

TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

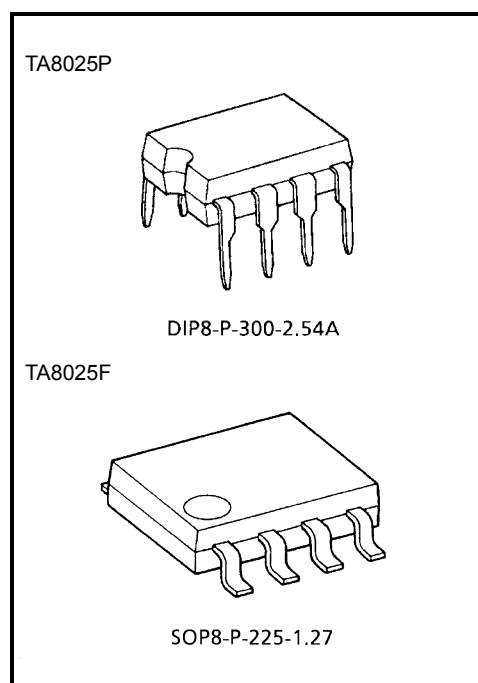
TA8025P,TA8025F

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 \longleftrightarrow $V_{peak} \times K$
- Small package : DIP-8pin (TA8025P)
: SOP-8pin (TA8025F)
- Separate GND line for output and logic control sections

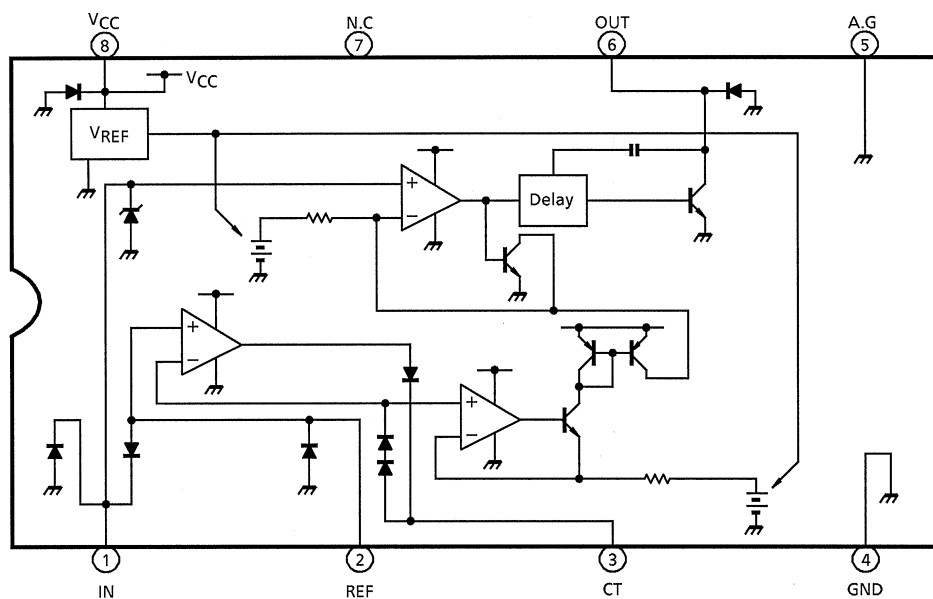


Weight

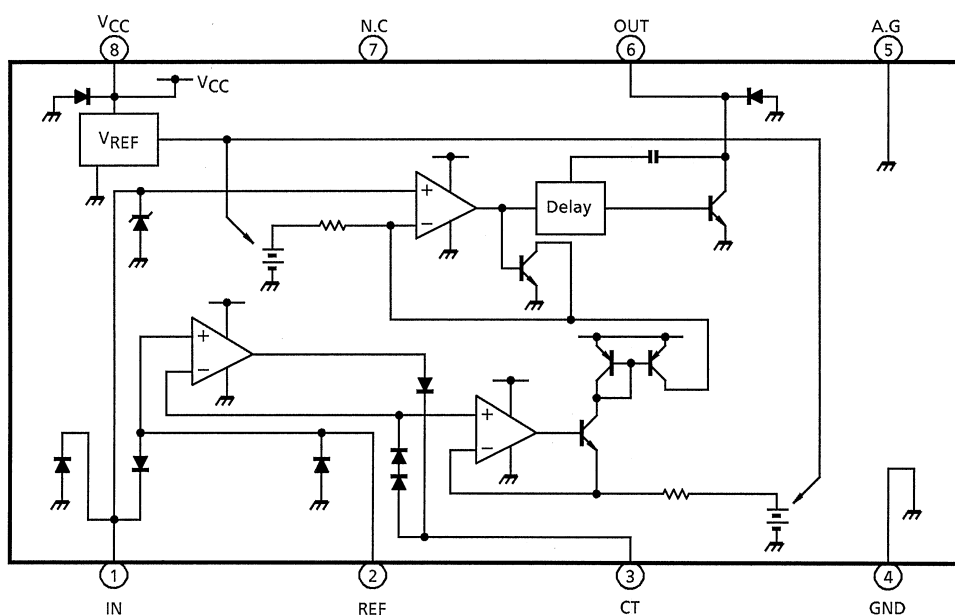
DIP8-P-300-2.54A : 0.45 g (typ.)
SOP8-P-225-1.27 : 0.08 g (typ.)

Block Diagram and Pin Layout

TA8025P



TA8025F

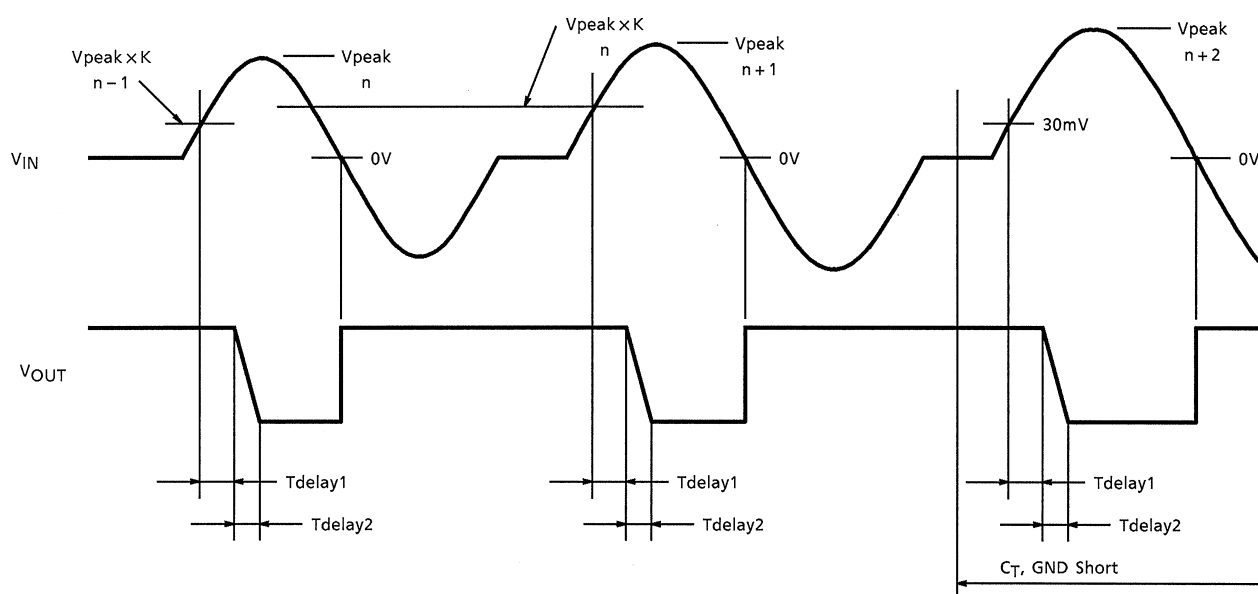


Note : The TA8025P and TA8025F are the same chip; only the packages are different.

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	V_{CC}	Power supply pin.

Timing Chart



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

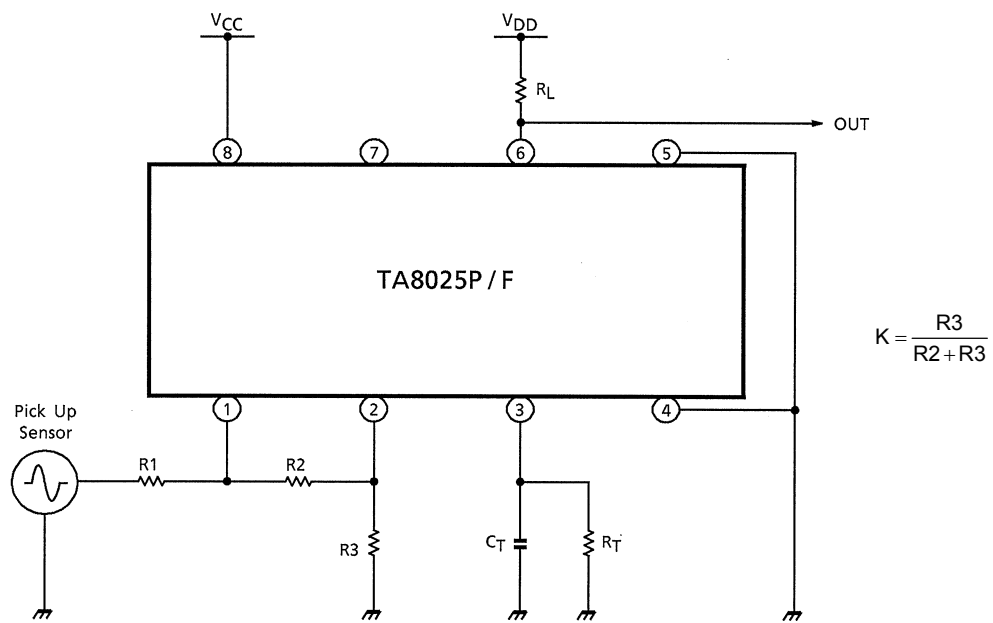
Maximum Ratings (Ta = 25°C)

Characteristics	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, Ta = -40~105°C)

Characteristics	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	

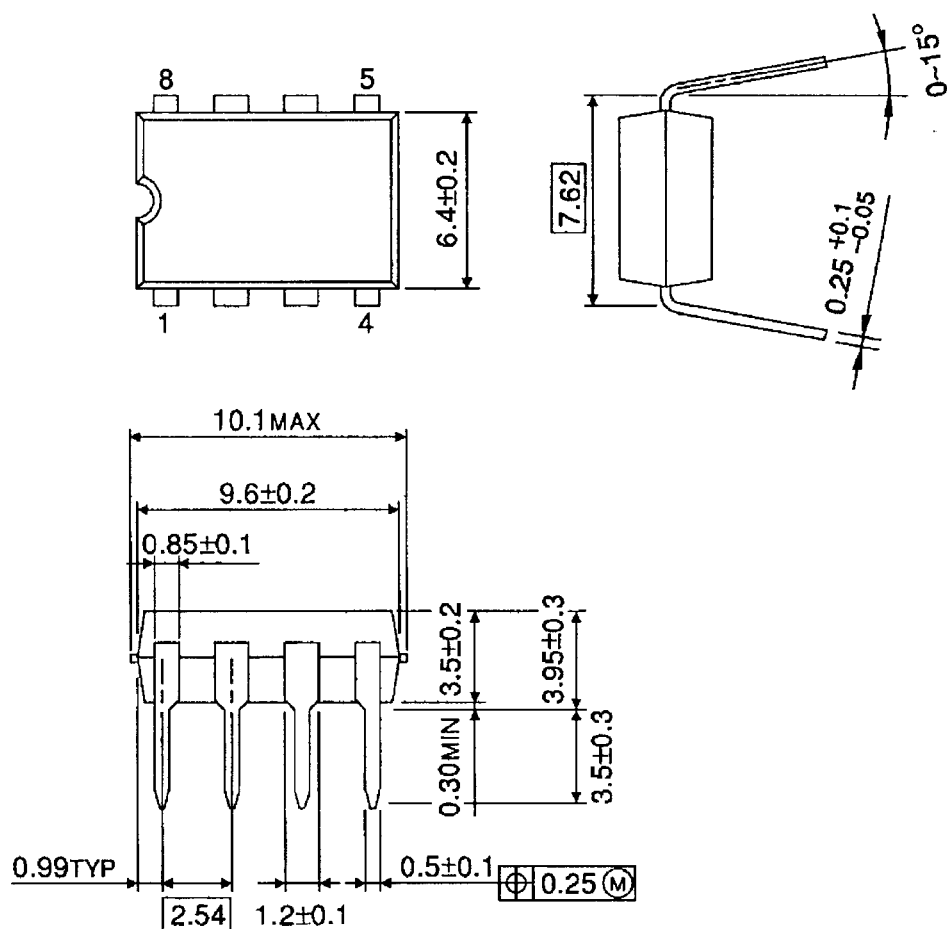
Example of Application Circuit



Package Dimensions

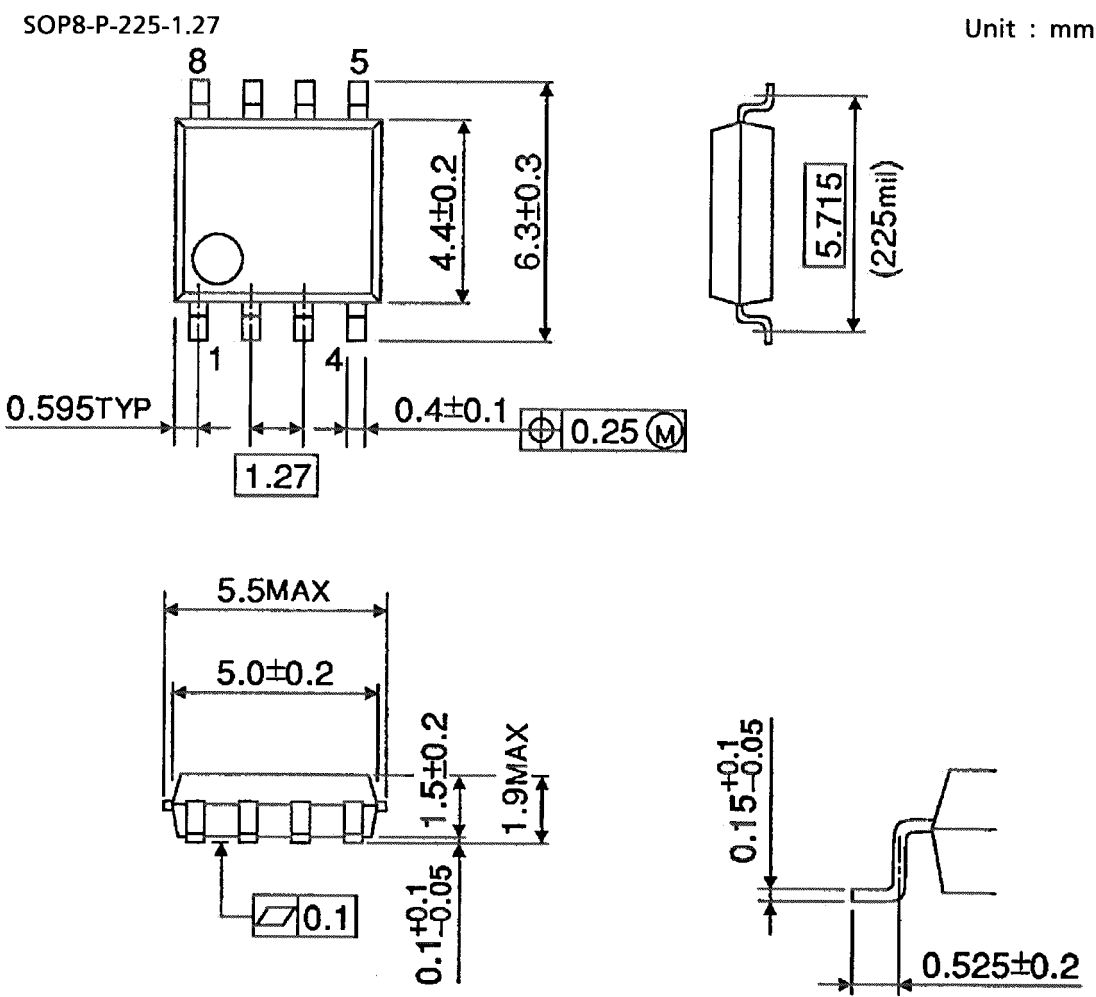
DIP8-P-300-2.54A

Unit : mm



Weight: 0.45 g (typ.)

Package Dimensions



Weight: 0.08 g (typ.)

RESTRICTIONS ON PRODUCT USE

000707EAA_S

- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.