



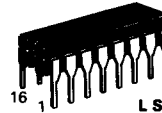
MOTOROLA

MC1690
OBSOLETE
USE MC12090

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	-30°C		+25°C		+85°C		Unit
		Min	Max	Min	Max	Min	Max	
Power Supply Drain Current	I_E	—	—	—	59	—	—	mAdc
Input Current Pins 7, 9 Pins 11, 12	I_{inH}	—	—	—	250 270	—	—	μ Adc
Switching Times				Min	Typ	Max		ns
Propagation Delay	t_{pd}	—	—	—	1.5	—	—	
Rise Time, Fall Time (10% to 90%)	t^+, t^-	—	—	—	1.3	—	—	ns
Setup Time	t_{setup}	—	—	—	0.3	—	—	ns
Hold Time	t_{hold}	—	—	—	0.3	—	—	
Toggle Frequency	f_{Tog}	500	—	500	540	—	500	MHz

**UHF PRESCALER
TYPE D FLIP-FLOP**



**L SUFFIX
CERAMIC PACKAGE
CASE 620**

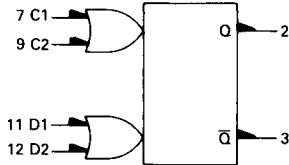
TRUTH TABLE

C	D	Q_{n+1}
L	ϕ	Q_n
H	ϕ	Q_n
	L	L
	H	H

C = C1 + C2
D = D1 + D2

ϕ = Don't Care

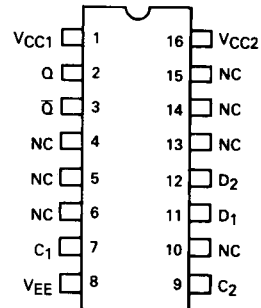
LOGIC DIAGRAM



VCC1 = Pin 1
VCC2 = Pin 16
VEE = Pin 8

F_D = 200 mW typ/pkg (No Load)
 f_{Tog} = 500 MHz min

PIN ASSIGNMENT



MC1690

FIGURE 1 — TOGGLE FREQUENCY TEST CIRCUIT

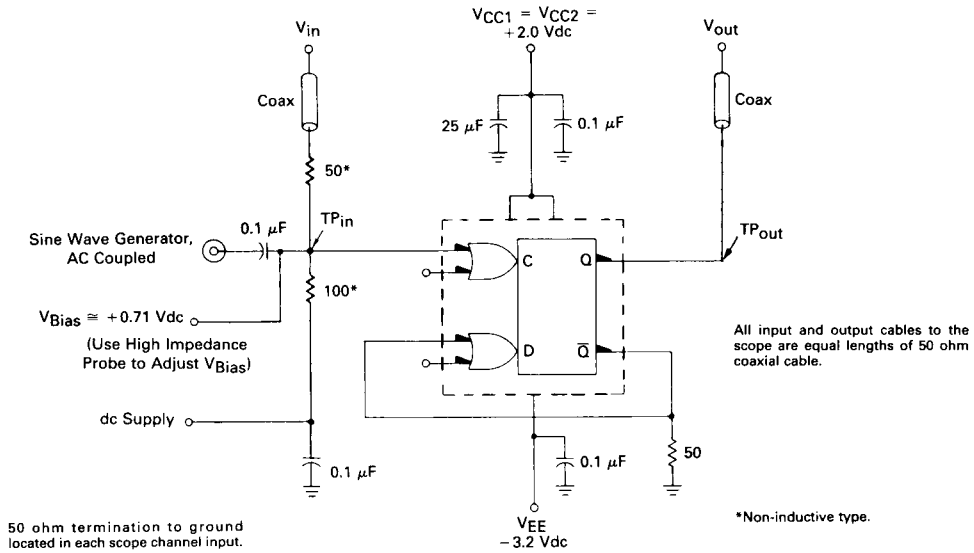
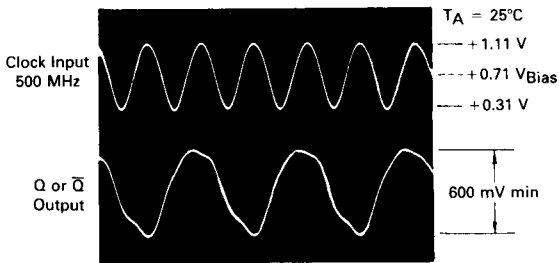


FIGURE 2 — TOGGLE FREQUENCY WAVEFORMS



The maximum toggle frequency of the MC1690 has been exceeded when either:

1. The output peak-to-peak voltage swing falls below 600 millivolts,
- OR
2. The device ceases to toggle (divide-by-two).

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