

## 520MHz Two-Modulus Prescaler

The MC12025 is a two-modulus prescaler which divides by 64 and 65. Supply voltages of 4.75 to 5.25V may be connected to Pin 8.

- 520MHz Toggle Frequency
- Low-Power 9.5mA Typical
- Control Input Is Compatible With Standard CMOS and TTL
- Operating Supply Voltage of 5.0V  $\pm$ 0.25V
- Propagation Delay 30ns Typical

### MAXIMUM RATINGS

Symbol	Characteristic	Range	Unit
V <sub>CC</sub>	Power Supply Voltage, Pin 8	-0.5 to 7.0	Vdc
T <sub>A</sub>	Operating Temperature Range	-40 to +85	°C
T <sub>stg</sub>	Storage Temperature Range	-65 to +175	°C

### ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 4.75 to 5.25V; T<sub>A</sub> = -40 to +85°C)

Symbol	Characteristic	Min	Typ	Max	Unit
f <sub>max</sub> f <sub>min</sub>	Toggle Frequency (Sine Wave Input)	520		30	MHz
I <sub>CC</sub>	Supply Current		9.5	11.5	mA
V <sub>IH</sub>	Control Input HIGH ( $\div$ 64)	2.0			V
V <sub>IL</sub>	Control Input LOW ( $\div$ 65)			0.8	V
V <sub>out</sub>	Output Voltage	0.8	1.2		V <sub>PP</sub>
V <sub>in</sub>	Input Voltage Sensitivity 30MHz 100-520MHz	400 100		800 800	mV <sub>PP</sub>
t <sub>PLL</sub>	PLL Response Time <sup>1</sup>			t <sub>out</sub> -42 <sup>2</sup>	ns

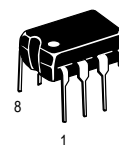
1 t<sub>PLL</sub> = The period of time the PLL has from the rising output transition to the Modulus Control input edge transition to ensure proper modulus selection

2 t<sub>out</sub> = Period of output waveform

# MC12025

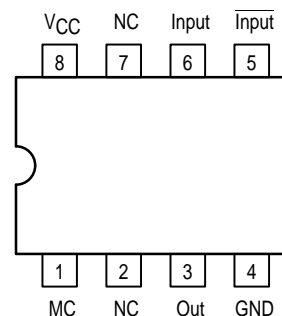
### MECL PLL COMPONENTS

$\div$ 64/65  
TWO-MODULUS  
PRESCALER

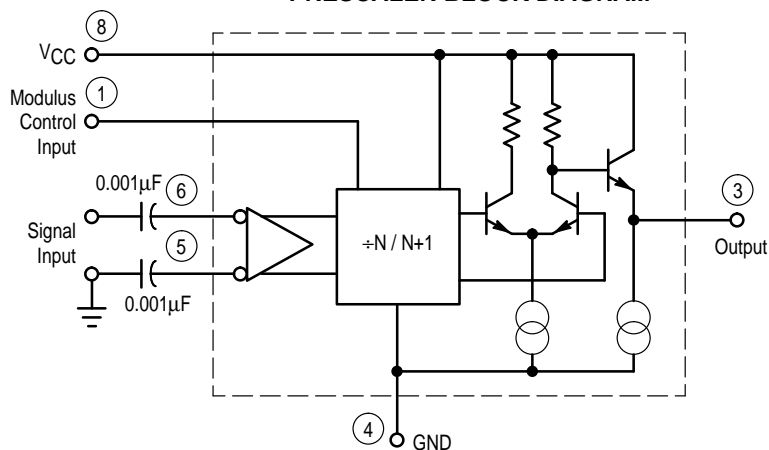


**P SUFFIX**  
PLASTIC PACKAGE  
CASE 626-05

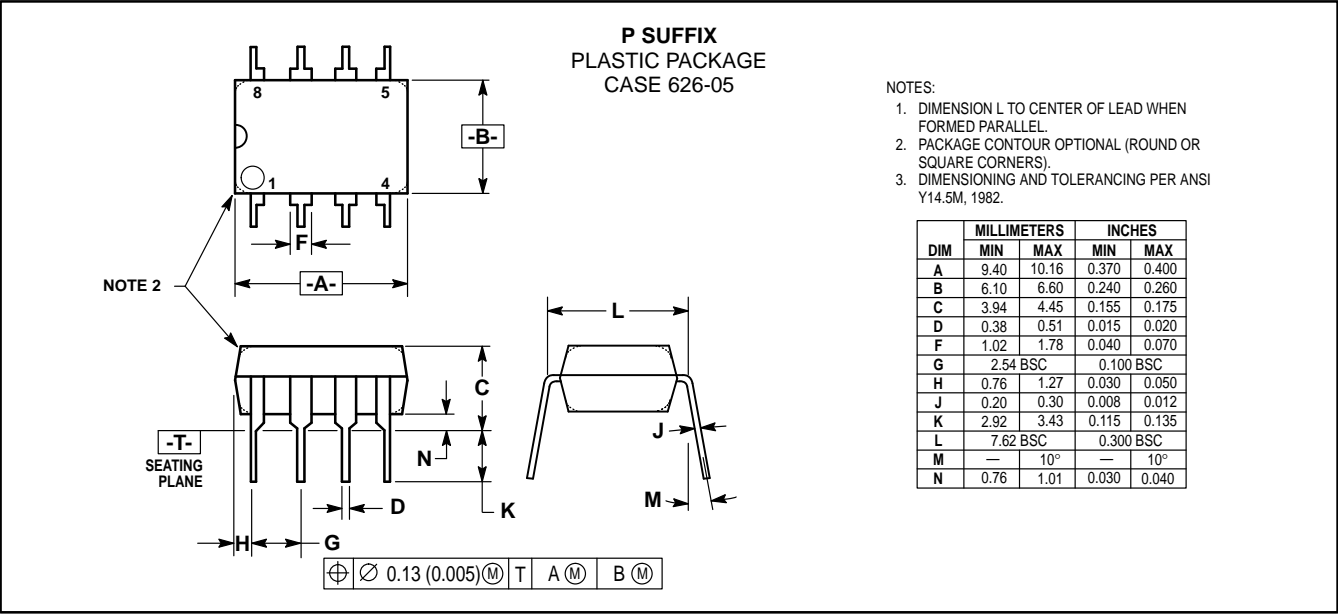
Pinout: 8-Lead Plastic (Top View)




### PRESCALER BLOCK DIAGRAM



OUTLINE DIMENSIONS



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 can and do vary in different applications. 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  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Literature Distribution Centers:

USA: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036.  
EUROPE: Motorola Ltd.; European Literature Centre; 88 Tanners Drive, Blakelands, Milton Keynes, MK14 5BP, England.  
JAPAN: Nippon Motorola Ltd.; 4-32-1, Nishi-Gotanda, Shinagawa-ku, Tokyo 141 Japan.  
ASIA-PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Center, No. 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong.

