

T-43-21

ECL 10 KH High-Speed Emitter-Coupled Logic Family MC10H210/MC10H211 3-Input, 3-Output OR/NOR Gates

Features/Benefits

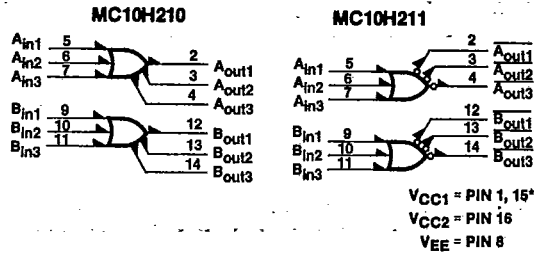
- Propagation delay, 1.0 ns typical
- Power dissipation, 160 mW typical
- Noise margin 150 mV (over operating voltage and temperature range)
- Voltage compensated
- ECL 10K-compatible

Description

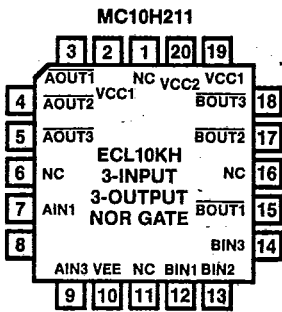
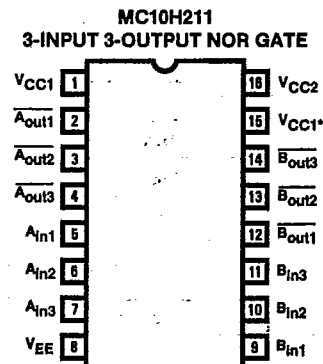
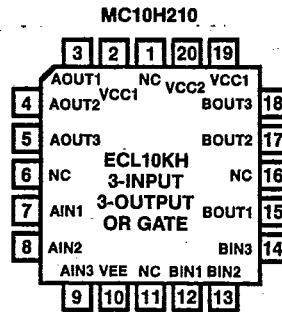
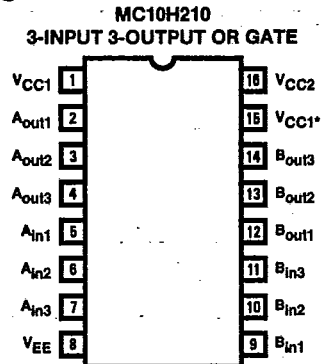
The MC10H210 and MC10H211 are members of Monolithic Memories' ECL family. These devices are dual 3-input, 3-output "OR" and "NOR" gates respectively. These ECL 10KH parts are functional/pinout duplications of the standard ECL 10KH family parts, with 100% improvement in propagation delay and no increase in power supply current.

Ordering Information

PART NUMBER	PACKAGE	TEMPERATURE
MC10H210 MC10H211	J,N,NL,(20)	Com



Pin Configurations



* Pins 1 and 15 Internally connected

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MC10H210/211

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Absolute Maximum Ratings

Supply voltage, V_{EE} ($V_{CC} = 0$).....	-8.0 V to 0 V_{dc}
Input voltage, V_I ($V_{CC} = 0$).....	0 V_{dc} to V_{EE}
Output Current:	
Continuous	50 mA
Surge.....	100 mA

Operating Conditions

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

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

SYMBOL	PARAMETER	0°		25°		75°		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
I_E	Power supply current	—	42	—	38	—	42	mA
I_{inH}	Input current HIGH	—	720	—	450	—	450	μA
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 $V_{EE} = -5.2V \pm 5\%$ (See Note)

SYMBOL	PARAMETER		0°		25°		75°		UNIT
			MIN	MAX	MIN	MAX	MIN	MAX	
t_{pd}	Propagation delay	MC10H210	0.5	1.55	0.55	1.55	0.6	1.7	ns
		MC10H211	0.7	1.6	0.7	1.6	0.7	1.7	
t_r, t^+	Rise time	MC10H210	0.75	1.8	0.75	1.9	0.8	2.0	ns
		MC10H211	0.9	2.0	0.9	2.2	0.9	2.4	
t_f, t^-	Fall time	MC10H210	0.75	1.8	0.75	1.9	0.8	2.0	ns
		MC10H211	0.9	2.0	0.9	2.2	0.9	2.4	

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.