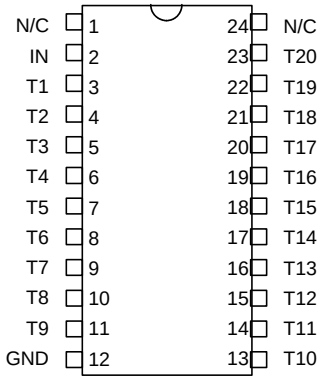
20-TAP DIP DELAY LINE
T_D/T_R = 10
(SERIES 2214)

data delay devices, inc.

FEATURES

- 20 taps of equal delay increment
- High bandwidth (T_D/T_R =10)
- Low profile
- Epoxy encapsulated
- Meets or exceeds MIL-D-23859C

PACKAGES



2214-xxz (DIP)
2214-xxzC4 (Gull-Wing)
xx = Delay (T_D)
z = Impedance Code

PIN DESCRIPTIONS

IN	Signal Input
T1-T20	Tap Outputs
GND	Ground

FUNCTIONAL DESCRIPTION

The 2214-series device is a fixed, single-input, twenty-output, passive delay line. The signal input (IN) is reproduced at the outputs (T1-T20) in equal increments. The delay from IN to T20 (T_D) is given by the device dash number. The characteristic impedance of the line is given by the letter code that follows the dash number (See Table). The rise time (T_R) of the line is 10% of T_D, and the 3dB bandwidth is given by 3.5 / T_D.

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

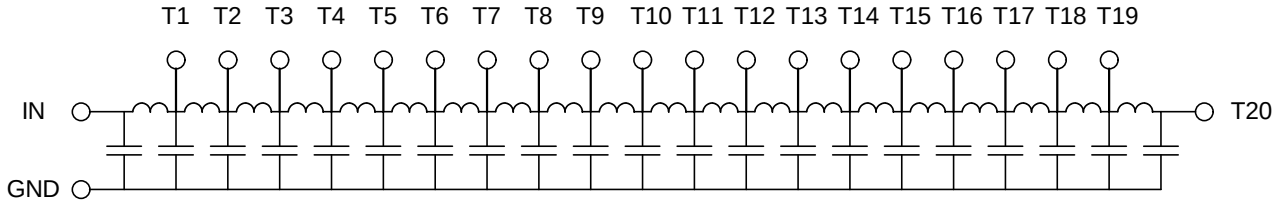
DASH NUMBER SPECIFICATIONS

Part Number	T_D (ns)	Delay per Tap (ns)	T_R (ns)	Imped. (Ω)	R_{DC} (Ω)
2214-50A	50.0 ± 2.5	2.5 ± 1.0	5.0	50	3.2
2214-60A	60.0 ± 3.0	3.0 ± 1.0	6.0	50	3.6
2214-80A	80.0 ± 4.0	4.0 ± 1.0	8.0	50	5.0
2214-100A	100 ± 5.0	5.0 ± 1.0	10.0	50	6.0
2214-150A	150 ± 7.5	7.5 ± 1.0	15.0	50	6.0
2214-200A	200 ± 10.0	10.0 ± 1.0	20.0	50	7.0
2214-50B	50.0 ± 2.5	2.5 ± 1.0	5.0	100	6.0
2214-60B	60.0 ± 3.0	3.0 ± 1.0	6.0	100	6.0
2214-80B	80.0 ± 4.0	4.0 ± 1.0	8.0	100	6.5
2214-100B	100 ± 5.0	5.0 ± 1.0	10.0	100	7.0
2214-150B	150 ± 7.5	7.5 ± 1.0	15.0	100	8.0
2214-200B	200 ± 10.0	10.0 ± 1.0	20.0	100	8.5
2214-300B	300 ± 15.0	15.0 ± 1.0	30.0	100	11.0
2214-400B	400 ± 20.0	20.0 ± 1.0	40.0	100	12.0

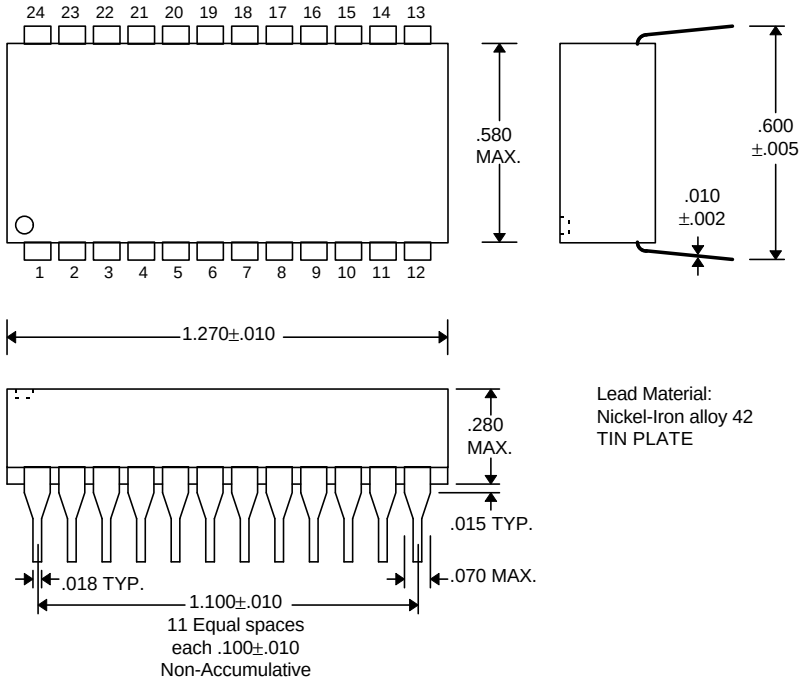
DASH NUMBER SPECIFICATIONS

Part Number	T_D (ns)	Delay per Tap (ns)	T_R (ns)	Imped. (Ω)	R_{DC} (Ω)
2214-40C	40.0 ± 2.0	2.0 ± 1.0	4.0	200	7.0
2214-80C	80.0 ± 4.0	4.0 ± 1.0	8.0	200	8.0
2214-120C	120 ± 6.0	6.0 ± 1.0	12.0	200	10.0
2214-200C	200 ± 10.0	10.0 ± 1.0	20.0	200	13.0
2214-300C	300 ± 15.0	15.0 ± 1.0	30.0	200	12.0
2214-400C	400 ± 20.0	20.0 ± 1.0	40.0	200	15.0
2214-500C	500 ± 25.0	25.0 ± 1.3	50.0	200	17.0
2214-600C	600 ± 30.0	30.0 ± 1.5	60.0	200	23.0
2214-800C	800 ± 40.0	40.0 ± 2.0	80.0	200	38.0
2214-50D	50.0 ± 2.5	2.5 ± 1.0	5.0	250	7.0
2214-100D	100 ± 5.0	5.0 ± 1.0	10.0	250	10.0
2214-150D	150 ± 7.5	7.5 ± 1.0	15.0	250	12.0
2214-200D	200 ± 10.0	10.0 ± 1.0	20.0	250	22.0
2214-250D	250 ± 12.5	12.5 ± 1.0	25.0	250	21.0
2214-300D	300 ± 15.0	15.0 ± 1.0	30.0	250	23.0
2214-400D	400 ± 20.0	20.0 ± 1.0	40.0	250	26.0
2214-500D	500 ± 25.0	25.0 ± 1.3	50.0	250	30.0
2214-600D	600 ± 30.0	30.0 ± 1.5	60.0	250	37.0
2214-800D	800 ± 40.0	40.0 ± 2.0	80.0	250	41.0
2214-1000D	1000 ± 50.0	50.0 ± 2.5	100	250	47.0
2214-200G	200 ± 10.0	10.0 ± 1.0	20.0	500	20.0
2214-300G	300 ± 15.0	15.0 ± 1.0	30.0	500	37.0
2214-400G	400 ± 20.0	20.0 ± 1.0	40.0	500	40.0
2214-500G	500 ± 25.0	25.0 ± 1.3	50.0	500	45.0
2214-600G	600 ± 30.0	30.0 ± 1.5	60.0	500	52.0
2214-800G	800 ± 40.0	40.0 ± 2.0	80.0	500	80.0
2214-1000G	1000 ± 50.0	50.0 ± 2.5	100	500	100
2214-1200G	1200 ± 60.0	60.0 ± 3.0	120	500	110
2214-1500G	1500 ± 75.0	75.0 ± 3.8	150	500	130
2214-2000G	2000 ± 100	100 ± 5.0	200	500	156

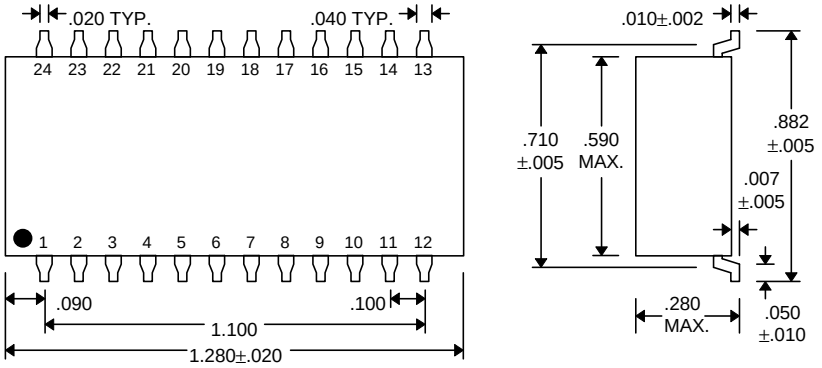
FUNCTIONAL DIAGRAM



PACKAGE DIMENSIONS



DIP (2214-xxz)



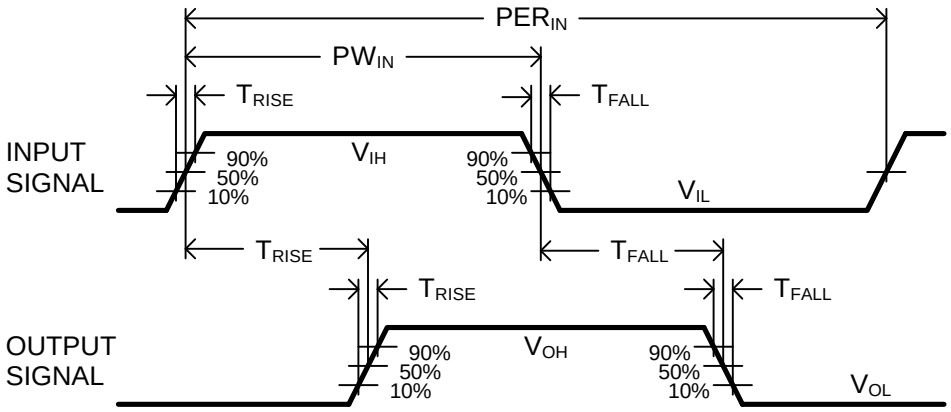
Gull-Wing (2214-xxzC4)

PASSIVE DELAY LINE TEST SPECIFICATIONS

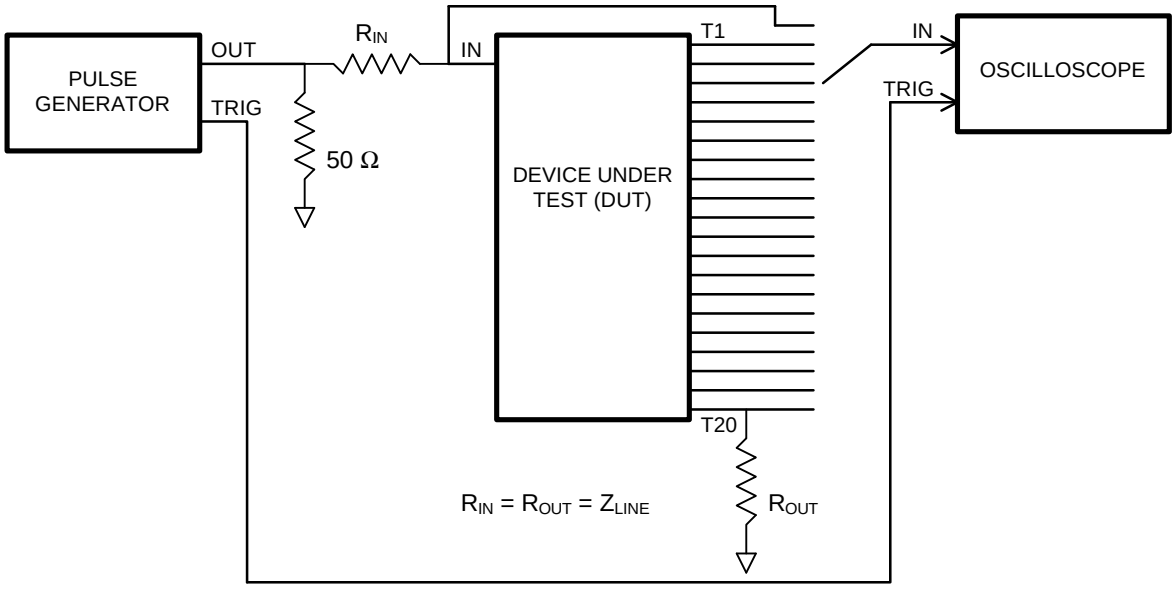
TEST CONDITIONS

INPUT:			**OUTPUT:**	
Ambient Temperature:		25°C ± 3°C	**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