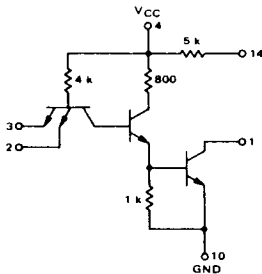


TRIPLE 2-INPUT
BUSS DRIVER

MTTL I MC500/400 series

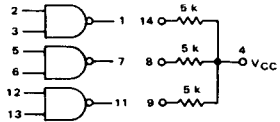
MC519 • MC569
MC419 • MC469

1/3 OF CIRCUIT SHOWN



This device consists of three 2-input NAND gates. High level output transistors with open collectors provide output current sinking capability of up to 30 mA. Internal 5 k pullup resistors, which can be externally connected to the collector of the output transistor, are provided for each gate in the package.

This function is useful where it is desirable to perform the Wired-OR function and/or drive relatively high dc loads.



Positive Logic: $1 = \overline{2 \cdot 3}$
Negative Logic: $1 = \overline{2 + 3}$

Total Power Dissipation = 54 mW typ/pkg

Propagation Delay Time (using 5.0 k ohm pullup resistor):

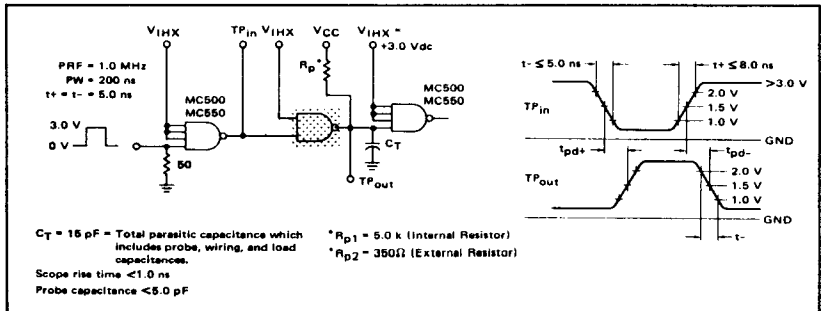
$t_{pd+} = 50$ ns typ

$t_{pd-} = 15$ ns typ

TYPE NO.	INPUT LOADING FACTOR	(I _F)	OUTPUT DRIVE (I _{OL})	TEMPERATURE RANGE
MC519 MC569	1	(-1.33 mA)	30 mA 15 mA	-55°C to +125°C
MC419 MC469	1	(-1.66 mA)	30 mA 15 mA	0°C to +75°C

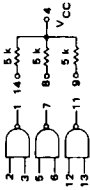
SWITCHING TIME TEST CIRCUIT

VOLTAGE WAVEFORMS AND DEFINITIONS



ELECTRICAL CHARACTERISTICS

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



Characteristic	Symbol	MC519, MC569 Test Limits										MC419, MC469 Test Limits										TEST CURRENT VOLTAGE APPLIED TO PINS LISTED BELOW.									
		-55°C		+25°C		+125°C		0°C		+75°C		-55°C		+25°C		+125°C		0°C		+75°C		-55°C		+25°C		+125°C		0°C		+75°C	
		Pin	Unit	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Input																															
Excess Current	I_{EX}	2	-1.33	-1.33	-1.33	-1.33	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	
Leakage Current	I_L	2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
Inverse Beta Current	I_{IB}	2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Breakdown Voltage	$V_{BR(1)}$	2	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
Output																															
Output Voltage	$V_{out(0)}$	1	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	
Leakage Current	I_{OLK}	1	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Breakdown Current	I_{BVO}	1	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Short Circuit Current	I_{SC}	1	0.8	-1.33	-0.8	-1.33	-0.75	-1.33	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75	-1.55	-0.75
Output Voltage	V_{OL}	1	0.4	0.4	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4	0.45	0.4
Power Requirements																															
Max. Drive Power	I_{max}	4	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Max. Power Supply Current	I_{PSI}	4	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Power Supply Drain	I_{PSD}	4	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
Switching Parameters																															
Turn-On Delay	t_{pd-1}	1	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	t_{pd-2}	1	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turn-Off Delay	t_{pd-1}	1	-	-	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	t_{pd-2}	1	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Full Time	t_{FT}	1	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* R_{int} = internal 5.0 ohm resistor connected to V_{CC} . Pin shown in column is connected to this resistor.
 R_{ext} = external 330 ohm resistor connected from output indicated to V_{CC} .

542

542