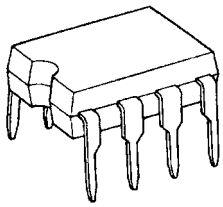
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8026P

FLASHER CONTROLLER

The TA8026P is designed as an automotive flasher controller. It can issue a rapied-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.



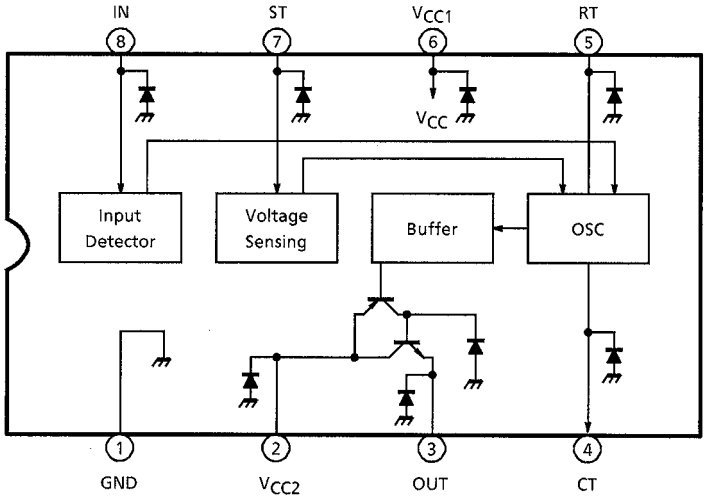
DIP8-P-300-2.54A

Weight: 0.45 g (typ.)

FEATURES

- Large output current : I_{OUT} = 300mA (Max.)
- Low standby current : I_{CC} = 1.0mA (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 : Ta = −40 to 110°C
- DIP-8pin.

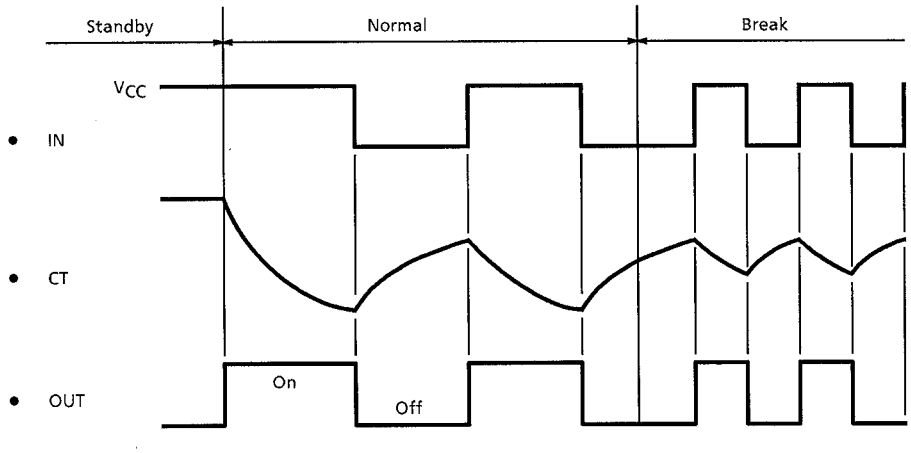
BLOCK DIAGRAM AND PIN LAYOUT



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
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

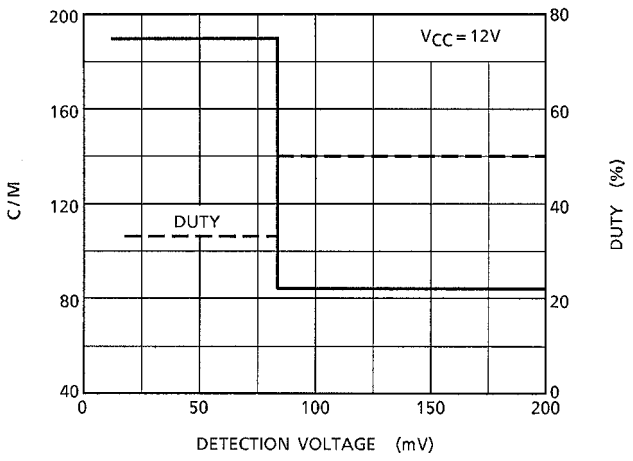
*: Ta≤110°C

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

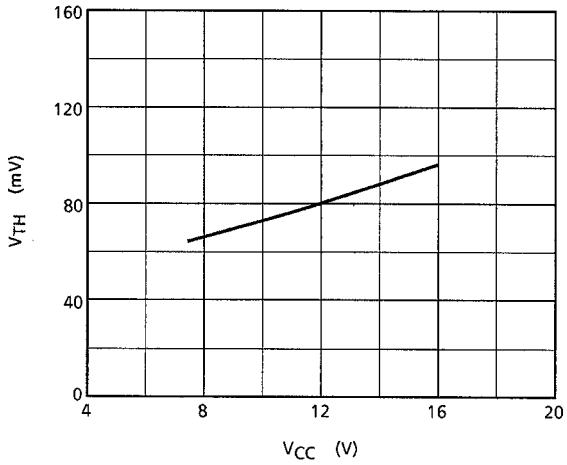
CHARACTERISTIC	SYMBOL	PIN	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Operating Voltage	V_{opr}	V_{CC}	—		6	—	18	V
Power Supply Current	I_{CC}	GND	—	Standby, Ta = 25°C	0.6	0.9	1.4	mA
			—	Output on, Ta = 25°C	2.5	4.0	6.0	
Output Voltage	V_{OH}	OUT	—	R_L = 82Ω	—	—	1.3	V
Leakage Current	I_{LEAK}	OUT	—	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.

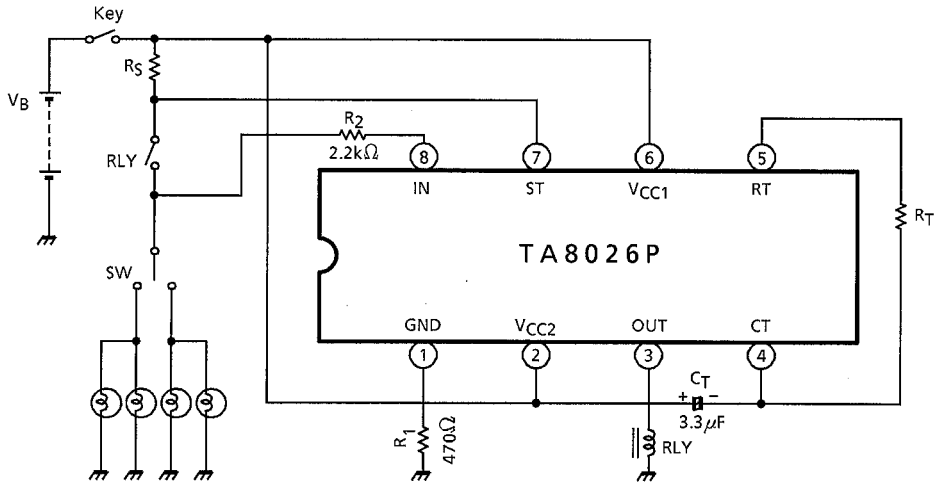
FLASHING FREQUENCY CHARACTERISTICS



DETECTION VOLTAGE CHARACTERISTCS



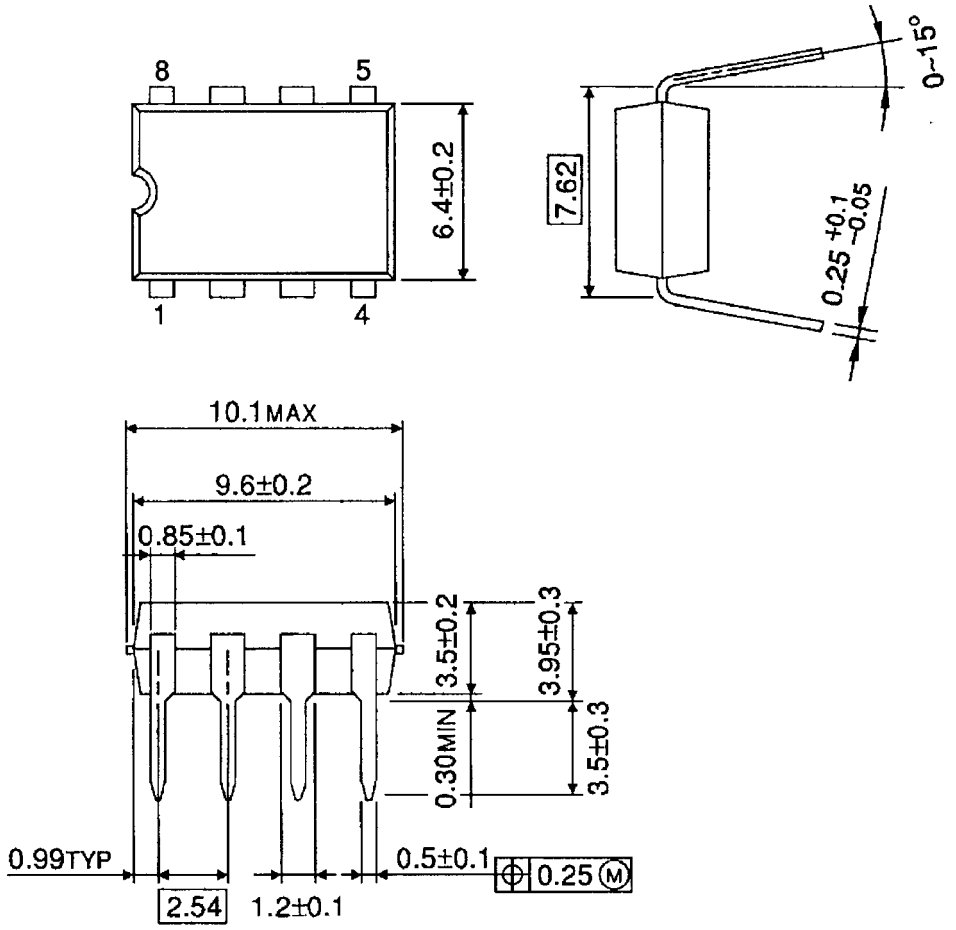
EXAMPLE OF APPLICATION CIRCUIT



Note: The tolerance of R_1 and R_2 is within ±5%.

PACKAGE DIMENSIONS

DIP8-P-300-2.54A Unit : mm



Weight: 0.45g (Typ.)

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