

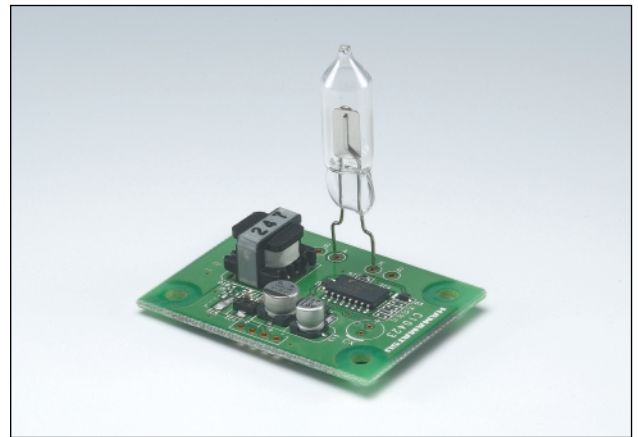
**Compact, Lightweight, Low Current Consumption**  
**Operates as High-sensitivity UV Sensor Just by Connecting to a UV TRON R9454**  
**Ideal for Fire and Arson Surveillance**

## FEATURES

The C10423 is a compact power supply and signal processing circuit developed to drive the high-sensitivity UV sensor "UV TRON R9454". By using a double-sided printed circuit board we cut the area size to half that of conventional drive circuits (C3704 series).

Since the high-voltage supply and signal processor are mounted on the same circuit board, the C10423 can operate as a high-sensitivity UV sensor just by connecting a UV TRON and supplying a low DC voltage. The signal processing circuit cancels out background discharges which may occur in the UV TRON due to natural excitation light (cosmic rays, solar UV rays, etc.). This minimizes erroneous detection so the C10423 output signal can be used without additional filtering.

Combining the C10423 with a high-sensitivity "UV TRON R9454" (sold separately) for use as a flame detector yields sensitivity capable of detecting the flame from a cigarette lighter (flame length 25 mm) even at distances up to 5 meters away.



\* UV TRON is sold separately

## APPLICATIONS

- Flame detectors for gas and oil lighters
- Fire alarms
- Arson watch monitor
- Combustion monitors for burners
- Electric spark detector

## SPECIFICATIONS

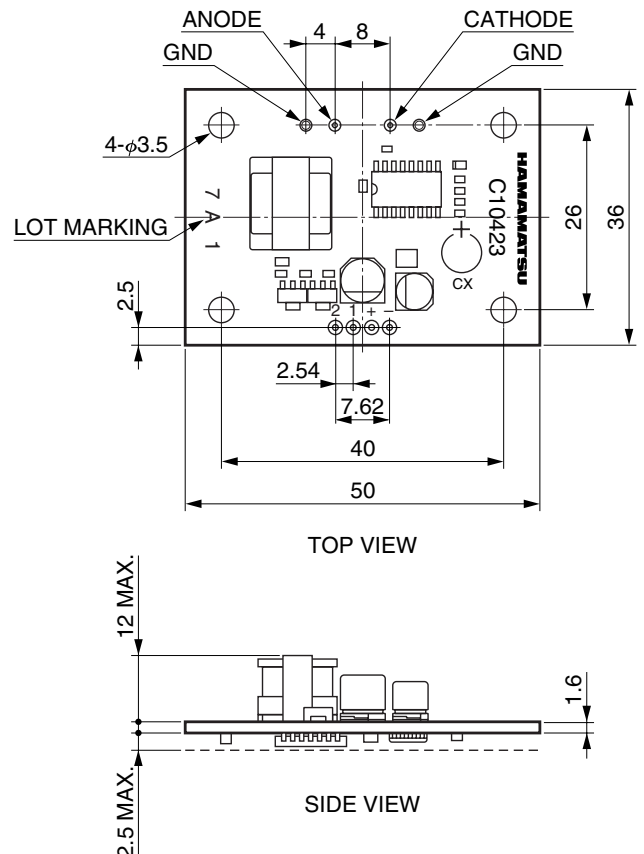
Parameter	Description / Value	Unit
Output Signal	Open Collector Output (High Impedance, Low Impedance) (50 V, 100 mA Max.) 10 ms with pulse output ①	—
UV TRON Supply Voltage	400 ②	V
Quenching Time	Approx. 25	ms
Suitable UV TRON	R9454 (sold separately)	—
Operating Ambient Temperature ③	-10 to +50	°C
Input Voltage (DC)	12 to 24	V
Current Consumption	Max. 4	mA
Weight	Approx. 12	g

**NOTE:** ① The output pulse width can be extended up to about 10 s by adding a capacitor to the circuit board.

② Since the output impedance of this power supply is extremely high, an ordinary voltmeter cannot be used. Use a voltmeter that has an input impedance of more than 10 GΩ.

③ No condensation

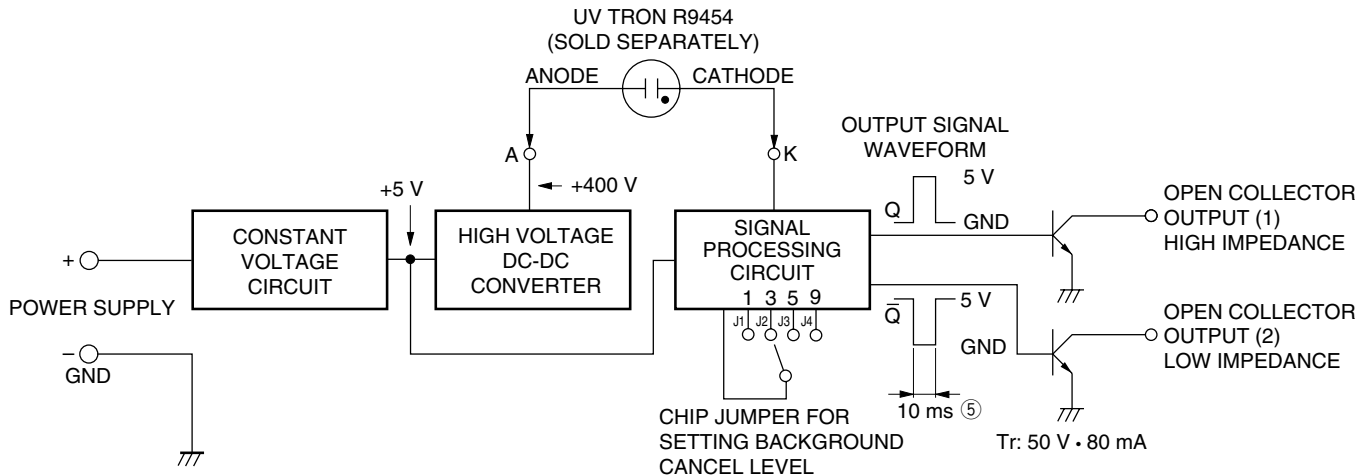
## DIMENSIONAL OUTLINE (Unit: mm)



TPT A0043EA

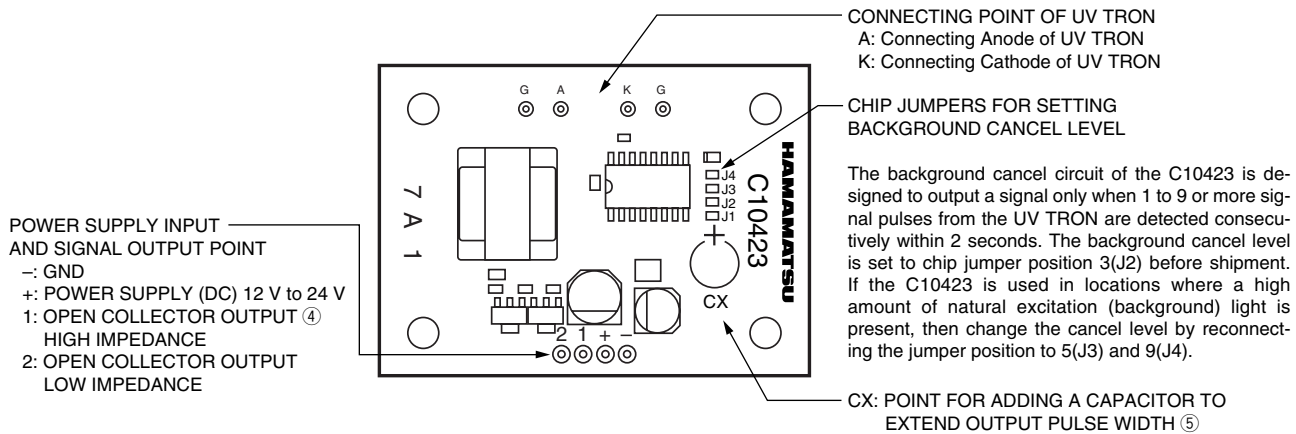
# UV TRON® DRIVING CIRCUIT C10423

Figure 1: Schematic Diagram



TPT C0019EA

Figure 2: Method of Connection



TPT C0020EA

**NOTE:** ④The maximum rating of the open-collector transistor is 50 V / 100 mA. When connecting a relay or buzzer, use caution not to exceed this rating.

⑤The C10423 output pulse width is set to 10 ms before shipment. To expand the pulse width, connect a capacitor to this terminal. (Make sure the polarity is correct when using an electrolytic capacitor.)

Example: CX = 1 μF, Pulse width = approx. 1 s

CX = 10 μF, Pulse width = approx. 10 s

## PRECAUTIONS FOR USE

- Since the operation impedance is extremely high, the UV TRON should be connected as close as possible to the circuit board within 5 cm.
- Take care to avoid external noise since a C-MOS IC is used in the circuit. It is recommended that the whole PC board be put in the shield box when it is used.
- The DC-DC converter type high-voltage supply for this unit has a very high impedance. If the ambient humidity is high, then electrical leakage on the printed circuit board surface might lead to a drop in the supply voltage to the UV TRON. This voltage drop might cause lower sensitivity or malfunctions. If using the unit in a high humid environment apply a silicon-based moisture-proof coating to the UV TRON connection terminals.

# HAMAMATSU

WEB SITE [www.hamamatsu.com](http://www.hamamatsu.com)

HAMAMATSU PHOTONICS K.K., Electron Tube Division

314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P. O. Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: [usa@hamamatsu.com](mailto:usa@hamamatsu.com)

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658 E-mail: [info@hamamatsu.de](mailto:info@hamamatsu.de)

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: [infos@hamamatsu.fr](mailto:infos@hamamatsu.fr)

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road Welwyn Garden City Hertfordshire AL7 1BW, United Kingdom, Telephone: 44-(0)1707-294888, Fax: 44-(0)1707-325777 E-mail: [info@hamamatsu.co.uk](mailto:info@hamamatsu.co.uk)

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171-41 SOLNA, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: [info@hamamatsu.se](mailto:info@hamamatsu.se)

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741 E-mail: [info@hamamatsu.it](mailto:info@hamamatsu.it)

TPT 1023E01  
JUN. 2007. IP