

# C11204-01 Power Supply module for MPPC

## ■ Overview

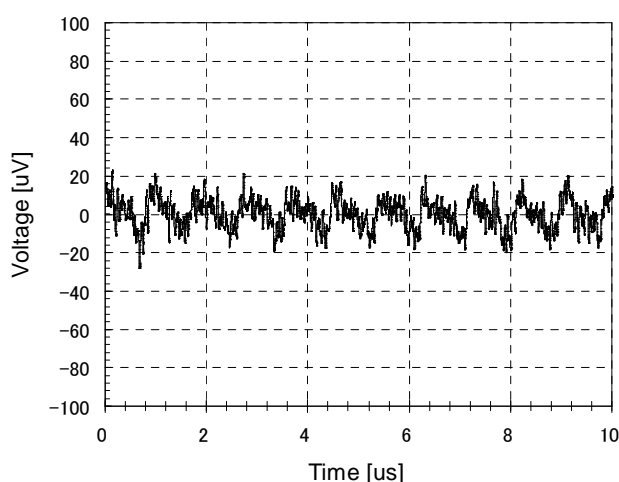
The C11204-01 is high voltage power supply for HAMAMATSU MPPC series. It is optimized to drive MPPC. It can provide up to 90V output. The C11204-01 includes the automatic temperature compensating function. The output voltage monitor and MPPC current monitor always allow optimum voltage supply for MPPC. All functions are controlled by the microcomputer on the board. The C11204-01 is available in 16-lead hybrid board.



## ■ Features

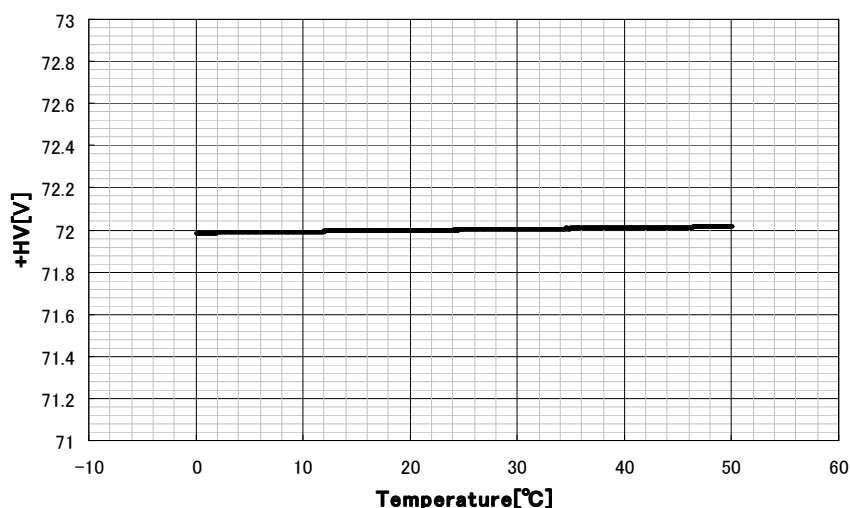
- Wide output voltage range: 50V to 90V
- Low ripple noise: 0.1mVp-p typ.
- Good temperature stability:  $\pm 10$ ppm/ $^{\circ}\text{C}$  typ.
- High setting resolution: 1.8mV
- MPPC current monitor
- Serial communication

## ■ Ripple noise (+HV=72V)



\*1: In use recommended circuit.

## ■ Temperature dependence



## ■ Specifications

### ■ Absolute maximum ratings

Parameter	Condition	Value	Unit
Power supply		6	V
Operating temperature	No condensation	0 to 50	°C
Storage temperature	No condensation	-20 to 70	°C

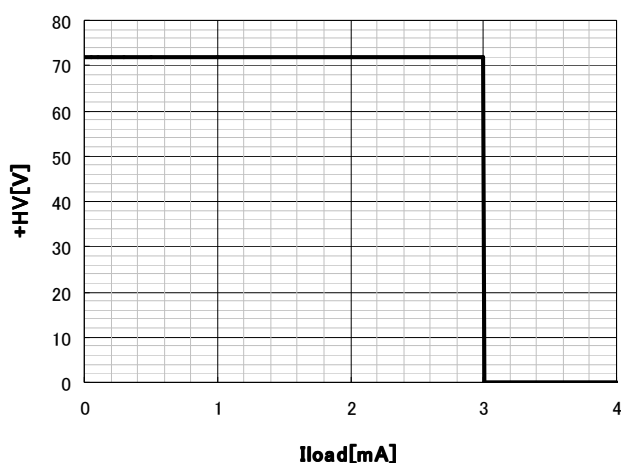
### ■ General ratings (Typ. Ta=25°C, Vcc=+5V)

Parameter	Condition	Min.	Typ.	Max.	Unit
Power supply		4.75	5	5.25	V
Consumption current	+HV=72V, No load		20		mA
Output voltage	No load		50 to 90		V
Output current		0		2	mA
Ripple noise <sup>*2</sup>	+HV=72V, No load		0.1	0.2	mVp-p
Setting accuracy	+HV=72V, No load		±10	±40	mV
Setting resolution			1.8		mV
Temperature stability	25±10°C, +HV=72V, No load		±10	±20	ppm/°C
Interface <sup>*3</sup>		Serial communication			

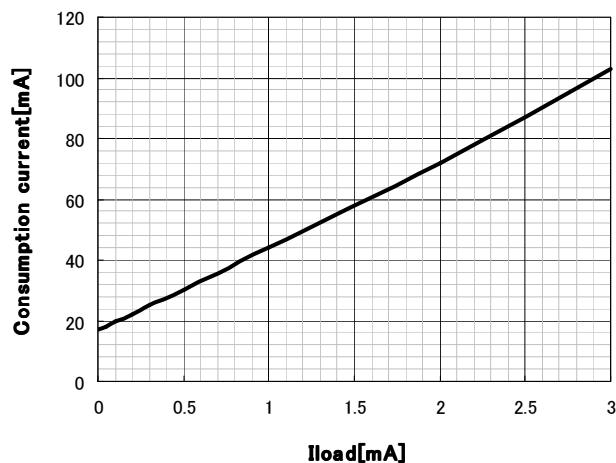
\*2: In use recommended circuit.

\*3: Need PC communication module.

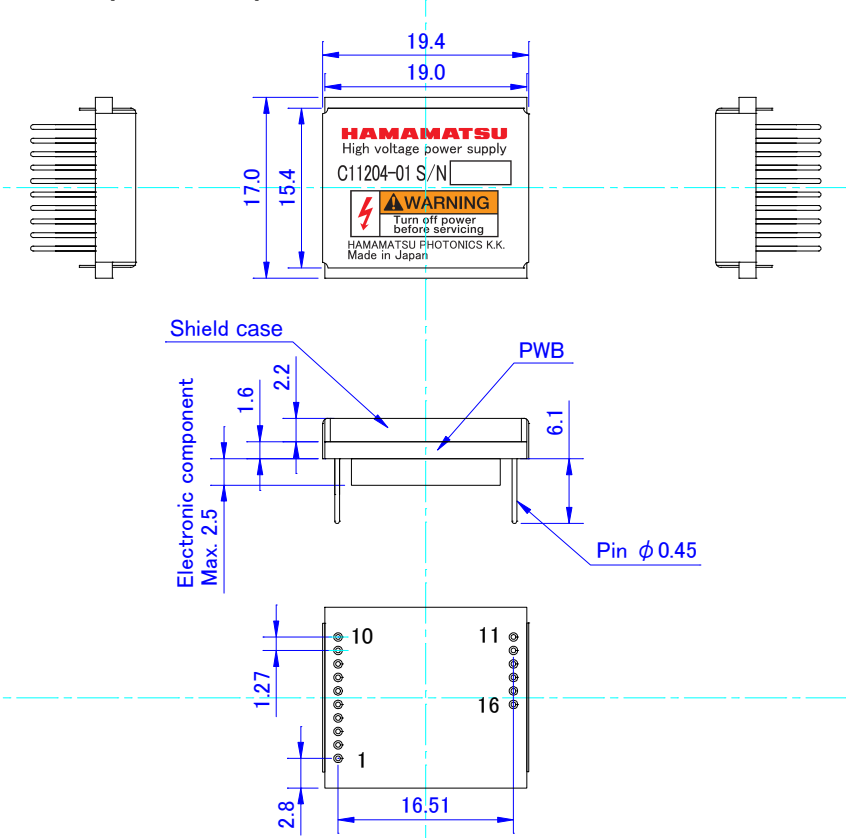
### ■ Current load



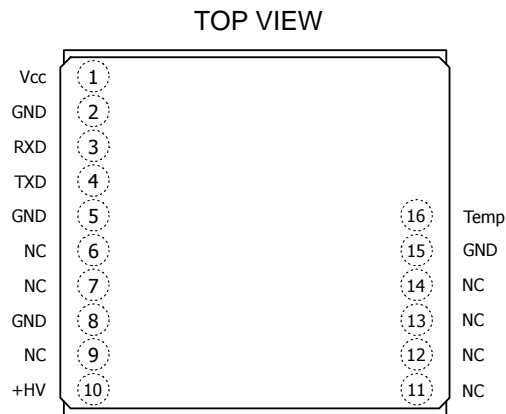
### ■ Consumption current (+HV=72V)



■ Dimensional outline (Unit: mm)



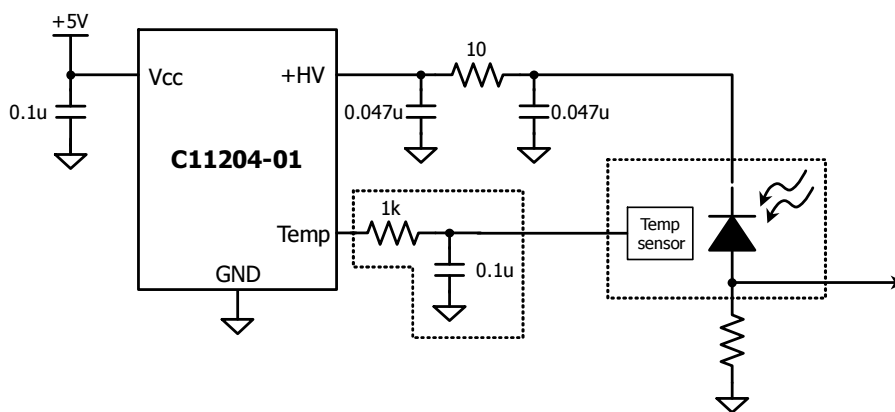
■ Pin configuration



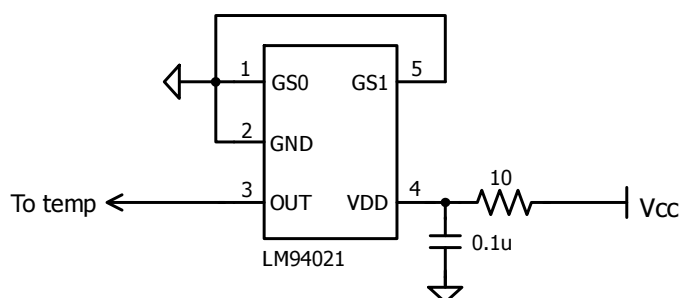
12-LEAD (19mm x 17mm) hybrid board

Pin No.	Symbol	Description
1	Vcc	Power Supply Pin. Please supply 5.0 V. V+ should be decoupled to GND.
2, 5, 8, 15	GND	Ground. Pins connected internally. For best performance, connect both pins to board ground.
3	RXD	Serial Data Input Pin.
4	TXD	Serial Data Output Pin.
6, 7, 9, 11-14	NC	No Connection.
10	+HV	High Voltage Output Pin.
16	Temp.	Temperature sensor signal input pin.

## ■ Recommended circuits



Temperature sensor



note:

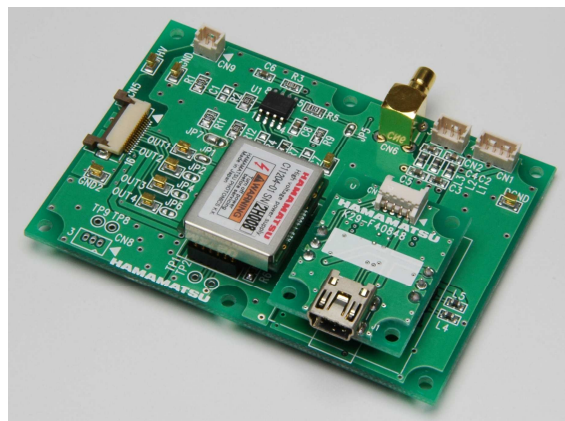
1. Low ESR capacitors should be used at the output to minimize the output voltage ripple.
2. The temperature sensor should be LM94021 made in Texas Instruments.
3. It is recommended to be put near Temperature sensor Pin.

## ■ Related product C12332(X) =evaluation kit for MPPC operation=

C12332(X) allows to evaluate C11204-01 easily and allows to evaluate the operation of MPPC easily and quickly.

The functions can easily be operated by attached software.

It can easily communicate with a PC by a USB connector.



- This document lists tentative specifications for new products or products under development by the Solid State Division of Hamamatsu Photonics. Please note that product specifications are subject to change without prior notice due to improvements or other reasons. Before using products listed in this document, please be sure to check the latest information.
- Type numbers of products listed in the specification sheets or supplied as samples may have a suffix "(X)" which means tentative specifications or a suffix "(Z)" which means developmental specifications.

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