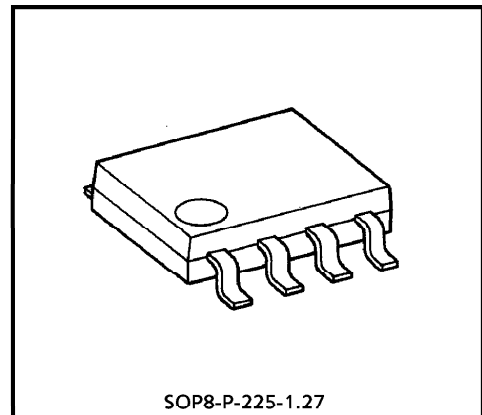


TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA8025F

## PICK UP SENSOR INTERFACE IC

The TA8025F is an IC designed for making the output signal from electromagnetic pick up sensor and etc..., waveform-shaping. The  $V_{th}$  of input has hysteresis that is division value between peak voltage of input signal and 0V.

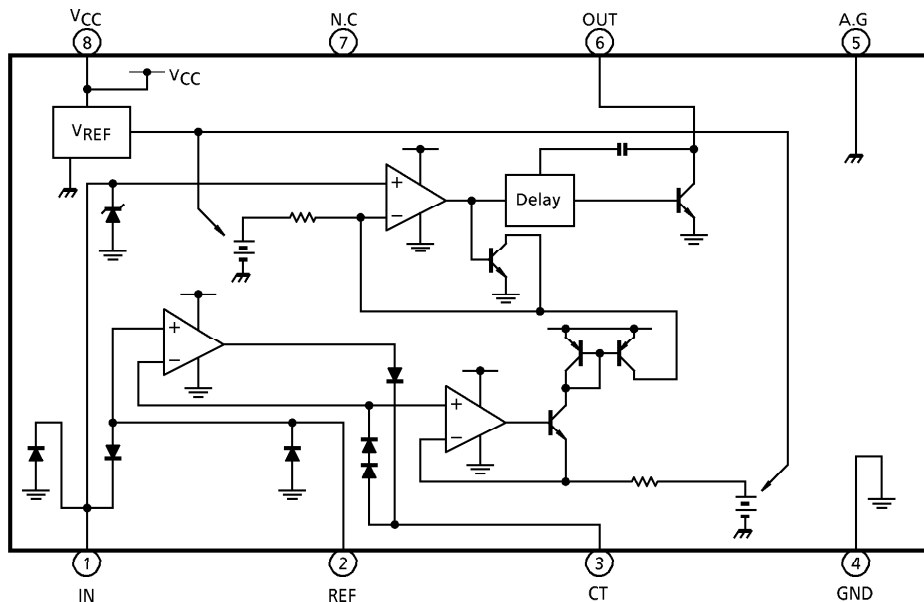


Weight : 0.08g (Typ.)

### FEATURES

- Input frequency : DC~50kHz
- Input voltage  $V_{TH}$  :  $0V \leq V_{peak} \times K$
- Small package : SOP 8pin
- Separate GND line for output and logic control sections

### BLOCK DIAGRAM AND PIN LAYOUT



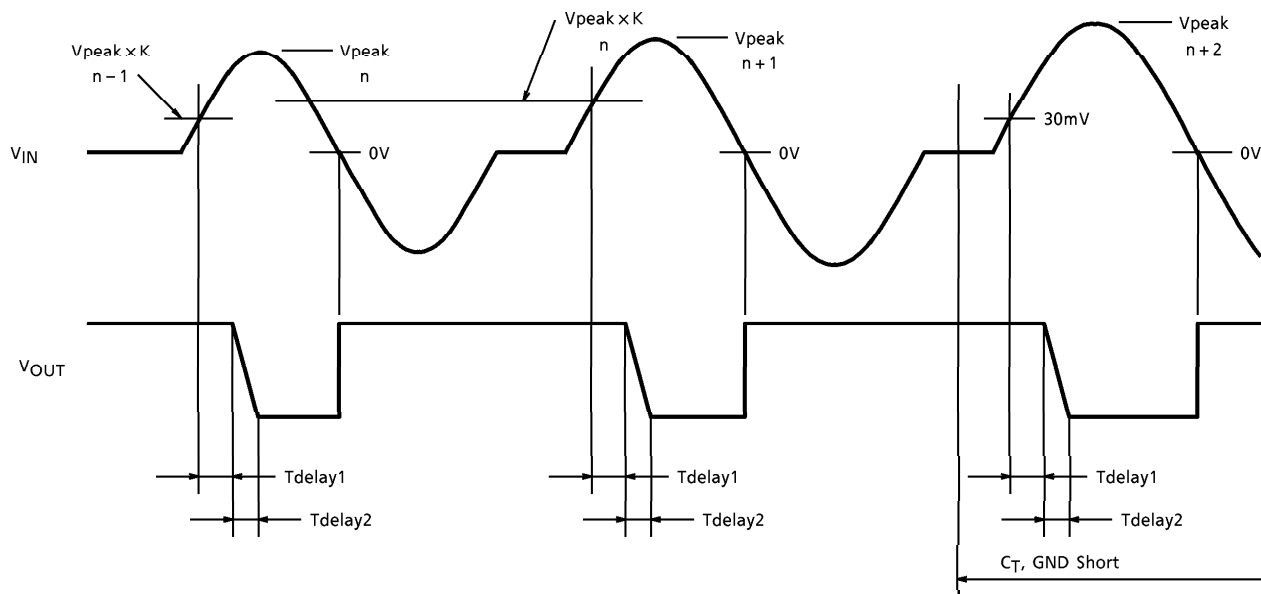
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**PIN DESCRIPTION**

PIN No.	SYMBOL	DESCRIPTION
1	IN	Input pin for a signal from sensor.
2	REF	$V_{TH}$ setting pin. The $V_{TH}$ value can be set according to divide the input signal with resistors.
3	CT	This pin hold the peak value of input signal of REF pin.
4	GND	Grounded.
5	A.G	Grounded pin for REF.
6	OUT	The output is an NPN open-collector output and the input signal which is made waveform-shaping is gone out. When the output goes down, it has a slope of $1V/\mu s$ in order to lose the influence for the input signal.
7	N.C	Not connected.
8	VCC	Power supply pin.

**TIMING CHART**



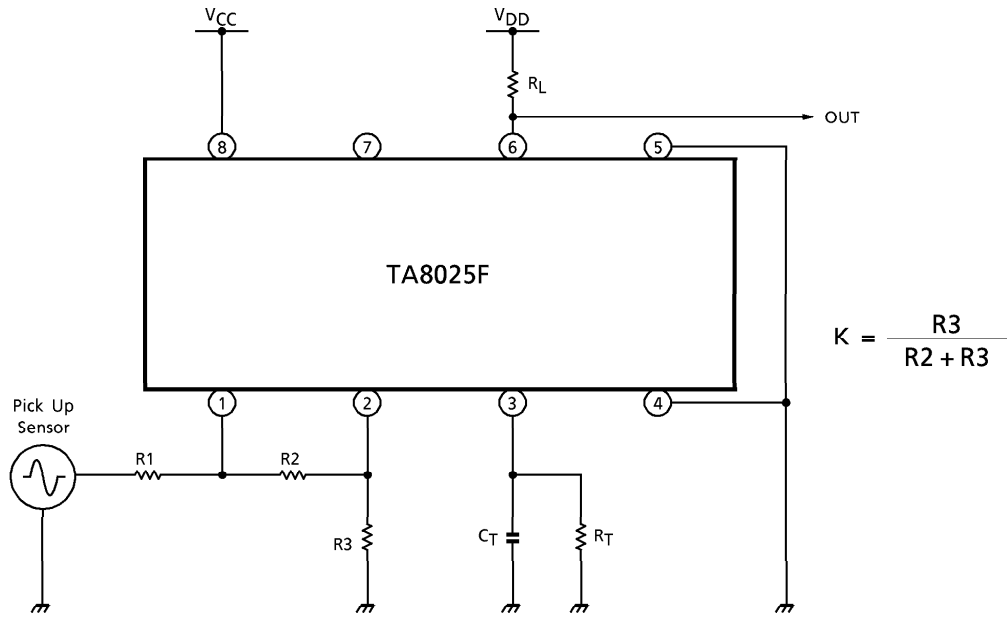
**MAXIMUM RATINGS** (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	36	V
Input Voltage	V <sub>IN</sub>	36	V
Input Current	I <sub>IN</sub>	± 20	mA
Output Current	I <sub>OUT</sub>	10	mA
Power Dissipation	P <sub>D</sub>	280	mW
Operating Voltage	V <sub>opr</sub>	4.5~30	V
Operating Temperature	T <sub>opr</sub>	- 40~105	°C
Storage Temperature	T <sub>stg</sub>	- 55~150	°C
Lead Temperature · Time	T <sub>sol</sub>	260 (10s)	°C

**ELECTRICAL CHARACTERISTICS** (V<sub>CC</sub> = 4.5~16V, T<sub>c</sub> = - 40~105°C)

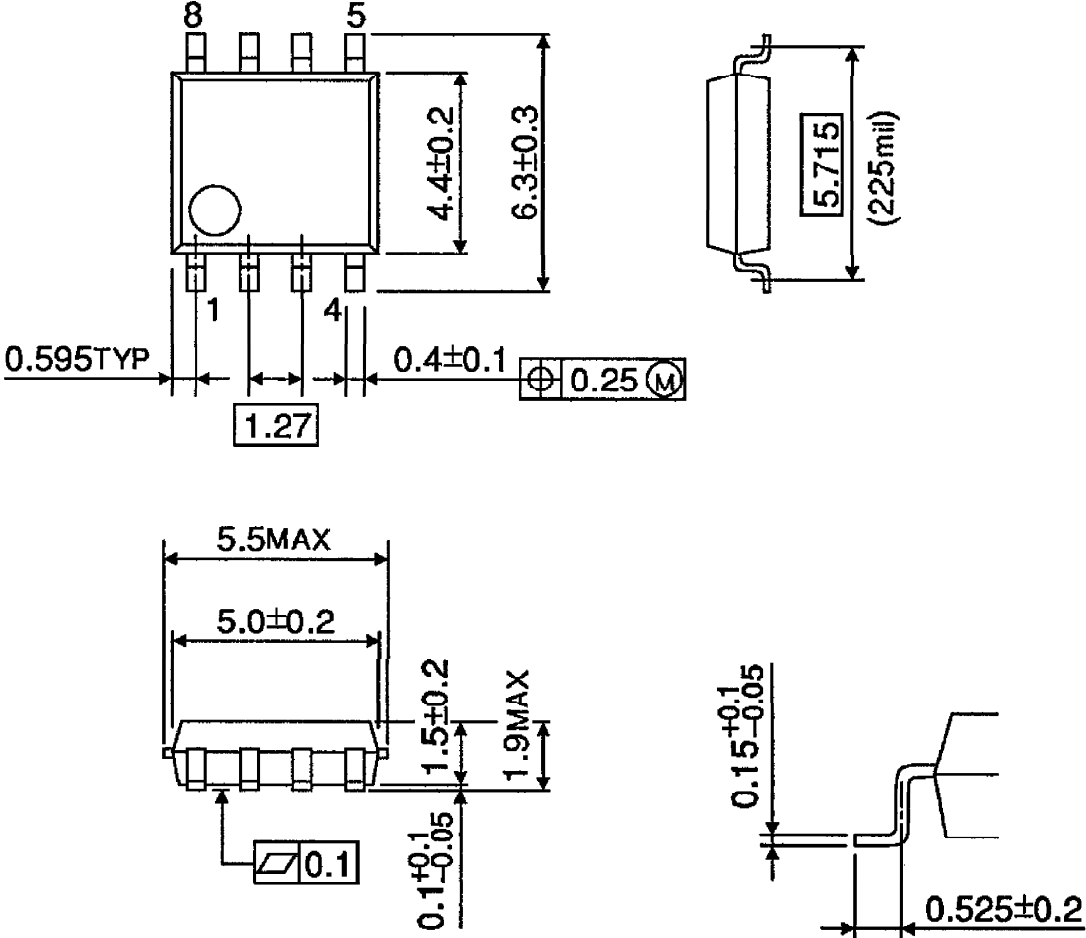
CHARACTERISTIC	SYMBOL	PIN	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Supply Current	I <sub>CC</sub>	V <sub>CC</sub>	—	Output : OFF	—	3.0	5.0	mA	
				Output : ON	—	4.5	8.0		
Input Current	I <sub>IN</sub>	I <sub>N</sub>	—	V <sub>IN</sub> = 0V	- 0.2	—	0.1	μA	
				V <sub>IN</sub> = V <sub>CC</sub>	- 0.1	—	0.1		
High-Side Minimum Threshold Voltage	V <sub>TH1</sub>		—	—	V <sub>REF</sub> = 0V	24	30	36	mA
Zero-Cross Threshold Voltage	V <sub>TH2</sub>					- 20	—	20	
Zener Voltage	V <sub>Z</sub>		—	—	I <sub>IN</sub> = 1mA	24	30	36	V
Input Current	I <sub>IN</sub>		REF	—	V <sub>IN</sub> = 0V	- 0.2	—	0.1	μA
		V <sub>IN</sub> = V <sub>CC</sub>			- 0.1	—	0.1		
Output Voltage	V <sub>OL</sub>	OUT	—	I <sub>OL</sub> = 5mA	—	—	0.5	V	
Output Leakage Current	I <sub>LEAK</sub>		—	—	V <sub>OH</sub> = 5V	- 5.0	—	5.0	μA
Output Delay Time	T <sub>delay1</sub>	OUT	—	V <sub>CC</sub> = 16V	—	7.5	20.0	μs	
	T <sub>delay2</sub>		—	V <sub>DD</sub> = 5V	—	5.0	10.0		

EXAMPLE OF APPLICATION CIRCUIT



OUTLINE DRAWING  
SOP8-P-225-1.27

Unit : mm



Weight : 0.08g (Typ.)