

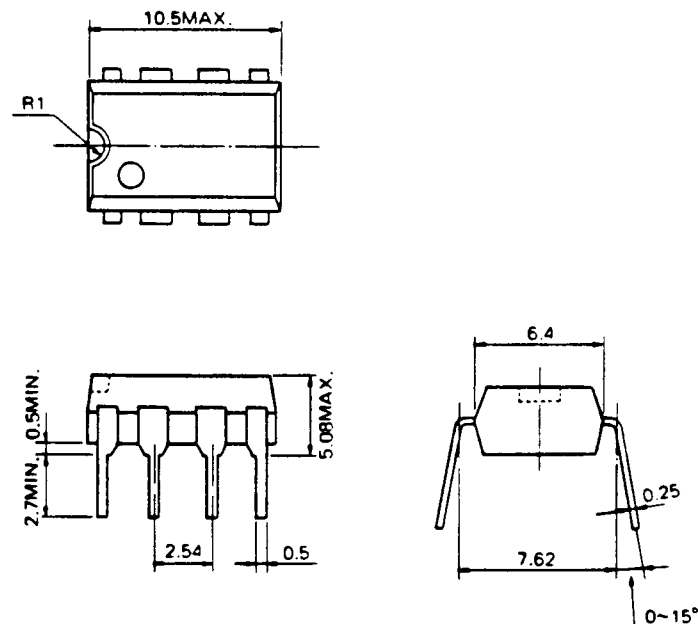
**DESCRIPTION**

The  $\mu$ PB551C is a prescaler designed for using as a frequency divider in PLL digital tuning systems.

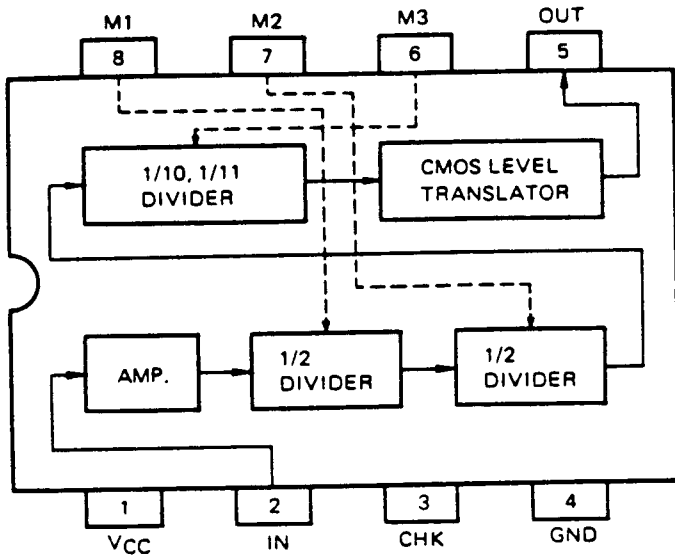
The device is silicon monolithic integrated circuit using advanced bipolar technology in order to realize high frequency operation with low power consumption. It can easily obtain 1/10, 1/11, 1/20, 1/22, 1/40 and 1/44 divided output even at low input signal up to 150 MHz.

**FEATURES**

- 150 MHz operation is guaranteed ( $-35$  to  $+75^{\circ}\text{C}$ ).
- Division ratio of 1/10, 1/11, 1/20, 1/22, 1/40 and 1/44 are provided.
- Low input voltage operation is possible:  $V_i \geq 150\text{mV}_{\text{p-p}}$
- Single supply voltage:  $V_{\text{CC}} = 5 \pm 0.5$  volts
- Low power operation:  $P_d = 190$  mW (TYP.)
- CMOS output interface
- Small package: 8 pin plastic dual in-line package (DIP)

**PACKAGE DIMENSIONS (Unit: mm)**

**BLOCK DIAGRAM (Top View)**



**CONNECTION DIAGRAM**

Pin Number	Symbol	Function
1	VCC	Power Supply (VCC)
2	IN	Signal Input
3	CHK	Initialize
4	GND	GND
5	OUT	Output
6	M3	} Division Ratio Control
7	M2	
8	M1	

**FUNCTION TABLE (CH = GND)**

M1	M2	M3	Division Ratio	
GND	GND	LOW	40	
GND	GND	HIGH	44	
GND	VCC	LOW	20	LOW < 0.2VCC
GND	VCC	HIGH	22	HIGH > 0.8VCC
VCC	VCC	LOW	10	
VCC	VCC	HIGH	11	

**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>	V
Output Current	I <sub>O</sub>	15	mA
Junction Temperature	T <sub>j</sub>	+125	°C
Storage Temperature	T <sub>stg</sub>	-55 to +125	°C

**RECOMMENDED OPERATING CONDITIONS**

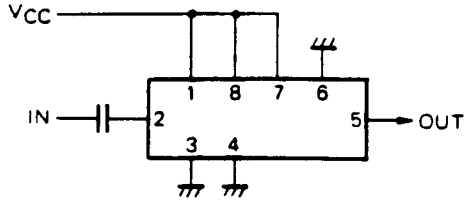
Supply Voltage Range		4.5 to 5.5	V
Ambient Temperature	T <sub>a</sub>	-35 to +75	°C
Output Load Capacitance	C <sub>L</sub>	less than 10 picofarad	

**ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 5V ±10%, T<sub>a</sub> = -35 to +75°C)**

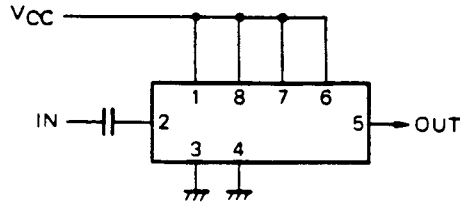
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Power Supply Current	I <sub>CC</sub>		38	52	mA	V <sub>CC</sub> =5V T <sub>a</sub> =25°C
Power Consumption	P <sub>C</sub>		190		mW	
High Level Output Voltage	V <sub>OH</sub>	0.8V <sub>CC</sub>			V	I <sub>OH</sub> =-40μA
Low Level Output Voltage	V <sub>OL</sub>			0.2V <sub>CC</sub>	V	I <sub>OL</sub> =1.0mA
High Level Input Voltage	V <sub>IH</sub>	0.8V <sub>CC</sub>			V	(M3)
Low Level Input Voltage	V <sub>IL</sub>			0.2V <sub>CC</sub>	V	(M3)
IN Input Voltage	V <sub>in</sub>	150			mVp-p	Division Ratio = 20, 22, 40, 44
IN Input Voltage	V <sub>in</sub>	400			mVp-p	Division Ratio = 10, 11
Frequency Response	f <sub>in</sub>	1		150	MHz	(IN)

Note: M1, M2 and CHK input terminals should be connected to either GND or V<sub>CC</sub>.

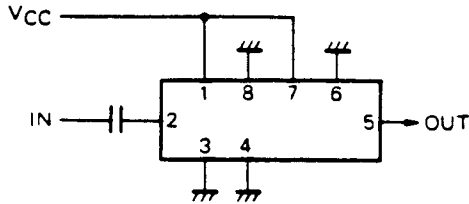
APPLICATION-1



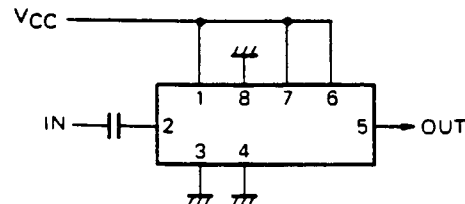
DIVIDED BY 10



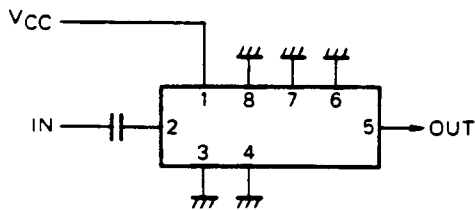
DIVIDED BY 11



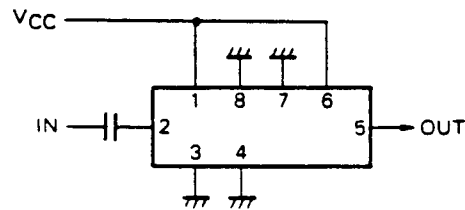
DIVIDED BY 20



DIVIDED BY 22

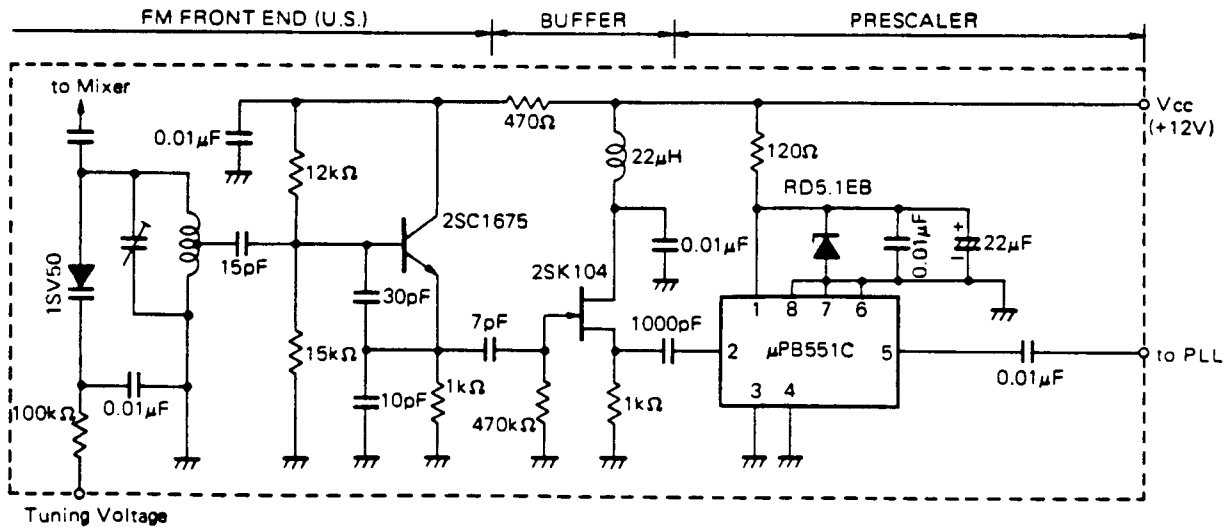


DIVIDED BY 40



DIVIDED BY 44

APPLICATION-2



Tuning Voltage

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