

TA8026P

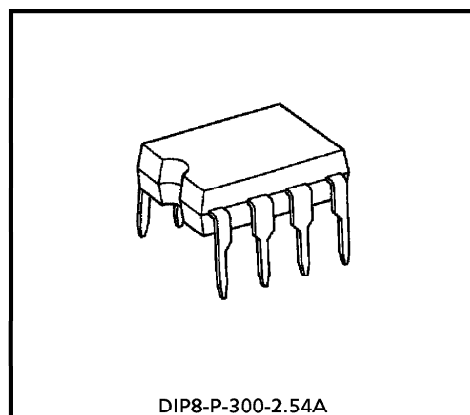
FLASHER CONTROLLER

The TA8026P is designed as an automotive flasher controller. It can issue a rapid-flashing warning when a lamp failure occurs.

It operates accurately in wide ranges of supply voltages and operating temperatures. It incorporates an accurate reference voltage circuit which compensates for lamp current characteristic variations due to supply voltage changes.

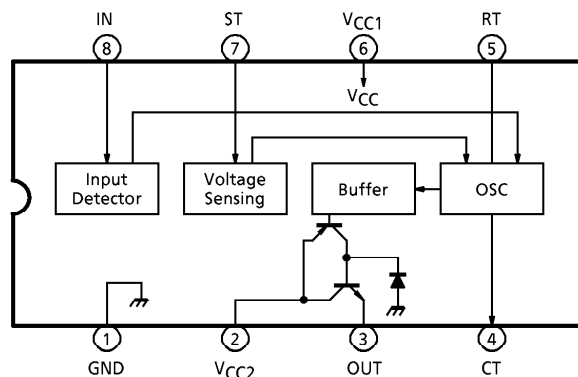
FEATURES

- Large output current : $I_{OUT} = 300\text{mA}$ (Max.)
- Low standby current : $I_{CC} = 1.0\text{mA}$ (Typ.)
- Reference voltage characterized by small temperature drift.
- Built-in circuit that compensates for variations in lamp voltage characteristics.
- Output from combination of PNP and NPN transistors with suppression diode.
- Wide operating temperature : $T_a = -40$ to 110°C
- DIP-8pin.



Weight : 0.45g (Typ.)

BLOCK DIAGRAM AND PIN LAYOUT



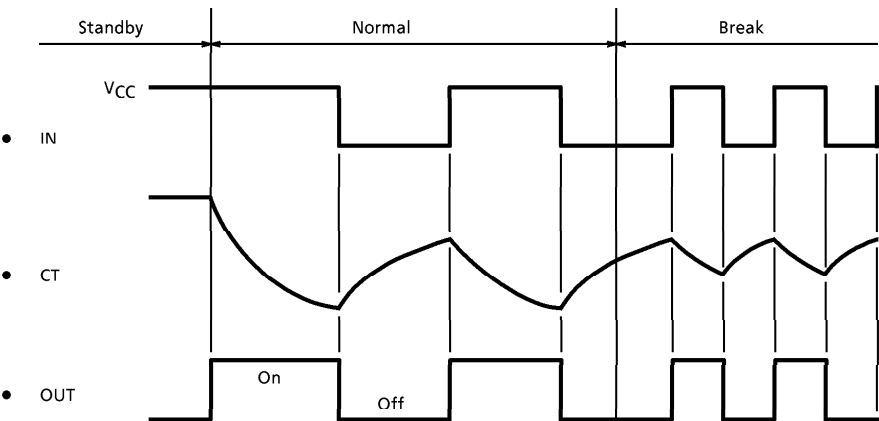
961001EBA2

- TOSHIBA is continually working to improve the quality and the 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 observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product 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 products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The products described in this document are subject to foreign exchange and foreign trade control laws.
- 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.

PIN DESCRIPTION

PIN No.	SYMBOL	DESCRIPTION
1	GND	Grounded.
2	V _{CC2}	Power supply pin (2).
3	OUT	Open-emitter output of complementary combination of PNP and NPN transistors.
4	CT	A capacitor is connected between V _{CC} and CT. This layout determines the flashing interval of the flasher.
5	RT	A resistor is connected between RT and CT. This layout determines the flashing interval of the flasher.
6	V _{CC1}	Power supply pin (1).
7	ST	Current detection pin. The lamp current is detected through a shunt resistor connected between V _{CC1} and ST.
8	IN	Detection pin for lamp operation.

TIMING CHART



MAXIMUM RATINGS (Ta = 25°C)

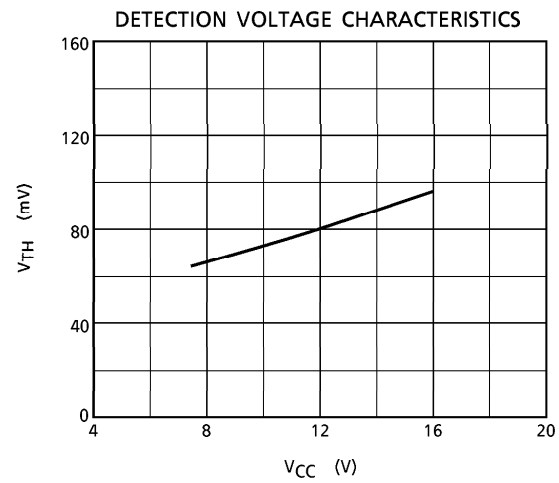
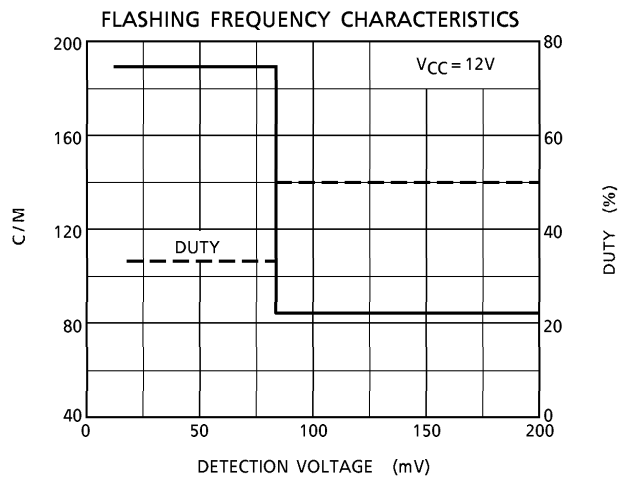
CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V _{CC}	28	V
Power Dissipation	P _D	300 *	mW
Output Current	I _{OUT}	300	mA
Input Voltage	V _{IN}	-0.3~V _{CC}	V
Operating Temperature	T _{opr}	-40~110	°C
Storage Temperature	T _{stg}	-55~150	°C
Lead Temperature-time	T _{sol}	260 (10s)	°C

* Ta ≤ 110°C

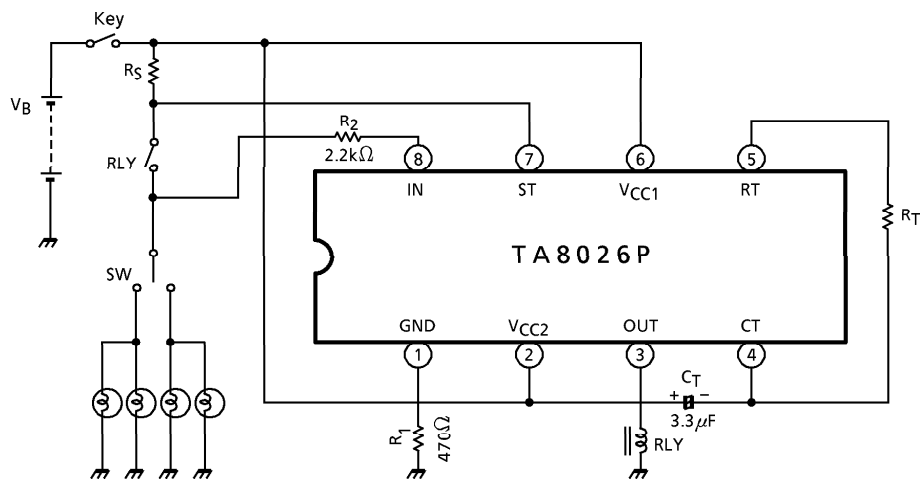
ELECTRICAL CHARACTERISTICS (V_{CC} = 12V, Ta = -40~110°C)

CHARACTERISTIC	SYMBOL	PIN	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V _{opr}	V _{CC}	—	—	6	—	18	V
Power Supply Current	I _{CC}	GND	—	Standby, Ta = 25°C	0.6	0.9	1.4	mA
			—	Output on, Ta = 25°C	2.5	4.0	6.0	
Output Voltage	V _{OH}	OUT	—	R _L = 82Ω	—	—	1.3	V
Leakage Current	I _{LEAK}	OUT	—	V _{OUT} = 0V	-100	—	—	μA
Input Current	I _{IN}	CT	—	V _{IN} = V _{CC} - V _{CC} - 5V	-10	—	10	μA
		ST	—	V _{IN} = V _{CC}	-10	—	10	
		IN	—	V _{IN} = 12V	—	—	20	
			—	V _{IN} = 0V	-1.5	-2.5	-3.5	mA
Input Voltage	V _{IL}	IN	—	—	—	—	0.4	× V _{CC}
	V _{IH}		—	—	0.6	—	—	
Detection Voltage	V _{TH}	ST	—	V _{CC} = 9V	63	71	78	mV
			—	V _{CC} = 12V	75	82	89	
			—	V _{CC} = 15V	87	95	103	
	ΔV _{TH} / T		—	—	-60	—	60	μV / °C
	ΔV _{TH} / ΔV _{CC}		—	—	2.7	3.3	3.9	mV / V
Flashing Interval	—	OUT	—	C _T = 3.3μF, R _T = ADJ *	690	706	723	ms
Flashing Interval (At fail detection)	—	OUT			315	324	333	
On Duty	—	OUT			45	50	55	%
On Duty (At fail detection)	—	OUT			30	—	50	

* Adjust the flashing interval to 706ms by changing R_T while keeping C_T = 3.3μF at room temperature.



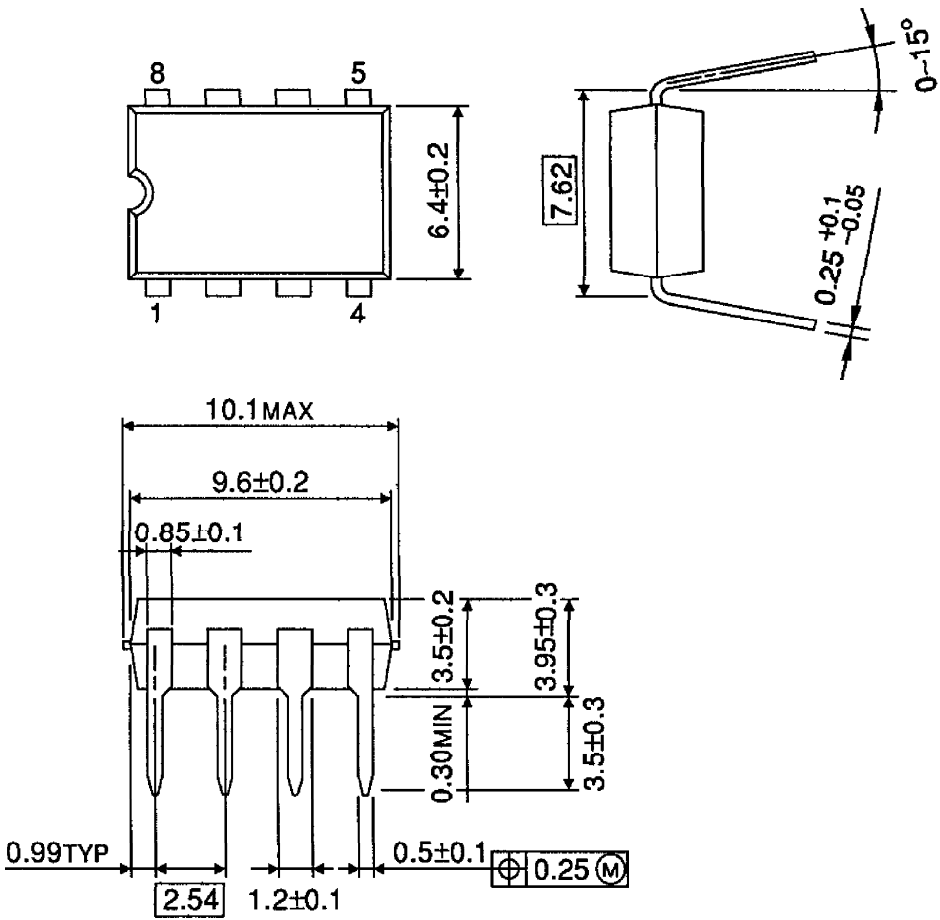
EXAMPLE OF APPLICATION CIRCUIT



Note : The tolerance of R_1 and R_2 is within $\pm 5\%$.

OUTLINE DRAWING
DIP8-P-300-2.54A

Unit : mm



Weight : 0.45g (Typ.)