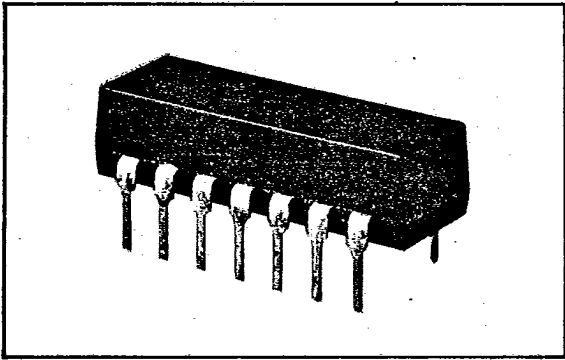


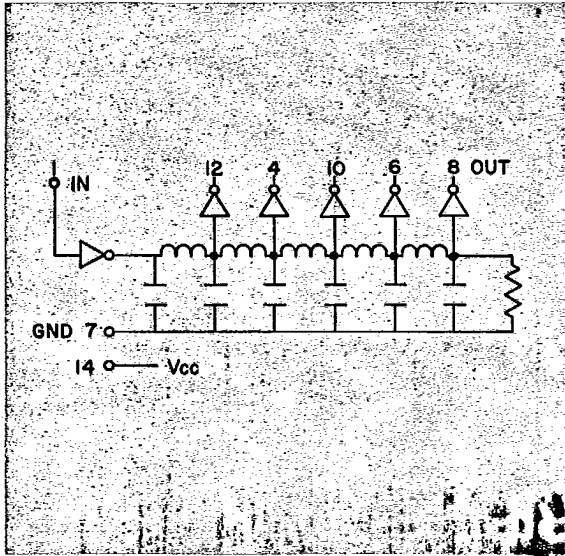
1-47-15

ACTIVE

**AUTO INSERTABLE
DIP DDM**

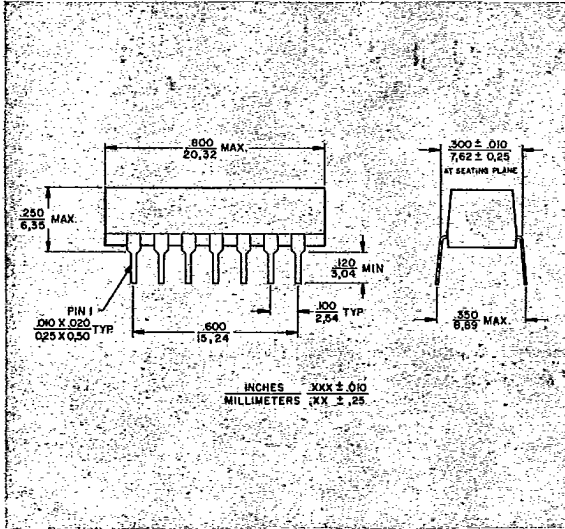


- AUTOMATICALLY INSERTABLE PACKAGE
- 14 PIN INDUSTRY STANDARD PINOUT
- 5 EQUALLY SPACED TAPS
- TTL/DTL COMPATIBLE
- LEADING EDGE PRECISION



| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns max.) |
|-------------|------------------|----------------|---------------------|
| 24001 | 25.0 | 5.0 | 4.0 |
| 24002 | 30.0 | 6.0 | 4.0 |
| 24003 | 35.0 | 7.0 | 4.0 |
| 24004 | 40.0 | 8.0 | 4.0 |
| 24005 | 45.0 | 9.0 | 4.0 |
| 24006 | 50.0 | 10.0 | 4.0 |
| 24007 | 60.0 | 12.0 | 4.0 |
| 24008 | 75.0 | 15.0 | 4.0 |
| 24009 | 100.0 | 20.0 | 4.0 |
| 24010 | 125.0 | 25.0 | 4.0 |
| 24011 | 150.0 | 30.0 | 4.0 |
| 24012 | 200.0 | 40.0 | 4.0 |
| 24013 | 250.0 | 50.0 | 4.0 |

Delay Tolerance: ± 2 ns or $\pm 5\%$, whichever is greater



Unused Pins not for external connection and may be removed upon request.

INPUT TEST CONDITIONS @25°C

| | |
|---------------|--------------------------|
| Pulse Voltage | 3.0V |
| Rise Time | 3.0ns |
| Pulse Width | Min 40% of Td |
| PRR | 3 x tw _r Min. |
| Vcc | 5.0V D.C. |

Refer to Pg. 12 for Waveform Definitions

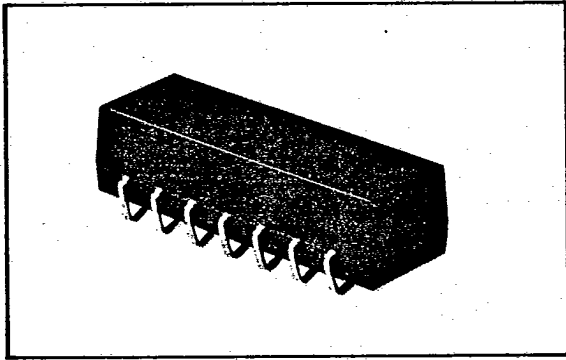
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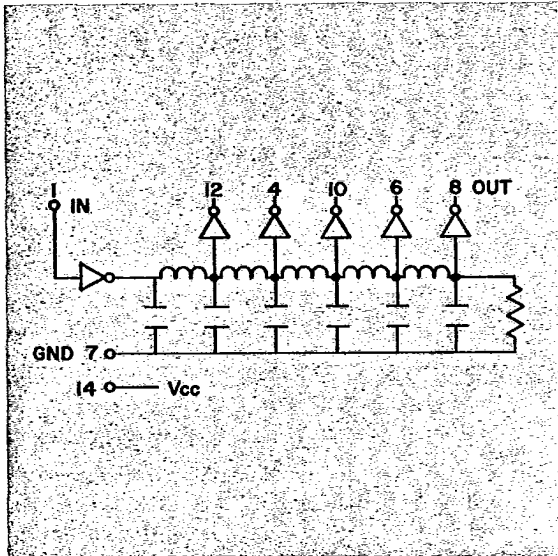
ACTIVE

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SURFACE MOUNT DDM

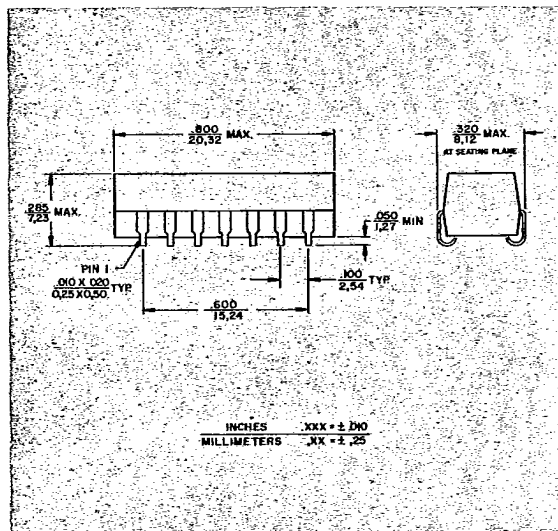


- SURFACE MOUNTABLE PACKAGE
- 14 PIN INDUSTRY STANDARD PINOUT
- 5 EQUALLY SPACED TAPS
- TTL/DTL COMPATIBLE
- LEADING EDGE PRECISION



| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns max.) |
|-------------|------------------|----------------|---------------------|
| 24051 | 25.0 | 5.0 | 4.0 |
| 24052 | 30.0 | 6.0 | 4.0 |
| 24053 | 35.0 | 7.0 | 4.0 |
| 24054 | 40.0 | 8.0 | 4.0 |
| 24055 | 45.0 | 9.0 | 4.0 |
| 24056 | 50.0 | 10.0 | 4.0 |
| 24057 | 60.0 | 12.0 | 4.0 |
| 24058 | 75.0 | 15.0 | 4.0 |
| 24059 | 100.0 | 20.0 | 4.0 |
| 24060 | 125.0 | 25.0 | 4.0 |
| 24061 | 150.0 | 30.0 | 4.0 |
| 24062 | 200.0 | 40.0 | 4.0 |
| 24063 | 250.0 | 50.0 | 4.0 |

Delay Tolerance: ± 2 ns or $\pm 5\%$, whichever is greater



Note: Gull-wing configuration available upon request.

INPUT TEST CONDITIONS @25°C

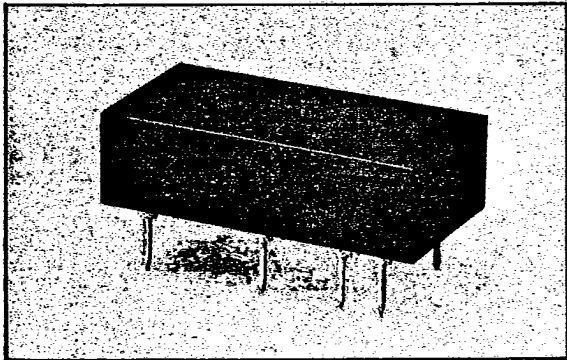
| | |
|---------------|---------------|
| Pulse Voltage | 3.0V |
| Rise Time | 3.0ns |
| Pulse Width | Min 40% of Td |
| PRR | 3 x twi Min. |
| Vcc | 5.0V D.C. |

Refer to Pg. 12 for Waveform Definitions

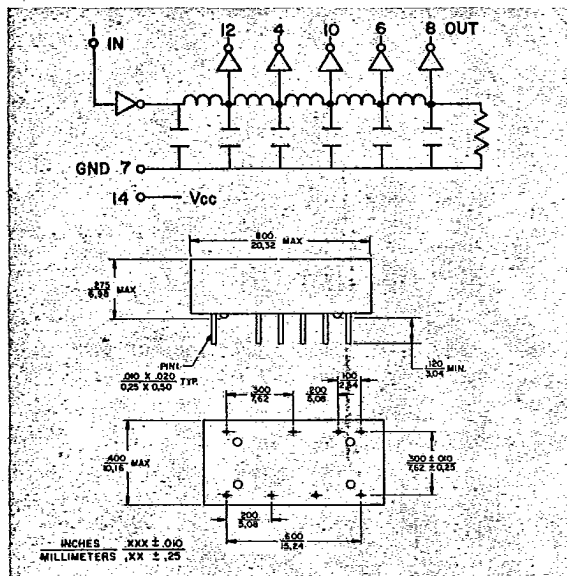
T-47-13

ACTIVE

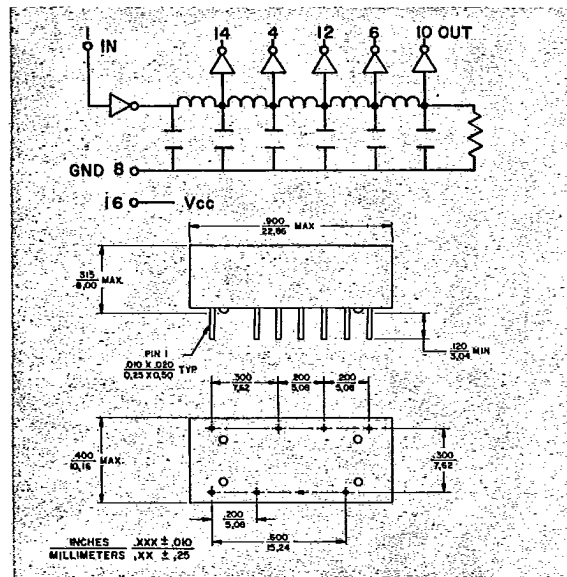
**INDUSTRY STANDARD
5-TAP DDM**



- 14 OR 16 PIN DIL PACKAGE
- INDUSTRY STANDARD PINOUTS
- 5 EQUALLY SPACED TAPS
- TTL/DTL COMPATIBLE
- LEADING EDGE PRECISION



See pages 4-5 for Auto-Insertable and Surface Mountable DDMs.



14 PIN

| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns Max) |
|-------------|------------------|----------------|--------------------|
| 21197 | 25 | 5 | 3 |
| 21198 | 50 | 10 | 3 |
| 21741 | 60 | 12 | 3 |
| 21818 | 75 | 15 | 3 |
| 21199 | 100 | 20 | 3 |
| 21712 | 125 | 25 | 4 |
| 21212 | 150 | 30 | 4 |
| 21213 | 200 | 40 | 4 |
| 21214 | 250 | 50 | 4 |
| 21819 | 300 | 60 | 5 |
| 21820 | 400 | 80 | 5 |
| 21821 | 500 | 100 | 6 |

16 PIN

| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns Max) |
|-------------|------------------|----------------|--------------------|
| 21215 | 25 | 5 | 3 |
| 21216 | 50 | 10 | 3 |
| 21217 | 100 | 20 | 3 |
| 21218 | 150 | 30 | 4 |
| 21219 | 200 | 40 | 4 |
| 21220 | 250 | 50 | 4 |

Delay Tolerance: ±2ns or ±5%, whichever is greater

INPUT TEST CONDITIONS @25°C

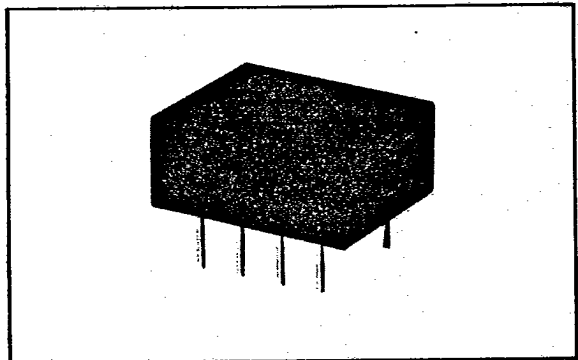
| | |
|---------------|---------------|
| Pulse Voltage | 3.0V |
| Rise Time | 3.0ns |
| Pulse Width | Min 40% of Td |
| PRR | 3 x twi Min. |
| Vcc | 5.0V D.C. |

Refer to Pg. 12 for Waveform Definitions

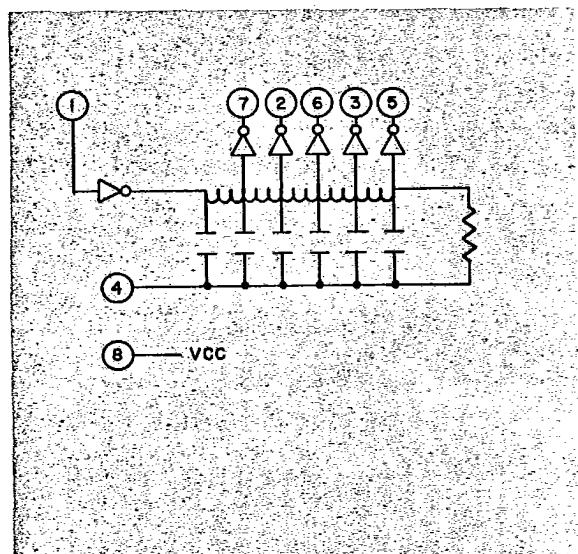
ACTIVE

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MINI 5-TAP DDM



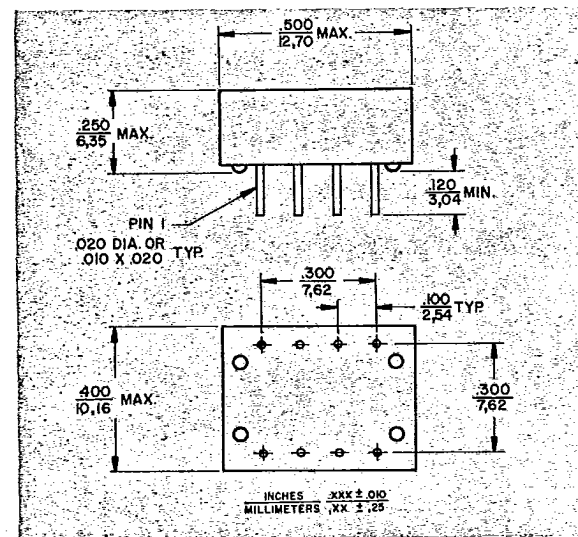
- SMALL SIZE—1/2" LONG 8 PIN PACKAGE
- 5 EQUALLY SPACED TAPS
- TTL/DTL COMPATIBLE
- LEADING EDGE PRECISION
- INDUSTRY STANDARD PINOUT



| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns max.) |
|-------------|------------------|----------------|---------------------|
| 21901 | 25.0 | 5.0 | 4.0 |
| 21902 | 30.0 | 6.0 | 4.0 |
| 21903 | 35.0 | 7.0 | 4.0 |
| 21904 | 40.0 | 8.0 | 4.0 |
| 21905 | 45.0 | 9.0 | 4.0 |
| 21906 | 50.0 | 10.0 | 4.0 |
| 21907 | 60.0 | 12.0 | 4.0 |
| 21908 | 75.0 | 15.0 | 4.0 |
| 21909 | 100.0 | 20.0 | 4.0 |
| 21910 | 125.0 | 25.0 | 4.0 |
| 21911 | 150.0 | 30.0 | 4.0 |
| 21912 | 200.0 | 40.0 | 4.0 |
| 21913 | 250.0 | 50.0 | 4.0 |

Delay Tolerance: ± 2 ns or $\pm 5\%$, whichever is greater

See pages 4-5 for Auto-Insertable and Surface Mountable DDMs.



INPUT TEST CONDITIONS @25°C

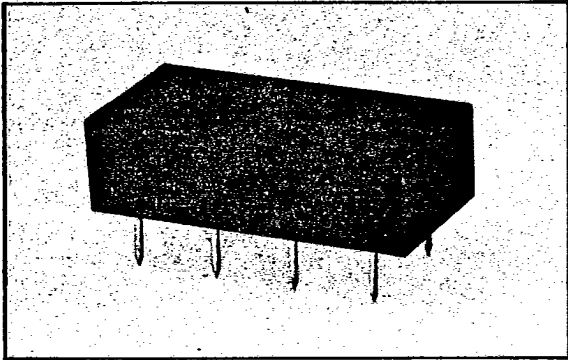
| | |
|---------------|---------------|
| Pulse Voltage | 3.0V |
| Rise Time | 3.0ns |
| Pulse Width | Min 40% of Td |
| PRR | 3 x twr Min. |
| Vcc | 5.0V D.C. |

Refer to Pg. 12 For Waveform Definitions

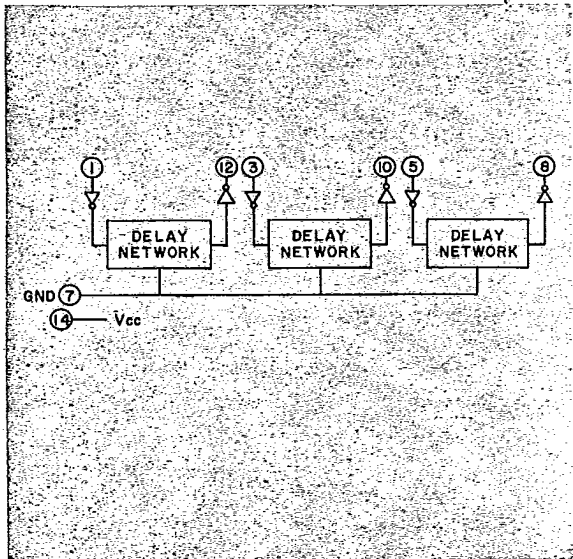
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ACTIVE

TRIPLE DDM



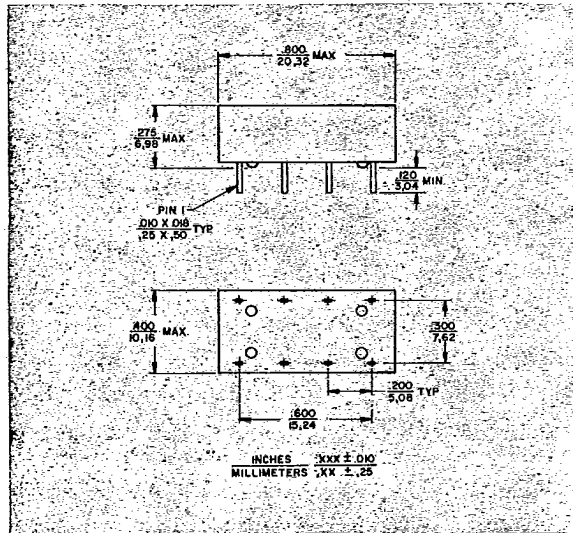
- 14 PIN DIL PACKAGE
- 3 INDEPENDENT EQUAL DELAYS
- NO TAPS
- TTL/DTL COMPATIBLE
- LEADING EDGE PRECISION
- INDUSTRY STANDARD PINOUT



| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns Max) |
|-------------|------------------|----------------|--------------------|
| 21260 | 5 | N/A | 3.0 |
| 21261 | 10 | N/A | 3.0 |
| 21262 | 20 | N/A | 3.0 |
| 21263 | 30 | N/A | 3.0 |
| 21264 | 40 | N/A | 3.0 |
| 21265 | 50 | N/A | 3.0 |
| 21266 | 60 | N/A | 4.0 |
| 21267 | 70 | N/A | 4.0 |
| 21268 | 80 | N/A | 4.0 |
| 21269 | 90 | N/A | 4.0 |
| 21270 | 100 | N/A | 4.0 |

Delay Tolerance: $\pm 2\text{ns}$ or $\pm 5\%$, whichever is greater

See pages 4-5 for Auto-Insertable and Surface Mountable DDMs.



INPUT TEST CONDITIONS @25°C

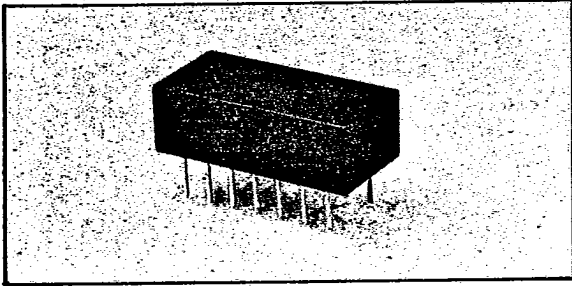
| | |
|---------------|----------------|
| Pulse Voltage | 3.0V |
| Rise Time | 3.0ns |
| Pulse Width | Min 100% of Td |
| PRR | 3 x twi Min. |
| Vcc | 5.0V D.C. |

Refer to Pg. 12 for Waveform Definitions

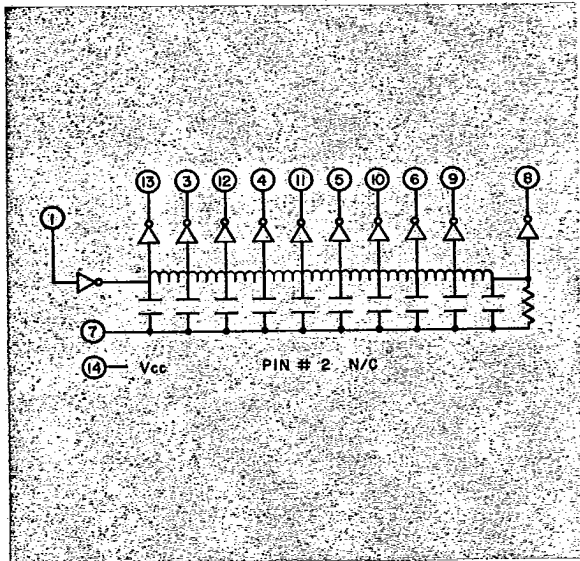
ACTIVE

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**INDUSTRY STANDARD
10-TAP 14-PIN DDM**



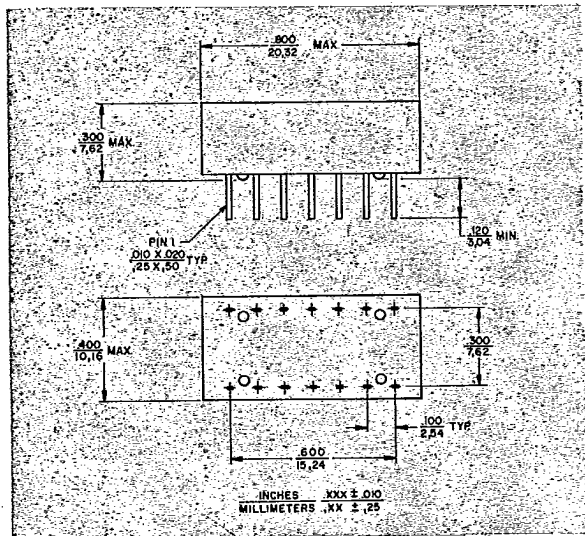
- 10 EQUALLY SPACED TAPS
- 14 PIN SPACE SAVING DIL PACKAGE
- INDUSTRY STANDARD PINOUT
- TTL/DTL COMPATIBLE
- LEADING EDGE PRECISION



| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns max.) |
|-------------|------------------|----------------|---------------------|
| 21781 | 50 NS | 5.0 NS | 4.0 |
| 21782 | 75 NS | 7.5 NS | 4.0 |
| 21783 | 100 NS | 10.0 NS | 4.0 |
| 21784 | 125 NS | 12.5 NS | 4.0 |
| 21785 | 150 NS | 15.0 NS | 4.0 |
| 21786 | 200 NS | 20.0 NS | 4.0 |
| 21787 | 250 NS | 25.0 NS | 4.0 |
| 21788 | 300 NS | 30.0 NS | 4.0 |
| 21789 | 350 NS | 35.0 NS | 4.0 |
| 21790 | 400 NS | 40.0 NS | 4.0 |
| 21791 | 500 NS | 50.0 NS | 4.0 |

Delay Tolerance: ±2ns or ±5%, whichever is greater

See pages 4-5 for Auto-Insertable and Surface Mountable DDMs.



INPUT TEST CONDITIONS @25° C

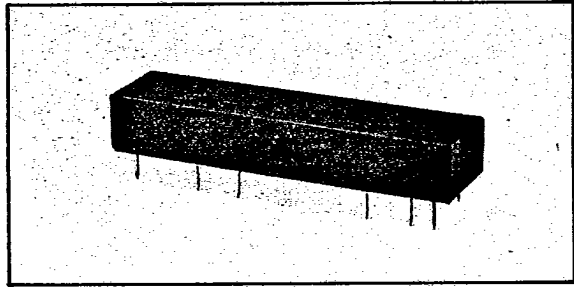
| | |
|---------------|---------------|
| Pulse Voltage | 3.0V |
| Rise Time | 3.0ns |
| Pulse Width | Min 30% of Td |
| PRR | 3 x twi Min. |
| Vcc | 5.0V D.C. |

Refer to Pg. 12 for Waveform Definitions

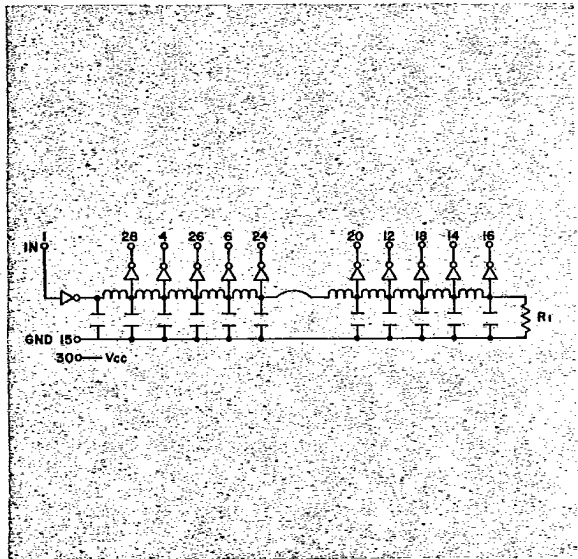
T-47-13

ACTIVE

**INDUSTRY STANDARD
10-TAP 30-PIN DDM**



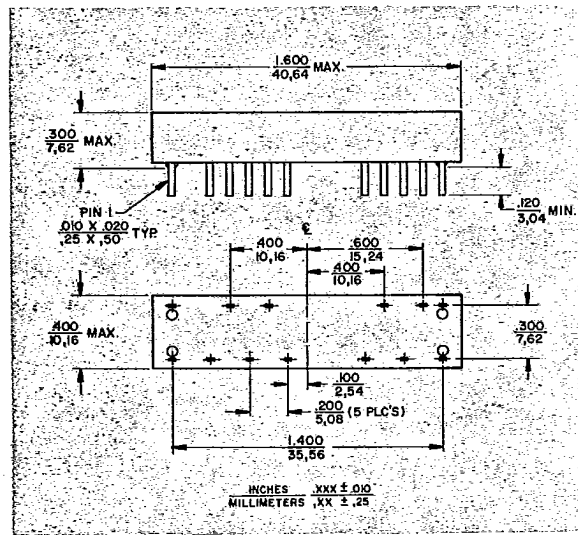
- 10 EQUALLY SPACED TAPS
- 30 PIN DIL PACKAGE
- INDUSTRY STANDARD PINOUT
- TTL/DTL COMPATIBLE
- LEADING EDGE PRECISION



| Part Number | Total Delay (ns) | Tap Delay (ns) | Rise Time (ns Max) |
|-------------|------------------|----------------|--------------------|
| 21310 | 50 | 5 | 4 |
| 21311 | 100 | 10 | 4 |
| 21312 | 150 | 15 | 4 |
| 21313 | 200 | 20 | 4 |
| 21314 | 250 | 25 | 4 |
| 21315 | 300 | 30 | 5 |
| 21316 | 400 | 40 | 6 |
| 21317 | 500 | 50 | 6 |

Delay Tolerance: ± 2 ns or $\pm 5\%$, whichever is greater

See pages 4-5 for Auto-Insertable and Surface Mountable DDMs.



INPUT TEST CONDITIONS @25°C

| | |
|---------------|---------------|
| Pulse Voltage | 3.0V |
| Rise Time | 3.0ns |
| Pulse Width | Min 30% of Td |
| PRR | 3 x twi Min. |
| Vcc | 5.0V D.C. |

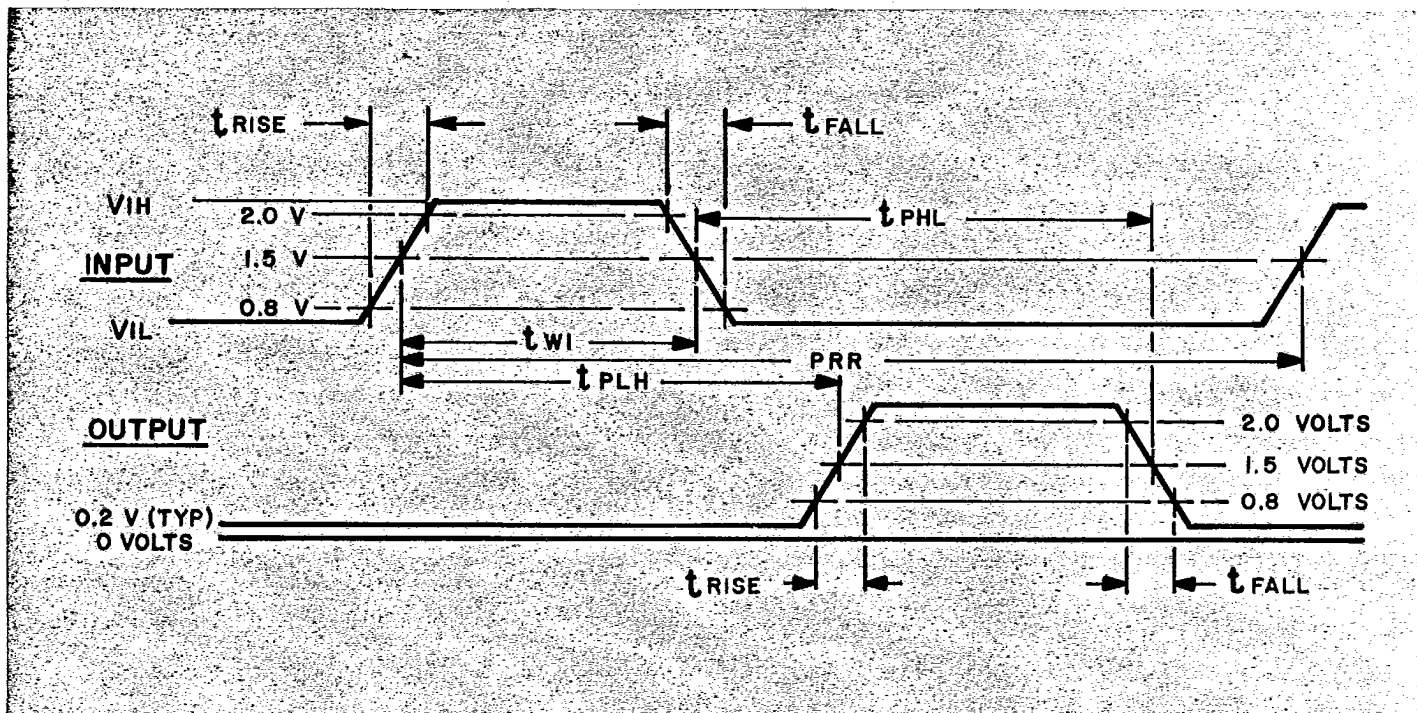
Refer to Pg. 12 for Waveform Definitions

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ACTIVE DELAY LINES—TEST CONDITIONS

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ACTIVE DEFINITIONS

- V_{IH} HIGH INPUT VOLTAGE—normal condition is 5.5V Max.
- V_{IL} LOW INPUT VOLTAGE—normal condition is ground.
- t_{PLH} DELAY TIME measured at the 1.5V level of the "low to high" edge between input and output pulses.
- t_{PHL} DELAY TIME measured at the 1.5V level of the "high to low" edge between input and output pulses.
- t_{RISE} PULSE RISE TIME measured from 0.8V to 2.0V on the rising edge of the pulse
- t_{FALL} PULSE FALL TIME measured from 2.0V to 0.8V on the falling edge of the pulse
- t_{WI} INPUT PULSE WIDTH measured at the 1.5V level on input pulse
- PRR PULSE REPETITION RATE measured at the 1.5V level from input pulse to next occurring input pulse

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Test Condition | Min. | Nom. | Max. | Units |
|----------|------------------------------|---|------|------|------|-------|
| V_{CC} | Supply Voltage | | | | +7.0 | Volts |
| V_{IH} | High Level Input Voltage | | | | +5.5 | Volts |
| T_A | Operating Temperature Range | Free Air | 0 | +25 | +70 | °C |
| | Storage Temperature Range | Free Air | -55 | | +125 | °C |
| N_H | Normalized Fan-out (per Tap) | $V_{CC} = \text{Max.}, \text{Logic } 1$ | | | 20 | Loads |
| N_L | Normalized Fan-out (per Tap) | $V_{CC} = \text{Max.}, \text{Logic } 0$ | | | 10 | Loads |