


MOTOROLA

1.1 GHz Prescaler

The MC12080 is a single modulus divide by 10, 20, 40, 80 prescaler for low power frequency division of a 1.1 GHz high frequency input signal. Divide ratio control inputs SW1, SW2 and SW3 select the required divide ratio of $\div 10$, $\div 20$, $\div 40$, or $\div 80$.

An external load resistor is required to terminate the output. A $820\ \Omega$ resistor is recommended to achieve a $1.2\ V_{pp}$ output swing, when dividing a 1.1 GHz input signal by the minimum divide by ratio of 10, assuming a $8.0\ pF$ load. Output current can be minimized dependent on conditions such as output frequency, capacitive load being driven, and output voltage swing required. Typical values for load resistors are included in the V_{out} specification for various divide ratios at 1.1 GHz input frequency.

- 1.1 GHz Toggle Frequency
- Supply Voltage 4.5 to 5.5 V
- Low Power 3.7mA Typical at $V_{CC} = 5.0\ V$
- Operating Temperature Range of -40 to $85^\circ C$

FUNCTIONAL TABLE

SW1	SW2	SW3	Divide Ratio
L	L	L	80
L	L	H	40
L	H	L	40
L	H	H	20
H	L	L	40
H	L	H	20
H	H	L	20
H	H	H	10

NOTE: SW1, SW2 and SW3: H = V_{CC} , L = Open.

MAXIMUM RATINGS

Characteristic	Symbol	Range	Unit
Power Supply Voltage, Pin 2	V_{CC}	-0.5 to 7.0	Vdc
Operating Temperature Range	T_A	-40 to 85	$^\circ C$
Storage Temperature Range	T_{stg}	-65 to 150	$^\circ C$
Maximum Output Current, Pin 4	I_O	10	mA

NOTE: ESD data available upon request.

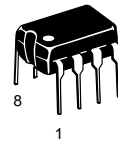
MC12080

MECL PLL COMPONENTS $\div 10/20/40/80$ PRESCALER

SEMICONDUCTOR TECHNICAL DATA

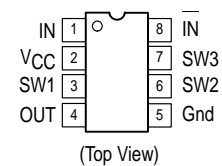


D SUFFIX
PLASTIC PACKAGE
CASE 751
(SO-8)



P SUFFIX
PLASTIC PACKAGE
CASE 626

PIN CONNECTIONS

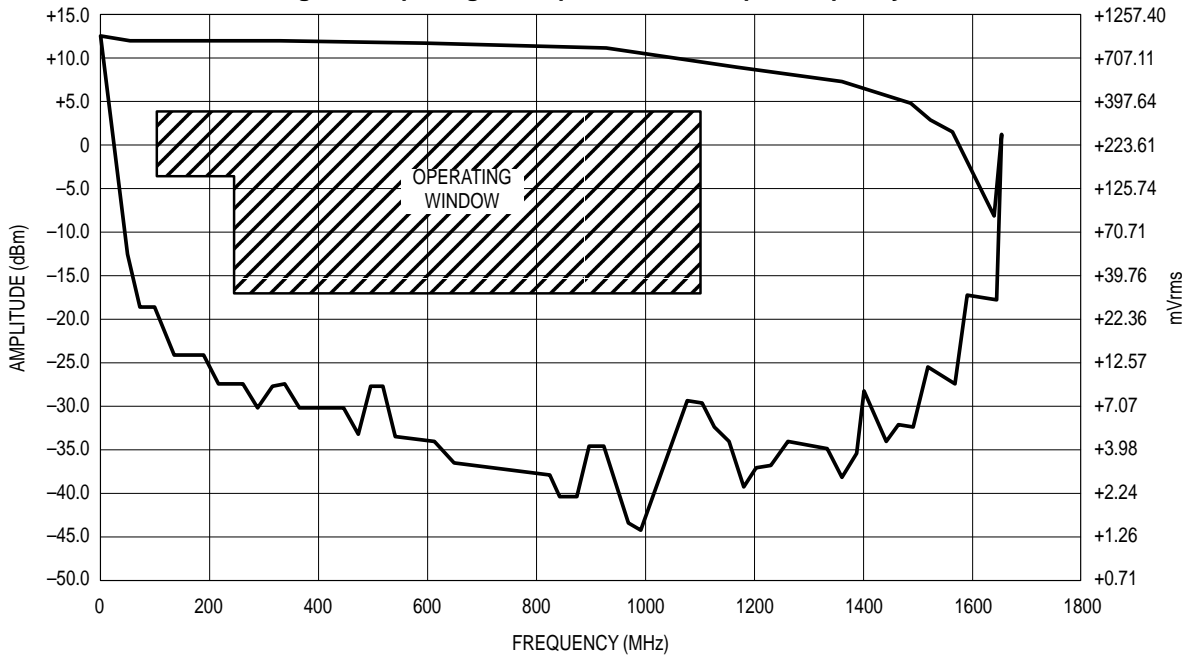


ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC12080D	$T_A = -40^\circ$ to $+85^\circ C$	SO-8
MC12080P		Plastic

MC12080

Figure 3. Input Signal Amplitude versus Input Frequency



Divide Ratio = 10; $V_{CC} = 5.0\text{ V}$; $T_A = 25^\circ\text{C}$

Figure 4. Output Amplitude versus Input Frequency

