

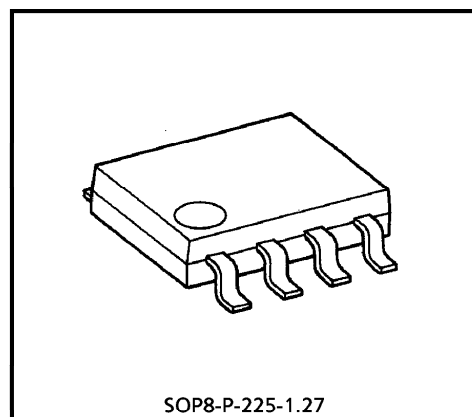
# TD7101F

## 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 150 MHz.

### FEATURES

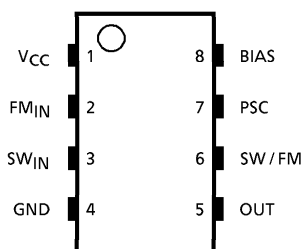
- Operating frequency range is 1.5~35 MHz / 50~150 MHz.
- 2 modulus prescaler :  $N = 4 \times 15 / 16$  and  $N = 15 / 16$
- Input voltage sensitivity is  $V_{IN}(FM) = 35 \text{ mV}_{rms}$ ,  $V_{IN}(SW) = 40 \text{ mV}_{rms}$
- 3 V low operating supply voltage.
- The package is SOP-8 pins.



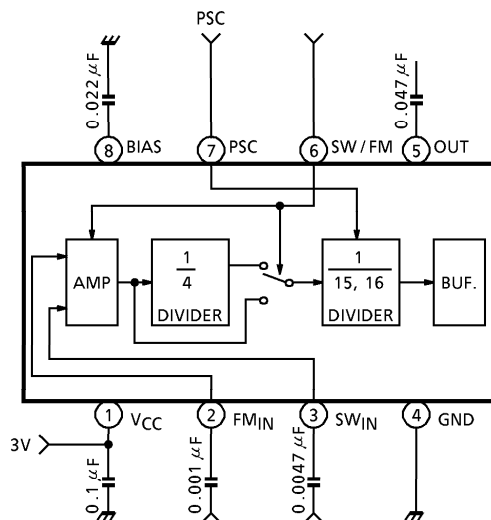
SOP8-P-225-1.27

Weight : 0.08 g (Typ.)

### PIN CONNECTION



### BLOCK DIAGRAM



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

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## 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)

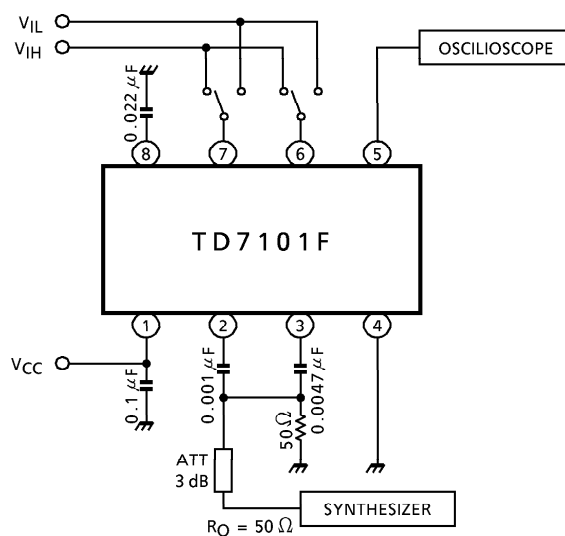
CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V <sub>CC</sub>	6.5	V
Power Dissipation	P <sub>D</sub>	200	mW
Input Voltage	V <sub>IN</sub>	-0.3~V <sub>CC</sub> + 0.3	V
Operating Temperature	T <sub>opr</sub>	-10~60	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

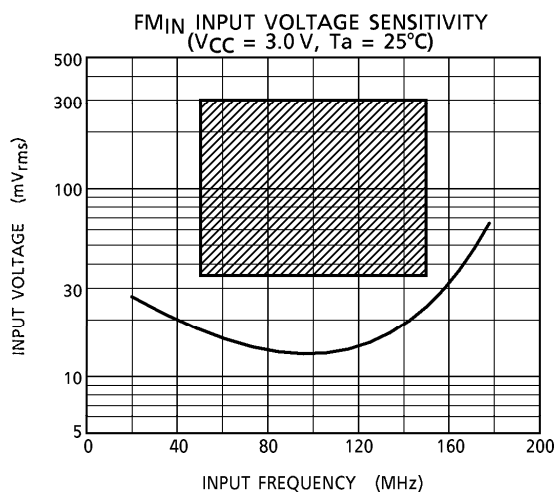
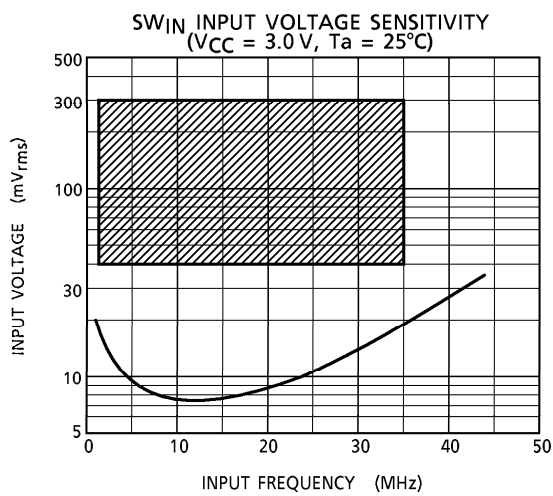
**ELECTRICAL CHARACTERISTICS**


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

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	$V_{CC}$	—	—	1.8	3.0	5.5	V
Supply Current	$I_{CC}$	—	$V_{CC} = 3.0\text{ V}$	—	5.5	9.5	mA
Operating Frequency Range	$f_{IN\ 1}$	—	FM <sub>IN</sub>	50	—	150	MHz
	$f_{IN\ 2}$	—	SW <sub>IN</sub>	1.5	—	35	
Input Voltage Range	$V_{IN\ 1}$	—	FM <sub>IN</sub>	35	—	300	mV <sub>rms</sub>
	$V_{IN\ 2}$	—	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, $V_{CC} = 5.0\text{ V}$ , $V_{IH} = 4.0\text{ V}$	—	60	$\mu\text{A}$
	"L" Level	$I_{IL}$	—	PSC, SW / FM, $V_{CC} = 5.0\text{ V}$ , $V_{IL} = 1.0\text{ V}$	—	10	

**TEST CIRCUIT (Input voltage sensitivity)**

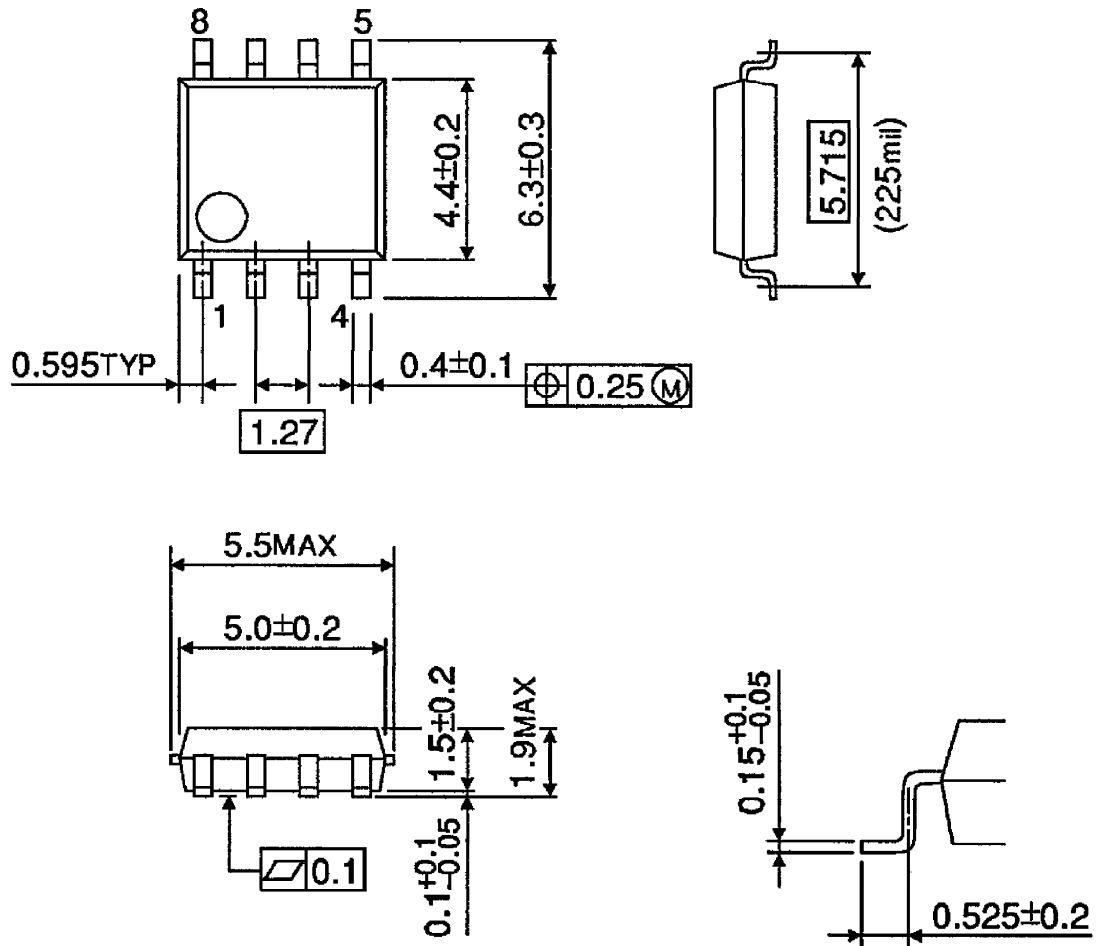




(Note)  Operating range (V<sub>CC</sub> = 1.8~5.5 V, Ta = -10~60°C)

**OUTLINE DRAWING**  
SOP8-P-225-1.27

Unit : mm



Weight : 0.08 g (Typ.)