



## 225 MHz Prescaler

The MC12023 is a prescaler which will divide by 64. This device may be operated over a supply voltage range of 3.2 to 5.5 V.

- 225 MHz Toggle Frequency
- Low-Power 4.8 mA Maximum at 5.5 V
- Operating Supply Voltage of 3.2 to 5.5 V
- Connecting Pins 2 and 3 Allows Driving One TTL Load

### MAXIMUM RATINGS

Characteristic	Symbol	Range	Unit
Power Supply Voltage	V <sub>CC</sub>	0 to 8.0	V <sub>dc</sub>
Operating Temperature Range	T <sub>A</sub>	0 to 70	°C
Storage Temperature Range	T <sub>stg</sub>	-65 to 175	°C

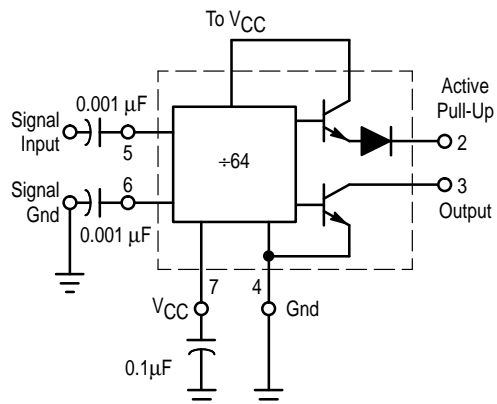
**NOTE:** ESD data available upon request.

### ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 3.2 to 5.5V; T<sub>A</sub> = 0 to +70°C)

Characteristic	Symbol	Min	Typ	Max	Unit
Toggle Frequency (Sine Wave Input)	f <sub>max</sub> f <sub>min</sub>	225 -	- -	- 35	MHz
Supply Current at 5.5 V	I <sub>CC</sub>	-	3.50 <sup>3</sup>	4.8	mA
Output Voltage HIGH <sup>1</sup> (V <sub>CC</sub> = 3.2 V) <sup>2</sup>	V <sub>OH</sub>	1.2	1.4	-	V
Output Voltage HIGH <sup>1</sup> (V <sub>CC</sub> = 5.0 V) <sup>2</sup>	V <sub>OH</sub>	2.5	-	-	V
Output Voltage LOW <sup>1</sup> (I <sub>sink</sub> = 2.0 mA)	V <sub>OL</sub>	-	-	0.5	V
Input Voltage Sensitivity 35 MHz 50-225 MHz	V <sub>in</sub>	400 200	- -	800 800	mV <sub>PP</sub>

**NOTES:** 1. Pin 2 connected to Pin 3  
2. I<sub>source</sub> = 50 μA  
3. V<sub>CC</sub> = 4.5 V

**Figure 1. Prescaler Block Diagram**



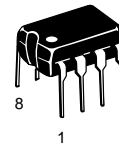
## MC12023

### MECL PLL COMPONENTS ÷64 PRESCALER

#### SEMICONDUCTOR TECHNICAL DATA

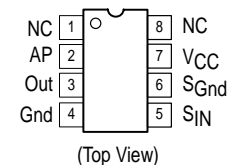


**D SUFFIX**  
PLASTIC PACKAGE  
CASE 751  
(SO-8)



**P SUFFIX**  
PLASTIC PACKAGE  
CASE 626

### PIN CONNECTIONS

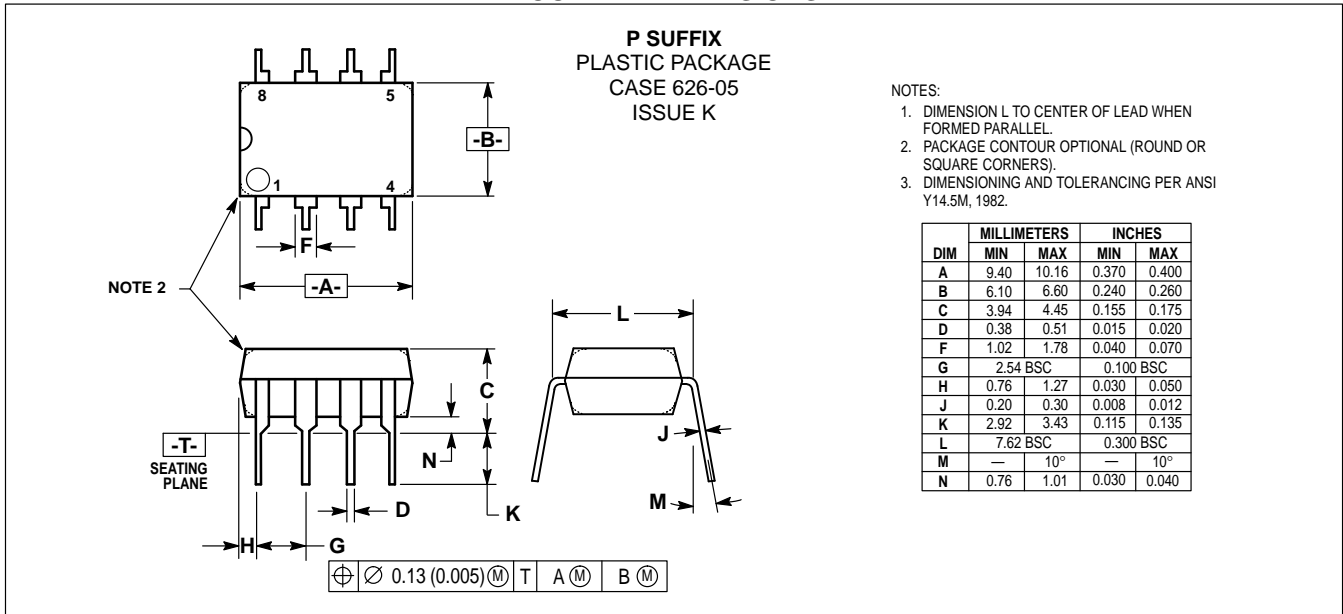


### ORDERING INFORMATION

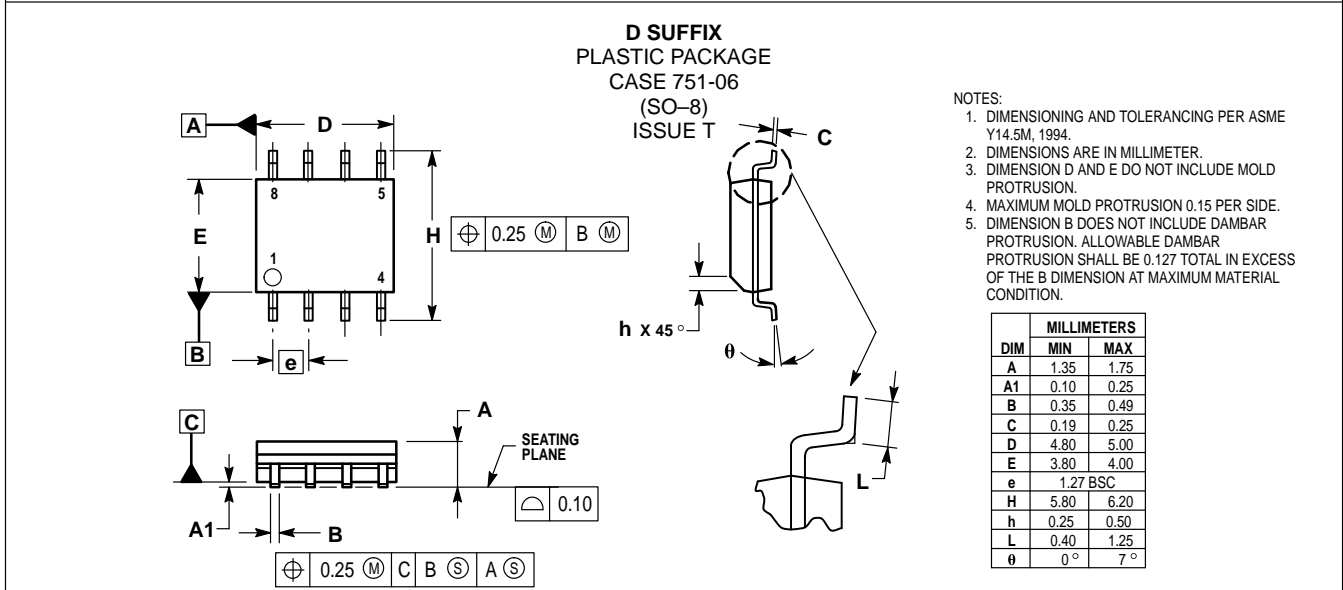
Device	Operating Temperature Range	Package
MC12023D	T <sub>A</sub> = 0° to 70°C	SO-8
MC12023P		Plastic

# MC12023

## 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 MILLIMETER.
  3. DIMENSION D AND E DO NOT INCLUDE MOLD PROTRUSION.
  4. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
  5. DIMENSION B DOES NOT INCLUDE DAMBAR 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.

Mfax is a trademark of Motorola, Inc.

**How to reach us:**

**USA/EUROPE/Locations Not Listed:** Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

**JAPAN:** Nippon Motorola Ltd.: SPD, Strategic Planning Office, 141, 4-32-1 Nishi-Gotanda, Shagawa-ku, Tokyo, Japan. 03-5487-8488

**Customer Focus Center: 1-800-521-6274**

**Mfax™:** RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609  
Motorola Fax Back System – US & Canada ONLY 1-800-774-1848  
– http://sps.motorola.com/mfax/

**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

**HOME PAGE:** http://motorola.com/sps/

