

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

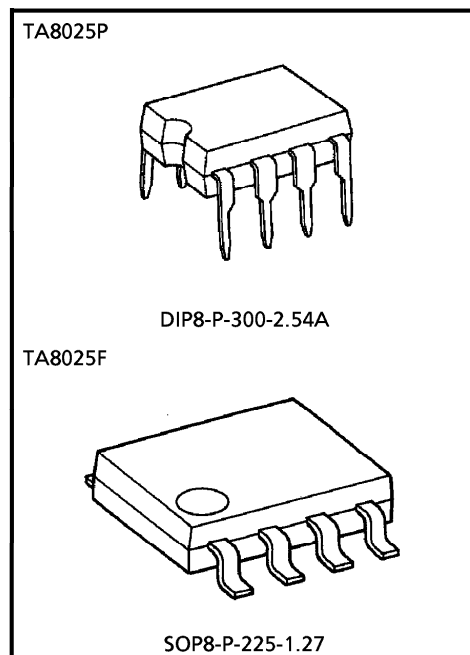
TA8025P, TA8025F

PICK UP SENSOR INTERFACE IC

The TA8025P 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.

FEATURES

- Input frequency : DC~50kHz
- Input voltage V_{TH} : $0V \leq V_{peak} \times K$
- Small package : DIP 8pin (TA8025P)
: SOP 8pin (TA8025F)
- Separate GND line for output and logic control sections



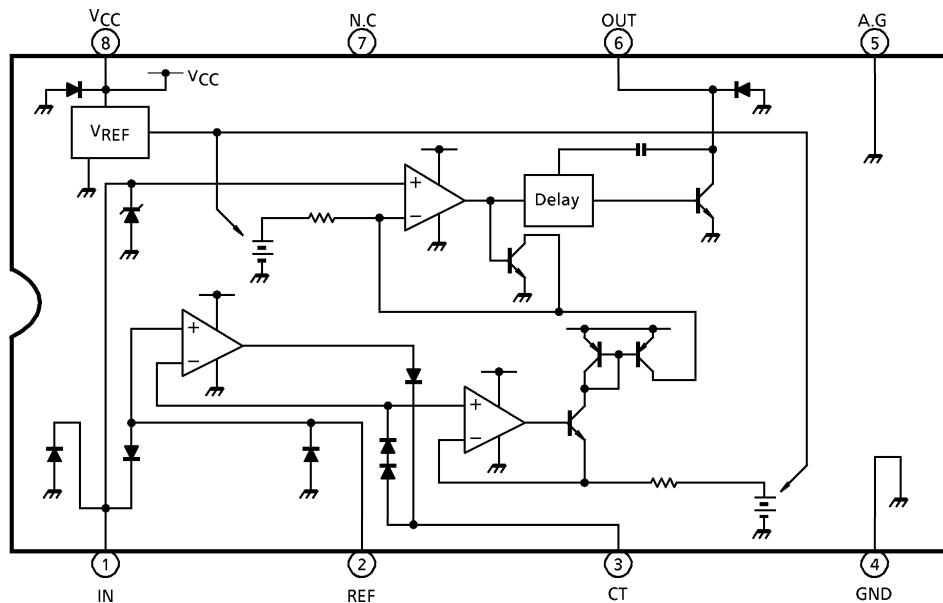
Weight
 DIP8-P-300-2.54A : 0.45g (Typ.)
 SOP8-P-225-1.27 : 0.08g (Typ.)

980910EBA1

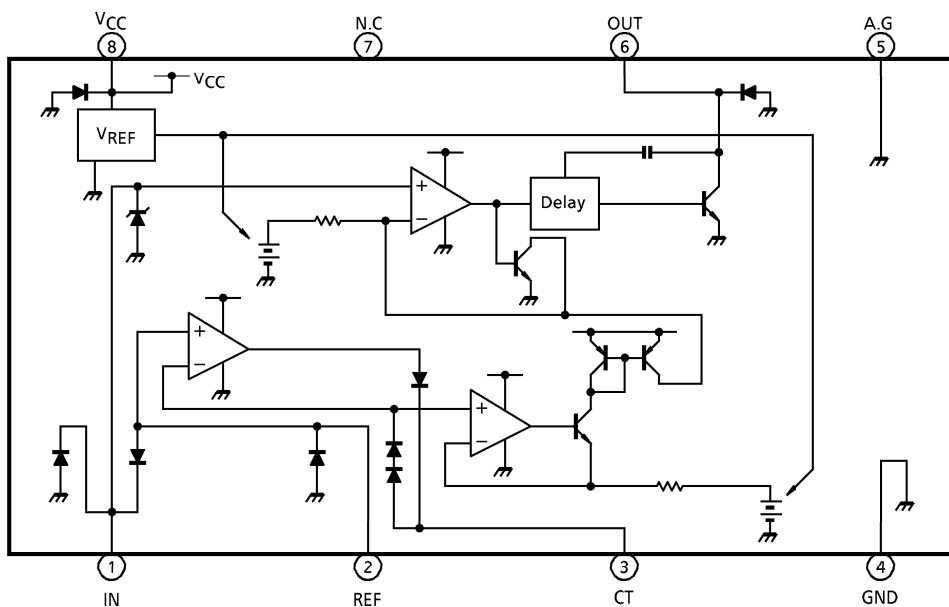
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BLOCK DIAGRAM AND PIN LAYOUT

TA8025P



TA8025F

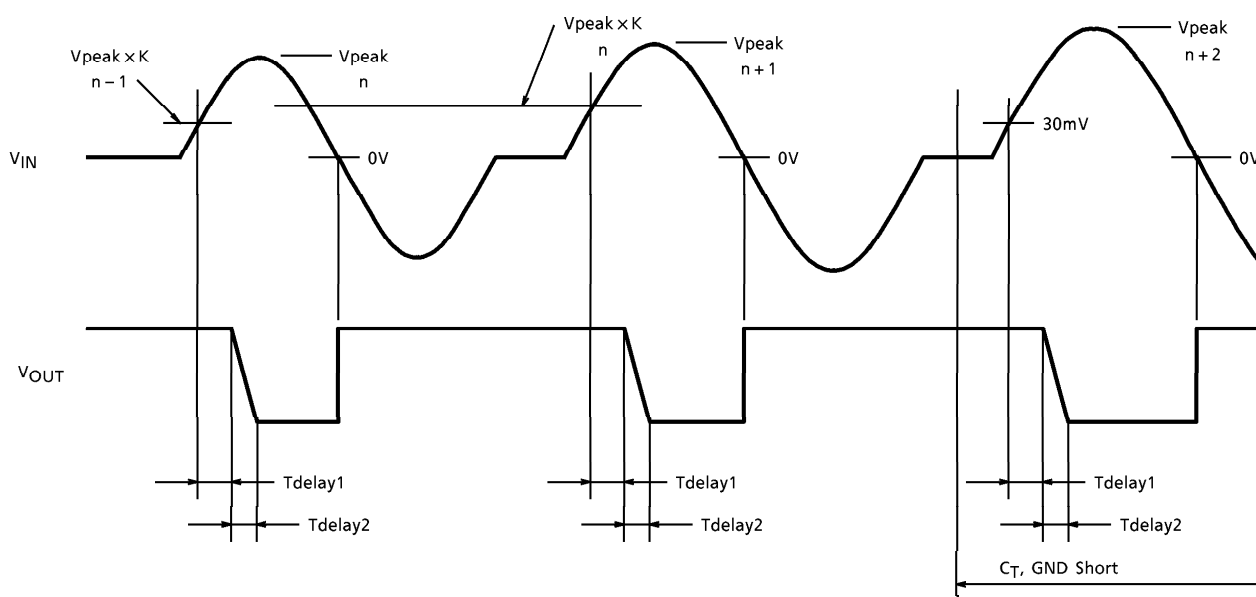


Note : The TA8025P and TA8025F are the same chip; only the packages are different.

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 for 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. (Electrically, this pin is completely open.) |
| 8 | VCC | Power supply pin. |

TIMING CHART



Note : See Electrical Characteristics for symbols in the timing chart.

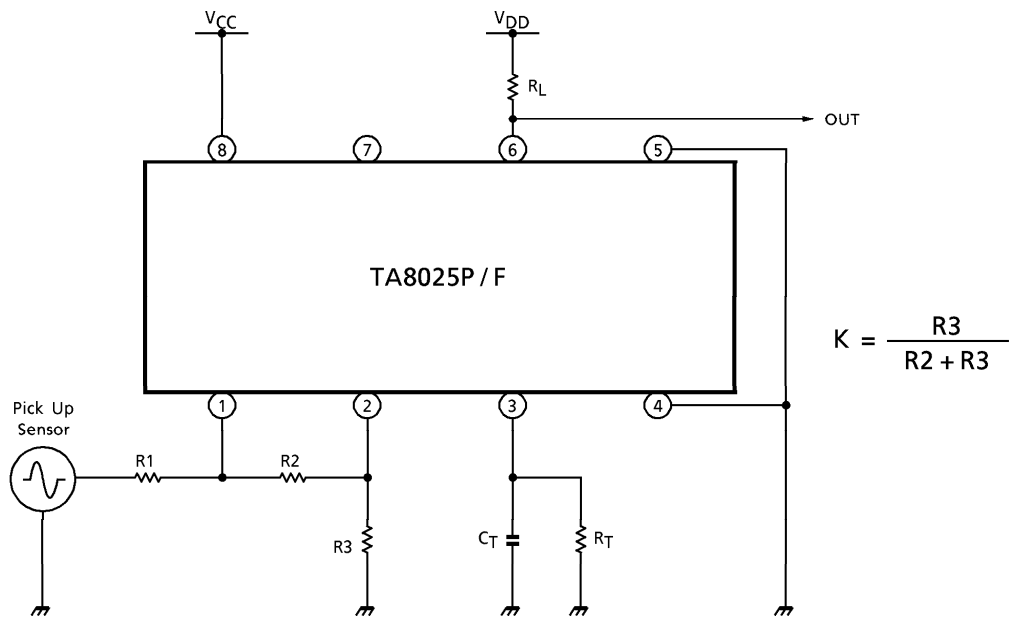
MAXIMUM RATINGS (Ta = 25°C)

| 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, T_c = -40~105°C)

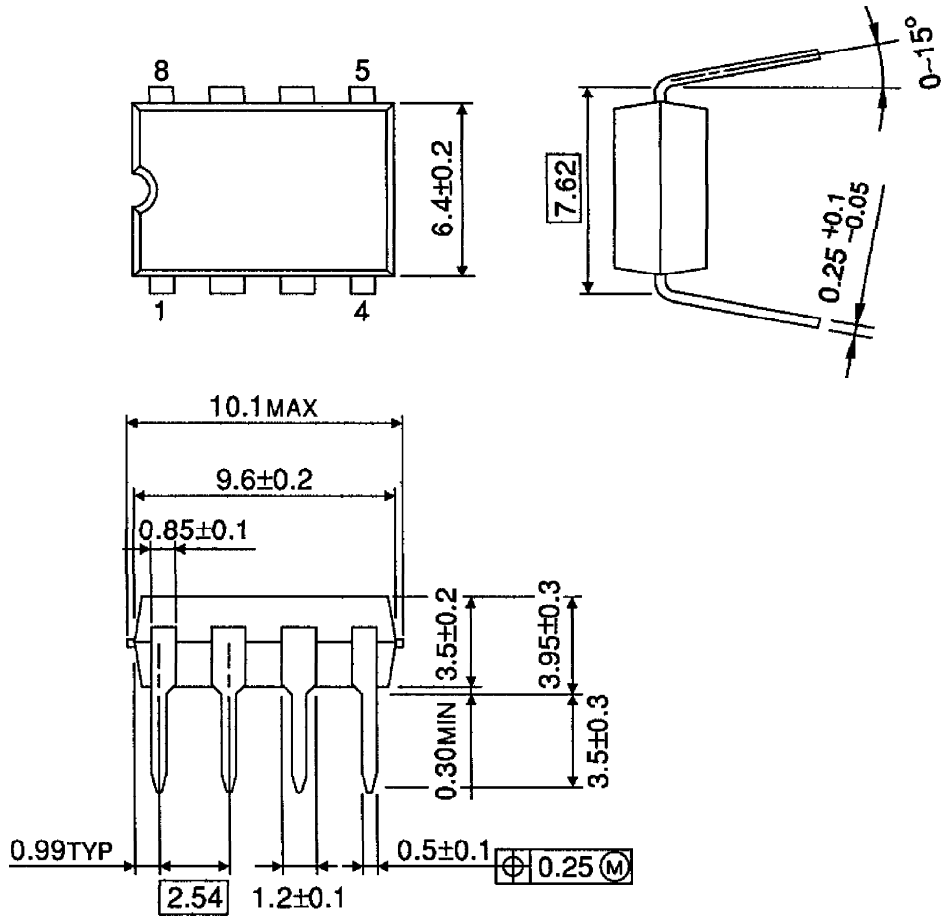
| CHARACTERISTIC | SYMBOL | PIN | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|-------------------------------------|---------------------|-----------------|--------------|-----------------------------------|-----------------------|------|------|------|------|
| Supply Current | I _{CC} | V _{CC} | — | Output : OFF | — | 3.0 | 5.0 | mA | |
| | | | | Output : ON | — | 4.5 | 8.0 | | |
| Input Current | I _{IN} | I _N | — | 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 | T _{delay1} | OUT | — | V _{CC} = 16V | — | 7.5 | 20.0 | μs | |
| | T _{delay2} | | — | — | V _{DD} = 5V | — | 5.0 | | 10.0 |

EXAMPLE OF APPLICATION CIRCUIT



OUTLINE DRAWING
DIP8-P-300-2.54A

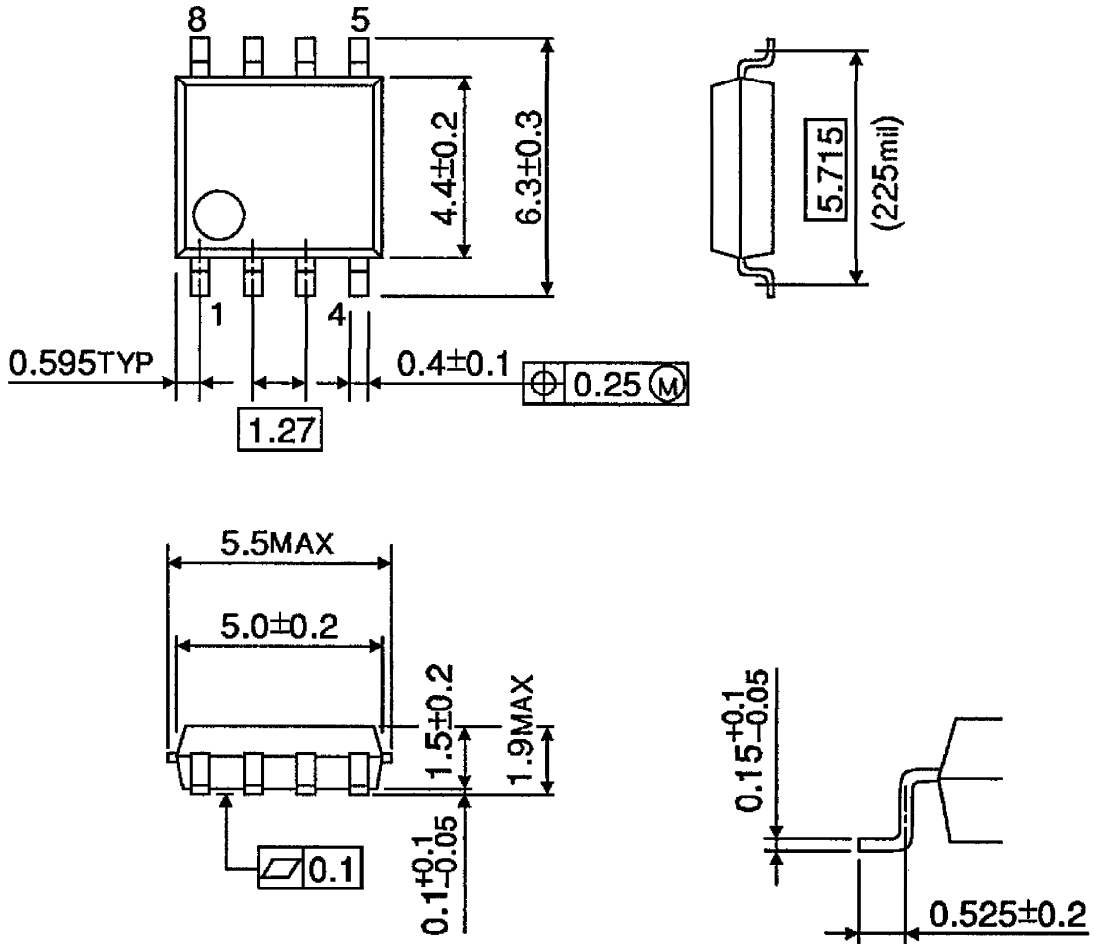
Unit : mm



Weight : 0.45g (Typ.)

OUTLINE DRAWING
SOP8-P-225-1.27

Unit : mm



Weight : 0.08g (Typ.)