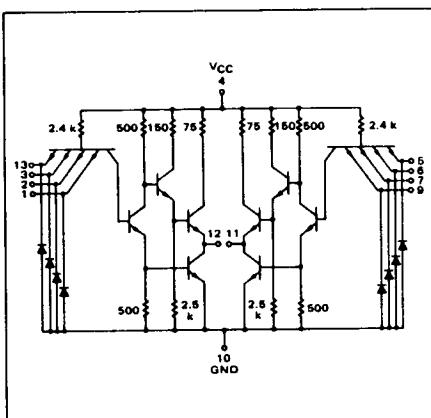
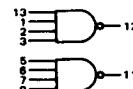


## DUAL 4-INPUT LINE DRIVER

MC507 • MC557  
MC407 • MC457

Each of the two independent drivers in the package consists of a 4-input AND gate driving an output inverter. The output inverter is capable of supplying twice the drive of the basic gates. The line driver is especially useful for driving high capacitive loads or for driving large fan-outs such as the numerous clock inputs of large counters.



Positive Logic:  
 $12 = \overline{1} \cdot \overline{2} \cdot \overline{3} \cdot \overline{4}$

Negative Logic:  
 $12 = \overline{1} + \overline{2} + \overline{3} + \overline{4}$

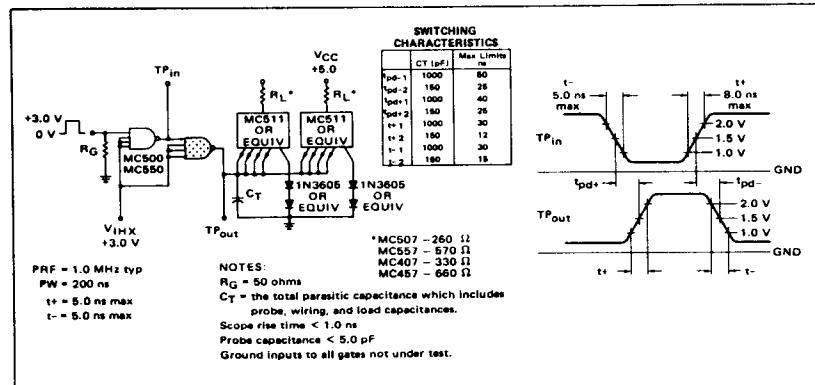
Total Power Dissipation = 60 mW typ/pkg  
Propagation Delay Time = 25 ns typ @ 1000 pF Load

TYPE NO.	INPUT LOADING FACTOR (I <sub>F</sub> )	OUTPUT DRIVE (I <sub>OL</sub> )	TEMPERATURE RANGE
MC507 MC557	1.5 (-2.0 mA)*	30 15 MC500 series Gates (40 mA) MC500 series Gates (20 mA)	-55°C to +125°C
MC407 MC457	1.5 (-2.5 mA)*	24 12 MC400 series Gates (40 mA) MC400 series Gates (20 mA)	0°C to +75°C

\*Use I<sub>F</sub> value of gate being driven (-1.33 or -1.66) to calculate output drive capability of line driver.

SWITCHING TIME TEST CIRCUIT

VOLTAGE WAVEFORMS AND DEFINITIONS



## ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one device. The other device is tested in the same manner. Further, test procedures are shown for only one input of the device under test. To complete testing, sequence through remaining inputs.



Characteristic	Symbol	Pin	TEST CONDITIONS													
			MC507, MC557 Test Limits			MC407, MC457 Test Limits			V <sub>DD</sub>			V <sub>SS</sub>				
Under Test	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Forward Current	I <sub>F</sub>	1	-	-2.0	-	-2.0	-	-2.5	-	-2.5	-	-2.5	-	-	-	-
Input Leakage Current	I <sub>IN</sub>	1	-	200	-	200	-	200	-	200	-	200	-	200	-	-
Inverse Beta Current	I <sub>L</sub>	1	-	200	-	200	-	200	-	200	-	200	-	200	-	-
Breakdown Voltage	BV <sub>12</sub> , BV <sub>11</sub>	1	5.5	-	5.5	-	5.5	-	5.5	-	5.5	-	5.5	-	-	-
Output Voltage	V <sub>OUT</sub>	12	-	0.45	-	0.45	-	0.45	-	0.45	-	0.45	-	0.45	-	-
Input Voltage	V <sub>IN</sub>	12	2.5	-	2.4	-	2.7	-	2.5	-	2.4	-	2.5	-	-	-
Low Current	I <sub>OL</sub>	12	-	100	-	-	-	100	-	-	-	100	-	-	-	-
Breakdown Current	I <sub>O</sub>	12	-	60	-	-	-	60	-	-	-	60	-	-	-	-
Leakage Current	I <sub>OLK</sub>	12	-	1.0	-	-	-	1.0	-	-	-	1.0	-	-	-	-
Short-Circuit Current	I <sub>SC</sub>	12	-50	-150	50	-150	-50	-150	-50	-150	-50	-150	-50	-150	-	-
Output Voltage	V <sub>OH</sub>	12	2.8	-	3.2	-	3.35	-	3.0	-	3.1	-	3.15	-	-	-
Power Requirements (Total Device)	V <sub>OL</sub>	12	-6.40	-	-6.40	-	-6.45	-	-6.40	-	-6.40	-	-6.45	-	-	-
Power Supply Drain	I <sub>PDP</sub>	4	-	28	-	28	-	34	-	34	-	34	-	34	-	-
Switching Parameters	I <sub>PD</sub>	4	-	9	-	9	-	11	-	11	-	11	-	11	-	-
Turn-On Delay	I <sub>pd-1</sub>	1,12	-	-	-	50(1)	-	-	-	50(1)	-	-	-	-	-	-
Turn-Off Delay	I <sub>pd-2</sub>	1,12	-	-	-	60(2)	-	-	-	60(2)	-	-	-	-	-	-
Rise Time	t <sub>r-1</sub>	1,12	-	-	-	30(1)	-	-	-	30(1)	-	-	-	-	-	-
Fall Time	t <sub>f-1</sub>	1,12	-	-	-	30(1)	-	-	-	30(1)	-	-	-	-	-	-

\* Prime Fan-Out  
\*\* Ground input to gates not under test during ALL tests, unless otherwise noted.

† Test input to all gates must be ungrounded  
‡ Values @ 1000 pF load