



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	—	—	μAdc
Input Current Pins 7, 9 Pins 11, 12	I_{inH}	—	—	—	250	—	—	μAdc
—	—	—	—	270	—	—	—	—
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

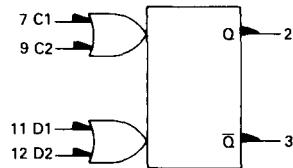
TRUTH TABLE

C	D	Q_{n+1}
L	ϕ	Q_n
H	ϕ	Q_n
—	L	L
—	H	H

$C = C_1 + C_2$
 $D = D_1 + D_2$

$\phi = \text{Don't Care}$

LOGIC DIAGRAM



V_{CC1} = Pin 1
V_{CC2} = Pin 16
V_{EE} = Pin 8

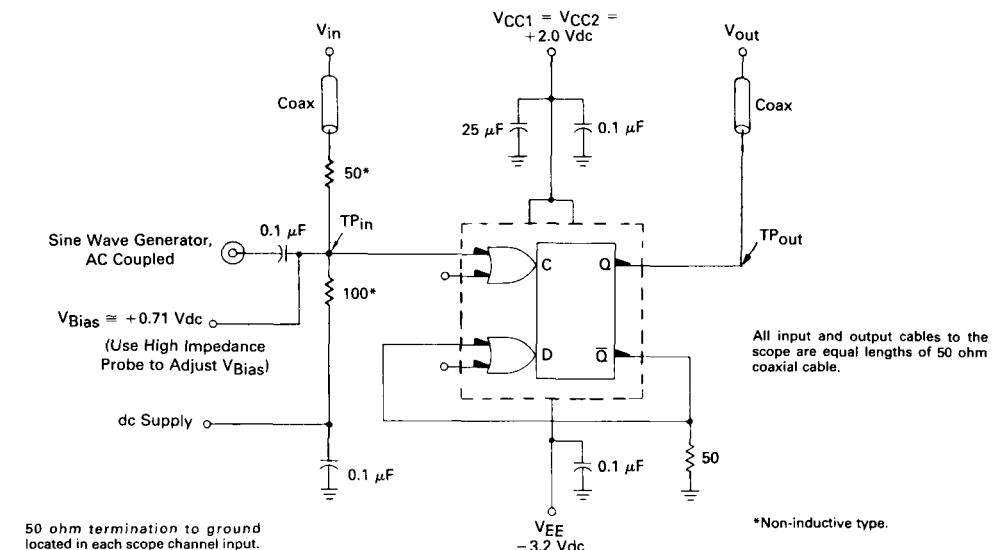
P_D = 200 mW typ/pkg (No Load)
 f_{Tog} = 500 MHz min

PIN ASSIGNMENT

V _{CC1}	1	16	V _{CC2}
Q	2	15	NC
\bar{Q}	3	14	NC
NC	4	13	NC
NC	5	12	D ₂
NC	6	11	D ₁
C ₁	7	10	NC
V _{EE}	8	9	C ₂

MC1690

FIGURE 1 — TOGGLE FREQUENCY TEST CIRCUIT



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FIGURE 2 — TOGGLE FREQUENCY WAVEFORMS

