

## Under development

\* This product is under development and may change at a later date.

Current driver circuits

### DESCRIPTION

This product is a semiconductor integrated circuit consisting of an NPN transistor, a PNP transistor, and resistors. This product is a semiconductor integrated circuit consisting of an NPN transistor, a PNP transistor, and resistors. By using this product, it is possible toThe use of this product enables miniaturization of the set and a significant reduction in parts and man-hours. This product converts pulse signals from external sources into DC voltage according to the duty ratio of the pulse signal. The output drive current can be adjusted with an externally connected drive current setting resistor. The output drive current can be adjusted by an externally connected drive current setting resistor. When the analog port of a microcomputer cannot be used, this IC can be used. This IC is suitable for adjusting output current when the analog port of the microcontroller cannot be used.

### FEATURES

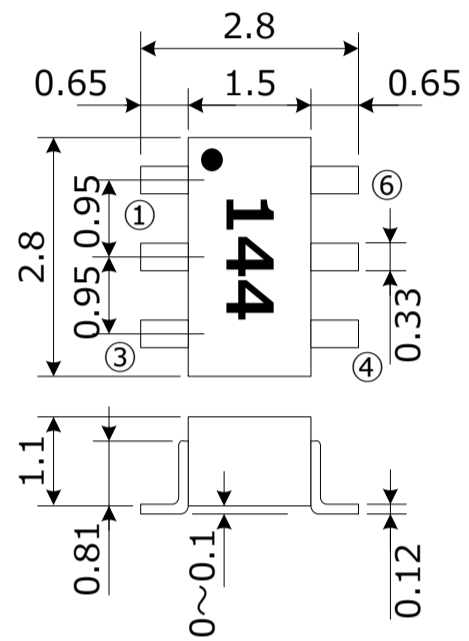
- Miniaturization of a set.
- Drive current can be adjusted by duty ratio of input pulse signal
- Drive current can be adjusted with external resistors

### APPLICATION

- LED driver circuit

### OUTLINE DRAWING

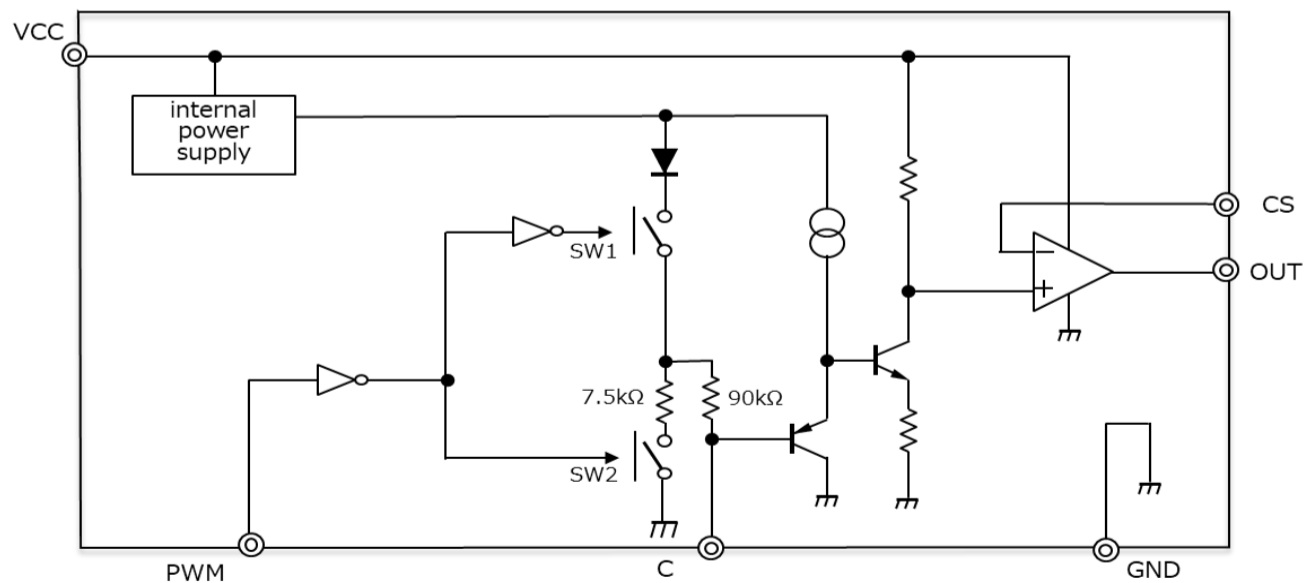
Unit : mm



### PIN CONFIGURATION

- |       |       |
|-------|-------|
| ① OUT | ⑥ PWM |
| ② C   | ⑤ GND |
| ③ VCC | ④ CS  |

### BLOCK DIAGRAM



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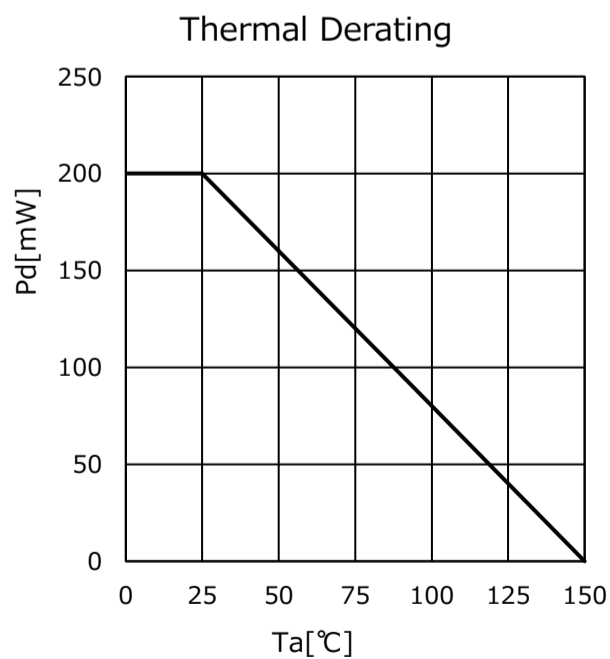
**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

Symbol	Parameter	Conditions	Ratings	Unit
Vcc	Supply voltage		40	V
Pd	Internal power dissipation	Ta ≥ 25°C	200	mW
Kθ	Thermal derating		1.6	mW/°C
Tj	Junction temperature		150	°C
Tstg	Storage temperature	(keep dry)	-40~150	°C
Topr	Operating temperature	(keep dry)	-20~85	°C

**ELECTRICAL CHARACTERISTIC (Ta=25°C, VCC=12V unless otherwise noted.)**

Symbol	Parameter	Test condition	Designed value			Unit
			Min	Typ	Max	
VCC	Supply voltage		9	12	37	V
ICC1	Circuit current1	PWM=5V	0.35	0.7	1.05	mA
ICC2	Circuit current2	PWM=0V	0.65	1.3	1.95	mA
VCH1	C pin H voltage 1	PWM=5V	6.0	7	8.1	V
VCL1	C pin L voltage 1	PWM=0V	-	-	0.3	V
VCSTH1	CS pin threshold voltage 1	PWM=5V, CS:VCC→L	0.95	1.05	1.16	V
VCSTH2	CS pin threshold voltage 2	C:VCH1/2, CS:VCC→L	0.46	0.51	0.56	V
VCSTH3	CS pin threshold voltage 3	C:VCH1/10, CS:VCC→L	0.06	0.08	0.10	V
VAMP1	AMP voltage 1	C:6V, CS-OUT:100kΩpull up	0.85	0.94	1.03	V
VAMP2	AMP voltage 2	C:3V, CS-OUT:100kΩpull up	0.41	0.45	0.50	V
VAMP3	AMP voltage 3	C:0.6V, CS-OUT:100kΩpull up	0.07	0.09	0.11	V
ICSBI	CS pin bias current	PWM=5V, CS:12V/IM	0	-	200	nA
ICBI	C pin bias current	PWM=0V, C:0V/IM	-300	-	0	nA
VTHPWM	PWM pin threshold voltage		1.08	1.35	1.62	V
VSAT	Output saturation voltage	OUT:5mA	-	-	0.4	V
ILEAK	Output leakage current	VCC=OUT=40V	-	-	1	uA

**CHARACTERISTICS**

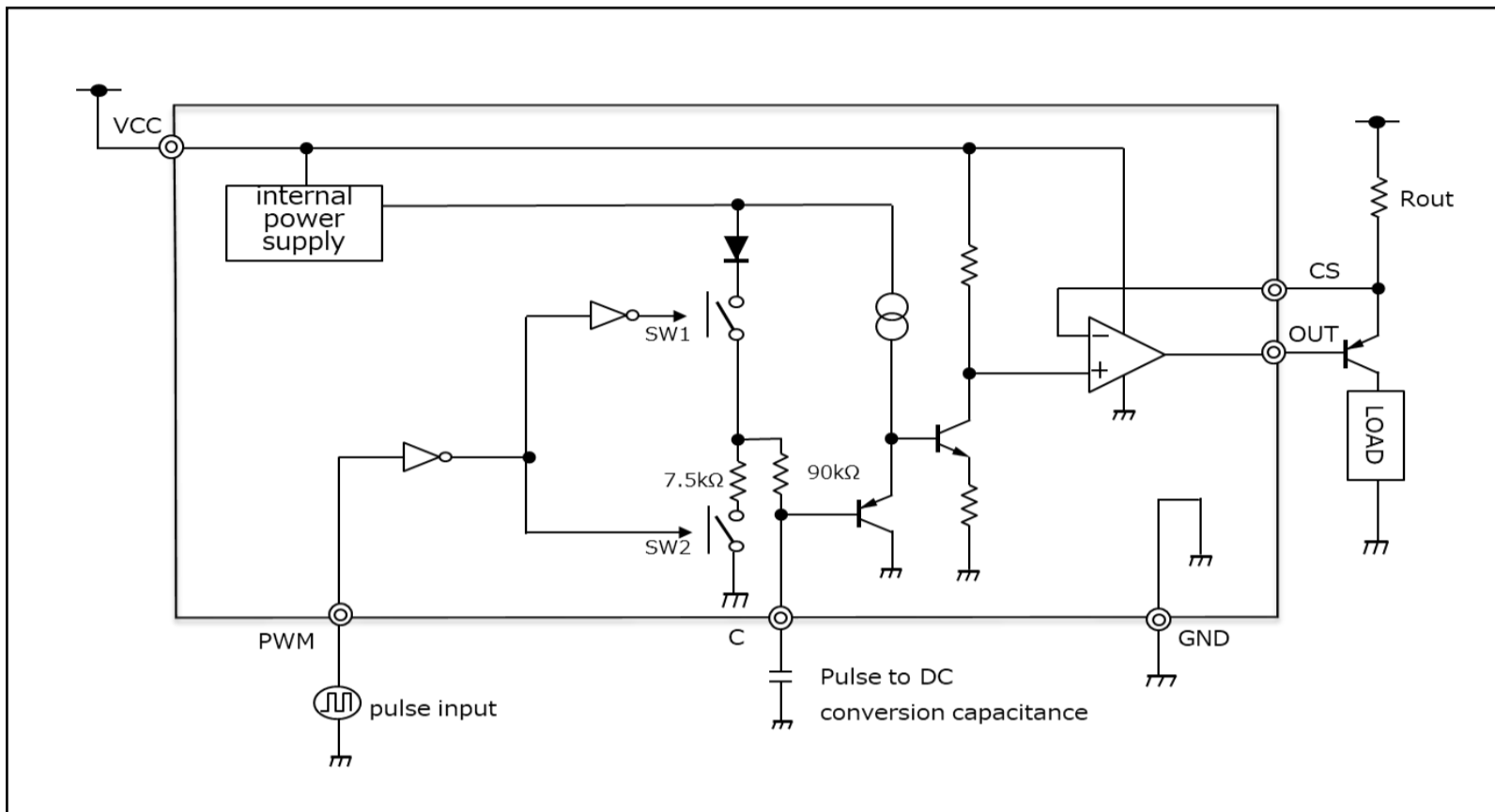


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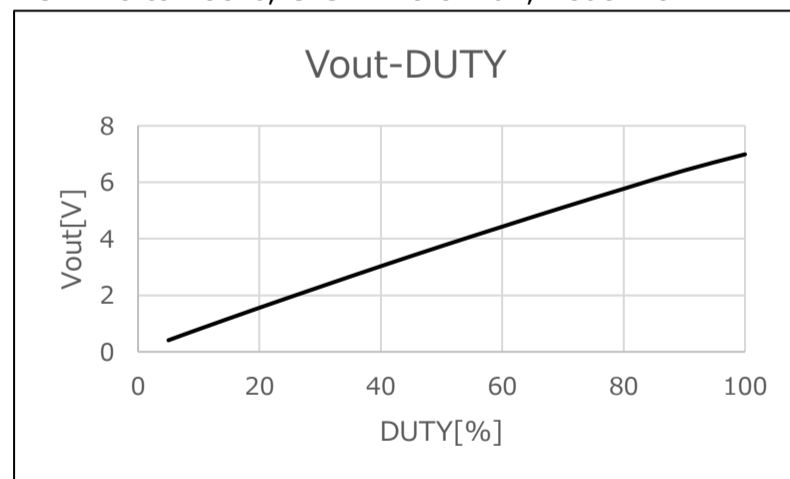
### APPLICATION CIRCUIT EXAMPLES



### Characteristic examples

• This product is configured to repeat charging and discharging depending on the frequency of the externally connected capacitance. The output is determined by the DUTY value of the pulse input of the PWM pin and the capacitance value connected to the C pin.

The application circuit example shows the output characteristic graph under the following conditions.  
Conditions: VCC=12V, PWM=5V, PWM frequency=20kHz, DUTY=0 to 100%, C-GND=0.022uF, Rout=10Ω



\*The configuration is designed to repeat charging and discharging, so the output current value will have a minute amplitude corresponding to the input frequency. If the capacitance value connected to the C terminal is set to a large value, the output amplitude width can be reduced, but the time until the output reaches the set current will be longer.

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**Keep safety first in your circuit designs!**

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