MOTOROLA

MC54/74HC192

Product Preview

PRESETTABLE BCD UP/DOWN COUNTER WITH RESET

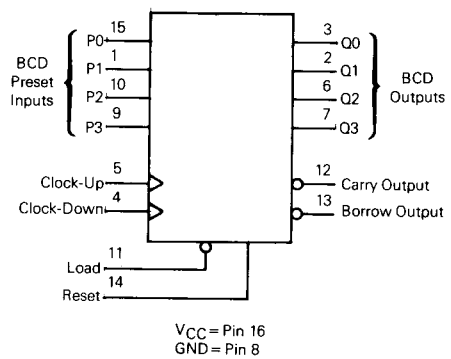
The MC54/74HC192 is identical in pinout to the LS192. The device inputs are compatible with standard CMOS outputs; with pullup resistors, they are compatible with LSTTL outputs.

This counter can be preset by applying the desired value in BCD to the preset inputs and then bringing the Load input low. Up or down counting is achieved by bringing the Load input high and clocking the appropriate clock input. The state of the counter changes on the positive transition of the appropriate clock input. In the count-up mode, Carry goes low half a clock period before the zero state is reached and returns high when the zero state is reached. In the count-down mode, Borrow goes low half a clock period before the nine state is reached and returns high when the nine state is reached. Reset is active high and forces Q0 thru Q3 low.

These counters can be cascaded by connecting Carry and Borrow of the least-significant counter to Clock-up and Clock-down respectively, of the next more-significant counter.

- Low Power Consumption Characteristic of CMOS Devices
- Output Drive Capability: 10 LSTTL Loads Minimum
- Operating Speeds Similar to LSTTL
- Wide Operating Voltage Range: 2 to 6 Volts
- Low Input Current: 1 μA Maximum
- Low Quiescent Current: 80 μA Maximum (74HC Series)
- High Noise Immunity Characteristic of CMOS Devices
- Diode Protection on All Inputs

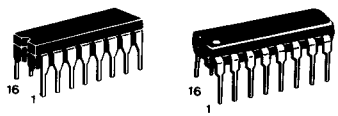
BLOCK DIAGRAM



V_{CC} = Pin 16
GND = Pin 8

HIGH-PERFORMANCE
CMOS
LOW-POWER COMPLEMENTARY MOS
SILICON-GATE

PRESETTABLE BCD UP/DOWN COUNTER WITH RESET



J SUFFIX
CERAMIC PACKAGE
CASE 620

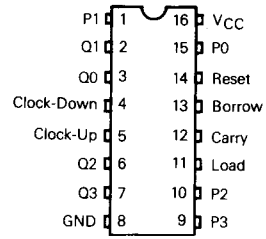
N SUFFIX
PLASTIC PACKAGE
CASE 648

ORDERING INFORMATION

54 Series: −55°C to +125°C
MC54HCXXXJ (Ceramic Package Only)

74 Series: −40°C to +85°C
MC74HCXXXN (Plastic Package)
MC74HCXXXJ (Ceramic Package)

PIN ASSIGNMENT



FUNCTION TABLE

Clock Up	Clock Down	Reset	Load	Function
↑	H	L	H	Count Up
H	↑	L	H	Count Down
X	X	H	X	Reset
X	X	L	L	Load Preset Inputs

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