

The C12446 series is an on-board type high voltage power supply module, especially designed for photomultiplier tubes. This power supply can drive several photomultipliers used for multi-channel measurement. The design offers good performance and complete fail-safe protection.

FEATURES

- High output power (1 kV / 10 mA)
- Compact and lightweight
- High voltage and current monitor output
- Low Ripple / Noise



SPECIFICATIONS

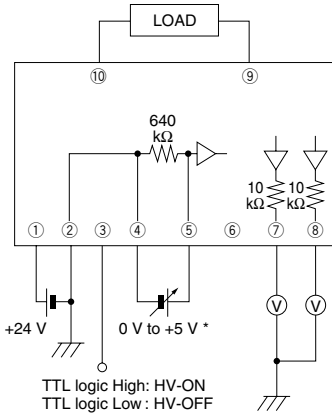
Parameter		C12446-12	C12446-52	Unit
Input voltage		+24 ± 1.2		V
Input current ^(A)	with no load	Typ.	55	mA
	with full load	Typ.	550	
Variable output voltage range		0 to -1000	0 to +1000	V
Specification guaranteed output voltage range		-200 to -1000	+200 to +1000	V
Output current		Max.	10	mA
Line regulation against ±1.2 V input change ^{(A)(B)}		Typ.	±0.01	%
Load regulation against 0 % to 100 % load change ^(A)		Typ.	±0.01	%
Ripple / Noise (p-p) ^{(A)(B)}		Typ.	50	mV
Output voltage control		By external controlling voltage (0 V to +5 V) or external potentiometer (50 kΩ)		—
Controlling voltage input impedance		Typ.	640	kΩ
Reference voltage output		Typ.	+5.3	V
Output voltage setting (Absolute value)		Typ.	Controlling voltage × 200	V
Output voltage rise time (0 % → 99 %) ^{(A)(B)}		Typ.	150	ms
Temperature coefficient ^{(A)(B)}		Typ.	±0.005	%/°C
High voltage monitor output		0 V to +5 V (Output impedance 10 kΩ), 5 mV/V		—
Current monitor output		0 V to +5 V (Output impedance 10 kΩ), 0.5 V/mA		—
ON / OFF input		TTL positive logic		—
ON / OFF input impedance		30		kΩ
Operating ambient temperature ^{(A)(B)}		0 to +50		°C
Operating ambient humidity ^(C)		Below 85		%
Storage temperature		-20 to +60		°C
Storage humidity ^(C)		Below 85		%
Weight		Typ.	100	g
Protective functions		units protected against reversed power input, reversed / excessive controlling voltage input, continuous overloading / short circuit in output		—

^(A)At maximum output voltage. ^(B)At maximum output current. ^(C)No condensation

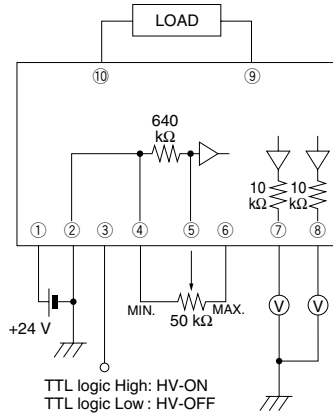
HIGH VOLTAGE POWER SUPPLY C12446 SERIES

Figure 1: Connection diagrams

● Output voltage control by external voltage



● Output voltage control by external potentiometer



PIN ASSIGNMENT

- | | |
|----------------|-----------------------|
| ① Vcc +24 V | ⑥ Vref +5.3 V Typ. |
| ② Vcc GND ** | ⑦ CURRENT MONITOR OUT |
| ③ ON / OFF IN | ⑧ HV MONITOR OUT |
| ④ Vcont GND ** | ⑨ HV GND |
| ⑤ Vcont | ⑩ HV OUT |

* The instability in the external controlling voltage should be minimized as it directly affects the output voltage quality.
** Never connect the pin number ② and ④ directly and externally.

NOTE: In the case of an open state at pin ③, the module will have no high voltage output. If you don't use HV-ON / OFF function at pin ③, you can make the module work by connecting a 10 kΩ (1/4 W or more) resistor between pin ③ and pin ①.

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Figure 2: Output voltage controlling characteristic

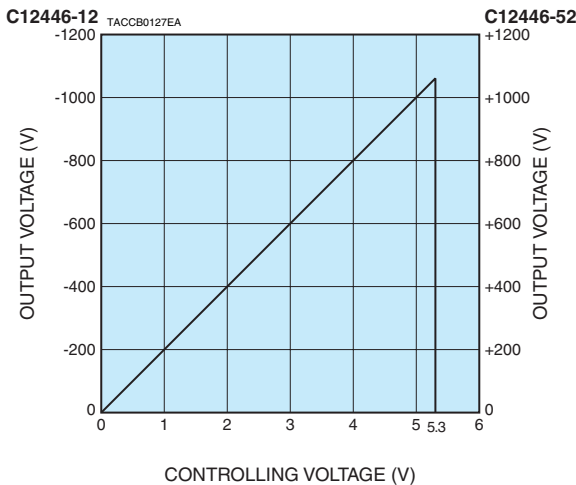
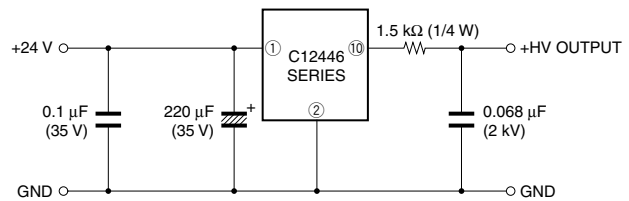


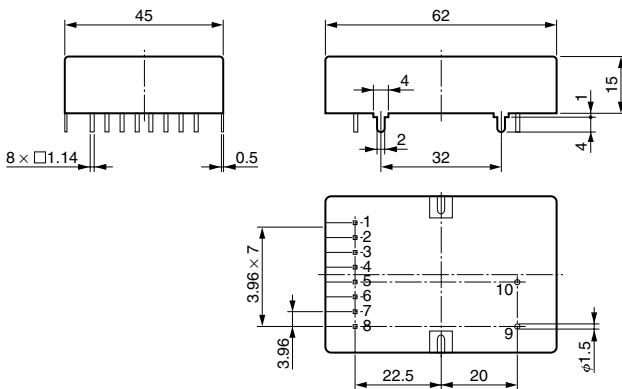
Figure 3: Example of ripple / noise reduction circuit



* The ripple noise can be reduced to approx. 1/3 by adding capacitors as illustrated above.

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Figure 4: Dimensional outline (Unit: mm)



PIN ASSIGNMENT

- | |
|-----------------------|
| ① Vcc +24 V |
| ② Vcc GND |
| ③ ON / OFF IN |
| ④ Vcont GND |
| ⑤ Vcont |
| ⑥ Vref +5.3 V Typ. |
| ⑦ CURRENT MONITOR OUT |
| ⑧ HV MONITOR OUT |
| ⑨ HV GND |
| ⑩ HV OUT |

* The housing is internally connected to pin ②.

TACCA0315EC

HAMAMATSU PHOTONICS K.K. 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, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: 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

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: info@hamamatsu.fr

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

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 SE-164 40 Kista, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 inf. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93581733, Fax: (39)02-93581741 E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: B1201 Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No.158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)03-659-0080, Fax: (886)07-811-7238 E-mail: info@tw.hpk.co.jp

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