

# 520MHz Dual Modulus Prescaler

The MC12025 is a dual 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 ±0.25V
- Propagation Delay 30ns Typical

### MAXIMUM RATINGS

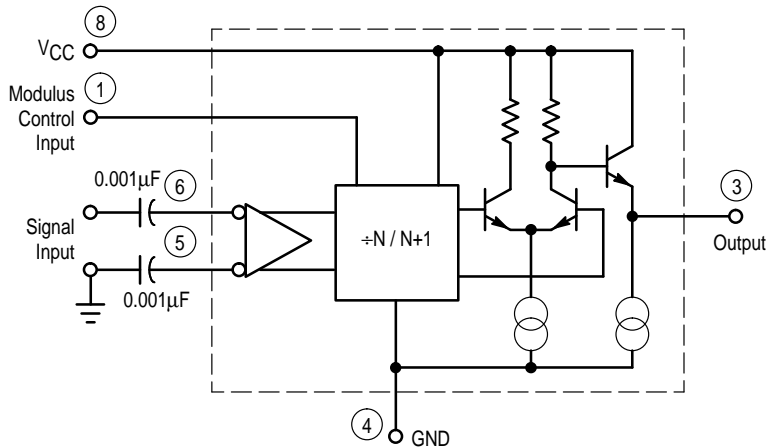
Symbol	Characteristic	Range	Unit
V <sub>CC</sub>	Power Supply Voltage, Pin 8	-0.5 to 7.0	Vdc
T <sub>A</sub>	Operating Temperature Range	-40 to +85	°C
T <sub>stg</sub>	Storage Temperature Range	-65 to +175	°C

### 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	13.5	mA
V <sub>IH</sub>	Control Input HIGH (+64)	2.0			V
V <sub>IH</sub>	Control Input LOW (+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

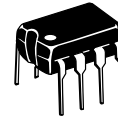
### PRESCALER BLOCK DIAGRAM



# MC12025

## MECL PLL COMPONENTS

### ÷64/65 DUAL MODULUS PRESCALER

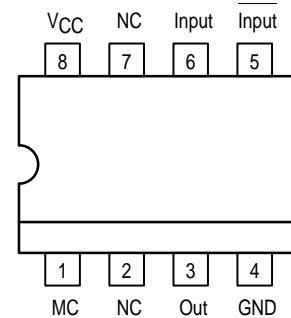


**P SUFFIX**  
8-LEAD PLASTIC PACKAGE  
CASE 626-05



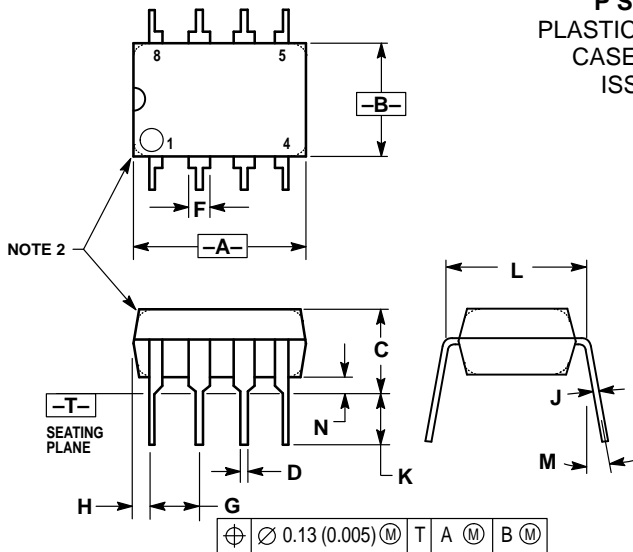
**D SUFFIX**  
8-LEAD PLASTIC SOIC PACKAGE  
CASE 751-05

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



OUTLINE DIMENSIONS

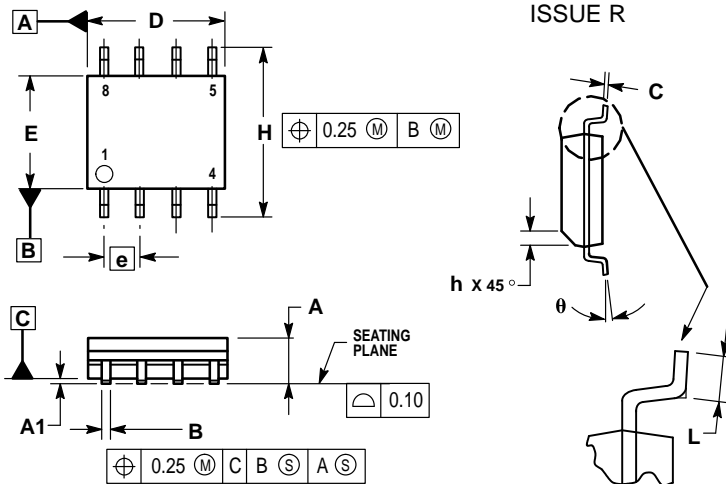
**P SUFFIX**  
**PLASTIC PACKAGE**  
**CASE 626-05**  
**ISSUE K**



- 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 R**



- 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.

DIM	MILLIMETERS	
	MIN	MAX
A	1.35	1.75
A1	0.10	0.25
B	0.35	0.49
C	0.18	0.25
D	4.80	5.00
E	3.80	4.00
e	1.27 BSC	
H	5.80	6.20
h	0.25	0.50
L	0.40	1.25
$\theta$	0° 7°	

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