MOTOROLA

MC1697

BEING DISCONTINUED
(LIFETIME BUY UNTIL JUNE 14, 1989)

1.0 GHz DIVIDE-BY-FOUR PRESCALER

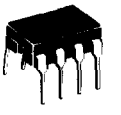
The MC1697 is a divide-by-four gigahertz prescaler in an 8 pin package. The clock input requires an ac coupled driving signal of 800 mV amplitude (typical). The clock toggles two divide-by-two stages, and the complementary outputs (50% duty cycle) are taken from the second stage.

The complementary outputs are capable of driving 50 ohm lines.

Pin 6 is available for connection of a decoupling capacitor to ground. This capacitor stabilizes the reference point which is internally coupled to the clock input.

1.0 GHz DIVIDE-BY-FOUR PRESCALER

P SUFFIX
PLASTIC PACKAGE
CASE 626

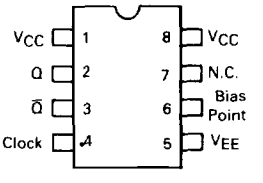


L SUFFIX
CERAMIC PACKAGE
CASE 693

ELECTRICAL CHARACTERISTICS

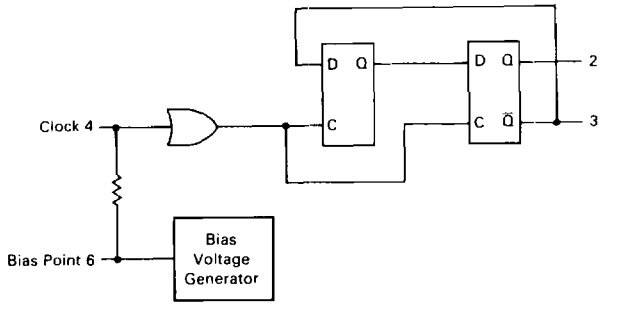
Characteristic	Symbol	MC1697P Test Limits 0°C Min	0°C Max	+25°C Min	+25°C Max	+75°C Min	+75°C Max	Unit
Power Supply Drain Current	I_E	—	—	—	57	—	—	mAdc
Toggle Frequency (high frequency operation)	f_{Tog}	1.0	—	1.0	—	1.0	—	GHz
Toggle Frequency (low frequency sine wave input)	f_{Tog}	—	—	—	100	—	—	MHz

PIN ASSIGNMENT



LOGIC DIAGRAM

Power Dissipation — 320 mW Typ/Pkg
(No Load — 7.0 V Supply)



V_{CC1} = Pin 1
V_{CC2} = Pin 8
V_{EE} = Pin 5

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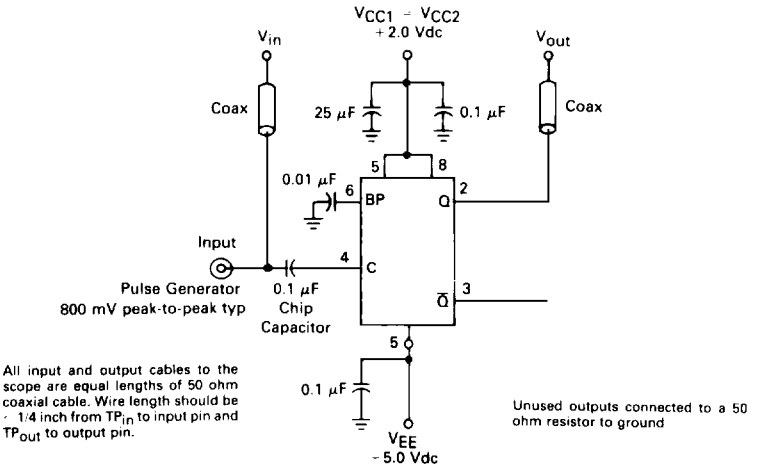
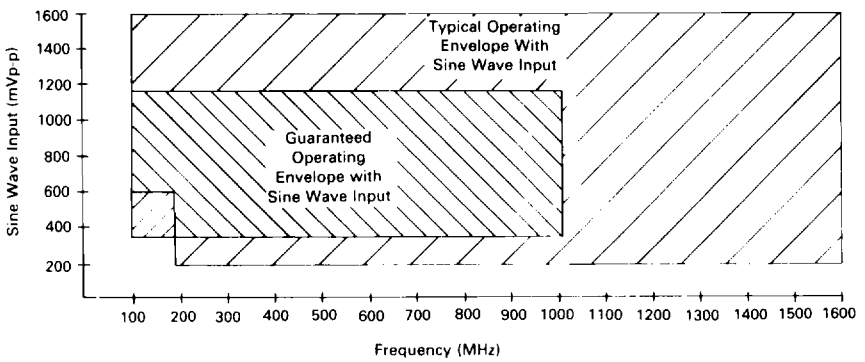
COUNT FREQUENCY TEST CIRCUIT



Note: All power supply and logic levels are shown shifted 2.0 volts positive.

TIMING DIAGRAM



APPLICATION INFORMATION

The MC1697 is a very high speed divide-by-four prescaler designed to operate on a nominal supply voltage of −7.0 volt. In some applications it may be necessary to interface the output of the MC1697 with other MECL circuits requiring a supply voltage of −5.2 volts. One method of interfacing the circuits is shown below. This configuration is adequate for frequencies up to 1.0 GHz over the temperature range of 0° to +75°C. For best performance it is recommended that separate regulated supplies be used.

METHOD OF INTERFACING MC1697 WITH STANDARD MECL CIRCUITS