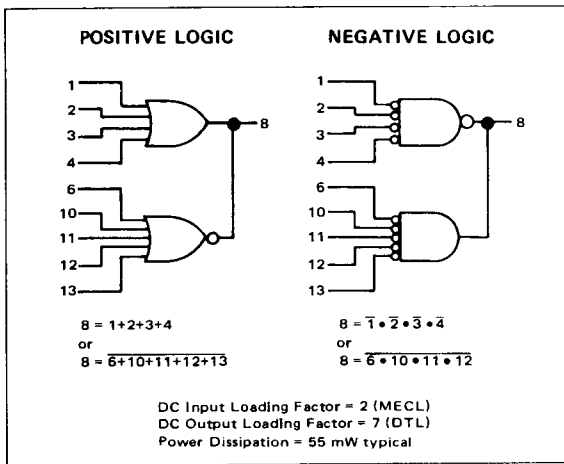
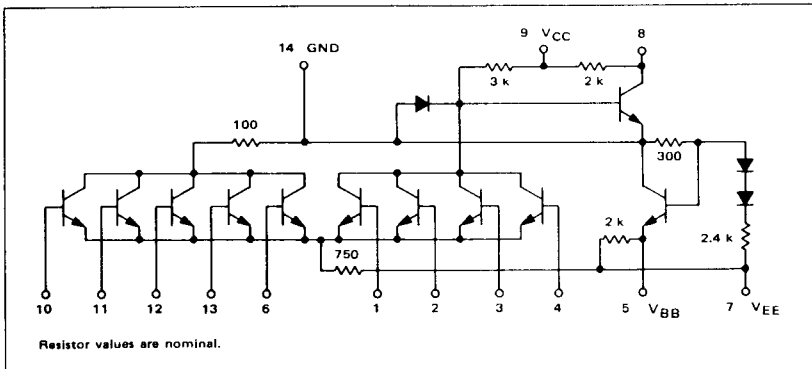


MC1018
MC1218

This level translator converts MECL signal levels to saturate logic levels. The translator will provide the positive logic OR or logic NOR function by connecting the internal bias driver output to the corresponding inputs of the differential amplifier, i.e., when pin 4 is connected to the reference bias, pin 5, pins 6, 10, 11, 12, and 13 become the inputs of a 5-input NOR gate. When pin 6 is connected to the reference bias, pin 5, pins 1, 2, 3, and 4 become the inputs of a 4-input OR gate.

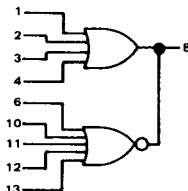


CIRCUIT SCHEMATIC



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MC1018, MC1218 (continued)



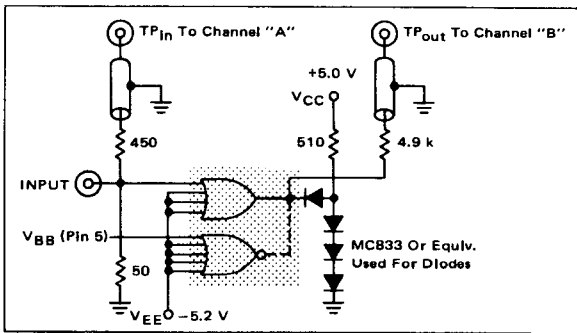
ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Pin Under Test	MC1218 Test Limits						MC1018 Test Limits							
			-55°C		+25°C		+125°C		0°C		+25°C		+75°C		Unit	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		
Positive Supply Drain Current	I_C	9	-	-	-	3.0	-	-	mAdc	-	-	-	3.0	-	-	mAdc
Negative Supply Drain Current	I_E	7	-	-	-	11.0	-	-	mAdc	-	-	-	11.0	-	-	mAdc
Input Current	I_{in}	1, 2, 3, 4, 6, 10, 11, 12, 13	-	-	-	200	-	-	μ Adc	-	-	-	200	-	-	μ Adc
Input Leakage Current	I_R	1, 2, 3, 4*, 6, 10, 11, 12, 13*	-	-	-	0.2	-	2.0	μ Adc	-	-	-	0.2	-	2.0	μ Adc
Output Voltage High	V_{OH}	8	-	-	4.6	-	4.4	Vdc	-	-	4.6	-	4.5	-	Vdc	
Output Voltage Low	V_{OL}	8	-	0.40	-	0.40	-	0.45	Vdc	-	0.45	-	0.45	-	0.50	Vdc
Bias Driver Output Voltage	V_{BB} ①	5	-1.35	-1.20	-1.26	-1.10	-1.11	-0.98	Vdc	-1.28	-1.14	-1.26	-1.10	-1.19	-1.04	Vdc
Output Short Circuit Current	I_{SC}	8	-	-4.0	-	-3.8	-	-3.6	mAdc	-	-3.9	-	-3.8	-	-3.6	mAdc
Switching Times	t_{1-8} , t_{1-8} , t_{6-8} , t_{6-8}	8	Typ Max		Typ Max		Typ Max		ns	Typ Max		Typ Max		Typ Max		ns
			19	25	19	25	19	25		19	25	19	25	19	25	
			8.0	12	8.0	12	10	14		8.0	12	8.0	12	9.0	13	
			8.0	12	8.0	12	10	14		8.0	12	8.0	12	9.0	13	
			19	25	19	25	19	25	12	25	19	25	19	25		

① V_{BB} is supplied from pin 5, and applies from no load (0 mA) to full load (-1.0 mAdc)

* Individually test each input using the pin connections shown.

SWITCHING TIME TEST CIRCUIT @ 25°C



Circuit Shown For OR Configurations. Connect Pin 5 to 4 For NOR.

@Test
Temperature

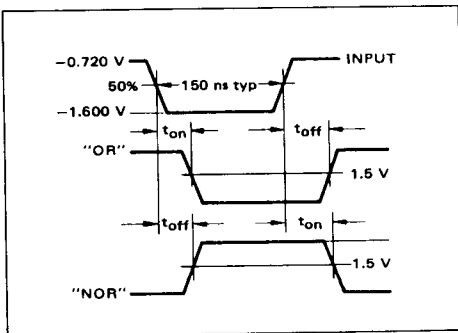
MC1218 {
-55°C
+25°C
+125°C

MC1018 {
0°C
+25°C
+75°C

TEST VOLTAGE/CURRENT VALUES									
V _{dc} ± 1.0%									
V _{IL min} to V _{IL max}	V _{IH min} to V _{IH max}	V _{IH max}	V _{CC}	V _{EE}	V _{BB}	I _{OH}	I _{OL}	I _L	mAdc
-5.2 to -1.405	-1.165 to -0.825	-	5.0	-5.2	1	-120	11.4	1.0	-
-5.2 to -1.325	-1.025 to -0.700	-0.700	5.0	-5.2	1	-120	12.0	1.0	-
-5.2 to -1.205	-0.875 to -0.530	-	5.0	-5.2	1	-120	10.8	1.0	-
-5.2 to -1.350	-1.070 to -0.740	-	5.0	-5.2	(1)	-120	12.0	1.0	-
-5.2 to -1.325	-1.025 to -0.700	-0.700	5.0	-5.2	1	-120	12.0	1.0	-
-5.2 to -1.260	-0.950 to -0.615	-	5.0	-5.2	(1)	-120	11.4	1.0	-

TEST VOLTAGE/CURRENT APPLIED TO PINS LISTED BELOW:

Characteristic	Pin Under Test	V _{IL min} to V _{IL max}	V _{IH min} to V _{IH max}	V _{IH max}	V _{CC}	V _{EE}	V _{BB}	I _{OH}	I _{OL}	I _L	V _{CC} (Gnd)
Positive Supply Drain Current	9	-	-	-	9	1, 2, 3, 6, 7, 10, 11, 12, 13	4	-	-	-	14
Negative Supply Drain Current	7	-	-	-	9	1, 2, 3, 6, 7, 10, 11, 12, 13	4	-	-	-	14
Input Current	1	-	-	1	9	2, 3, 4, 7, 10, 11, 12, 13	6	-	-	-	14
	2	-	-	2	9	1, 3, 4, 7, 10, 11, 12, 13	6	-	-	-	14
	3	-	-	3	9	1, 2, 4, 7, 10, 11, 12, 13	6	-	-	-	14
	4	-	-	4	9	1, 2, 3, 7, 10, 11, 12, 13	6	-	-	-	14
	6	-	-	6	9	1, 2, 3, 7, 10, 11, 12, 13	4	-	-	-	14
	10	-	-	10	9	1, 2, 3, 6, 7, 11, 12, 13	4	-	-	-	14
	11	-	-	11	9	1, 2, 3, 6, 7, 10, 12, 13	4	-	-	-	14
12	-	-	12	9	1, 2, 3, 6, 7, 10, 11, 13	4	-	-	-	14	
13	-	-	13	9	1, 2, 3, 6, 7, 10, 11, 12	4	-	-	-	14	
Input Leakage Current	1, 2, 3, 4*, 6, 10, 11, 12, 13*	-	-	-	9	1, 2, 3, 4, 7, 10, 11, 12, 13	6	-	-	-	14
	6, 10, 11, 12, 13*	-	-	-	9	1, 2, 3, 6, 7, 10, 11, 12, 13	4	-	-	-	14
Output Voltage High	8	6, 10, 11, 12, 13	-	-	9	1, 2, 3, 7	4	8	-	-	14
	↓	-	1	-	9	2, 3, 4, 7, 10, 11, 12, 13	6	-	-	-	14
	↓	-	2	-	9	1, 3, 4, 7, 10, 11, 12, 13	4	-	-	-	14
	↓	-	3	-	9	1, 2, 4, 7, 10, 11, 12, 13	4	-	-	-	14
Output Voltage Low	8	1, 2, 3, 4	-	-	9	7, 10, 11, 12, 13	6	-	8	-	14
	↓	-	6	-	9	1, 2, 3, 7, 10, 11, 12, 13	4	-	-	-	14
	↓	-	10	-	9	1, 2, 3, 6, 7, 11, 12, 13	4	-	-	-	14
	↓	-	11	-	9	1, 2, 3, 6, 7, 10, 12, 13	4	-	-	-	14
	↓	-	12	-	9	1, 2, 3, 6, 7, 10, 11, 13	4	-	-	-	14
Bias Driver Output Voltage	5	-	-	-	9	7	-	-	-	5	14
Output Short Circuit Current	8	-	-	4	9	1, 2, 3, 7, 10, 11, 12, 13	6	-	-	-	8, 14
Switching Times	8	Pulse In		Pulse Out		9	2, 3, 4, 7, 10, 11, 12, 13	6	-	-	14
		1	8								
		1	8								
		6	8								
		6	8								



SWITCHING TIME WAVEFORMS