

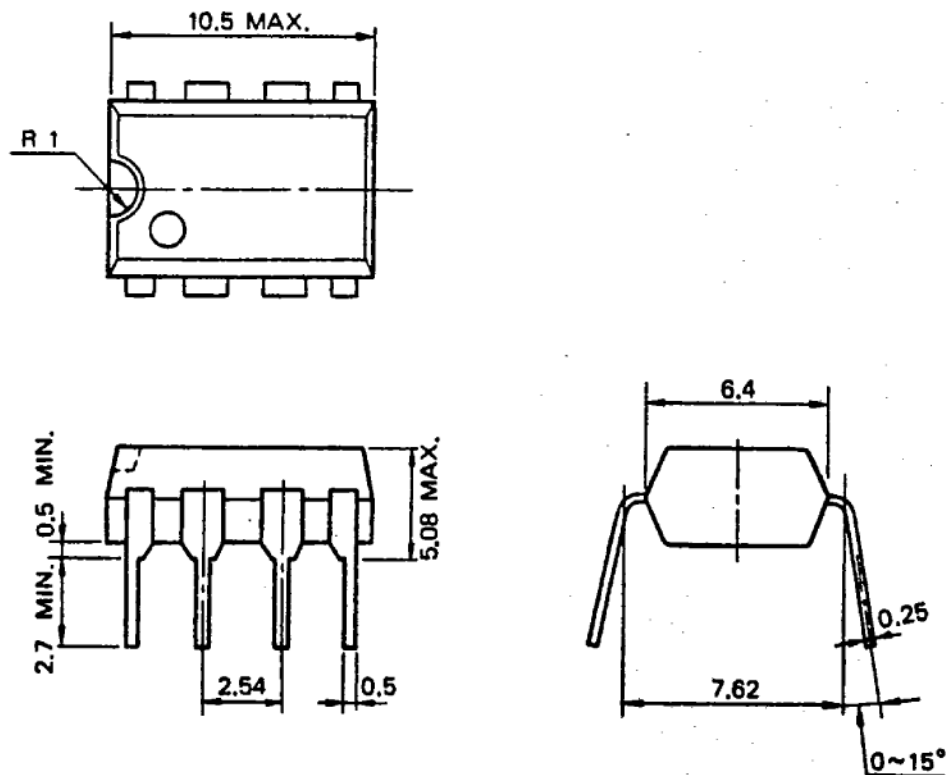
DESCRIPTION

The μ PB554C is a VHF two-modulus prescaler intended for use in PLL digital tuning systems. Advanced bipolar process technology is utilized to realize high frequency operation with extremely low power consumptions. The device provides variable division ratio of 1/10, 1/11, 1/20, 1/22, 1/40, and 1/44 for a minimum guaranteed input frequency of 150 MHz over a -35°C to $+75^{\circ}\text{C}$ temperature range. An included input amplifier allows it to be operated with small amplitude signal of 150 mVp-p.

FEATURES

- High frequency, 150 MHz (except 1/10, 1/11)
- Variable division ratio, 1/10, 1/11, 1/20, 1/22, 1/40, and 1/44
- Small input amplitude, $V_i = 150 \text{ mVp-p}$ (MIN.)
- Single supply voltage, $V_{CC} = 5 \text{ V} \pm 10 \%$
- Ultra-low power, $P_C = 28 \text{ mW}$ (TYP.)
- Incorporated buffer amplifier, $V_O = 1.2 \text{ Vp-p}$ (TYP.)
- Small package, 8-pin plastic DIP

PACKAGE DIMENSIONS (Unit: mm)



ABSOLUTE MAXIMUM RATINGS

Supply Voltage	V _{CC}	-0.5 to 6.0	V
Input Voltage	V _i	-0.5 to V _{CC}	V
Output Current	I _{OH}	- 10	mA
Junction Temperature	T _j	+125	°C
Storage Temperature	T _{stg}	-55 to +125	°C

RECOMMENDED OPERATING CONDITIONS

Supply Voltage Range	V _{CC}	4.5 to 5.5	V
Ambient Temperature	T _a	-35 to +75	°C
Output Load Capacitance	C _L	less than 10 picofarad	

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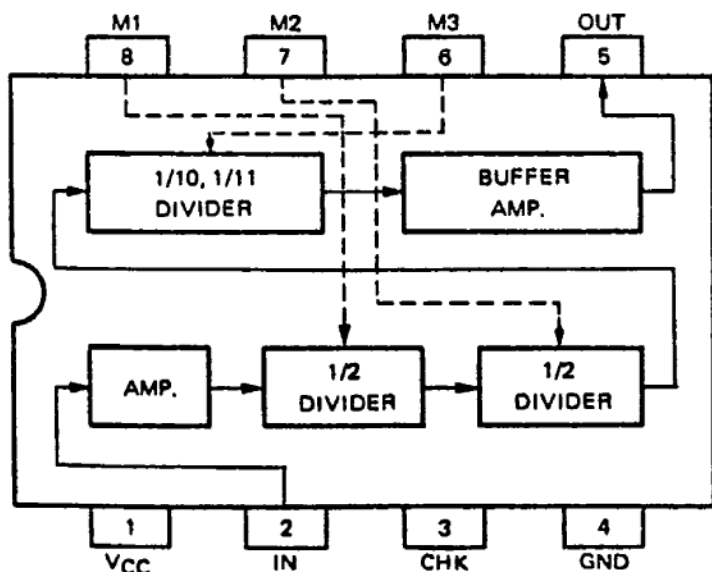
ELECTRICAL CHARACTERISTICS (V_{CC} = 5 V ± 10 %, T_a = -35 to +75 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Power Supply Current	I _{CC}		5.6	7.6	mA	V _{CC} = 5.0 V, T _a = 25 °C
Power Consumption	P _C		19.6		mW	
Output Voltage	V _O	0.9	1.2		V _{p-p}	(OUT)
High Level Input Voltage	V _{IH}	0.8V _{CC}			V	(M3)
Low Level Input Voltage	V _{IL}			0.2V _{CC}	V	(M3)
Frequency Response	f _{in}	1		150	MHz	Division Ratio = 20, 22, 40, 44
Frequency Response	f _{in}	1		50	MHz	Division Ratio = 10, 11
Input Voltage	V _{in}	150		2000	mV _{p-p}	(IN)
Set Up Time	t _s	30			ns	M3 → OUT
Output Rise Time	t _r	5.0		20	ns	C _L = 10pF, (20 % → 80 %)

Note: M1, M2 and CHK input terminals should be connected to either GND or V_{CC}.

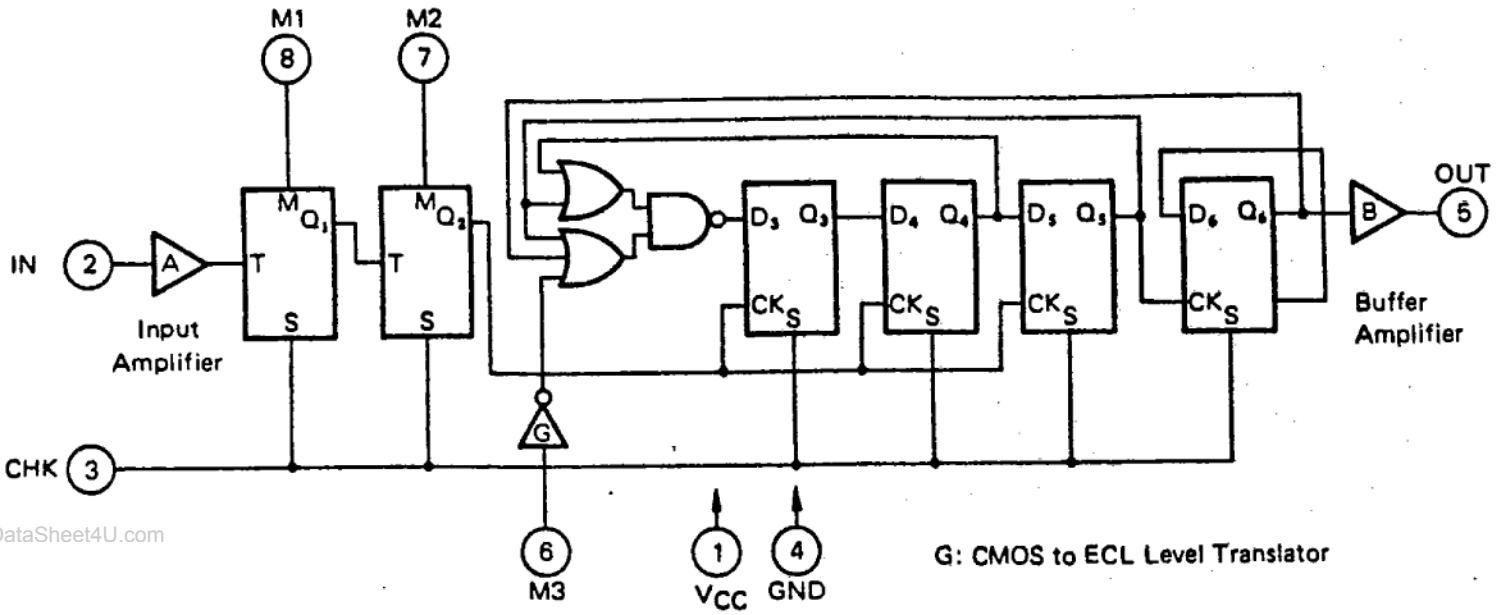
V_i ≥ 150 mV_{p-p}, sine wave

CONNECTION DIAGRAM

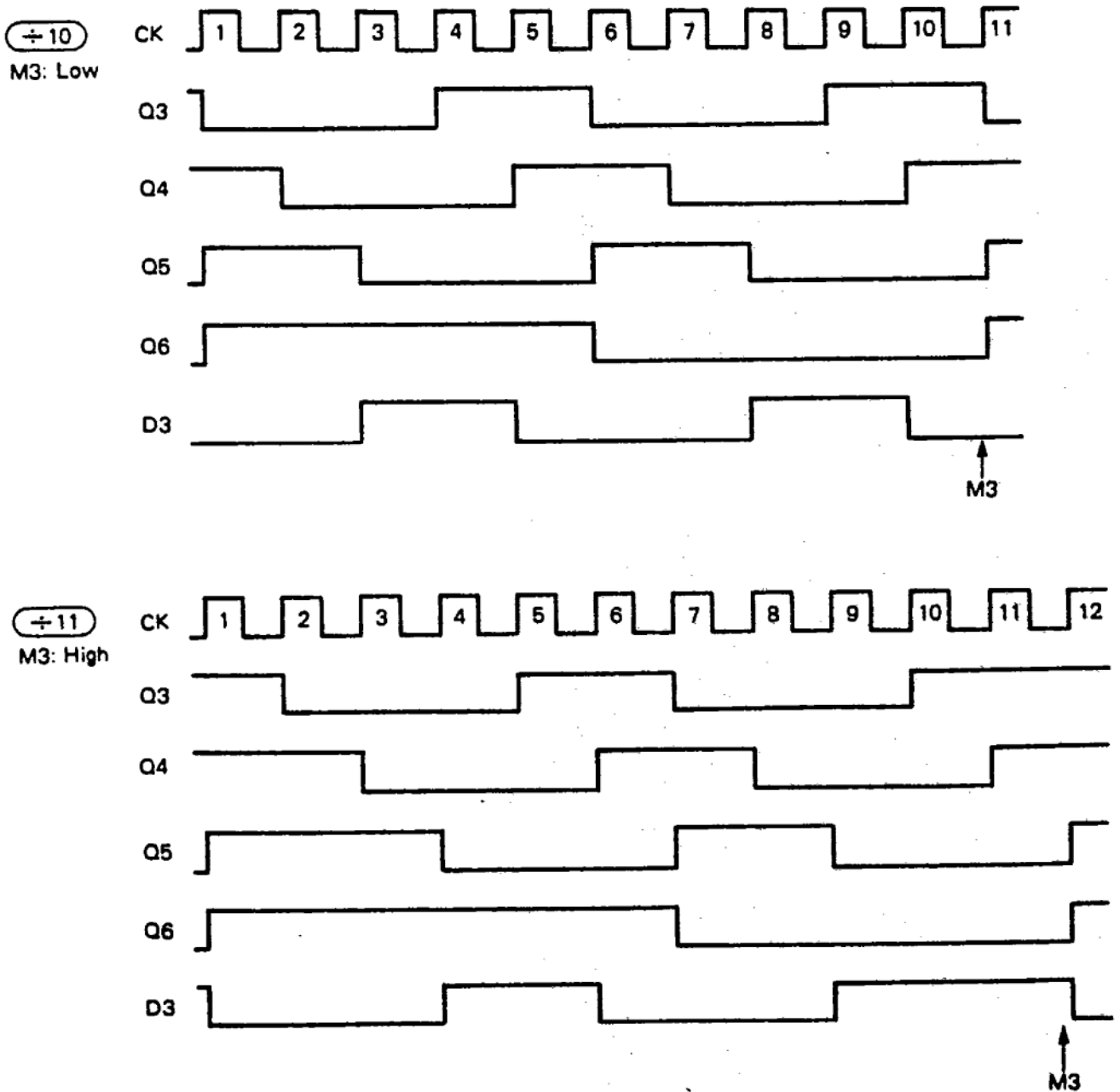


Pin Number	Symbol	Function
1	V _{CC}	Power Supply (V _{CC})
2	IN	Signal Input
3	CHK	Initialize
4	GND	GND
5	OUT	Output
6	M3	} Division Ratio Control
7	M2	
8	M1	

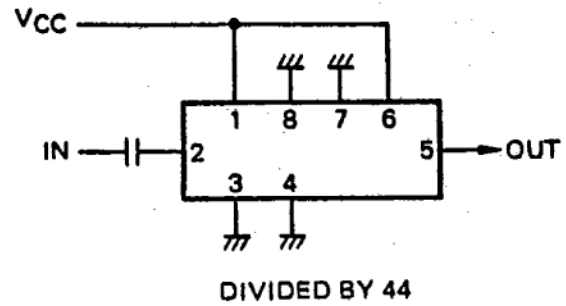
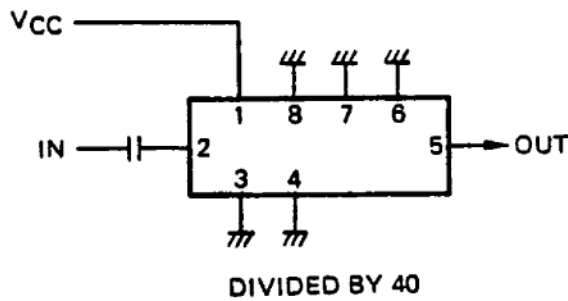
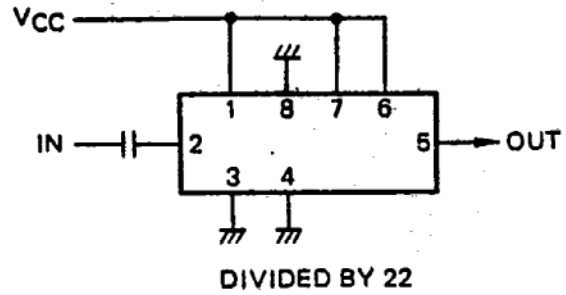
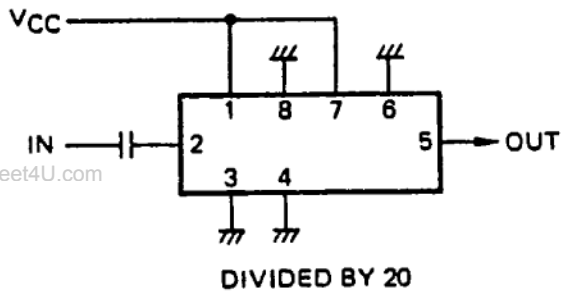
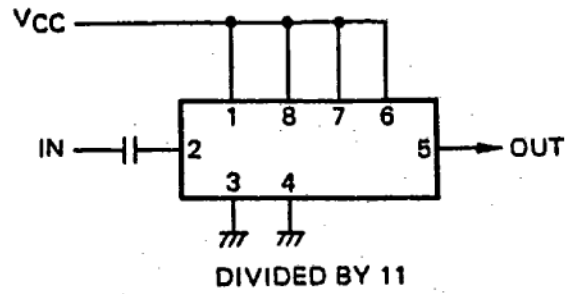
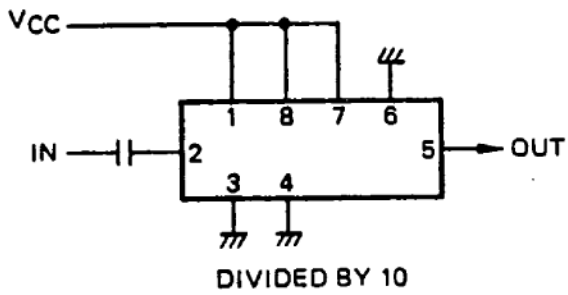
BLOCK DIAGRAM



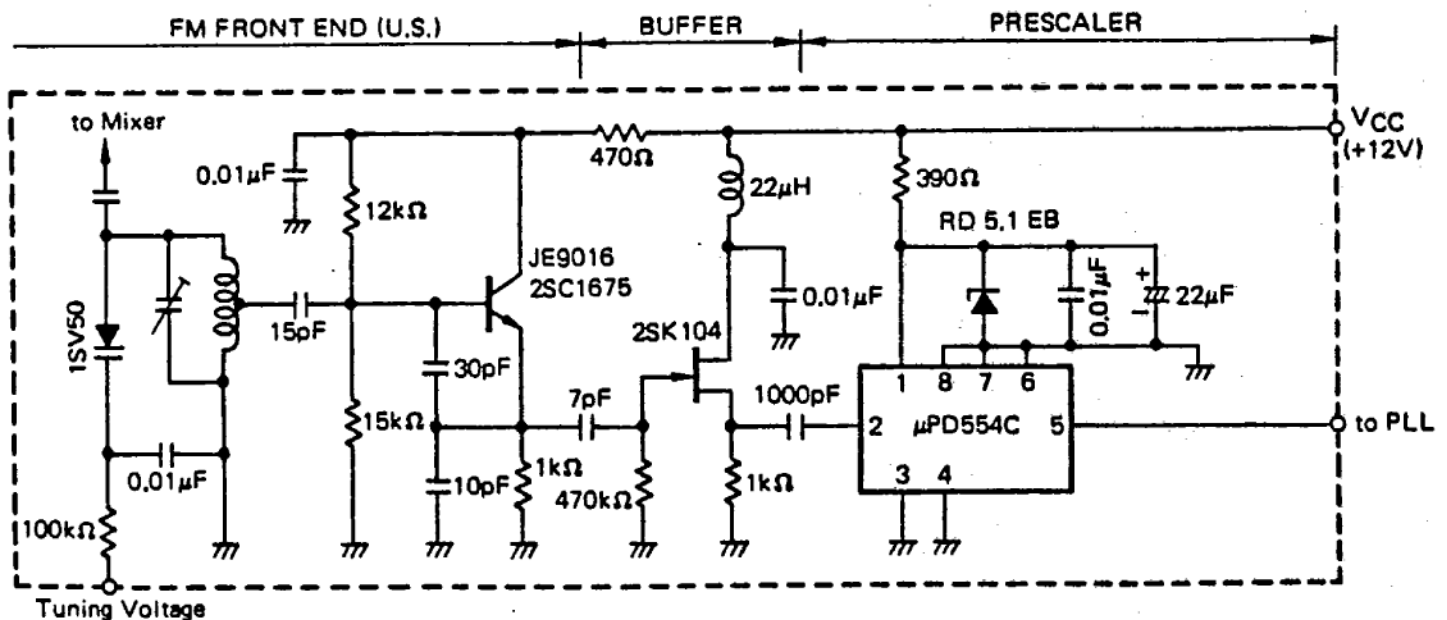
TIMING CHART



APPLICATION-1



APPLICATION-2



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