

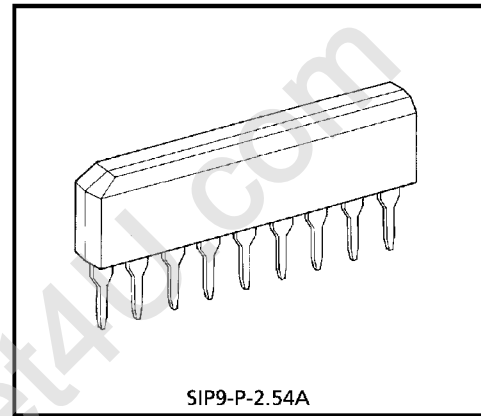
TC5081BP

PHASE COMPARATOR

The TC5081BP is phase comparator for PLL frequency synthesizer type, and consists of a digital phase comparator and an amplifier for active low pass filter.

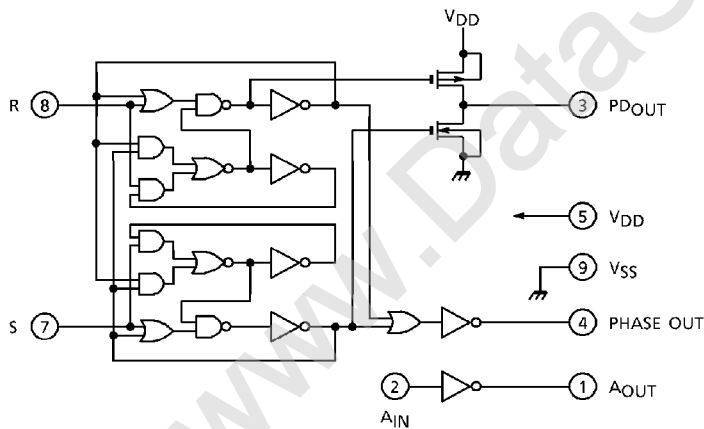
FEATURES

- The phase comparator detects two input pulse phase differences and outputs proportionate positive or negative pulses to PD_{OUT}. When the input pulse phases are the same, PD_{OUT} has high impedance.
- Because the IC is CMOS, the input impedance of the filter for the amp is extremely high and has excellent characteristics.
- TC5081BP comes in a SIP 9 PIN.

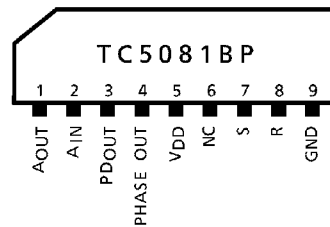


Weight : 0.92g (Typ.)

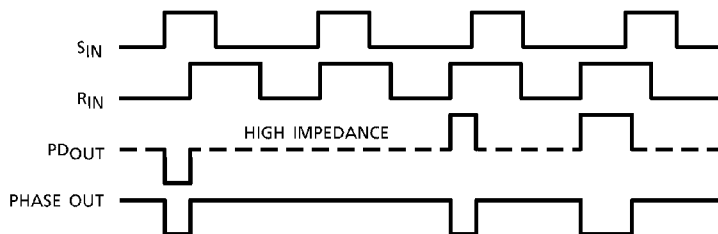
LOGIC DIAGRAM



PIN CONNECTION (SIDE VIEW)



PHASE COMPARATOR TIMING CHART



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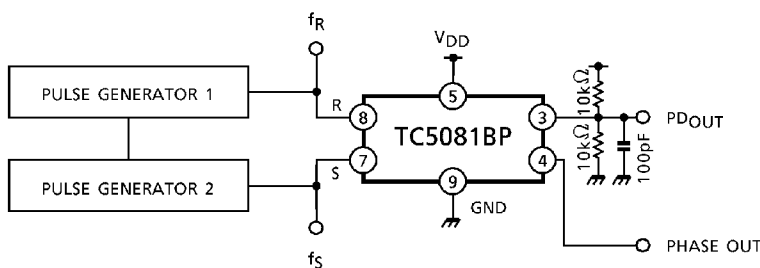
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{DD}	15	V
Input Voltage	V _{IN}	- 0.3~V _{DD} + 0.3	V
Operating Temperature	T _{opr}	- 30~75	°C
Storage Temperature	T _{stg}	- 55~125	°C

ELECTRICAL CHARACTERISTICS (V_{DD} = 7.5V, Ta = - 30~75°C)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Supply Voltage	V _{DD}	—	—	4.5	—	12	V
Output Voltage	"H" Level	V _{OH}	V _{IH} = 6.6V, I _{OH} = - 50μA	7.3	—	—	V
	"L" Level	V _{OL}	V _{IL} = 1.6V, I _{OL} = 50μA	—	—	0.2	V
Quiescent Current	I _{DD}	—	V _{IH} = 7.5V, V _{IL} = 0V	—	—	200	μA
3 State Leak Current	"H" Level	I _{TLH}	—	—	—	500	nA
	"L" Level	I _{TLL}	—	—	—	- 500	nA
Filter Amp. Voltage Gain	G _V	3	R _{①-②} = 1MΩ, f _{IN} = 1kHz R _g = 600Ω	—	30	—	dB

TEST CIRCUIT 1

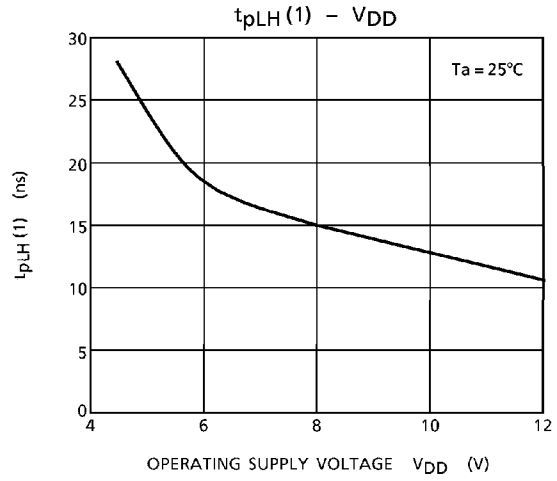
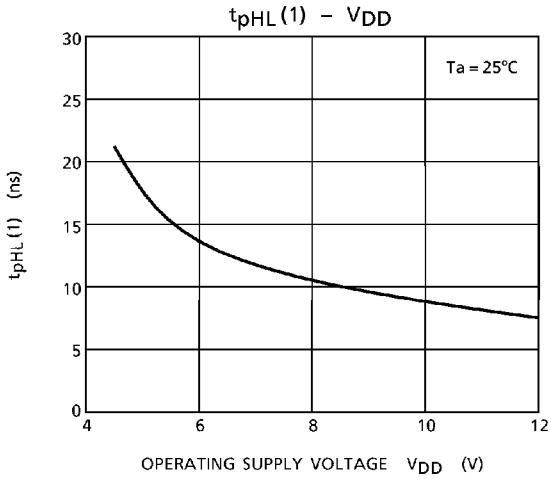
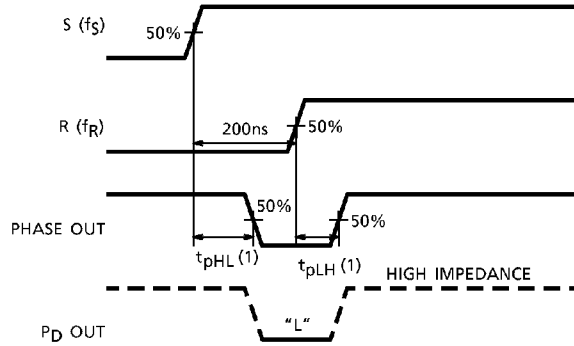


The pulse generator-1 is synchronized with the pulse generator-2. Then, the phase of f_R and f_S is variable.

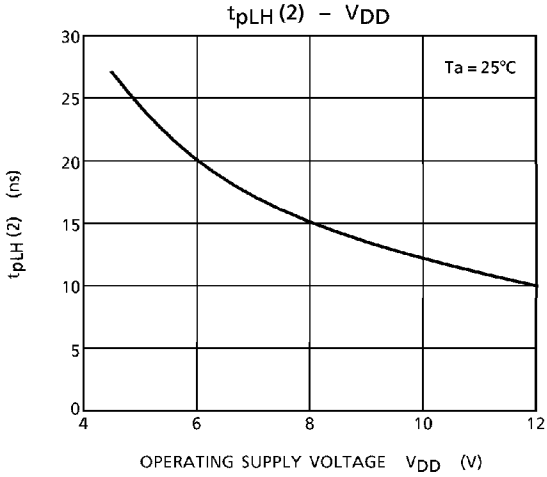
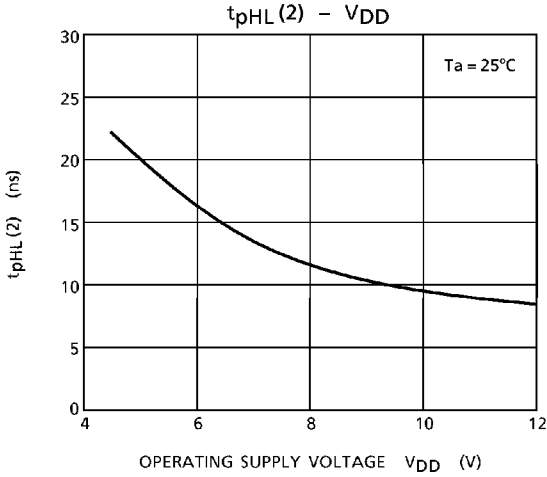
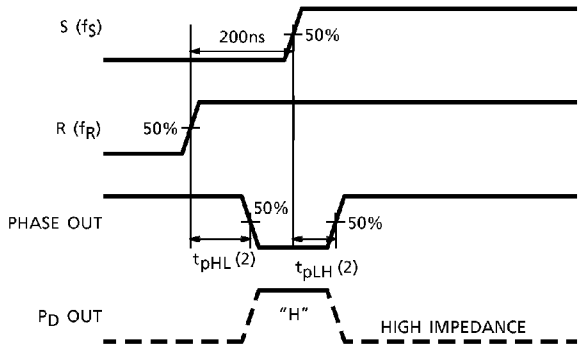
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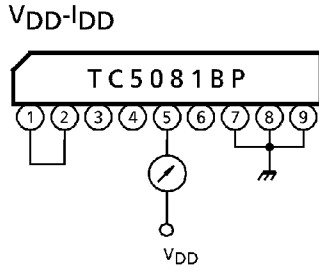
WAVE FORM 1 (The leading phase, $f_S > f_R$)



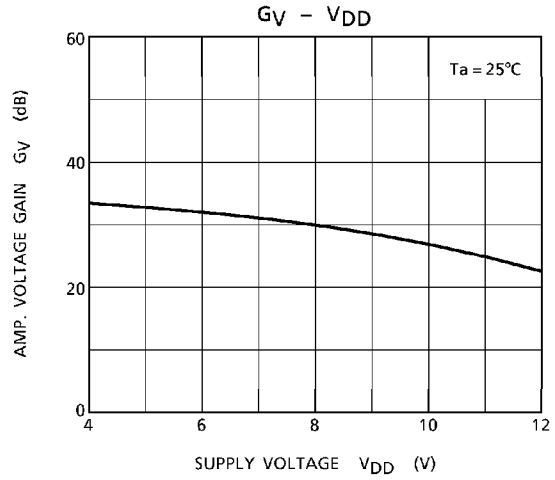
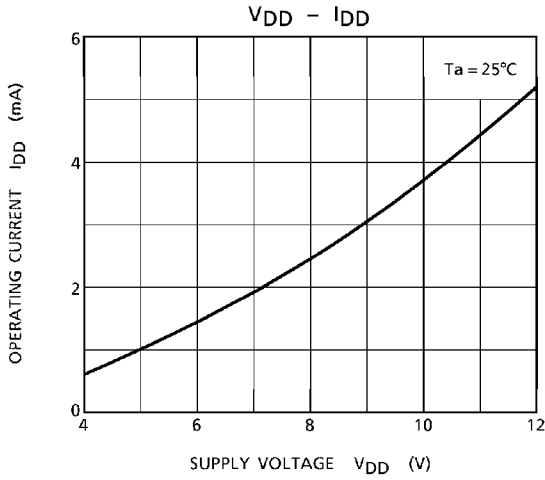
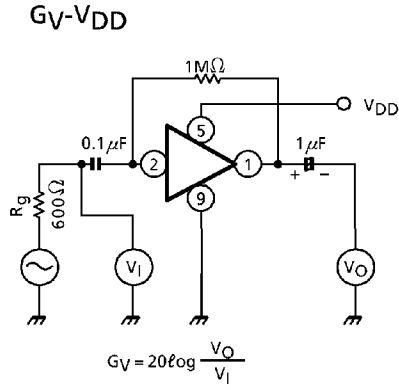
WAVE FORM 2 (The lagging phase, $f_S < f_R$)



TEST CIRCUIT 2

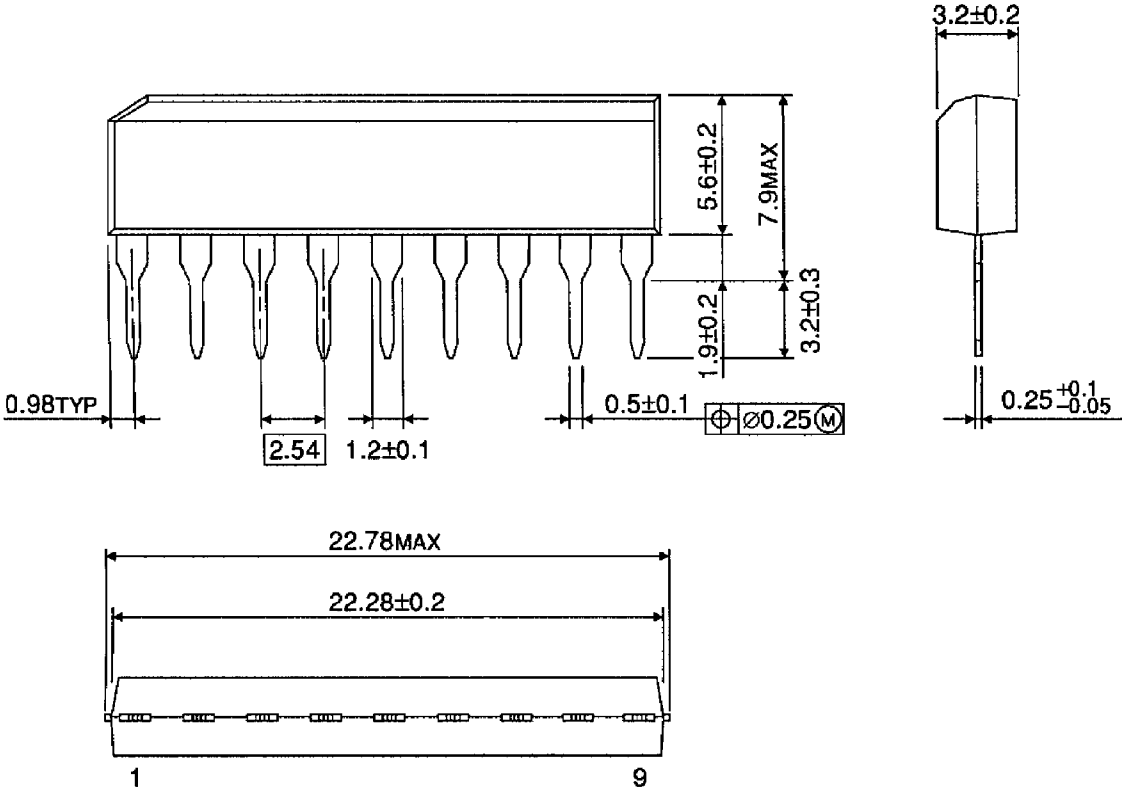


TEST CIRCUIT 3



OUTLINE DRAWING
SIP9-P-2.54A

Unit : mm



Weight : 0.92g (Typ.)