

1.1GHz Prescaler

The MC12074 is a divide by 256 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 PECL 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 PECL 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} 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}

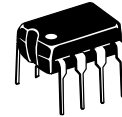
* Typical measured at $+25^\circ C$, 5.0V

1. See Figure 1

MC12074

MECL PLL COMPONENTS

$\div 256$
PRESCALER

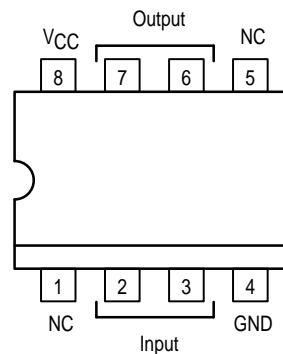


P SUFFIX
8-LEAD PLASTIC PACKAGE
CASE 626-05



D SUFFIX
8-LEAD PLASTIC SOIC PACKAGE
CASE 751-05

Pinout: 8-Lead Plastic (Top View)



PRESCALER BLOCK DIAGRAM

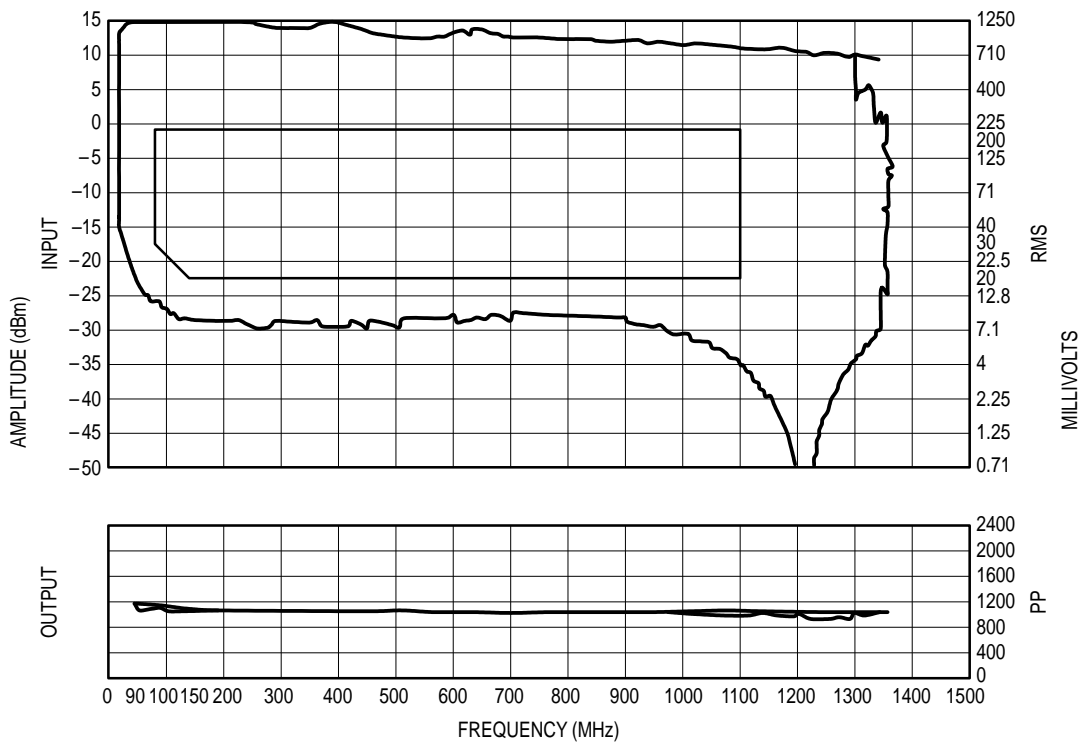
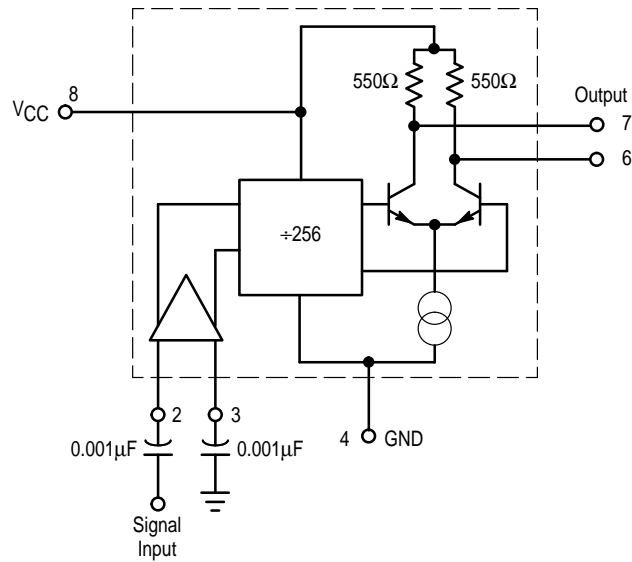
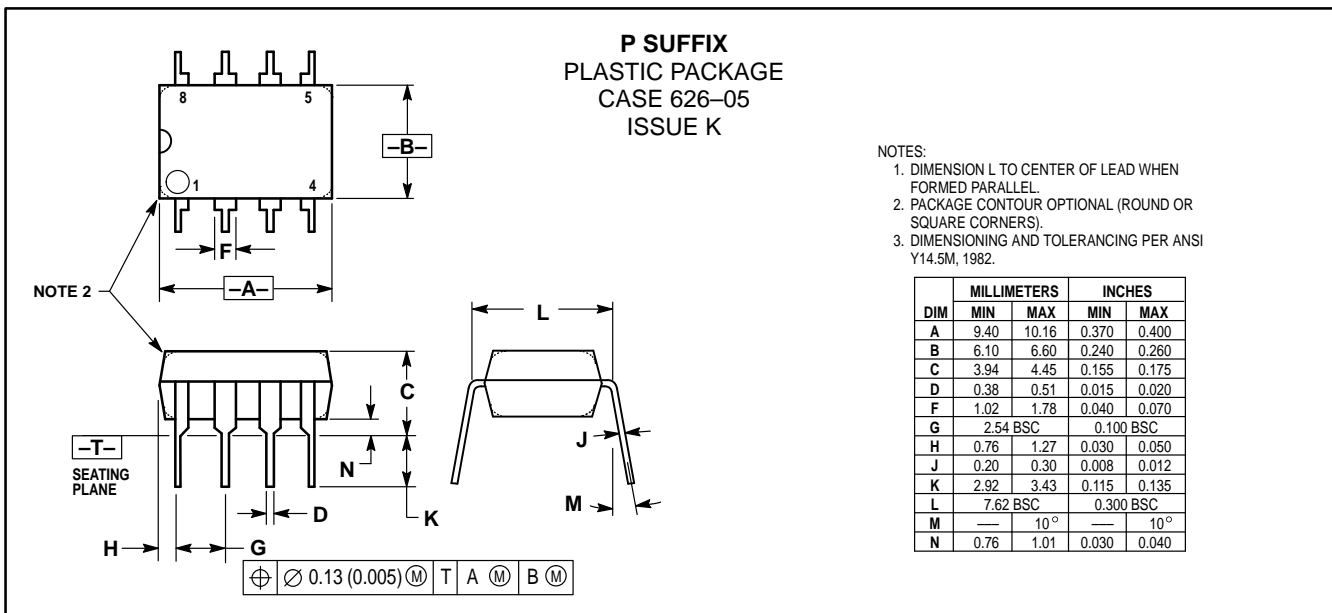


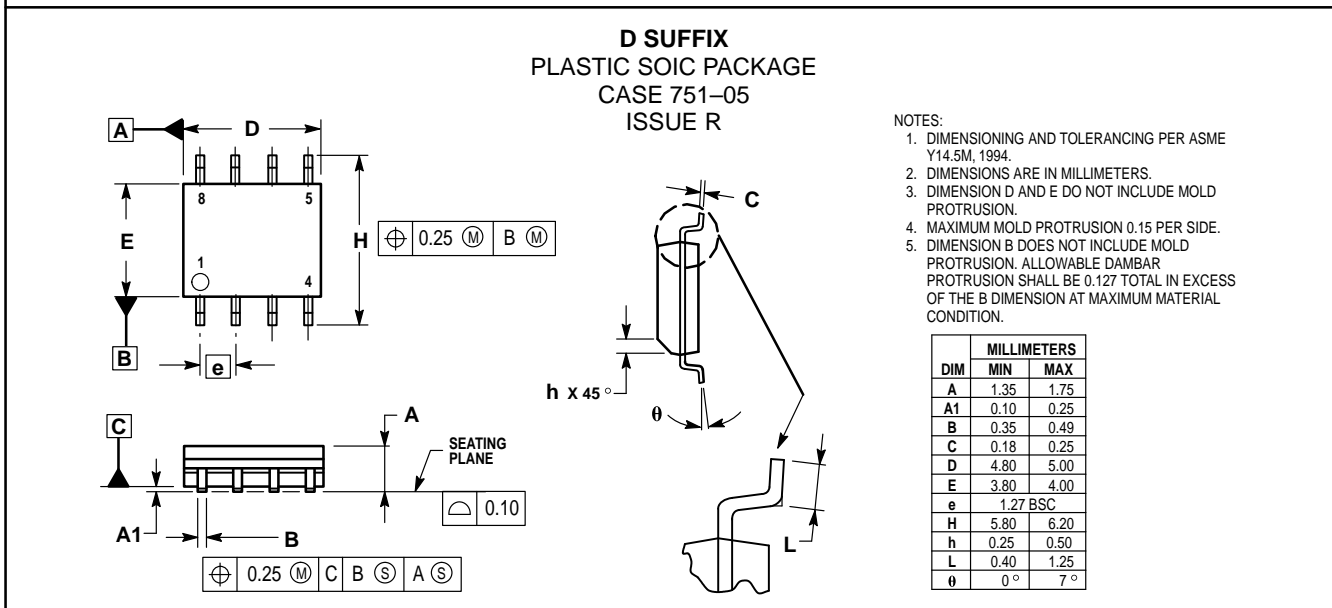
Figure 1. Divide Ratio = 256
 (Maximum Toggle Frequency: Min = 1357, Mean = 1357, Max = 1357
 Temp = 25°C, V_{CC} = 5.0V, Number of Devices = 1)

OUTLINE DIMENSIONS



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.



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. DIMENSIONS ARE IN MILLIMETERS.
3. DIMENSION D AND E DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
5. DIMENSION B DOES NOT INCLUDE MOLD PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 TOTAL IN EXCESS OF THE B DIMENSION AT MAXIMUM MATERIAL CONDITION.

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and M are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

How to reach us:
USA/EUROPE/Locations Not Listed: Motorola Literature Distribution; P.O. Box 5405; Denver, Colorado 80217. 303-675-2140 or 1-800-441-2447
Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 602-244-6609
INTERNET: http://Design-NET.com

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, 6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 81-3-3521-8315
ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298