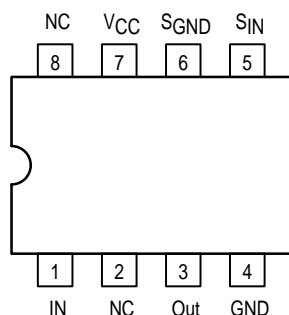


## Dual Modulus Prescaler

The MC12019 is a divide by 20 and 21 dual modulus prescaler. It will divide by 20 when the modulus control input is HIGH and divide by 21 when the modulus control input is LOW.

- 225MHz Toggle Frequency
- Low-Power 7.5mA Maximum at 5.5V
- Control Input Is Compatible With Standard Motorola CMOS Synthesizers
- Emitter Follower Outputs

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



### MAXIMUM RATINGS

Symbol	Characteristic	Range	Unit
V <sub>CC</sub>	Power Supply Voltage, Pin 7	8.0	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> = 4.5 to 5.5V; T<sub>A</sub> = -40 to +85°C)

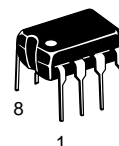
Symbol	Characteristic	Min	Typ	Max	Unit
f <sub>max</sub> f <sub>min</sub>	Toggle Frequency (Sine Wave Input)	225		20	MHz
I <sub>CC</sub>	Supply Current			7.5	mA
V <sub>IH</sub>	Control Input HIGH (÷20)	2.0			V
V <sub>IL</sub>	Control Input LOW (÷21)			0.8	V
V <sub>out</sub>	Output Swing Voltage	600		1200	mV <sub>pp</sub>
V <sub>in</sub>	Input Voltage Sensitivity 20-225MHz	200		800	mV <sub>pp</sub>
t <sub>PLL</sub>	PLL Response Time (Notes 1 and 2)			t <sub>out</sub> -70	ns

1. t<sub>PLL</sub> = the period of time the PLL has from the prescaler rising output transition (50%) to the modulus control input edge transition (50%) to ensure proper modulus selection
2. t<sub>out</sub> = period of output waveform

## MC12019

### MECL PLL COMPONENTS

#### ÷20/21 DUAL MODULUS PRESCALER

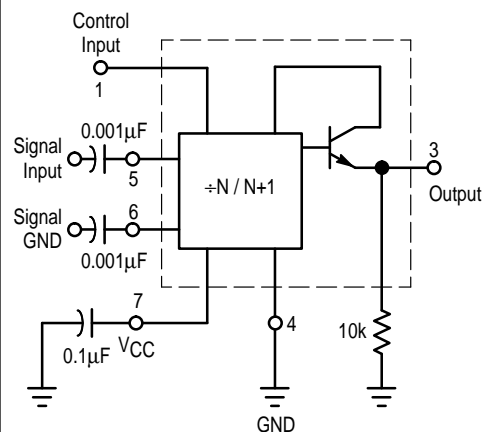


**P SUFFIX**  
PLASTIC PACKAGE  
CASE 626-05

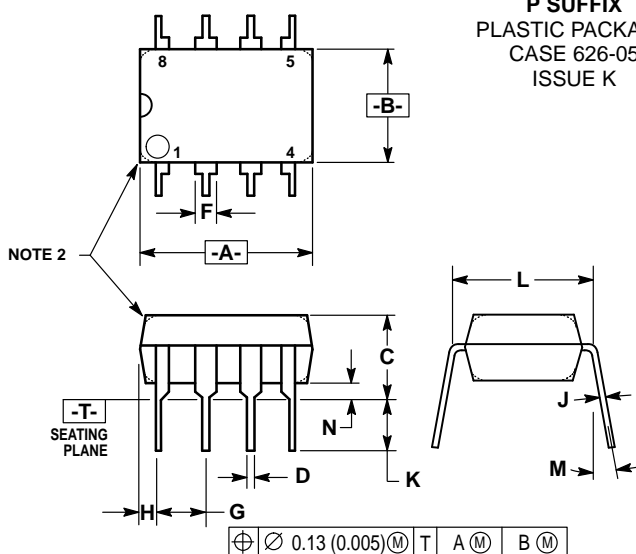
**D SUFFIX**  
PLASTIC SOIC PACKAGE  
CASE 751-05



### PRESCALER BLOCK DIAGRAM



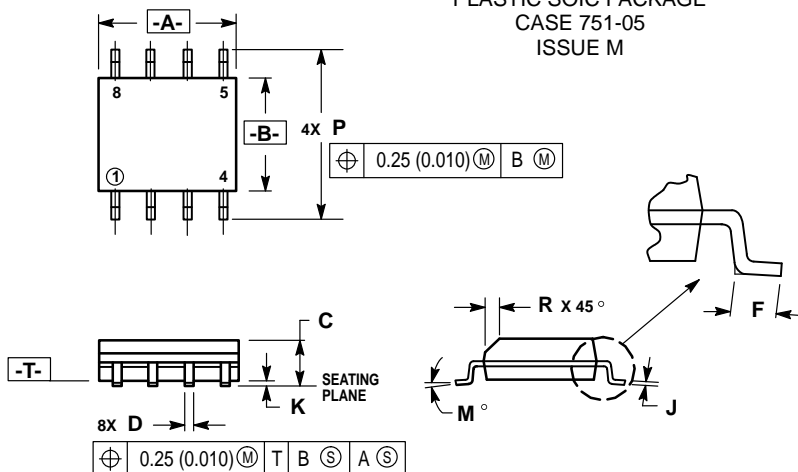
## OUTLINE DIMENSIONS

**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 M


## NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC	0.050 BSC		
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

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