



500 MHz DUAL-MODULUS PRESCALER

UPB571C

DESCRIPTION

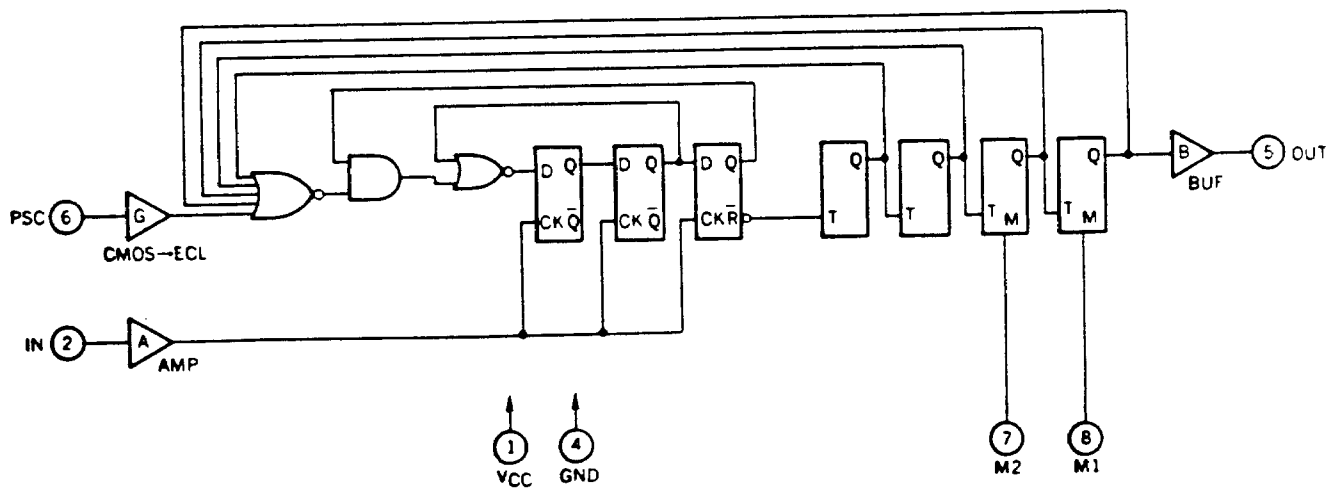
The UPB571C is a 500 MHz Low Power Dual - modulus prescaler intended for use in PLL digital tuning systems in connection with NEC PLL LSI ICs.

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.

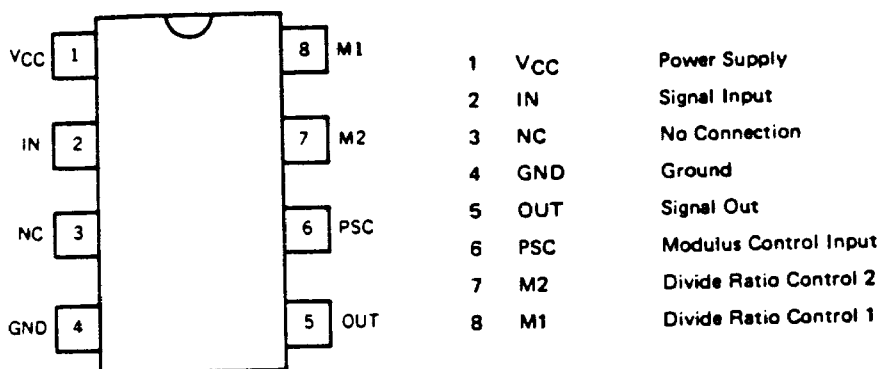
FEATURES

- 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 _{CC}	-0.5 to +6.0	V
Input Voltage	V _I	-0.5 to V _{CC} +0.5	V
Output Current	I _o	-10	mA
Storage Temperature	T _{stg}	-55 to +125	°C
Operating Temperature	T _{opt}	-35 to +75	°C

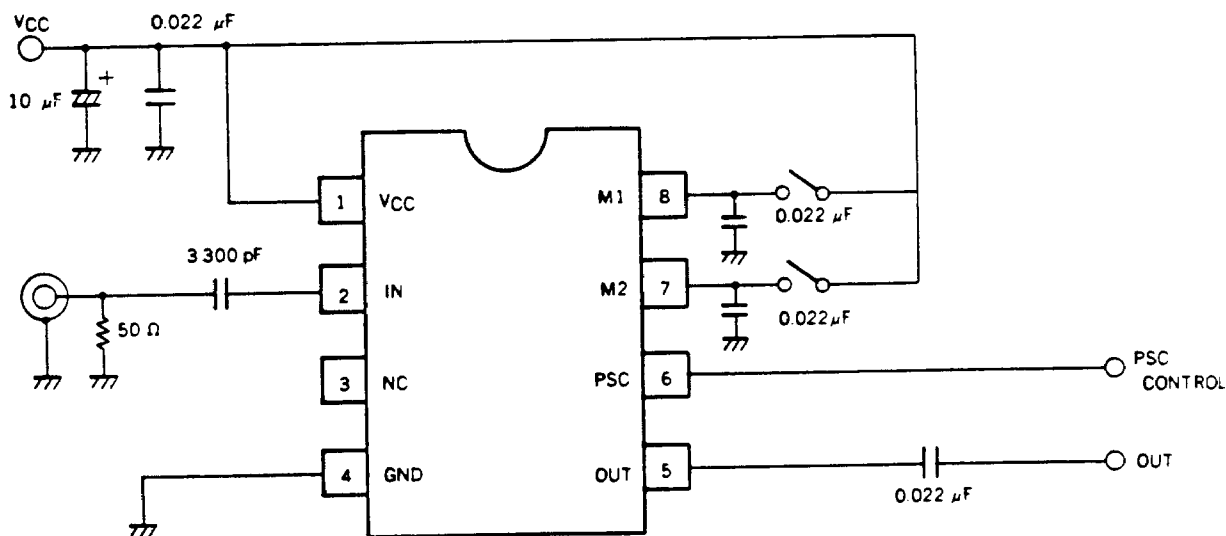
RECOMMENDED OPERATING CONDITIONS

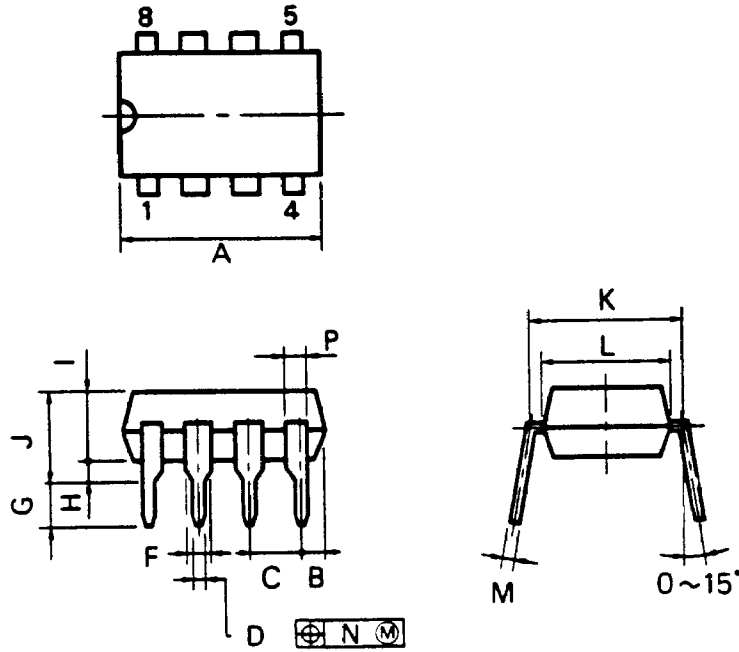
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Supply Voltage	V _{CC}	4.5	5.0	5.5	V	
Input Amplitude	V _{in}	0.4		1.2	V _{p-p}	IN Terminal
High Level Input Voltage	V _{IH}	0.8 V _{CC}			V	PSC Terminal
Low Level Input Voltage	V _{IL}			0.2 V _{CC}	V	PSC Terminal
Frequency Response	f _{in}	100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

ELECTRICAL CHARACTERISTICS (V_{CC} = 5±0.5 [V], T_a = -35 to +75 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Supply Current	I _{CC}		11	15.7	mA	
Output Amplitude	V _O	0.9	1.2		V _{p-p}	Out Terminal
High Level Input Current	I _{IH}			5	μA	PSC, M, Terminal
Set-up Time	t _s			30	ns	PSC to Out
Output Rise Time	t _r	5		15	ns	C _L = 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 ^{-0.10}	0.020 ^{0.004}
F	1.4 MIN.	0.055 MIN.
G	3.2 ^{-0.3}	0.126 ^{-0.012}
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 ^{0.08}	0.010 ^{0.003}
N	0.25	0.01
P	0.9 MIN.	0.035 MIN.

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