ECL 10KH High-Speed Emitter-Coupled Logic Family
MC10H160
12-Bit Parity Generator-Checker

Features/Benefits

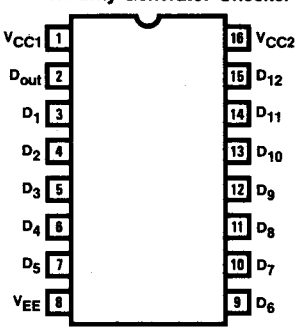
- **Propagation delay, 2.5 ns typical**
- **Power dissipation, 320 mW typical**
- **Noise margin 150 mV**
- **Voltage compensated**
- **ECL 10K-compatible**

Description

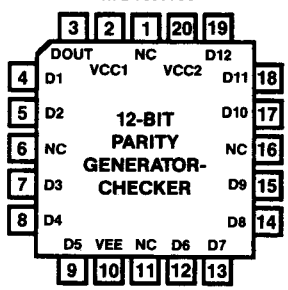
The MC10H160 is a member of Monolithic Memories' new ECL family. The MC10H160 is a 12-bit parity generator-checker. The output goes high when an odd number of inputs are high providing the odd parity function. Unconnected inputs are pulled to a logic low allowing parity detection and generation for less than 12 bits. The MC10H160 is a functional/pin out duplication of the standard ECL 10K family part with 100% improvement in propagation delay and no increase in power-supply current.

Pin Configuration

MC10H160
12-Bit Parity Generator-Checker



MC10H160

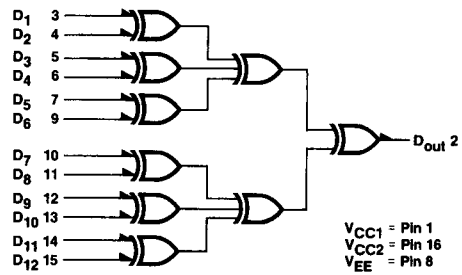


Ordering Information

PART NUMBER	PACKAGE	TEMPERATURE
MC10H160	J,N,NL(20)	Com

Logic Diagram

MC10H160
12-Bit Parity Generator-Checker



Function Table

INPUT SUM OF HIGH LEVEL INPUTS	OUTPUT PIN 2
Even	LOW
Odd	HIGH

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TWX: 910-338-2376
Monolithic Memories

Absolute Maximum Ratings

Power supply V_{EE} (V_{CC} = 0 V) ..... -8.0 V to 0 Vdc
Input voltage V_I (V_{CC} = 0 V) ..... 0 Vdc to V_{EE}
Output Current:
Continuous ..... 50 mA
Surge ..... 100 mA

Operating Conditions

SYMBOL	PARAMETER		COMMERCIAL MIN	TYP	MAX	UNIT
V_{EE}	Supply voltage		-5.46	-5.2	-4.94	V
T_A	Operating temperature range		0		+75	°C
T_{STG}	Storage temperature range	Plastic	-55		+150	°C
		Ceramic	-55		+165	

Electrical Characteristics V_{EE} = -5.2 V ± 5% (See Note)

SYMBOL	PARAMETER		0° MIN	0° MAX	25° MIN	25° MAX	75° MIN	75° MAX	UNIT
I_E	Power supply current		—	88	—	78	—	86	mA
I_{inH}	Input current HIGH	Pins 3,5,7,10,12,14	—	391	—	246	—	246	µA
		Pins 4,6,9,11,13,15	—	457	—	285	—	285	
I_{inL}	Input current LOW		0.5	—	0.5	—	0.3	—	µA
V_{OH}	HIGH output voltage		-1.02	-0.84	-0.98	-0.81	-0.92	-0.735	Vdc
V_{OL}	LOW output voltage		-1.95	-1.63	-1.95	-1.63	-1.95	-1.60	Vdc
V_{IH}	HIGH input voltage		-1.17	-0.84	-1.13	-0.81	-1.07	-0.735	Vdc
V_{IL}	LOW input voltage		-1.95	-1.48	-1.95	-1.48	-1.95	-1.45	Vdc

Switching Characteristics V_{EE} = -5.2V ±5% (See Note)

SYMBOL	PARAMETER	0° MIN	0° MAX	25° MIN	25° MAX	75° MIN	75° MAX	UNIT
t_{pd}	Propagation delay	1.1	3.1	1.1	3.3	1.2	3.5	ns
t_r, t+	Rise time	0.55	1.5	0.55	1.6	0.75	1.7	ns
t_f, t-	Fall time	0.55	1.5	0.55	1.6	0.75	1.7	ns

Note: Each ECL 10KH series circuit has been designed to meet the dc specifications shown in the test table, after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse air flow greater than 500 linear fpm is maintained. Outputs are terminated through a 50 Ω resistor to -2.0 V.