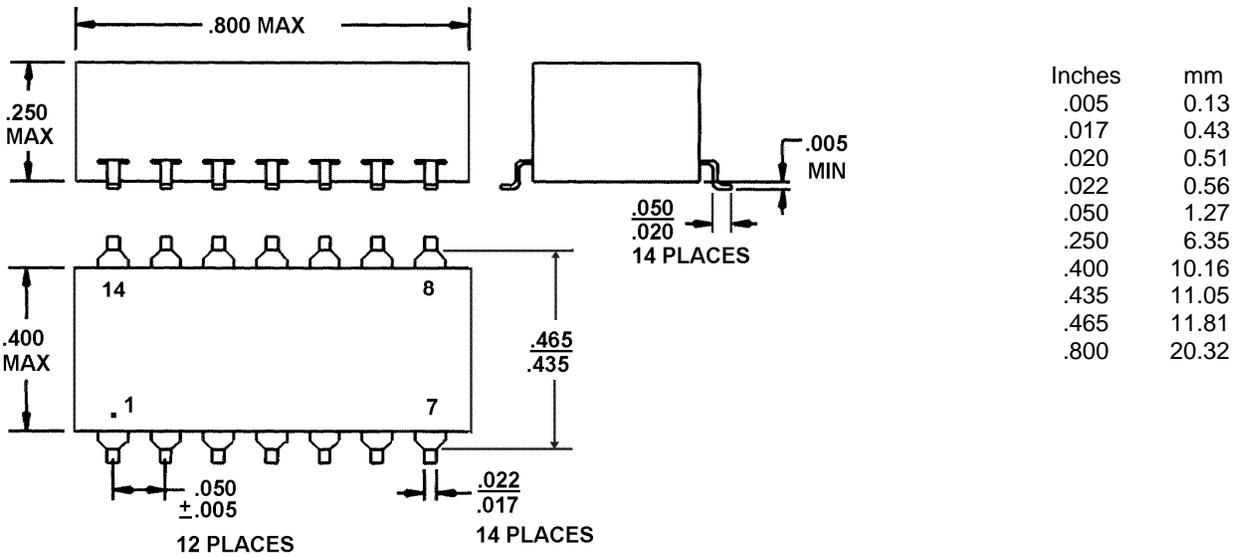
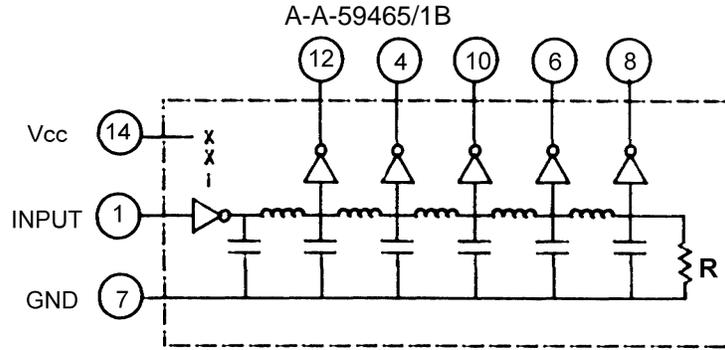


FIGURE 1. Interface and physical dimensions.



NOTES.

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 1. Interface and physical dimensions. - Continued

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TABLE I. Dash numbers and delay characteristics at +25°C, $V_{CC} = 5.00 \pm .01$ 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%

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TABLE II. Dash numbers and delay characteristics at -55°C and $+125^{\circ}\text{C}$, $V_{\text{CC}} = 5.00 \pm .01$ 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 \pm 3 ns	10 \pm 3 ns	15 \pm 3 ns	20 \pm 3 ns	25 \pm 3 ns
002	6.0 \pm 3 ns	12 \pm 3 ns	18 \pm 3 ns	24 \pm 3 ns	30 \pm 3 ns
003	7.0 \pm 3 ns	14 \pm 3 ns	21 \pm 3 ns	28 \pm 3 ns	35 \pm 3 ns
004	8.0 \pm 3 ns	16 \pm 3 ns	24 \pm 3 ns	32 \pm 3 ns	40 \pm 3 ns
005	9.0 \pm 3 ns	18 \pm 3 ns	27 \pm 3 ns	36 \pm 3 ns	45 \pm 8%
006	10 \pm 3 ns	20 \pm 3 ns	30 \pm 3 ns	40 \pm 3 ns	50 \pm 8%
007	11 \pm 3 ns	22 \pm 3 ns	33 \pm 3 ns	44 \pm 8%	55 \pm 8%
008	12 \pm 3 ns	24 \pm 3 ns	36 \pm 3 ns	48 \pm 8%	60 \pm 8%
009	13 \pm 3 ns	26 \pm 3 ns	39 \pm 3 ns	52 \pm 8%	65 \pm 8%
010	14 \pm 3 ns	28 \pm 3 ns	42 \pm %	56 \pm 8%	70 \pm 8%
011	15 \pm 3 ns	30 \pm 3 ns	45 \pm 8%	60 \pm 8%	75 \pm 8%
012	16 \pm 3 ns	32 \pm 3 ns	48 \pm 8%	64 \pm 8%	80 \pm 8%
013	18 \pm 3 ns	36 \pm 3 ns	54 \pm 8%	72 \pm 8%	90 \pm 8%
014	20 \pm 3 ns	40 \pm 3 ns	60 \pm 8%	80 \pm 8%	100 \pm 8%
015	25 \pm 3 ns	50 \pm %	75 \pm 8%	100 \pm 8%	125 \pm 8%
016	30 \pm 3 ns	60 \pm 8%	90 \pm 8%	120 \pm 8%	150 \pm 8%
017	35 \pm 3 ns	70 \pm 8%	105 \pm 8%	140 \pm 8%	175 \pm 8%
018	40 \pm 3 ns	80 \pm 8%	120 \pm 8%	160 \pm 8%	200 \pm 8%
019	45 \pm 8%	90 \pm 8%	135 \pm 8%	180 \pm 8%	225 \pm 8%
020	50 \pm 8%	100 \pm 8%	150 \pm 8%	200 \pm 8%	250 \pm 8%
021	55 \pm 8%	110 \pm 8%	165 \pm 8%	210 \pm 8%	275 \pm 8%
022	60 \pm 8%	120 \pm 8%	180 \pm 8%	240 \pm 8%	300 \pm 8%
023	70 \pm 8%	140 \pm 8%	210 \pm 8%	280 \pm 8%	350 \pm 8%
024	80 \pm 8%	160 \pm 8%	240 \pm 8%	320 \pm 8%	400 \pm 8%
025	90 \pm 8%	180 \pm 8%	270 \pm 8%	360 \pm 8%	450 \pm 8%
026	100 \pm 8%	200 \pm 8%	300 \pm 8%	400 \pm 8%	500 \pm 8%
027	120 \pm 8%	240 \pm 8%	360 \pm 8%	480 \pm 8%	600 \pm 8%
028	140 \pm 8%	280 \pm 8%	420 \pm 8%	560 \pm 8%	700 \pm 8%
029	160 \pm 8%	320 \pm 8%	480 \pm 8%	640 \pm 8%	800 \pm 8%
030	180 \pm 8%	360 \pm 8%	540 \pm 8%	720 \pm 8%	900 \pm 8%
031	200 \pm 8%	400 \pm 8%	600 \pm 8%	800 \pm 8%	1000 \pm 8%

TABLE III. DC characteristics.

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

NOTES.

PIN. The PIN should be used for Government purposes to buy commercial products to this CID specification sheet. See the classification information for PIN format example.

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.)

<u>MFR's CAGE</u>	<u>MFR's name and address</u>
50965	Princeton Advanced Components, Incorporated 59 Dehart Road Belle Mead, NJ 08540-5420 Phone: (609) 924-2444
90095	Pulse Electronics Corporation Pulse Components Division Two Pearl Buck Court Bristol, PA 19007-6812 Phone: (215) 781-6400

Part number (P/N) supersession data. These CID specification sheet PINs supersede the following MFR's P/N's as shown. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE IV. P/N supersession data.

CID Dash number (see table I)	Vendor commercial P/N ^{1/}	Vendor commercial P/N ^{1/}
AA59465/1-	MFGR's CAGE 50965	MFGR's CAGE 90095
001	4701	TTLDL025
002	4702	
003	4703	
004	4704	
005	4705	
006	4706	TTLDL050
007	4707	
008	4708	
009	4709	
010	4710	
011	4711	TTLDL075
012	4712	
013	4713	
014	4714	TTLDL100
015	4715	TTLDL125
016	4716	TTLDL150
017	4717	
018	4718	TTLDL200
019	4719	
020	4720	TTLDL250
021	4721	
022	4722	
023	4723	
024	4724	
025	4725	
026	4726	TTLDL500
027	4727	
028	4728	
029	4729	
030	4730	
031	4731	

^{1/} The manufacturer's P/N shall not be used for acquisition to the requirements of this CID specification sheet. At the time of preparation of this CID specification sheet, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements, see the marking paragraph of [A-A-59465](#).

Referenced documents. This document references [A-A-59465](#).

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue 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 previous issue.

MILITARY INTERESTS:

Custodians:

Army - CR

Navy - EC

Air Force - 85

DLA - CC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

Preparing Activity:

DLA - CC

Project 5999-2016-002

Review activity:

Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil/>.