

**500 MHz DUAL-MODULUS  
PRESCALER**

**UPB571C**

**DESCRIPTION**

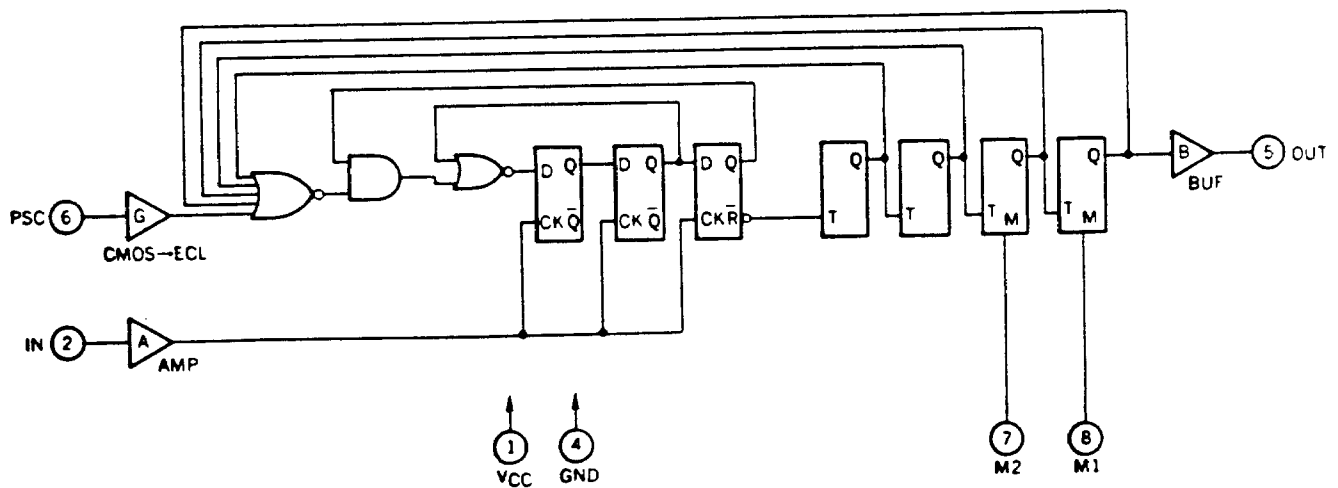
The UPB571C is a 500 MHz Low Power Dual - modulus prescaler intended for use in PLL digital tuning systems in connection with NEC PLL LSI ICs.

The device provides 1/64, 1/65, 1/32, 1/33, 1/16 and 1/17 division ratio for pulse swallowing method and is guaranteed to operate up to 500 MHz over a -35°C to +75°C temperature range.

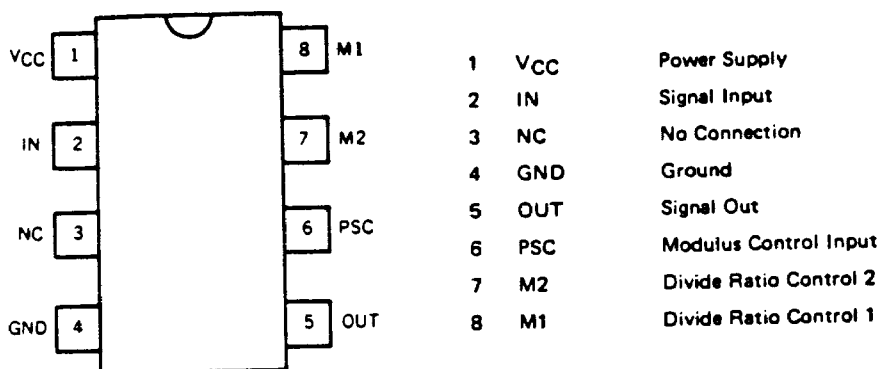
**FEATURES**

- High frequency operation: 500 MHz MAX. ( $V_{IN} = 400 \text{ mV}_{p-p}$ )
- Dual mode operation with pulse swallowing method  
 $\div 64/\div 65, \div 32/\div 33, \div 16/\div 17$
- Single supply Voltage:  $V_{CC} = 5.0 \text{ V} \pm 10 \%$
- Low supply current:  $I_{CC} = 11 \text{ mA (TYP.)}$
- Small package: 8 pin plastic dual in-line package (DIP)

**BLOCK DIAGRAM**



CONNECTION DIAGRAM



DIVIDE RATIO

M1	M2	PSC	DIVIDE RATIO
L	L	H	64
L	L	L	65
L	H	H	32
L	H	L	33
H	H	H	16
H	H	L	17

M Terminal

"H" : Connect to VCC

"L" : Open

PSC Terminal

"H" : 0.8 VCC to VCC [V]

"L" : 0 to 0.2 VCC [V]

ABSOLUTE MAXIMUM RATINGS

Supply Voltage	V <sub>CC</sub>	-0.5 to +6.0	V
Input Voltage	V <sub>I</sub>	-0.5 to V <sub>CC</sub> +0.5	V
Output Current	I <sub>o</sub>	-10	mA
Storage Temperature	T <sub>stg</sub>	-55 to +125	°C
Operating Temperature	T <sub>opt</sub>	-35 to +75	°C

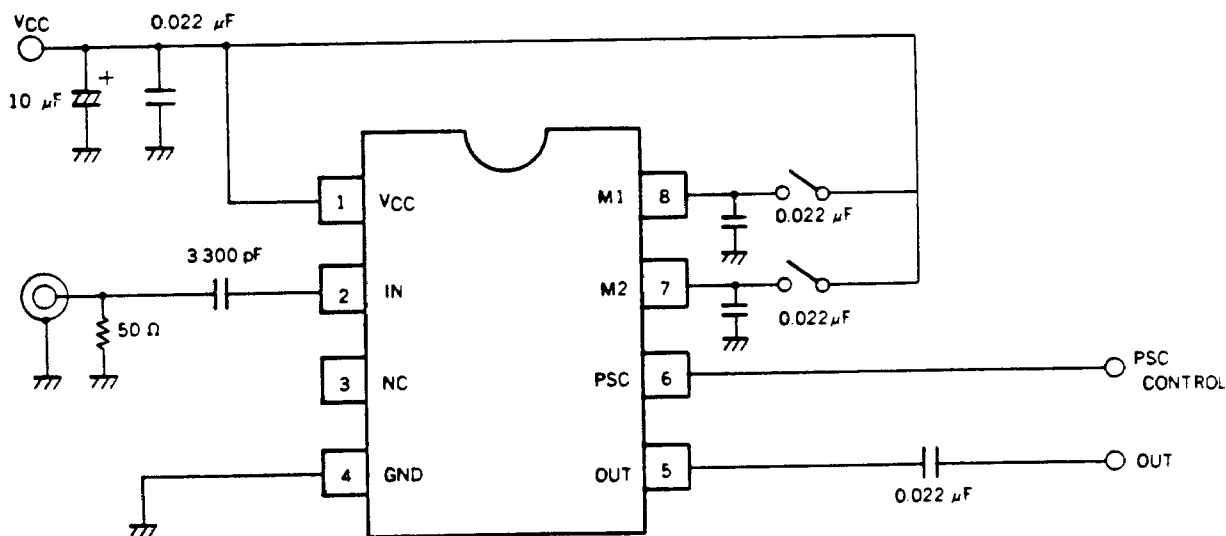
RECOMMENDED OPERATING CONDITIONS

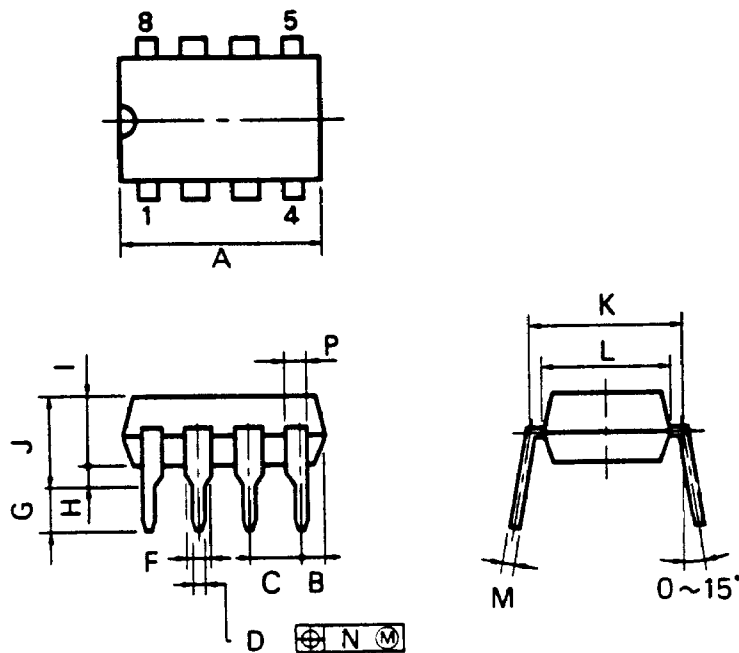
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Supply Voltage	V <sub>CC</sub>	4.5	5.0	5.5	V	
Input Amplitude	V <sub>in</sub>	0.4		1.2	V <sub>p-p</sub>	IN Terminal
High Level Input Voltage	V <sub>IH</sub>	0.8 V <sub>CC</sub>			V	PSC Terminal
Low Level Input Voltage	V <sub>IL</sub>			0.2 V <sub>CC</sub>	V	PSC Terminal
Frequency Response	f <sub>in</sub>	100		500	MHz	IN Terminal, V <sub>in</sub> = 0.4 V <sub>p-p</sub>
Output Load Capacitance	CL			10	pF	
Operating Temperature	T <sub>opt</sub>	-35		75	°C	

ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 5±0.5 [V], T<sub>a</sub> = -35 to +75 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Supply Current	I <sub>CC</sub>		11	15.7	mA	
Output Amplitude	V <sub>O</sub>	0.9	1.2		V <sub>p-p</sub>	Out Terminal
High Level Input Current	I <sub>IH</sub>			5	μA	PSC, M, Terminal
Set-up Time	t <sub>s</sub>			30	ns	PSC to Out
Output Rise Time	t <sub>r</sub>	5		15	ns	C <sub>L</sub> = 10 pF, 20 to 80 % Out Terminal

MEASUREMENT CIRCUIT





PBC-100-300B.C

**NOTES**

- 1) Each lead centerline is located within 0.25 mm (0.01 inch) of its true position (T.P.) at maximum material condition.
- 2) Item "K" to center of leads when formed parallel.

ITEM	MILLIMETERS	INCHES
A	10.16 MAX.	0.400 MAX.
B	1.27 MAX.	0.050 MAX.
C	2.54 (T.P.)	0.100 (T.P.)
D	0.50 <sup>-0.10</sup>	0.020 <sup>0.004</sup>
F	1.4 MIN.	0.055 MIN.
G	3.2 <sup>-0.3</sup>	0.126 <sup>-0.012</sup>
H	0.51 MIN.	0.020 MIN.
I	4.31 MAX.	0.170 MAX.
J	5.08 MAX.	0.200 MAX.
K	7.62 (T.P.)	0.300 (T.P.)
L	6.4	0.252
M	0.25 <sup>0.08</sup>	0.010 <sup>0.003</sup>
N	0.25	0.01
P	0.9 MIN.	0.035 MIN.

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