

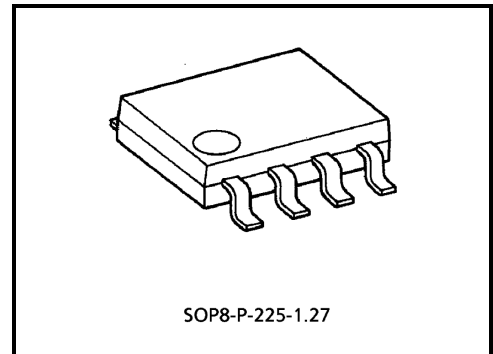
# TD7101F

## ELC Prescaler For Digital Synthesized Tuner

TD7101F is a 2 modulus prescaler developed for low operating voltage digital synthesized tuner, and can operate up to 150MHz.

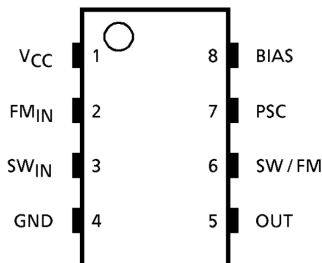
### Features

- Operating frequency range is 1.5~35MHz / 50~150MHz.
- 2 modulus prescaler:  $N = 4 \times 15 / 16$  and  $N = 15 / 16$
- Input voltage sensitivity is  $V_{IN} (FM) = 35mV_{rms}$ ,  $V_{IN} (SW) = 40mV_{rms}$
- 3V low operating supply voltage.
- The package is SOP-8 pins.

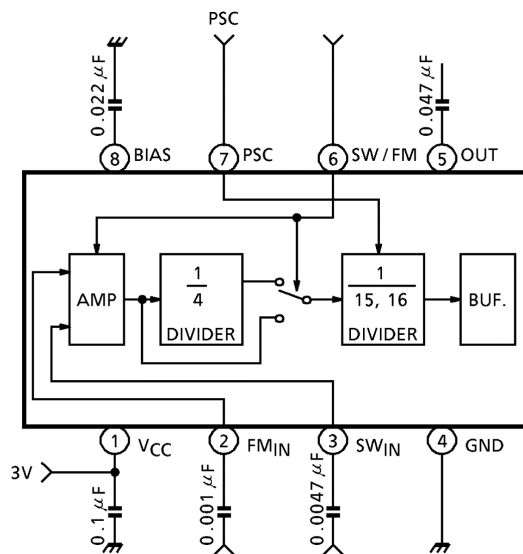


Weight: 0.08g (typ.)

### Pin Connection



### Block Diagram



(Note) This device is vulnerable to surge voltage.  
Take it into account when using this device in your system.

## Pin Function

Pin No.	Symbol	Function	Remarks
1	V <sub>CC</sub>	Power supply terminal.	—
2	FM <sub>IN</sub>	Signal input terminal from FM local oscillator.	—
3	SW <sub>IN</sub>	Signal input terminal from SW local oscillator.	—
4	GND	Ground terminal.	—
5	Out	Divider signal output terminal.	—
6	SW / FM	Dividing mode control terminal. "H" level input: SW <sub>IN</sub> is selected, direct mode. "L" level input: FM <sub>IN</sub> is selected, 1 / 4 mode.	—
7	PSC	2 modulus mode control terminal. "H" level input: 1 / 16 dividing "L" level input: 1 / 15 dividing	—
8	Bias	Bias capacitor terminal. Bias capacitor is connected.	—

## Maximum Ratings (Ta = 25°C)

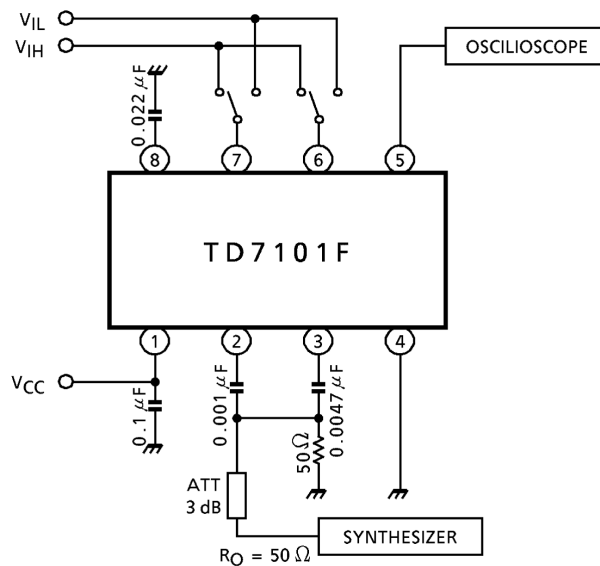
Characteristic	Symbol	Rating	Unit
Power supply voltage	V <sub>CC</sub>	6.5	V
Power dissipation	P <sub>D</sub>	200	mW
Input voltage	V <sub>IN</sub>	-0.3~V <sub>CC</sub> + 0.3	V
Operating temperature	T <sub>opr</sub>	-10~60	°C
Storage temperature	T <sub>stg</sub>	-55~150	°C

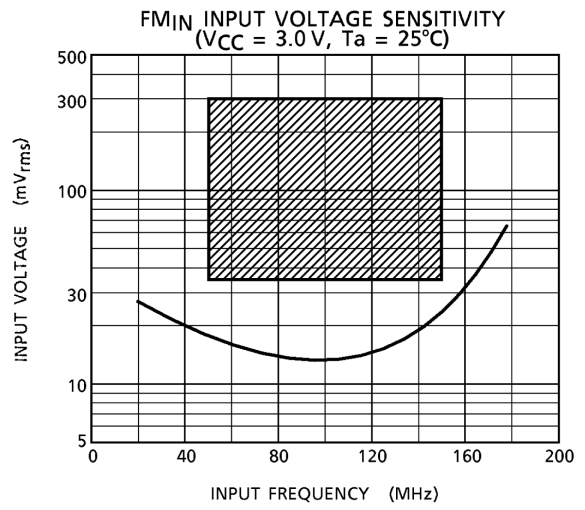
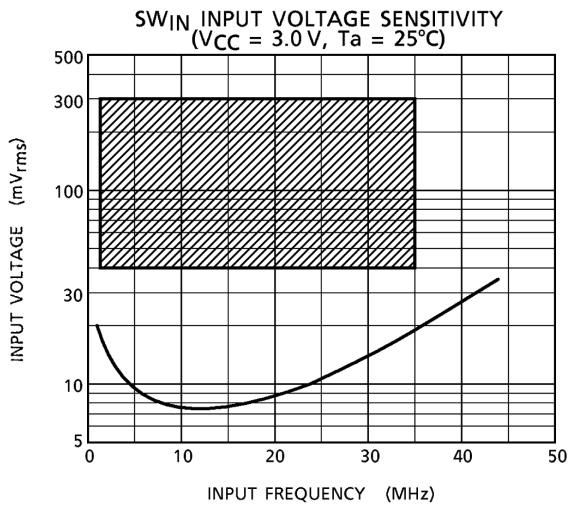
## Electrical Characteristics


(unless otherwise specified,  $V_{CC} = 1.8\sim 5.5V$ ,  $T_a = -10\sim 60^\circ C$ ,  $f_{in} (FM) = 50\sim 150MHz$ ,  $f_{in} (SW) = 1.5\sim 35MHz$  )

Characteristic		Symbol	Test Circuit	Test Condition	Min.	Typ.	Max.	Unit
Supply voltage		$V_{CC}$	—	—	1.8	3.0	5.5	V
Supply current		$I_{CC}$	—	$V_{CC} = 3.0V$	—	5.5	9.5	mA
Operating frequency range		$f_{IN1}$	—	FM <sub>IN</sub>	50	—	150	MHz
		$f_{IN2}$	—	SW <sub>IN</sub>	1.5	—	35	
Input voltage range		$V_{IN1}$	—	FM <sub>IN</sub>	35	—	300	mV <sub>rms</sub>
		$V_{IN2}$	—	SW <sub>IN</sub>	40	—	300	
Output amplitude		$V_{OUT}$	—	—	0.5	—	—	V <sub>p-p</sub>
Input voltage	"H" level	$V_{IH}$	—	PSC, SW / FM	1.6	—	$V_{CC}$	V
	"L" level	$V_{IL}$	—	PSC, SW / FM	0	—	1.0	
Input current	"H" level	$I_{IH}$	—	PSC, SW / FM, $V_{CC} = 5.0V$ , $V_{IH} = 4.0V$	—	—	60	$\mu A$
	"L" level	$I_{IL}$	—	PSC, SW / FM, $V_{CC} = 5.0V$ , $V_{IL} = 1.0V$	—	—	10	

## Test Circuit (input voltage sensitivity)



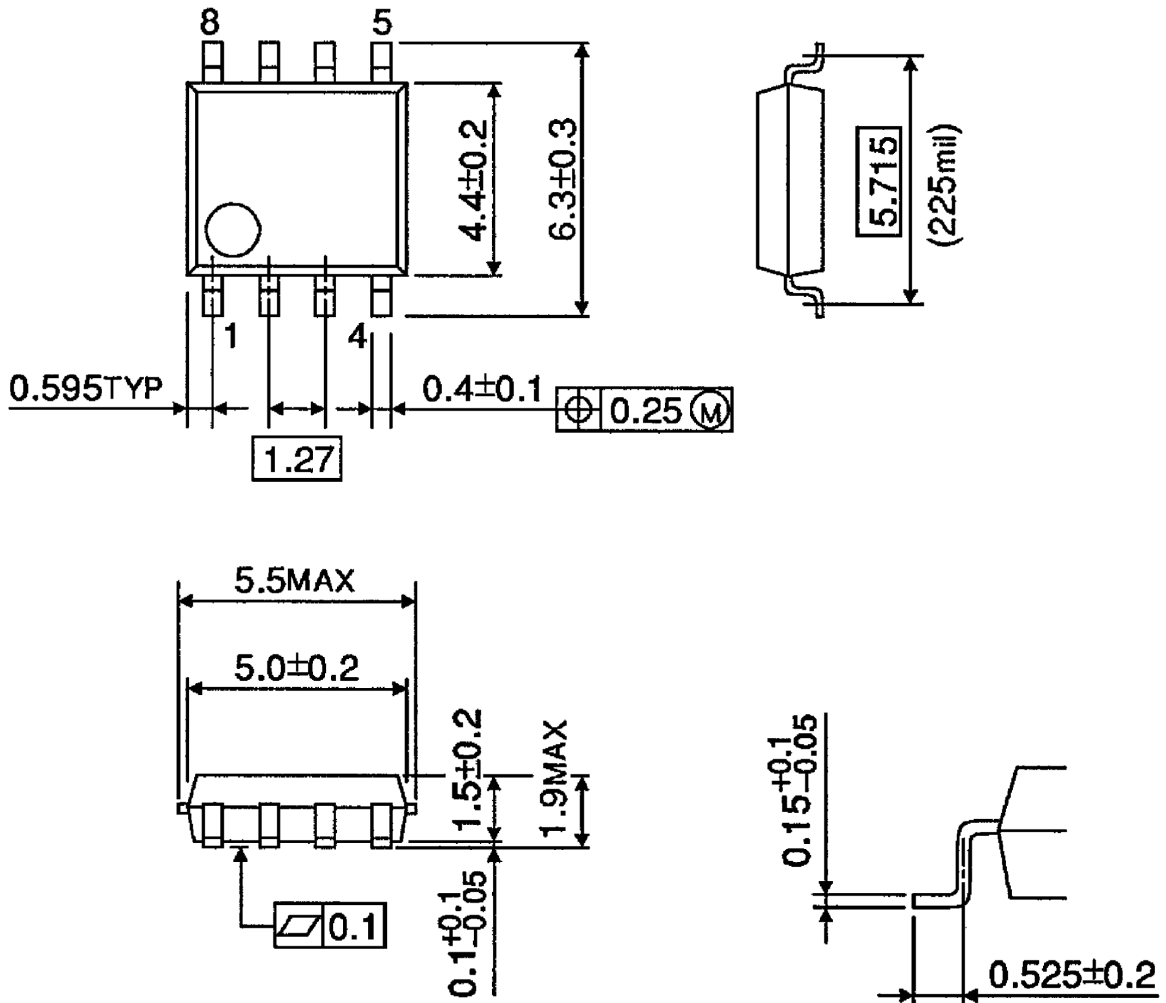


(Note)  Operating range (V<sub>CC</sub> = 1.8~5.5 V, T<sub>a</sub> = -10~60°C)

**Package Dimensions**

SOP8-P-225-1.27

Unit : mm



Weight: 0.08g (typ.)

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