520MHz Dual Modulus Prescaler

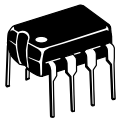
MC12025

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

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

MAXIMUM RATINGS

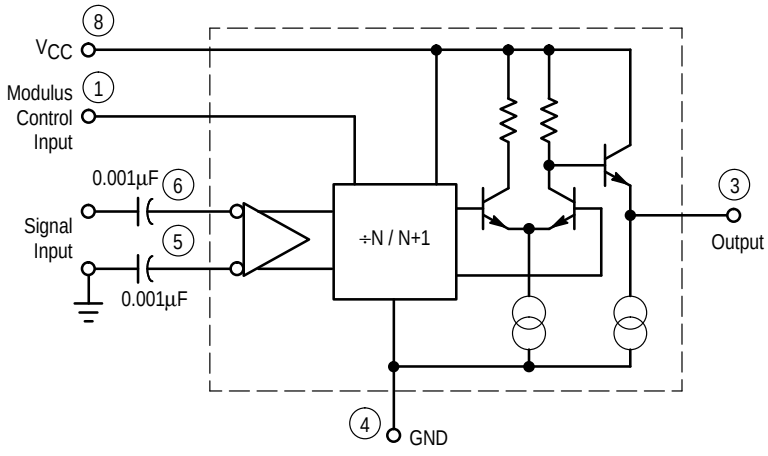
Symbol	Characteristic	Range	Unit
V_{CC}	Power Supply Voltage, Pin 8	–0.5 to 7.0	Vdc
T_A	Operating Temperature Range	–40 to +85	°C
T_{stg}	Storage Temperature Range	–65 to +175	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 4.75 to 5.25V; T_A = –40 to +85°C)

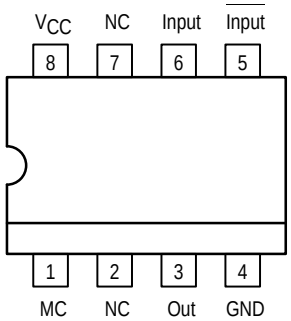
Symbol	Characteristic	Min	Typ	Max	Unit
f_{max} f_{min}	Toggle Frequency (Sine Wave Input)	520		 30	MHz
I_{CC}	Supply Current		9.5	13.5	mA
V_{IH}	Control Input HIGH (÷64)	2.0			V
V_{IH}	Control Input LOW (÷65)			0.8	V
V_{out}	Output Voltage	0.8	1.2		V_{PP}
V_{in}	Input Voltage Sensitivity 30MHz 100–520MHz	 400 100		 800 800	mV_{PP}
t_{PLL}	PLL Response Time[1]			t_{out}–42[2]	ns

1. t_{PLL} = 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_{out} = Period of output waveform

PRESCALER BLOCK DIAGRAM



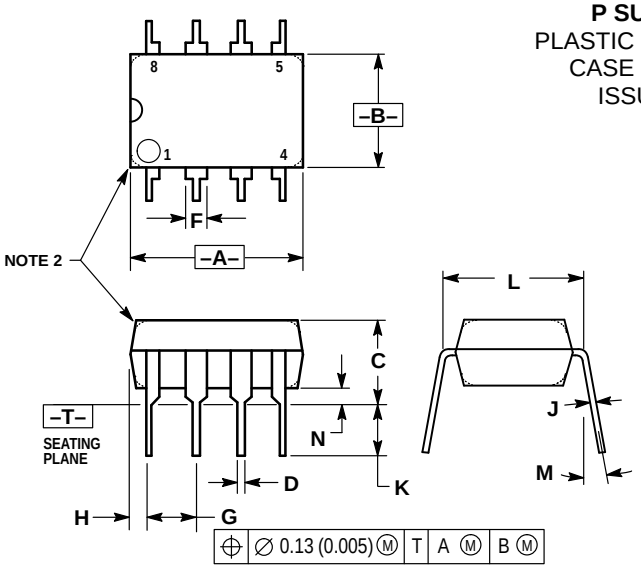
Pinout: 8–Lead Plastic (Top View)



MOTOROLA

OUTLINE DIMENSIONS

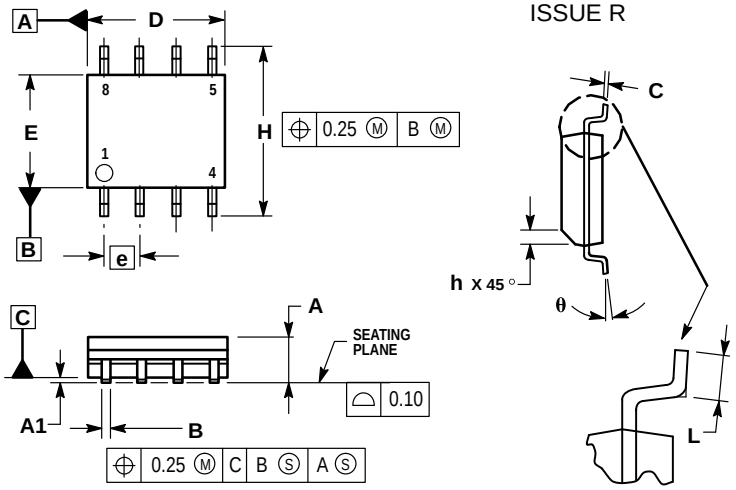
P SUFFIX
PLASTIC PACKAGE
CASE 626–05
ISSUE K



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.

	MILLIMETERS		INCHES	
DIM	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.

	MILLIMETERS	
DIM	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
θ	0°	7°

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