ECL PRESCALLER FOR FM

TD6104P is an FM prescaller for digital tuning system for which a swallow counter has been adopted.

- Frequency division ratio is made by a swallow counter method of 1/30 and 1/32.
- Realizes operation at low voltage and low current.

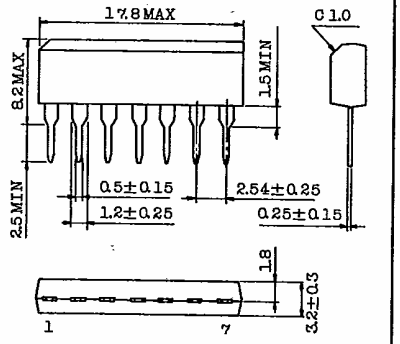
  V_{CC} = 4 ∿ 6V

  I_{CC} = 3mA (TYP)
- High input sensitivity permits operation at low level input.

  V_{in} = 75mVrms (MIN)

  f_{in} = 60 ∿ 140MHz

Unit in mm



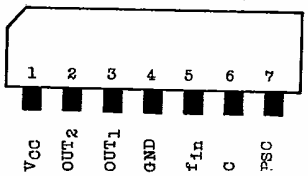
Lead pitch is 2.54 and tolerance is ±0.25 against theoretical center of each lead that is obtained on the basis of No.1 lead.

JEDEC	—
TOSHIBA	S7A-P

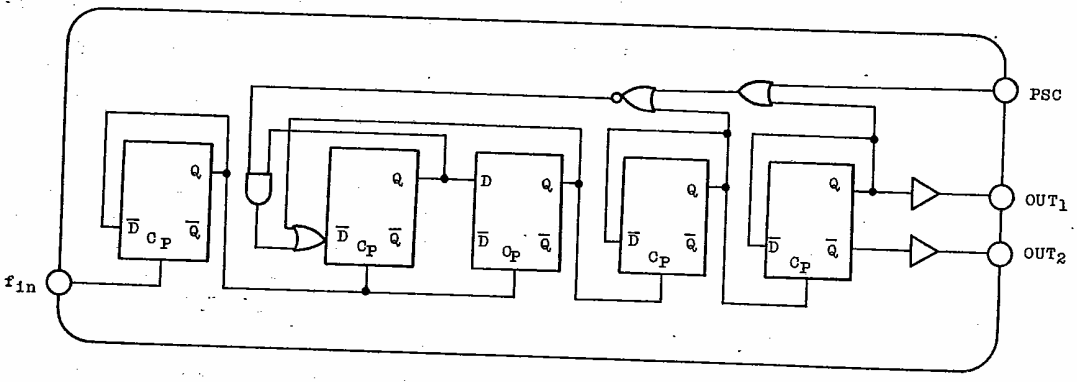
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	8	V
Power Dissipation	P_D	200	mW
Operating Temperature	T_{opr}	− 10 ∿ 75	°C
Storege Temperature	T_{stg}	− 55 ∿ 150	°C

PIN CONNECTION



LOGIC DIAGRAM



FUNCTIONAL EXPLANATION OF TERMINALS

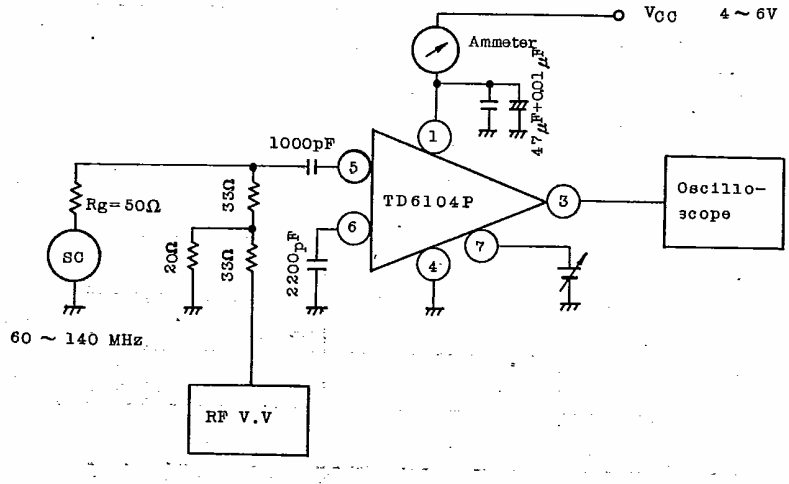
PIN NO.	SYMBOL	FUNCTION	REMARKS
5	f_{in}	Input of FM local oscillator signal. Frequency Range: 60 ∿ 140 MHz Input Level : 75 ∿ 300 mVrms	
3	OUT-1	Output dividing input signal from frequency division output f_{in} into 1/30 or 1/32. Output Level : 0.5 V_{P-P} (MIN)	
2	OUT-2	Inverted signal output. External resistance is required when this pin is used; because it is an open-emitter type. Usually it is open.	
7	PSC	Frequency-division ratio switching control terminal. 1/32 at $V_{PSC} \geqq 2$(V) 1/30 at $V_{PSC} \leqq 1$(V)	
6	C	External pin for condenser of bias circuit Connection of approx. C=2200pF between Pin and GND.	
1 4	V_{CC} GND	Power Supply V_{CC}=5V I_{CC}=3mA (TYP), 8mA (Max).	

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, V_{CC}=5.0V, Ta=25°C)

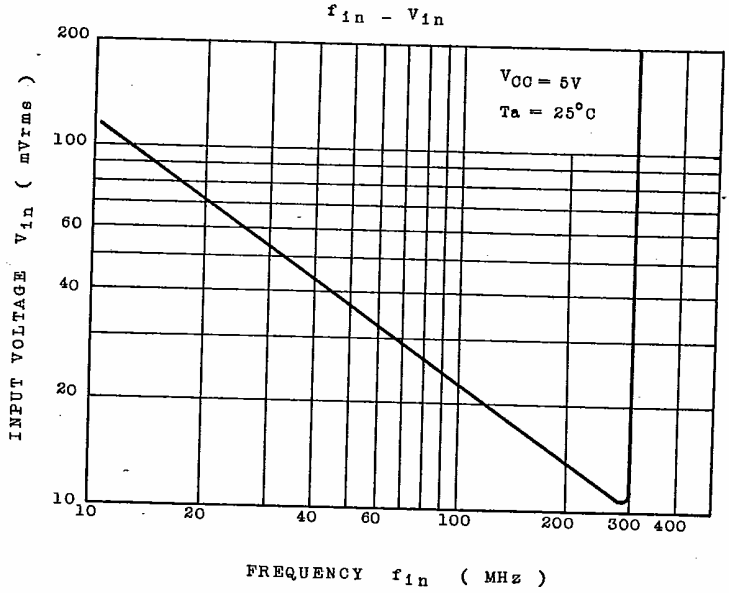
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITIONS	MIN	TYP.	MAX.	UNIT
Operating Supply Voltage	V_{CC}	-	* -	4	5	6	V
Operating Supply Current	I_{CC}	-	-	-	3	8	mA
Operating Frequency Range	f_{in}	-	* V_{in}=75 mVrms	60	-	140	MHz
Input Voltage Range	v_{in}	-	* -	75	-	300	mVrms
Output Amplitude	V_{OUT}	-	* -	0.5	0.7	-	V_{PP}
PSC Low Level Input Voltage	V_{IL}	-	-	0	-	1.0	V
PSC High Level Input Voltage	V_{IH}	-	-	2.0	-	5.0	V
Input Resistance	R_{in}	-	-	-	1	-	kΩ
Input Capacity	C_{in}	-	-	-	2.5	-	pF

Asterisk (*) denotes assurance under all the conditions of V_{CC}=4 ∿ 6V Ta=25°C, and f_{in}=60 ∿ 140 MHz.

TEST CIRCUIT



f_{in} - V_{in}



I_{CC} - V_{CC}