

MECL II INTEGRATED CIRCUITS

MC1000 Series (0° to 75°C)

MC1200 Series (−55° to +125°C)

FEATURES

- Propagation typically 4 ns per logic decision
- Excellent noise immunity characteristics
- Simultaneous OR/NOR or AND/NAND outputs
- High fan-in and fan-out capabilities



CASE 83
(TO-86)



CASE 93

The MECL II series of integrated logic circuits presents the design engineer with all of the monolithic digital building blocks required for the arithmetic portion of a computer. MECL II circuits feature the fastest switching "state-of-the-art" devices and are systems-oriented to permit implementation with the fewest possible number of individual units. This approach can offer cost savings, lower power supply requirements, smaller physical size, and greater reliability plus the fastest circuitry available anywhere.

FUNCTIONS AND CHARACTERISTICS

FUNCTION	TYPE		DC Fanout each Output	Propagation Delay @ 25°C t_{pd} ns typ	Total Power Dissipation mW typ	CASE ①
	−55 to +125°C	0 to +75°C				
Single 6 Input Gate, 3 "OR" Outputs w Pulldowns 3 "NOR" Outputs w Pulldowns	MC1201F	MC1001P	25	4	115	83, 93
Single 6 Input Gate, 3 "OR" Outputs w Pulldowns 3 "NOR" Outputs w/o Pulldowns	MC1202F	MC1002P	—	—	80	—
Single 6 Input Gate, 3 "OR" Outputs w/o Pulldowns 3 "NOR" Outputs w/o Pulldowns	MC1203F	MC1003P	—	—	40	—
Dual 4 Input Gate, 2 "OR" Outputs w Pulldowns 2 "NOR" Outputs w Pulldowns	MC1204F	MC1004P	—	—	95	—
Dual 4 Input Gate, 2 "OR" Outputs w Pulldowns 2 "NOR" Outputs w/o Pulldowns	MC1205F	MC1005P	—	—	65	—
Dual 4 Input Gate, 2 "OR" Outputs w/o Pulldowns 2 "NOR" Outputs w/o Pulldowns	MC1206F	MC1006P	—	—	45	—
Triple 3 Input Gate, 3 "NOR" Outputs w Pulldowns	MC1207F	MC1007P	—	—	110	—
Triple 3 Input Gate, 1 "NOR" Output w Pulldown	MC1208F	MC1008P	—	—	75	—
Triple 3 Input Gate, 3 "NOR" Outputs w/o Pulldowns	MC1209F	MC1009P	—	—	60	—
Quad 2 Input Gate, 4 "NOR" Outputs w Pulldowns	MC1210F	MC1010P	—	—	115	—
Quad 2 Input Gate, 2 "NOR" Output w Pulldowns	MC1211F	MC1011P	—	—	95	—
Quad 2 Input Gate, 2 "NOR" Output w/o Pulldowns	MC1212F	MC1012P	—	—	65	—
85 MHz AC Coupled J-K Flip-Flop	MC1213F	MC1013P	—	6	125	—
Dual R-S Flip-Flop (Positive Clock)	MC1214F	MC1014P	—	—	140	—
Dual R-S Flip-Flop (Negative Clock)	MC1215F	MC1015P	—	—	140	—
Dual R-S Flip-Flop (Single Rail)	MC1216F	MC1016P	—	—	140	—
Level Translator (Sat. Logic to MECL)	MC1217F	MC1017P	25 (MECL)	15	105	—
Level Translator (MECL to Sat. Logic)	MC1218F	MC1018P	7 (DTL)	20	70	—
Full Adder	MC1219F	MC1019P	25	8	110	—
Quad Line Receiver	MC1220F	MC1020P	25	4	115	—
Full Subtractor	MC1221F	MC1021P	25	8	110	—
Dual 4 Input "OR, NOR" Clock Driver	—	MC1023P	25	2	250	—
Dual 2 Input Expandable Gate	MC1224F	MC1024P	25	4	95	—
Dual 4 and 5 Input Expander	MC1225F	MC1025P	—	—	—	—
120 MHz AC Coupled J-K Flip-Flop	—	MC1027P	25	4	250	—

① Type numbers with F suffix use Case #83. Type numbers with P suffix use Case #93

MECL II LOGIC DIAGRAMS

MECL II — LOGIC DESCRIPTION

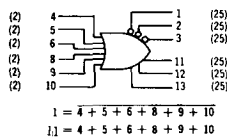
The logic diagrams shown describe the circuits of the MECL II line and permit quick selection of those circuits required to implement a particular logic system. Pertinent information, such as logic equations and truth tables, is provided to show line compatibility. Package pin numbers and dc loading factors for each device are specified on each logic diagram. The numbers at the ends of the terminals are package pin numbers. The numbers in parentheses indicate dc loading factors at each terminal.

MECL II circuits contain internal bias networks, insuring that the transition point is always in the center of the transfer characteristic curves over the temperature range.

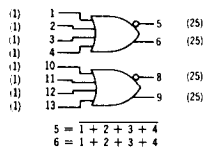
(V⁺ = Pin 14, V⁻ = Pin 7)

GATES

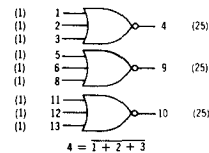
**MC1001P, MC1002P, MC1003P
MC1201F, MC1202F, MC1203F
6-Input Gate**



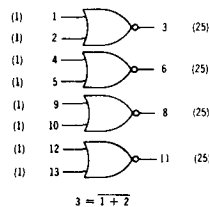
**MC1004P, MC1005P, MC1006P
MC1204F, MC1205F, MC1206F
Dual 4-Input Gate**



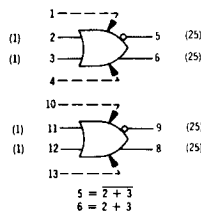
**MC1007P, MC1008P, MC1009P
MC1207F, MC1208F, MC1209F
Triple 3-Input Gate**



**MC1010P, MC1011P, MC1012P
MC1210P, MC1211P, MC1212F
Quad 2-Input Gate**

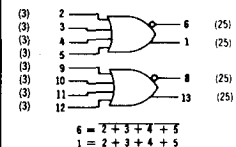


**MC1024P, MC1224F
Dual 2-Input Expandable Gate**



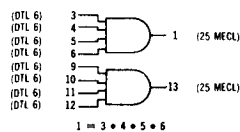
DRIVER

**MC1023P
Dual 4-Input Clock Driver**



TRANSLATORS

**MC1017P, MC1217F
Level Translator**



**MC1018P, MC1218F
Level Translator**

