

# 1.1GHz Prescaler

The MC12073 is a divide by 64 prescaler. Typical frequency synthesis applications include electronically tuned TV/CATV and communication systems as well as instrumentation.

An internal preamplifier is included which isolates the differential inputs and provides gain for the input signal. Differential ECL outputs are provided.

- 1.1GHz Toggle Frequency
- Operating Supply Voltage of 4.5 to 5.5V
- Low-Power 23mA Typical at  $V_{CC} = 5.0V$
- High Input Sensitivity,  $20mV_{rms}$  at  $V_{CC} = 5.0 \pm 10\%$ ,  $T_A = 0^\circ C$  to  $+70^\circ C$
- 800mV Minimum Peak-to-Peak Output Swing
- Differential ECL Outputs

## MAXIMUM RATINGS

Symbol	Characteristic	Range	Unit
$V_{CC}$	Power Supply Voltage	7.0	Vdc
$T_A$	Operating Temperature Range	0 to +70	$^\circ C$
$T_{stg}$	Storage Temperature Range	-65 to +175	$^\circ C$

## ELECTRICAL CHARACTERISTICS ( $V_{CC} = 4.5$ to $5.5V$ ; $T_A = 0$ to $+70^\circ C$ )

Symbol	Characteristic	Min	Typ*	Max	Unit
$f_{max}^1$ $f_{min}$	Toggle Frequency (Sine Wave Input)	1.1	1.3	90	GHz MHz
$I_{CC}$	Supply Current at 5.5V		23	30	mA
$V_{out}$	Output Voltage (Load = 10pF)	0.8	1.2		$V_{pp}$
$V_{in min}$	Input Voltage Sensitivity 150–1100MHz 90MHz		10	20 30	$mV_{rms}$
$V_{in max}$	Input Overload	200	400		$mV_{rms}$

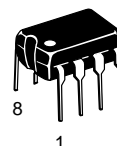
\* Typical measured at  $+25^\circ C$ , 5.0V

<sup>1</sup> See Figure 1

# MC12073

## MECL PLL COMPONENTS

$\div 64$   
**PRESCALER**

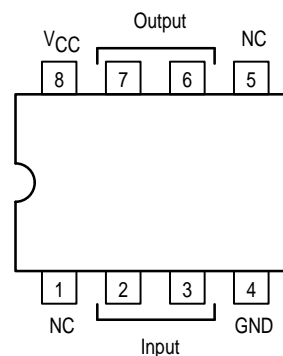


**P SUFFIX**  
PLASTIC PACKAGE  
CASE 626-05

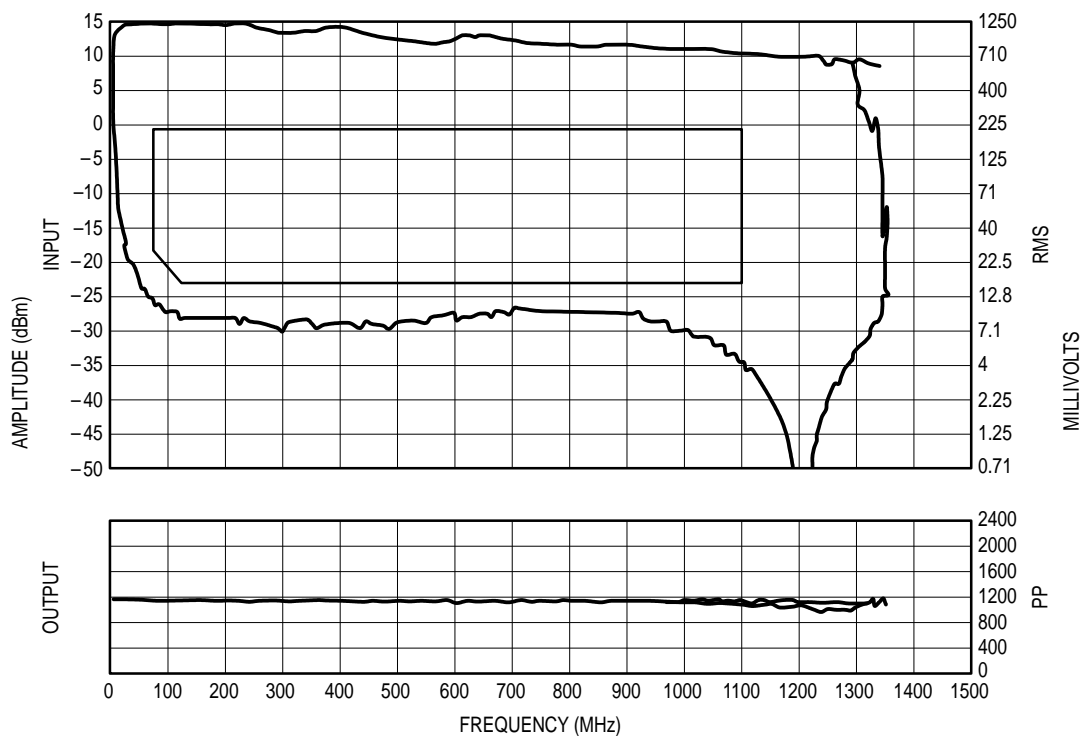
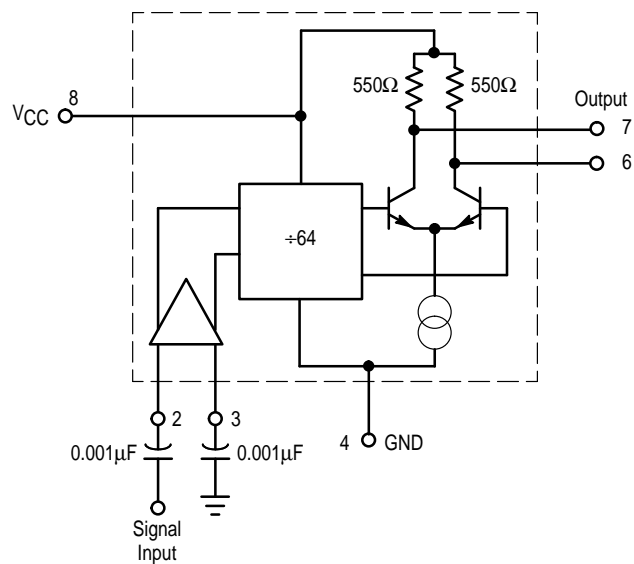
**D SUFFIX**  
PLASTIC SOIC PACKAGE CASE 751-05



## Pinout: 8-Lead Plastic (Top View)

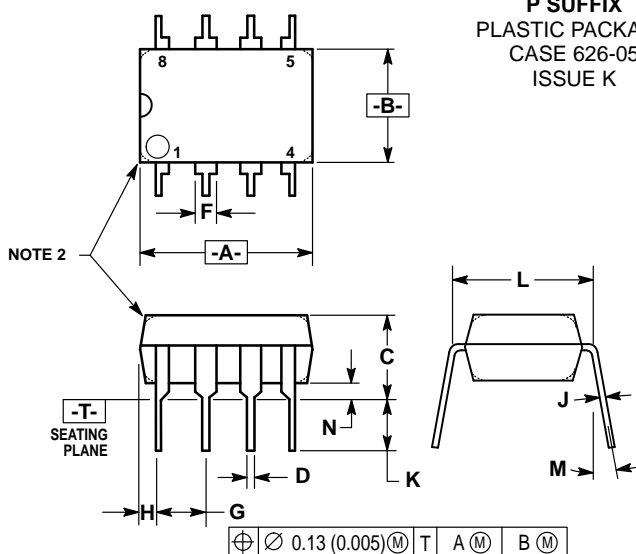


## PRESCALER BLOCK DIAGRAM

**Figure 1. Divide Ratio = 64**

(Maximum Toggle Frequency: Min = 1348, Mean = 1348, Max = 1348  
 Temp = 25°C, V<sub>CC</sub> = 5.0V, Number of Devices = 1, I<sub>CC</sub> (mA) = 22.51)

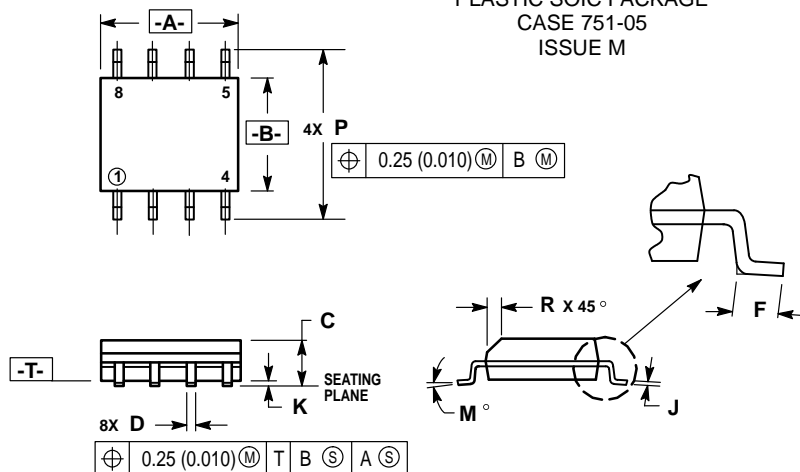
## OUTLINE DIMENSIONS

**P SUFFIX**  
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 ISSUE K


## NOTES:

1. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
2. PACKAGE CONTOUR OPTIONAL (ROUND OR SQUARE CORNERS).
3. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.40	10.16	0.370	0.400
B	6.10	6.60	0.240	0.260
C	3.94	4.45	0.155	0.175
D	0.38	0.51	0.015	0.020
F	1.02	1.78	0.040	0.070
G	2.54 BSC		0.100 BSC	
H	0.76	1.27	0.030	0.050
J	0.20	0.30	0.008	0.012
K	2.92	3.43	0.115	0.135
L	7.62 BSC		0.300 BSC	
M	—	10°	—	10°
N	0.76	1.01	0.030	0.040

**D SUFFIX**  
 PLASTIC SOIC PACKAGE  
 CASE 751-05  
 ISSUE M


## NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

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