

INCH-POUND

MIL-PRF-83532/4C  
19 October 2015  
SUPERSEDING  
MIL-PRF-83532/4B  
7 June 2004

## PERFORMANCE SPECIFICATION SHEET

### DELAY LINES, 14-PIN DIP COMPATIBLE, 3 DELAY CIRCUITS PER PACKAGE

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and [MIL-PRF-83532](#).

#### REQUIREMENTS:

Design and construction: Parts shall be of the design, construction, and physical dimensions specified in the appendix of [MIL-PRF-83532](#). Four case styles (A, B, C, and D) are available.

Input pulse: Delay lines must be capable of meeting applicable [table I](#) and [table II](#) requirements with an input pulse having the following characteristics:

- A: Leading edge of a positive-going pulse.
- B: Minimum pulse width of 100 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.

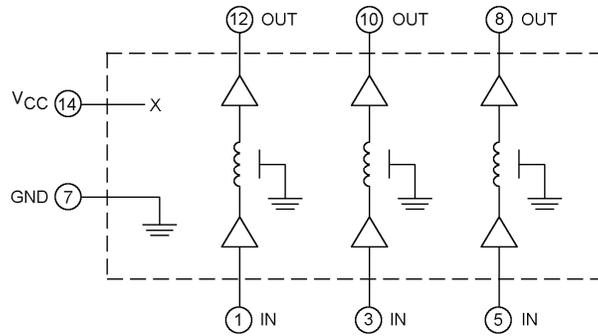
Schematic: See [figure 1](#).

Comments, suggestions, or questions on this document should be addressed to DLA Land and Maritime, ATTN: VAT, Post Office Box 3990, Columbus, OH 43218-3990 or emailed to [relay@dla.mil](mailto:relay@dla.mil). Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.



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Delay times: Delay time from input to all taps shall be as specified in [table I](#) (+25°C) and [table II](#) (-55°C and +125°C).



NOTES:

1. Schematic is for general information only.
2. Pins 2, 4, 6, 9, 11, and 13 are omitted on level A delay lines.
3. All pins are installed on level B delay lines.

FIGURE 1. Schematic.

TABLE I. Dash numbers and delay characteristics  
at +25°C, V<sub>cc</sub> = 5.00 ±.01 volts.

Dash number	Output
001	5 ±2 ns
002	6 ±2 ns
003	7 ±2 ns
004	8 ±2 ns
005	9 ±2 ns
006	10 ±2 ns
007	11 ±2 ns
008	12 ±2 ns
009	13 ±2 ns
010	14 ±2 ns
011	15 ±2 ns
012	16 ±2 ns
013	18 ±2 ns
014	20 ±2 ns
015	25 ±2 ns
016	30 ±2 ns
017	35 ±2 ns
018	40 ±2 ns
019	45 ±5%
020	50 ±5%
021	55 ±5%
022	60 ±5%
023	70 ±5%
024	80 ±5%
025	90 ±5%
026	100 ±5%
027	120 ±5%
028	125 ±5%

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TABLE II. Dash numbers and delay characteristics at -55°C and +125°C, Vcc = 5.00 ± 0.01 volts.

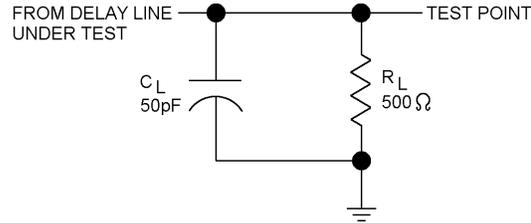
Dash number	Output
001	5 ±3 ns
002	6 ±3 ns
003	7 ±3 ns
004	8 ±3 ns
005	9 ±3 ns
006	10 ±3 ns
007	11 ±3 ns
008	12 ±3 ns
009	13 ±3 ns
010	14 ±3 ns
011	15 ±3 ns
012	16 ±3 ns
013	18 ±3 ns
014	20 ±3 ns
015	25 ±3 ns
016	30 ±3 ns
017	35 ±3 ns
018	40 ±3 ns
019	45 ±8%
020	50 ±8%
021	55 ±8%
022	60 ±8%
023	70 ±8%
024	80 ±8%
025	90 ±8%
026	100 ±8%
027	120 ±8%
028	125 ±8%

TABLE III. DC characteristics.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_{\text{C}} \leq +125^{\circ}\text{C}$	Limits		Unit
			Min	Max	
High level output voltage	$V_{\text{OH}}$	$V_{\text{CC}} = 4.5 \text{ V}$ $V_{\text{IH}} = 2.0 \text{ V}$ $I_{\text{OH}} = -1 \text{ mA}$	2.5		V
Low level output voltage	$V_{\text{OL}}$	$V_{\text{CC}} = 4.5 \text{ V}$ $V_{\text{IL}} = 0.8 \text{ V}$ $I_{\text{OL}} = 20 \text{ mA}$		0.5	V
Input clamp voltage	$V_{\text{IC}}$	$V_{\text{CC}} = 4.5 \text{ V}$ $I_{\text{I}} = -18 \text{ mA}$ $T_{\text{C}} = +25^{\circ}\text{C}$		-1.2	V
High level input current	$I_{\text{IH1}}$	$V_{\text{CC}} = 5.5 \text{ V}, V_{\text{IH}} = 2.7 \text{ V}$		50	$\mu\text{A}$
	$I_{\text{IH2}}$	$V_{\text{CC}} = 5.5 \text{ V}, V_{\text{IH}} = 5.5 \text{ V}$		1,000	$\mu\text{A}$
Low level input current	$I_{\text{IL}}$	$V_{\text{CC}} = 5.5 \text{ V}, V_{\text{IL}} = 0.5$		-2.0	mA
Short circuit output current	$I_{\text{OS}}$	$V_{\text{CC}} = 5.5 \text{ V}, V_{\text{OS}} = 0.0 \text{ V}$ (not more than one output shorted at a time)	-40	-150	mA
Low level supply current	$I_{\text{CCL}}$	$V_{\text{CC}} = 5.5 \text{ V}$ $V_{\text{I}} = 0.0 \text{ V}$		115	mA

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Output rise time (applied to leading edge only): 5 ns maximum. Measurement conditions ( $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$ ):  $V_{CC} = 5.0\text{ V dc}$ ;  $TR_1 \leq 3\text{ ns}$ . The load circuit shall be as follows ( $C_L$  includes probe and test fixture capacitance):



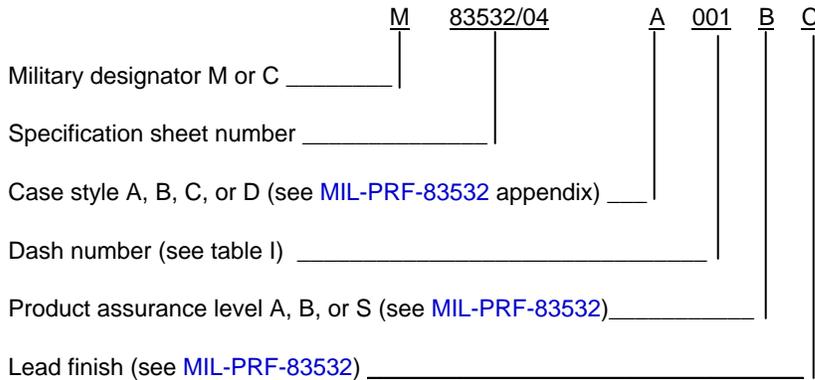
DC parameters (over operating temperature range): See [table III](#).

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

Terminations: Part terminations shall be printed-circuit pin type in accordance with [MIL-PRF-38534](#).

Operating temperature: Operating temperature range shall be  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

Part or Identifying Number (PIN): The PIN shall be in the following format:



VERIFICATION:

Extent of qualification: The extent of qualification shall be as specified in [MIL-PRF-83532](#), for example:

Qualification and testing of M83532/04A001A\* 1/ and M83532/04A028A\* 1/ shall be sufficient to grant qualification to all dash numbers with case style A contained in this specification sheet. Similarly, for case styles B, C, and D, qualification and testing of dash numbers 001 and 028 shall be sufficient to grant qualification to all dash numbers in this specification sheet having the same case style as the components tested.

1/ \* - Asterisk represents any of the applicable finishes.

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Product assurance level: Product assurance level A shall not extend to level B. Level B shall not extend to level A. Level S shall extend to level B. Level B shall not extend to level S.

Supersession data: MIL-PRF-83532/4 supersedes DESC drawing (DD) number [85151](#) when a qualified source is available.

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.

Referenced documents. In addition to [MIL-PRF-83532](#), this document references the following:

[MIL-PRF-38534](#)

Custodians:

Army - CR  
Navy - EC  
Air Force - 85  
DLA-CC

Preparing activity:

DLA - CC

(Project 5999-2015-013)

Review activities:

Navy - AS, CG, MC, SH  
Air Force - 19, 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/>.