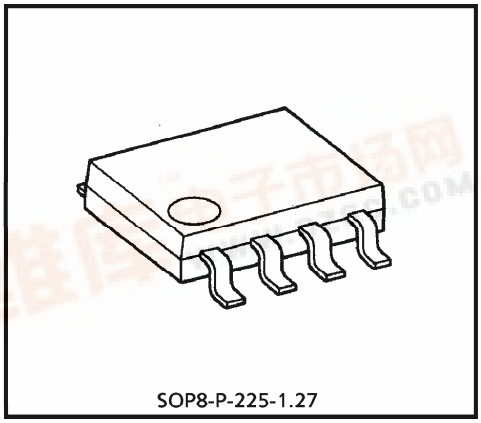
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

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.



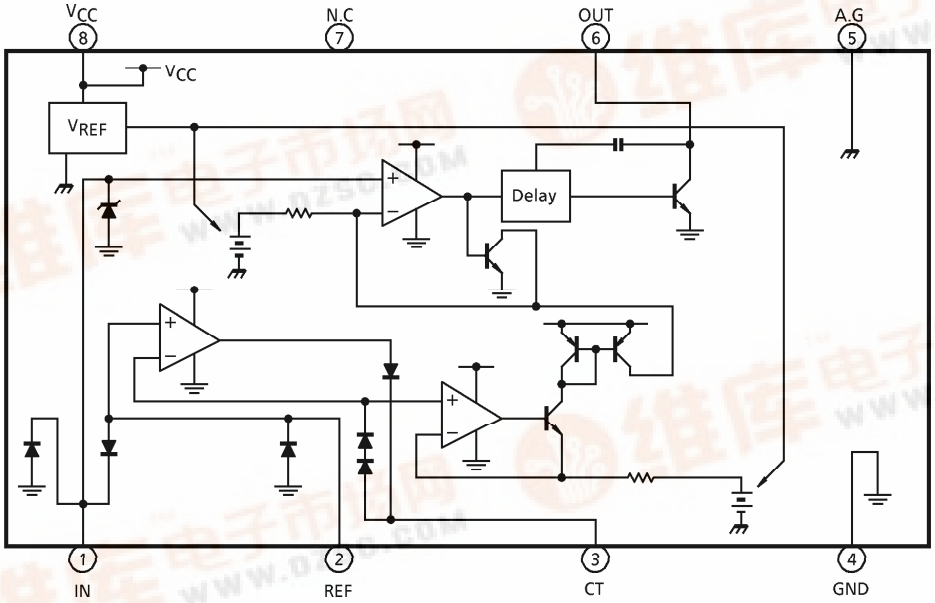
SOP8-P-225-1.27

Weight : 0.08g (Typ.)

FEATURES

- Input frequency : DC~50kHz
- Input voltage V_{TH} : 0V⇆Vpeak×K
- Small package : SOP 8pin
- Separate GND line for output and logic control sections

BLOCK DIAGRAM AND PIN LAYOUT



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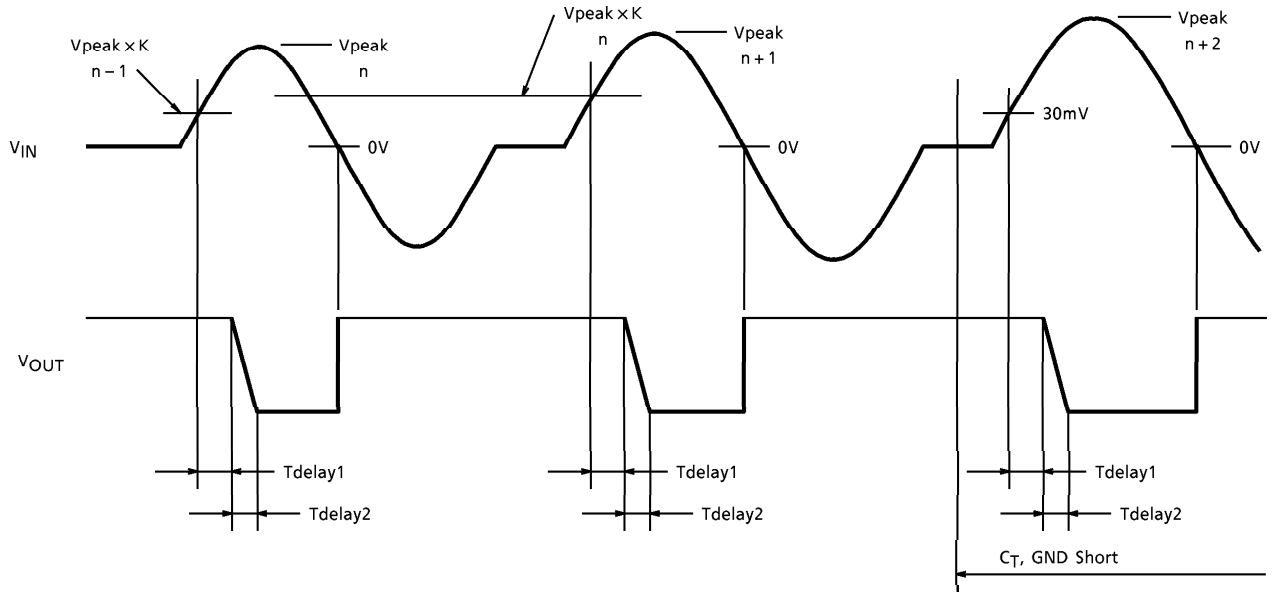
PIN DESCRIPTION

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 / μs in order to lose the influence for the input signal.
7	N.C	Not connected.
8	V_{CC}	Power supply pin.

TIMING CHART



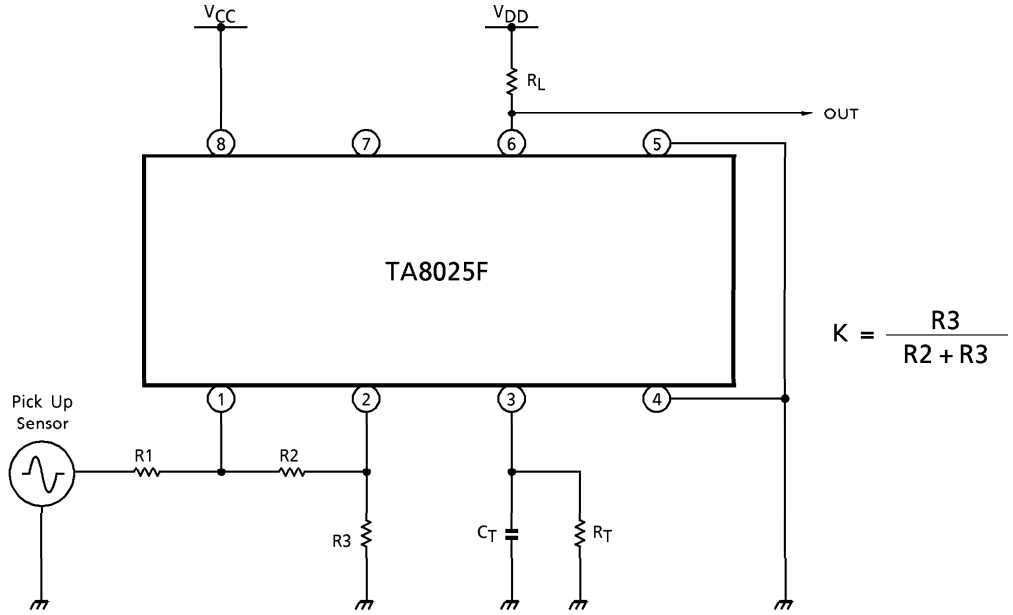
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	36	V
Input Voltage	V_{IN}	36	V
Input Current	I_{IN}	± 20	mA
Output Current	I_{OUT}	10	mA
Power Dissipation	P_D	280	mW
Operating Voltage	V_{opr}	4.5~30	V
Operating Temperature	T_{opr}	– 40~105	°C
Storage Temperature	T_{stg}	– 55~150	°C
Lead Temperature · Time	T_{sol}	260 (10s)	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 4.5~16V, Tc = – 40~105°C)

CHARACTERISTIC	SYMBOL	PIN	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I_{CC}	V_{CC}	—	Output : OFF	—	3.0	5.0	mA
				Output : ON	—	4.5	8.0	
Input Current	I_{IN}	IN	—	V_{IN} = 0V	– 0.2	—	0.1	μA
				V_{IN} = V_{CC}	– 0.1	—	0.1	
High-Side Minimum Threshold Voltage	V_{TH1}		—	V_{REF} = 0V	24	30	36	mA
Zero-Cross Threshold Voltage	V_{TH2}				– 20	—	20	
Zener Voltage	V_Z		—	I_{IN} = 1mA	24	30	36	V
Input Current	I_{IN}	REF	—	V_{IN} = 0V	– 0.2	—	0.1	μA
				V_{IN} = V_{CC}	– 0.1	—	0.1	
Output Voltage	V_{OL}	OUT	—	I_{OL} = 5mA	—	—	0.5	V
Output Leakage Current	I_{LEAK}		—	V_{OH} = 5V	– 5.0	—	5.0	μA
Output Delay Time	Tdelay1	OUT	—	V_{CC} = 16V	—	7.5	20.0	μs
	Tdelay2		—	V_{DD} = 5V	—	5.0	10.0	

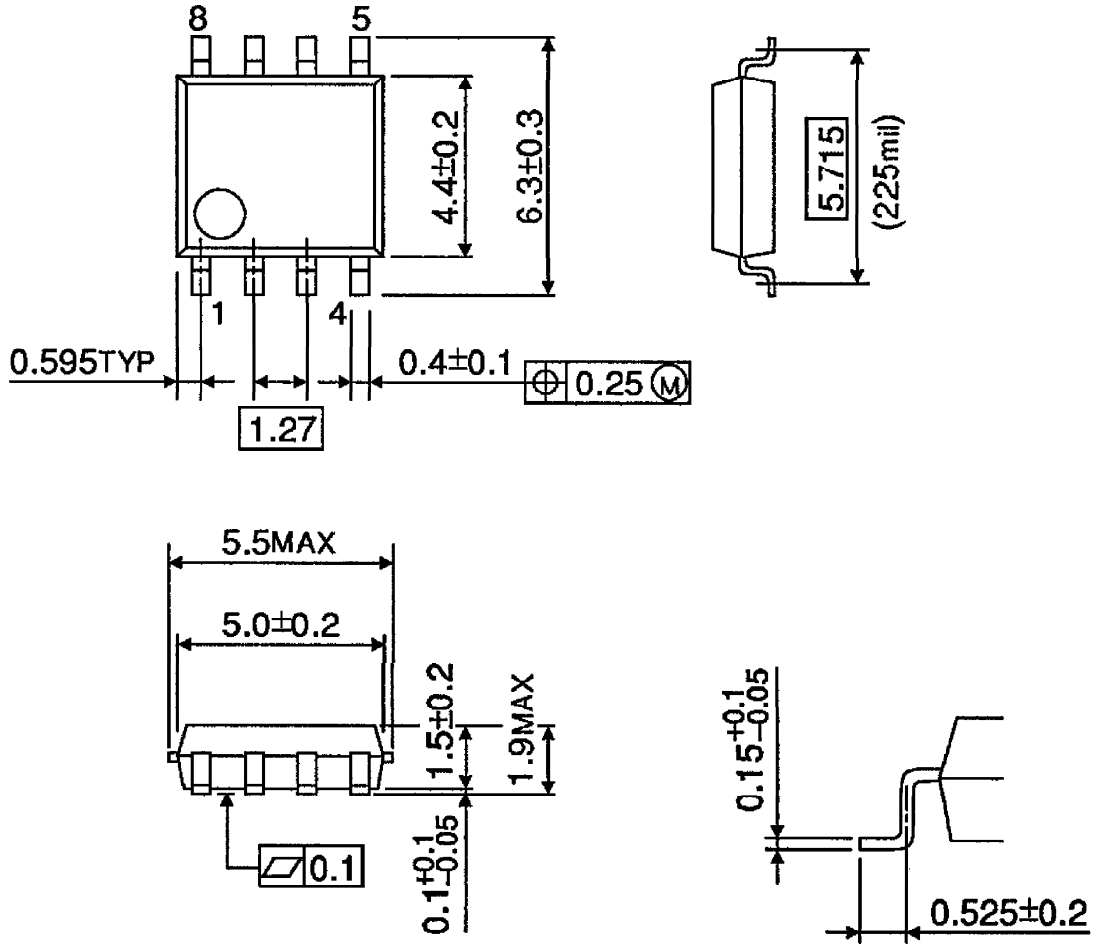
EXAMPLE OF APPLICATION CIRCUIT



$$K = \frac{R3}{R2 + R3}$$

OUTLINE DRAWING

SOP8-P-225-1.27 Unit : mm



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