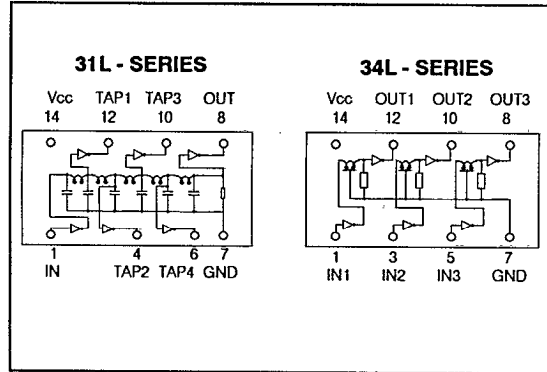


- Advanced Low-Power Schottky TTL buffered**
- 14 pin package**
- Low profile**
- TTL compatible**
- Industry standard pin-outs**

**DUAL-IN-LINE PACKAGE (TOP VIEW)**



**description**

The 31L and 34L series of Digital Delay Modules are Advanced Low-Power Schottky TTL buffered delay lines providing precise delay times and direct compatibility with TTL. Five equally spaced delay taps, and triple independent equal delays are each packaged in low profile 14 pin dual-in-line configurations having industry standard pin-outs. Internal termination of the delay line and compensation for propagation delays are incorporated in the design so that no additional external components are required. These modules are particularly suitable for high density board designs.

**absolute maximum ratings over operating free-air temperature range**

Supply voltage $V_{cc}$ . . . . .	.7V
Input voltage . . . . .	.7V
Min. pulse width as % of total delay . . . . .	.80%
Input pulse repetition rate PRR . . . . .	3 x pulse width min.
Operating free-air temperature range . . . . .	.0C to 70C
Storage temperature range . . . . .	−55C to 125C
Temperature coefficient of delay . . . . .	$\pm 300$ ppm/C
Lead temperature 1.5mm from case for 10 seconds . . . . .	300C

**drive capabilities**

Logic 0 output . . . . .	.20 LSTTL loads per tap max.
	20 LSTTL loads per unit max.
Logic 1 output . . . . .	20 LSTTL loads per unit max.

**31L, 34L Series****5 Tap and Triple Independent 14 Pin Moulded DIP****electrical specifications over operating free-air temperature range**

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
V <sub>IH</sub> High-level input voltage		2			V
V <sub>IL</sub> Low-level input voltage		0.8			V
V <sub>OH</sub> High-level output voltage	V <sub>IH</sub> = 2V, I <sub>OH</sub> = -0.4mA V <sub>CC</sub> = 4.5V to 5.5V	V <sub>CC</sub> -2			V
V <sub>OL</sub> Low-level output voltage	V <sub>CC</sub> = 4.5V I <sub>OL</sub> = 8mA, V <sub>IL</sub> = 0.8V		0.35	0.5	V
I <sub>IH</sub> High-level input current	V <sub>CC</sub> = 5.5V, V <sub>IH</sub> = 2.7V			20	μA
I <sub>IL</sub> Low-level input current	V <sub>CC</sub> = 5.5V, V <sub>IL</sub> = 0.4V			-0.1	mA
I <sub>CC</sub> Supply current outputs high	V <sub>CC</sub> = 5.5V, V <sub>IL</sub> = 0V		0.65	1.1	mA
I <sub>CC</sub> Supply current outputs low	V <sub>CC</sub> = 5.5V, V <sub>IH</sub> = 4.5V		2.9	4.2	mA

**31L, 34L Series**  
**5 Tap and Triple Independent 14 Pin Moulded DIP**

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**delay characteristics Vcc = 5V, Ta = 25C, no loads at taps, input test pulse width 100% of total delay, input rise time 3.0ns.**

delay tolerance from input to tap  $\pm 2\text{ns}$  or  $\pm 5\%$  whichever is greater

**31L SERIES 5 Tap 14 Pin DIP**  
**Package style H with pins 2, 3, 5, 9, 11 and 13 missing**

<b>PART No.</b>	<b>TOTAL DELAY (ns) <math>\pm 5\%</math></b>	<b>TAP TO TAP DELAY (ns)</b>	<b>OUTPUT RISE TIME (ns)</b>
31L - 5500	50	$10 \pm 2$	8
31L - 5101	100	$20 \pm 2$	8
31L - 5151	150	$30 \pm 3$	8
31L - 5201	200	$40 \pm 4$	8
31L - 5251	250	$50 \pm 5$	8
31L - 5301	300	$60 \pm 6$	8
31L - 5351	350	$70 \pm 7$	8
31L - 5401	400	$80 \pm 8$	8
31L - 5451	450	$90 \pm 9$	8
31L - 5501	500	$100 \pm 10$	8

Note: Delays measured at 1.3V on leading edge, Rise Time measured from 0.8V to 2.0V

## 31L, 34L Series

### 5 Tap and Triple Independent 14 Pin Moulded DIP

#### 34L SERIES Triple independent equal 14 Pin DIP Package style H with pins 2, 4, 6, 9, 11 and 13 missing

PART No.	TOTAL DELAY (ns) ±5% (1)	RISE TIME (ns) max.	PART No.	TOTAL DELAY (ns) ±5% (1)	RISE TIME (ns) max.
34L - 010	10	8	34L - 060	60	8
34L - 020	20	8	34L - 070	70	8
34L - 030	30	8	34L - 080	80	8
34L - 040	40	8	34L - 090	90	8
34L - 050	50	8	34L - 100	100	8

**Note: Delays measured at 1.3V on leading edge, Rise Time measured from 0.8V to 2.0V (1) or ±2ns whichever is greater**

