

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

FEATURES

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

Since the high-voltage supply and signal processor are mounted on the same circuit board, the C10423 can be operated as a high-sensitivity UV sensor just by connecting a UVTRON and supplying a low DC voltage.

The signal processing circuit cancels out background discharges which may occur in the UVTRON 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 "UVTRON 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.

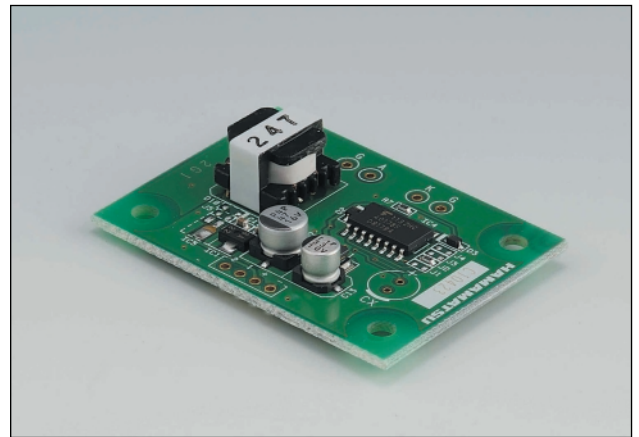


Figure 1: DIMENSIONAL OUTLINE (Unit: mm)

APPLICATIONS

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

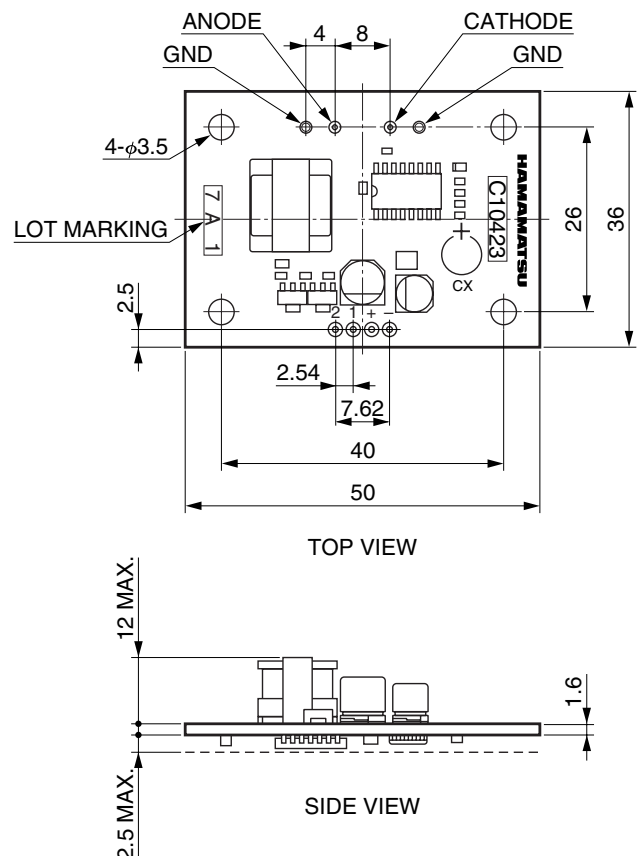
SPECIFICATIONS

Parameter	Description / Value	Unit	
Output Signal	Open Collector Output (50 V, 80 mA Max.) 10 ms with pulse output ^(A)	—	
UVTRON Supply Voltage	400 ^(B)	V	
Quenching Time	Approx. 25	ms	
Suitable UVTRON	R9454 (sold separately)	—	
Operating Ambient Temperature ^(C)	-10 to +50	°C	
Input Voltage (DC)	C10423	12 to 24	V
	C10423-01	5 ± 0.25	
Current Consumption (Max.)	C10423	4	mA
	C10423-01	0.3	
Weight	Approx. 12	g	

NOTE: ^(A)The output pulse width can be extended up to about 10 s by adding a capacitor to the circuit board.

^(B)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.

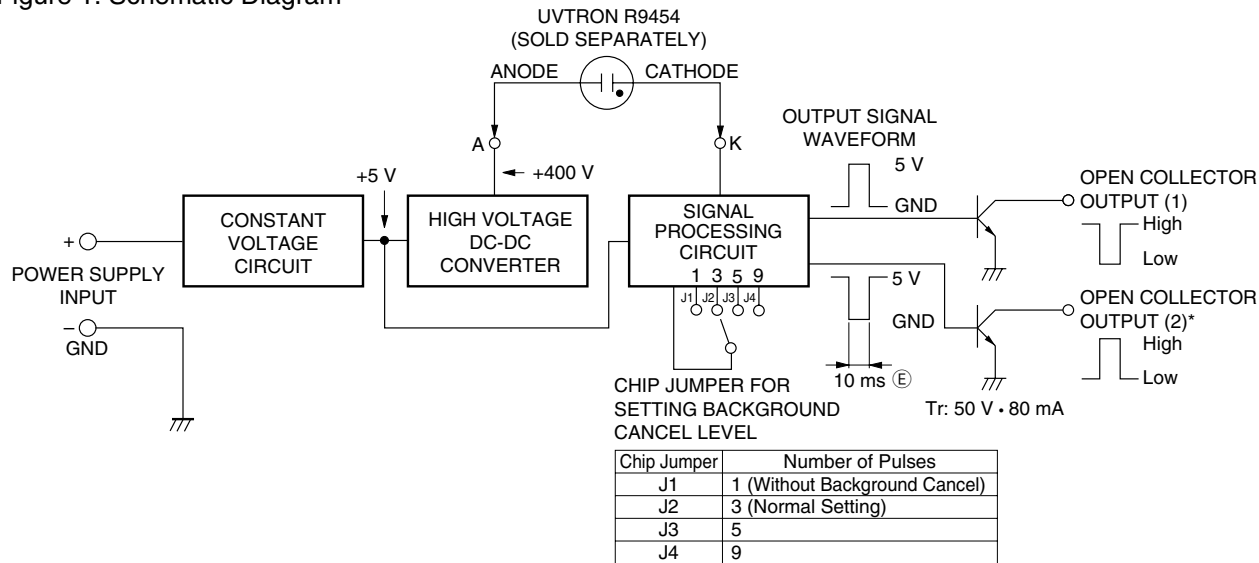
^(C)No condensation



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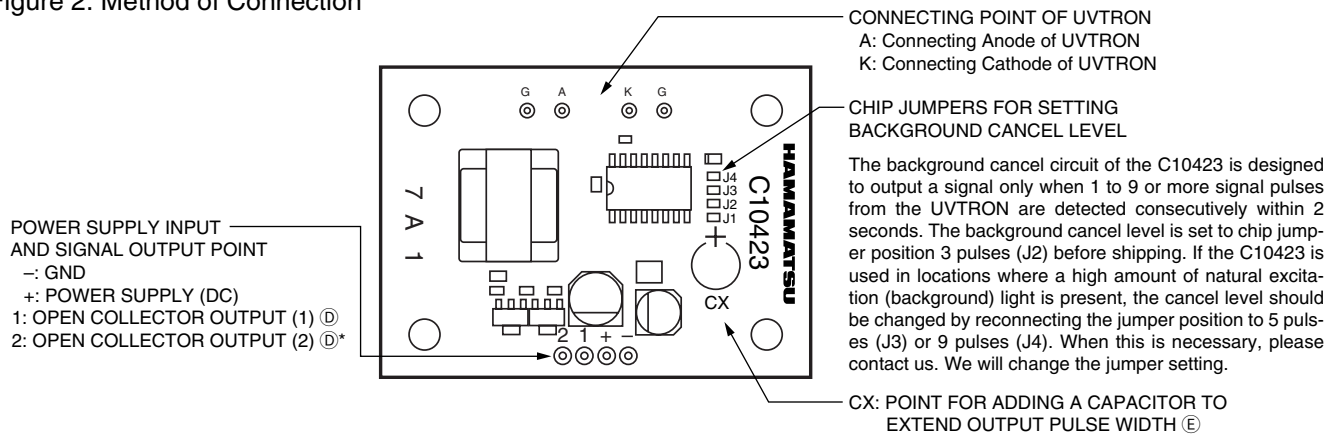
UVTRON® DRIVING CIRCUIT C10423 SERIES

Figure 1: Schematic Diagram



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Figure 2: Method of Connection



NOTE: (D) The recommended rating of the open-collector transistor is 50 V / 80 mA. The maximum rating of the open-collector transistor is 50 V / 100 mA. When the circuit is connected to a relay or buzzer, use caution not to exceed this rating.

(E) The 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 μ F, Pulse width = Approx. 1 s
CX = 10 μ F, Pulse width = Approx. 10 s

* C10423-01 does not read out "OPEN COLLECTOR OUTPUT (2)".

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PRECAUTIONS FOR USE

- Since the operation impedance is extremely high, the UVTRON 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 UVTRON. 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 UVTRON connection terminals.

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