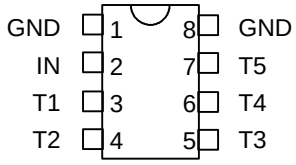
5-TAP DIP/SMD DELAY LINE
$T_D/T_R = 3$
(SERIES 1516)

data delay devices, inc.

FEATURES

- 5 taps of equal delay increment
- Delays to 200ns
- Low profile
- Epoxy encapsulated
- Meets or exceeds MIL-D-23859C



PACKAGES

IN	Signal Input
T1-T5	Tap Outputs
GND	Ground

Note: Standard pinout shown
Other pinouts available

FUNCTIONAL DESCRIPTION

The 1516-series device is a fixed, single-input, five-output, passive delay line. The signal input (IN) is reproduced at the outputs (T1-T5) in equal increments. The delay from IN to T5 (T_D) and the characteristic impedance of the line (Z) are determined by the dash number. The rise time (T_R) of the line is 30% of T_D, and the 3dB bandwidth is given by 1.05 / T_D. The device is available in a 8-pin DIP (1516) or a 8-pin SMD (1516S), and a wide range of pinouts may be specified.

Part numbers are constructed according to the scheme shown at right. For example, 1516C-101-500B is a 290 mil DIP, 100ns, 50Ω delay line with pinout code B. Similarly, 1516SB-151-501 is a 240 mil SMD, 150ns, 500Ω delay line with standard pinout.

PART NUMBER CONSTRUCTION

1516(S)m - xxx - zzz p

MOUNTING HEIGHT CODE
See Table

DELAY TIME
Expressed in nanoseconds (ns)
First two digits are significant figures
Last digit specifies # of zeros to follow

IMPEDANCE
Expressed in nanoseconds (ns)
First two digits are significant figures
Last digit specifies # of zeros to follow

PINOUT CODE
See Table
Omit for STD pinout

SERIES SPECIFICATIONS

- **Dielectric breakdown:** 50 Vdc
- **Distortion @ output:** 10% max.
- **Operating temperature:** -55°C to +125°C
- **Storage temperature:** -55°C to +125°C
- **Temperature coefficient:** 100 PPM/°C

PINOUT CODES

CODE	IN	T1	T2	T3	T4	T5	GND
STD	2	3	4	5	6	7	1,8
A	1	2	3	4	6	7	5,8
B	1	7	3	6	4	5	8
C	7	2	6	3	5	4	1,8
D	1	2	7	3	6	4	5,8

MOUNTING HEIGHT CODES

CODE	HEIGHT (MAX)	DIP	SMD
A	0.187	Yes	No
B	0.240	Yes	Yes
C	0.290	Yes	Yes

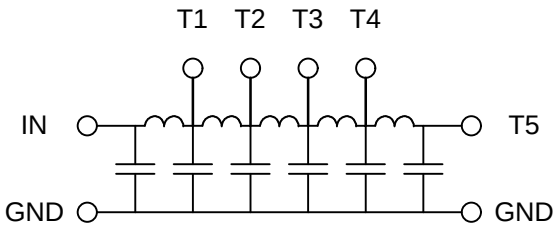
Note: Codes A and B are not available for all values of T_D
Contact technical staff for details

DELAY SPECIFICATIONS

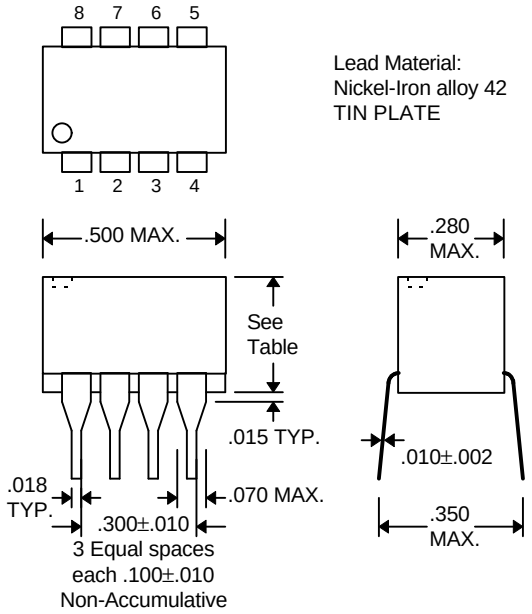
T_D	T_I	T_R	ATTENUATION (%) TYPICAL				
(ns)	(ns)	(ns)	Z=50Ω	Z=100Ω	Z=200Ω	Z=300Ω	Z=500Ω
5	1.0	3.0	N/A	5	N/A	N/A	N/A
10	2.0	4.0	3	5	5	N/A	N/A
15	3.0	5.0	3	5	5	N/A	N/A
20	4.0	6.0	3	5	5	5	N/A
25	5.0	7.0	3	5	5	5	7
30	6.0	10.0	3	5	5	5	7
40	8.0	13.0	3	5	5	5	7
50	10.0	15.0	3	5	5	7	7
60	12.0	20.0	3	5	6	7	8
75	15.0	25.0	3	5	6	7	8
80	16.0	26.0	4	5	6	7	8
100	20.0	30.0	4	5	6	7	8
110	22.0	32.0	4	5	6	7	8
125	25.0	40.0	4	5	6	7	8
150	30.0	50.0	N/A	5	8	10	10
180	36.0	60.0	N/A	7	8	10	10
200	50.0	70.0	N/A	8	10	12	12

Notes: T_I represents nominal tap-to-tap delay increment
Tolerance on T_D = ±5% or ±2ns, whichever is greater
Tolerance on T_I = ±5% or ±1ns, whichever is greater
"N/A" indicates that delay is not available at this Z

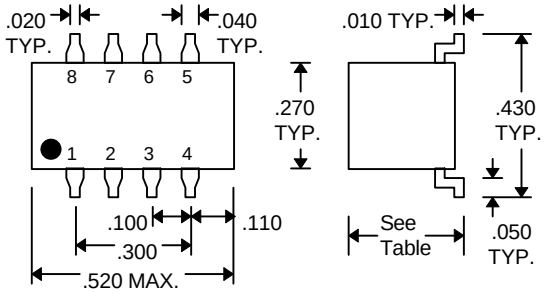
FUNCTIONAL DIAGRAM



PACKAGE DIMENSIONS



1516-xx (DIP)



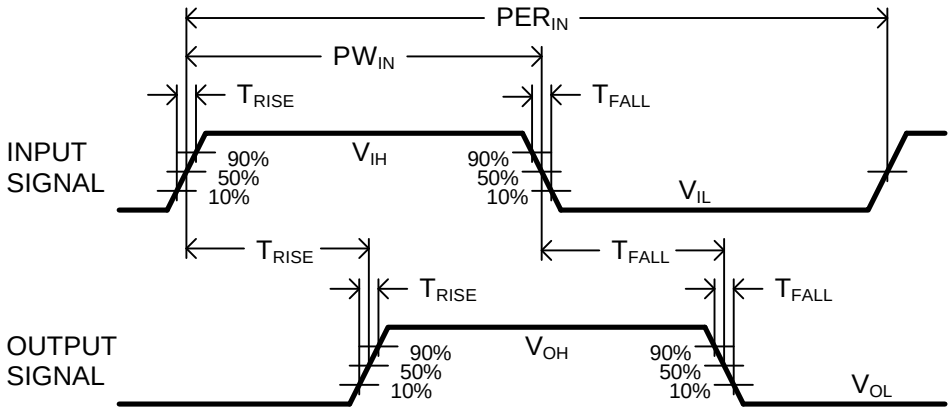
1516S-xx (Gull-Wing)

PASSIVE DELAY LINE TEST SPECIFICATIONS

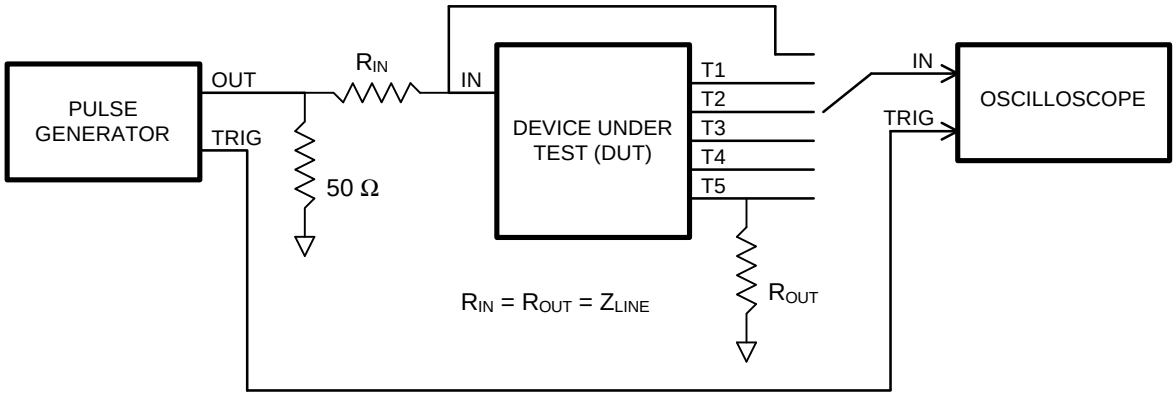
TEST CONDITIONS

INPUT:			**OUTPUT:**	
Ambient Temperature:		$25^oC \pm 3^oC$	**R_{load}:**	10MΩ
Input Pulse:		High = 3.0V typical	**C_{load}:**	10pf
		Low = 0.0V typical	**Threshold:**	50% (Rising & Falling)
Source Impedance:		50Ω Max.		
Rise/Fall Time:		3.0 ns Max. (measured at 10% and 90% levels)		
Pulse Width	**(T_D <= 75ns):**	PW_{IN} = 100ns		
Period	**(T_D <= 75ns):**	PER_{IN} = 1000ns		
Pulse Width	**(T_D > 75ns):**	PW_{IN} = 2 x T_D		
Period	**(T_D > 75ns):**	PER_{IN} = 10 x T_D		

NOTE: The above conditions are for test only and do not in any way restrict the operation of the device.



Timing Diagram For Testing



Test Setup