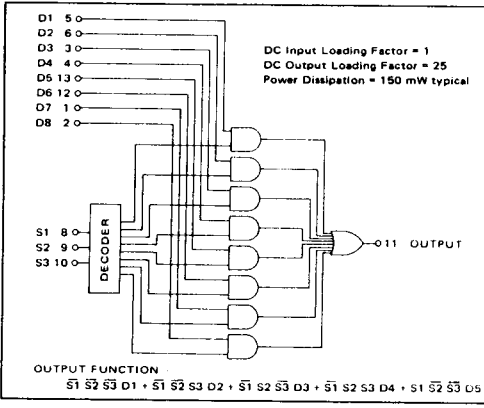


8 CHANNEL
DATA SELECTOR

MECL II MC1000/1200 series

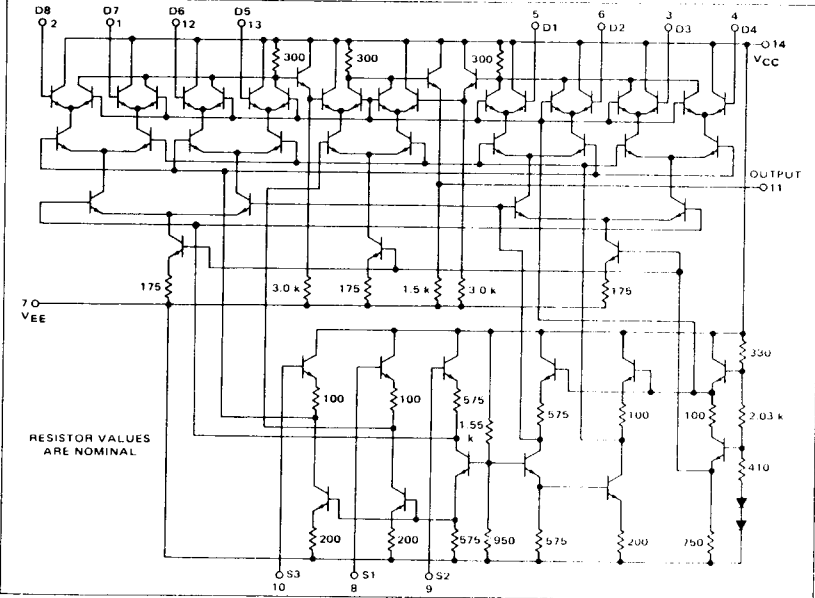
MC1038
MC1238



An electronic single-pole, 8-position switch by which any one of eight data input lines may be selected by a binary coded select input.

Input Select	Data Line Selected
S1 S2 S3	D1
S1 S2 S3	D2
S1 S2 S3	D3
S1 S2 S3	D4
S1 S2 S3	D5
S1 S2 S3	D6
S1 S2 S3	D7
S1 S2 S3	D8

CIRCUIT SCHEMATIC



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MC1038, MC1238 (continued)

ELECTRICAL CHARACTERISTICS

Characteristic Symbol	Pin Under Test	MC1238 Test Limits												MC1038 Test Limits						TEST CURRENT VOLTAGE VALUES												
		-55°C		+25°C		+125°C		0°C		+25°C		+75°C		-55°C		+25°C		+125°C		0°C		+25°C		+75°C								
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max							
Power Supply Drain Current	I _E	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V _{EH}	V _{IH}	V _{IH max}	V _{EH}	I _E			
Input Current	I _{in}	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Input Leakage Current	I _R	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Logical "1" Output Voltage	V _{OH}	11	-0.990	-0.825	-0.850	-0.700	-0.700	-0.530	V _{dc}	-0.895	-0.740	-0.890	-0.700	-0.775	-0.615	V _{dc}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Logical "0" Output Voltage	V _{OL}	11	-1.990	-1.990	-1.900	-1.500	-1.380	V _{dc}	-1.830	-1.525	-1.800	-1.500	-1.760	-1.435	V _{dc}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TEST CURRENT VOLTAGE VALUES											
V _{dc} ± 1%											
V _{EH}	V _{IH}	V _{IH max}	V _{EH}	I _E							
-1.580	-0.990	-	-5.2	-2.5							
-1.500	-0.850	-0.700	-5.2	-2.5							
-1.380	-0.700	-	-5.2	-2.5							
-1.525	-0.895	-	-5.2	-2.5							
-1.500	-0.850	-0.700	-5.2	-2.5							
-1.435	-0.775	-	-5.2	-2.5							

TEST CURRENT VOLTAGE APPLIED TO PINS LISTED BELOW											
V _{EH}	V _{IH}	V _{IH max}	V _{EH}	I _E							
8.9, 10	-	-	1.2, 3, 4, 5, 6, 7, 12, 13	-							
10	8.9	1	2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	8.9, 10	2	1, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	3	1, 2, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	4	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	5	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	6	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	10	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	12	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	8	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	9	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	10	1, 2, 3, 4, 5, 6, 7, 12, 13	-							
8.9, 10	9.0	10	1, 2, 3, 4, 5, 6, 7, 12, 13	-							

*V_{OH} limits apply from no load (0 mA) to full load (2.5 mA).

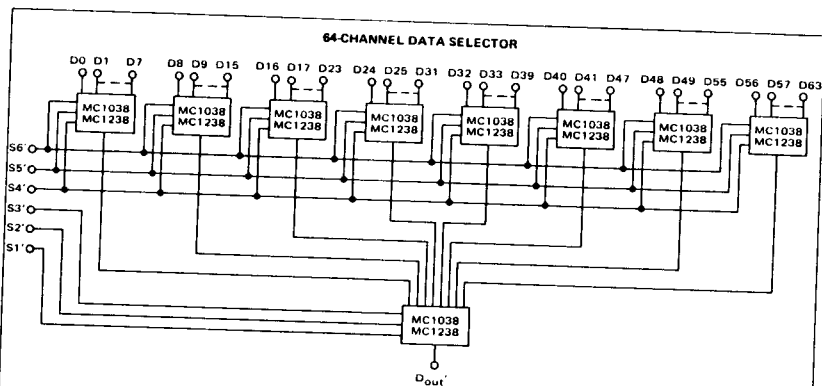
MC1038, MC1238 (continued)

APPLICATIONS INFORMATION

The MC1038/1238 "8" channel data selector is essentially a single-pole eight-position switch. The data applied to the input pins 1, 2, 3, 4, 5, 6, 12,

and 13 will be transferred to the output on pin 11 according to the binary select coding applied to pins 8, 9, 10.

The application shown is an example of the manner in which the "8" channel data selector may be used. Nine MC1038/1238 "8" channel data selectors are used to form a 64-bit multiplexer. The typical propagation delay in this application from the 64-bit input to the "8" channel data selector output is 14 ns.



TRUTH TABLE

S1'	S2'	S3'	S4'	S5'	S6'	Dout'
0	0	0	0	0	0	0
0	0	0	0	0	1	1
0	0	0	0	1	0	2
0	0	0	0	1	1	3
0	0	0	1	0	0	4
0	0	0	1	0	1	5
0	0	0	1	1	0	6
0	0	0	1	1	1	7
0	0	1	0	0	0	8
0	0	1	0	0	1	9
0	0	1	0	1	0	10
0	0	1	0	1	1	11
0	0	1	1	0	0	12
0	0	1	1	0	1	13
0	0	1	1	1	0	14
0	0	1	1	1	1	15
0	1	0	0	0	0	16
0	1	0	0	0	1	17
0	1	0	0	1	0	18
0	1	0	0	1	1	19
0	1	0	1	0	0	20
0	1	0	1	0	1	21

S1'	S2'	S3'	S4'	S5'	S6'	Dout'
0	1	0	1	1	0	22
0	1	0	1	1	1	23
0	1	1	0	0	0	24
0	1	1	0	0	1	25
0	1	1	0	1	0	26
0	1	1	0	1	1	27
0	1	1	1	0	0	28
0	1	1	1	0	1	29
0	1	1	1	1	0	30
0	1	1	1	1	1	31
1	0	0	0	0	0	32
1	0	0	0	0	1	33
1	0	0	0	1	0	34
1	0	0	0	1	1	35
1	0	0	1	0	0	36
1	0	0	1	0	1	37
1	0	0	1	1	0	38
1	0	0	1	1	1	39
1	0	1	0	0	0	40
1	0	1	0	0	1	41
1	0	1	0	1	0	42

S1'	S2'	S3'	S4'	S5'	S6'	Dout'
1	0	1	0	1	1	43
1	0	1	1	0	0	44
1	0	1	1	0	1	45
1	0	1	1	1	0	46
1	0	1	1	1	1	47
1	1	0	0	0	0	48
1	1	0	0	0	1	49
1	1	0	0	1	0	50
1	1	0	0	1	1	51
1	1	0	1	0	0	52
1	1	0	1	0	1	53
1	1	0	1	1	0	54
1	1	0	1	1	1	55
1	1	1	0	0	0	56
1	1	1	0	0	1	57
1	1	1	0	1	0	58
1	1	1	0	1	1	59
1	1	1	1	0	0	60
1	1	1	1	0	1	61
1	1	1	1	1	0	62
1	1	1	1	1	1	63