

**TOSHIBA**

**TD7103F**

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

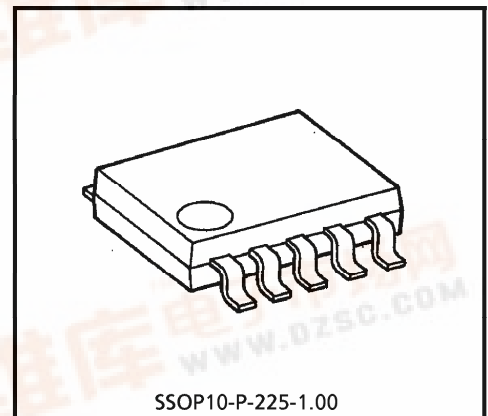
# TD7103F

## ECL PRESCALER FOR DIGITAL SYNTHESIZED TUNER

TD7103F is 1.5 V prescaler for digital synthesizer tuner and suitable for FM/TV band receiving.

### FEATURES

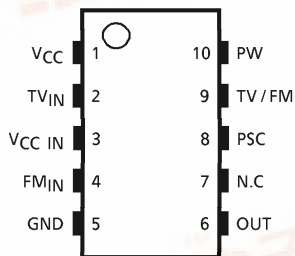
- Low voltage :  $V_{CC}$  (MIN.) = 1.0 V
- Operating frequency FM : 50~150 MHz  
TV : 50~250 MHz
- 2 modulus prescaler N = 60 / 64, 120 / 128
- Built-in stand-by circuit



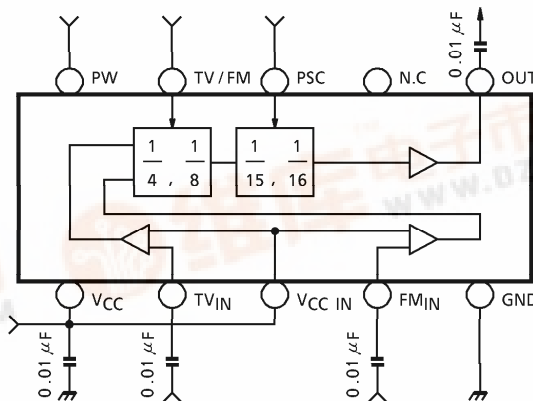
SSOP10-P-225-1.00

Weight : 0.10 g (Typ.)

### PIN CONNECTION

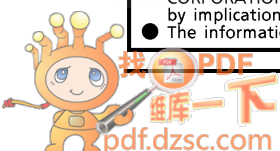


### BLOCK DIAGRAM



980910EBA2

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**PIN FUNCTION**

PIN No.	SYMBOL	FUNCTION			REMARKS	
1, 3	V <sub>CC</sub>	Power supply terminal			—	
2	TV <sub>IN</sub>	Signal input terminal TV (VHF) local oscillator			—	
4	FM <sub>IN</sub>	Signal input terminal FM local oscillator			—	
5	GND	Ground terminal			—	
6	OUT	Divider signal output terminal			—	
8	PSC	2 modulus mode control terminal	TV / FM	PSC	Dividing	—
9	TV / FM	Mode selection terminal	L	L	60	
			L	H	64	
			H	L	120	
			H	H	128	
10	PW	PW stand-by terminal "H" : Operate "L" or OPEN : Stand-by			—	

**MAXIMUM RATINGS** (Ta = 25°C)

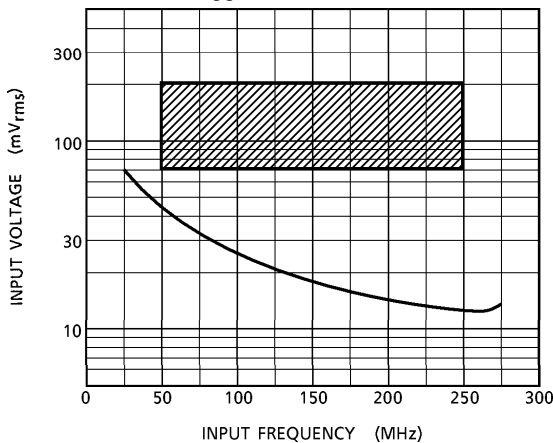
CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V <sub>CC</sub>	4.5	V
Input Voltage	V <sub>IN</sub>	-0.3~V <sub>CC</sub> + 0.3	V
Power Dissipation	P <sub>D</sub>	400 (Note)	mW
Operating Temperature	T <sub>opr</sub>	-25~75	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

(Note) Derated linearly above Ta = 25°C in the proportion of 3.2 mW/°C

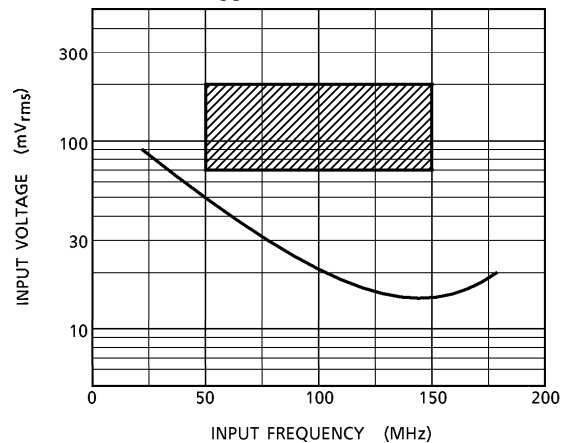
**ELECTRICAL CHARACTERISTICS** (Unless otherwise specified, V<sub>CC</sub> = 1.0~3.0 V, Ta = -25~75°C)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V <sub>CC</sub>	—	—	1.0	—	3.0	V
Supply Current	I <sub>CCopr</sub>	—	V <sub>CC</sub> = 1.2 V	—	6	10	mA
	I <sub>CCSTB</sub>	—	V <sub>CC</sub> = 3.0 V	—	1	10	μA
Operating Frequency Range	FM	f <sub>IN (FM)</sub>	V <sub>IN</sub> = 70 mV <sub>rms</sub>	50	—	150	MHz
	TV	f <sub>IN (TV)</sub>	V <sub>IN</sub> = 70 mV <sub>rms</sub>	50	—	250	
Input Voltage	V <sub>IN</sub>	—	—	70	—	200	mV <sub>rms</sub>
Output Amplitude	V <sub>OUT</sub>	—	—	0.4	—	—	V <sub>p-p</sub>
Input Voltage	"H" Level	V <sub>IL</sub>	PSC, TV/FM, STB	V <sub>CC</sub> × 0.8	—	V <sub>CC</sub>	V
	"L" Level	V <sub>IH</sub>	PSC, TV/FM, STB	0	—	V <sub>CC</sub> × 0.2	
Input Current	"H" Level	I <sub>IL</sub>	—	—	—	100	μA
	"L" Level	I <sub>IH</sub>	—	—	—	-100	

TV<sub>IN</sub> INPUT VOLTAGE SENSITIVITY (V<sub>CC</sub> = 1.2 V, Ta = 25°C)



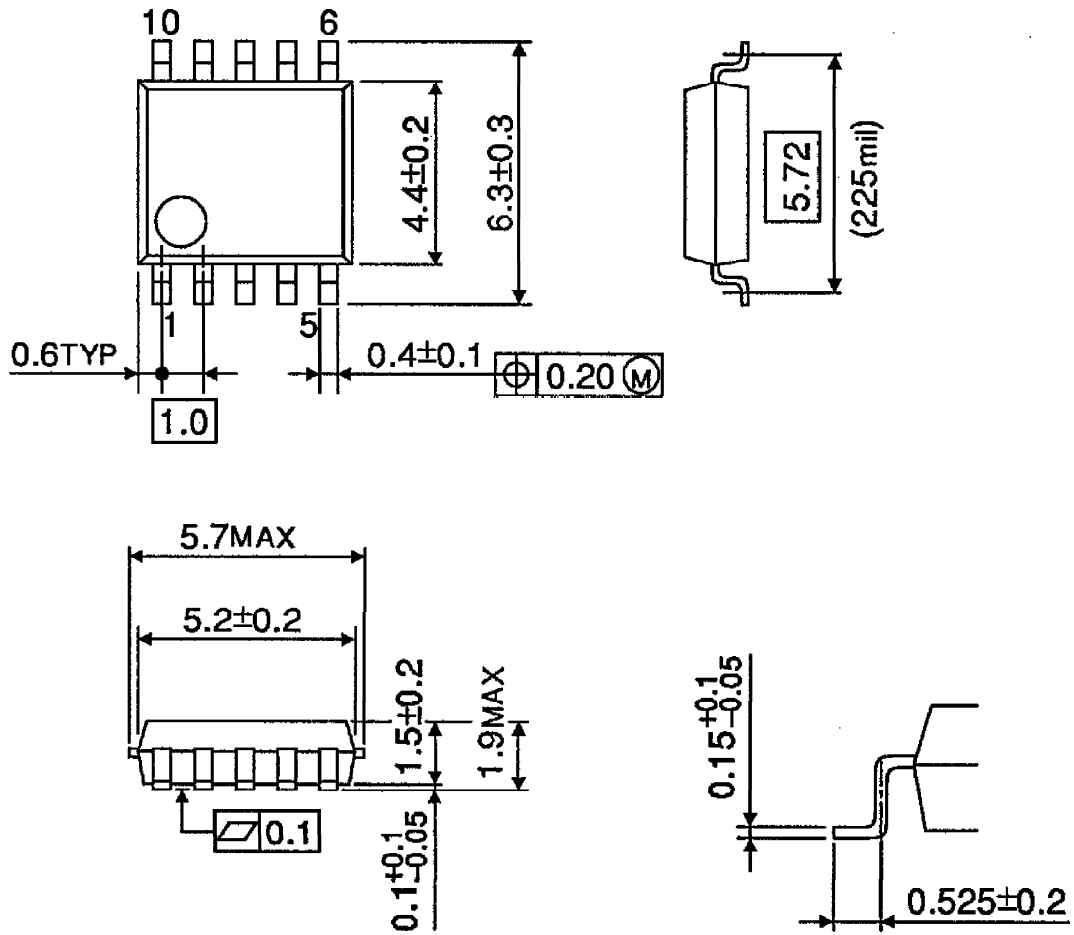
FM<sub>IN</sub> INPUT VOLTAGE SENSITIVITY (V<sub>CC</sub> = 1.2 V, Ta = 25°C)



(Note) Operating range (V<sub>CC</sub> = 1.0~3.0 V, Ta = 25~75°C)

OUTLINE DRAWING  
SSOP10-P-225-1.00

Unit : mm



Weight : 0.10 g (Typ.)