

HAMAMATSU

PRELIMINARY DATA
SEPT. 2000

COMPACT HYBRID PHOTO-DETECTOR with Si-Avalanche Diode Target R7110U-07

FEATURES

- Low excess noise
- High gain
- Operable in high magnetic fields
- Low hysteresis

APPLICATIONS

- High energy physics
- Medical
- Other high precision measurements

GENERAL

Parameter		Description/Value	Unit
Spectral Response		160 to 850	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Multialkali	—
	Minimum Effective Area [Ⓐ]	8	mm dia.
Window Material		Synthetic Silica	—
Target		φ3 mm Single-element Electron Bombarded Si-Avalanche Diode	—
Suitable Socket		E678-12M (Supplied)	—

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter	Value	Unit
Supply Voltage	-8500	Vdc
Avalanche Diode Reverse Bias Voltage	155 [Ⓓ]	V
Ambient Temperature	-40 to +50	°C

CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856K)	100	130	—	μA/lm
	Radiant at 420 nm	—	51	—	mA/W
Gain [Ⓒ]		—	4 × 10 ⁴	—	—
Time Response [Ⓒ]	Rise Time	—	1.3	—	ns
	Fall Time	—	15	—	ns
	Width	—	5	—	ns
Diode (Target)	Leakage Current [Ⓓ]	—	—	50	nA
	Capacitance [Ⓓ]	—	120	—	pF

NOTE: [Ⓐ]Without magnetic fields

[Ⓑ]at 25 °C

[Ⓒ]Photocathode Voltage: - 8 kV, Avalanche Diode Reverse Bias Voltage: approx.145 V

[Ⓓ]Avalanche Diode Reverse Bias Voltage: approx.145 V

Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office.

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Figure 1: Typical Gain

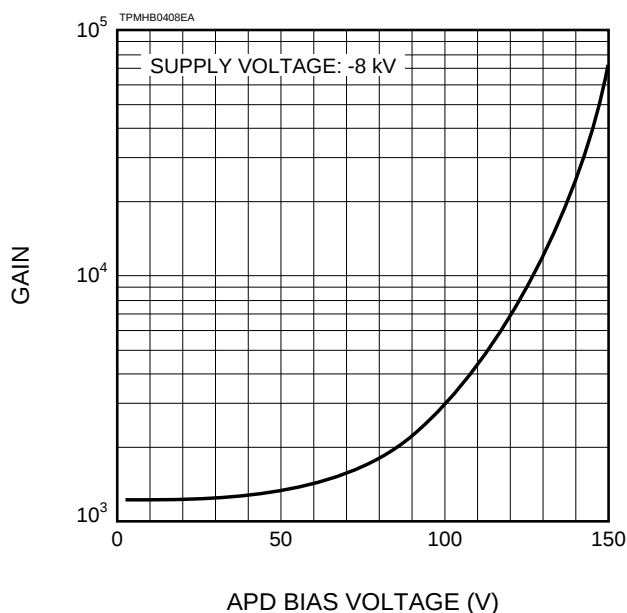


Figure 2: Typical Photoelectron Spectrum

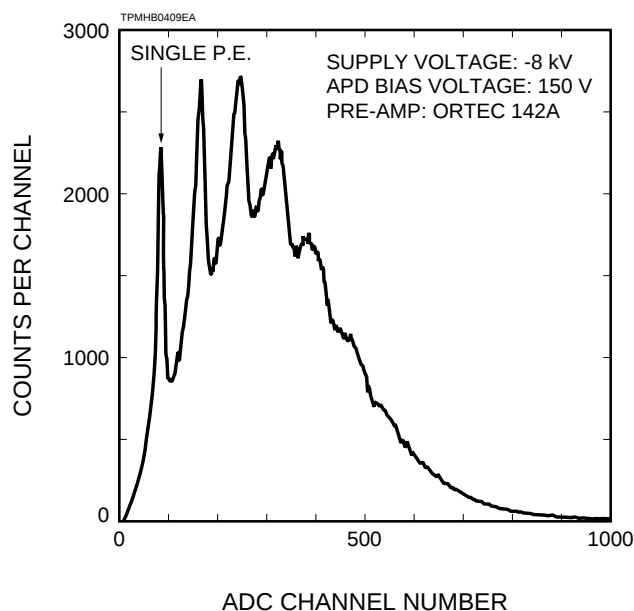
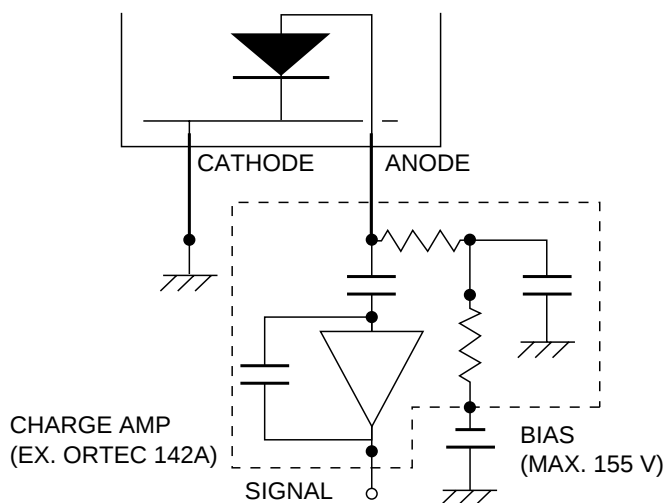
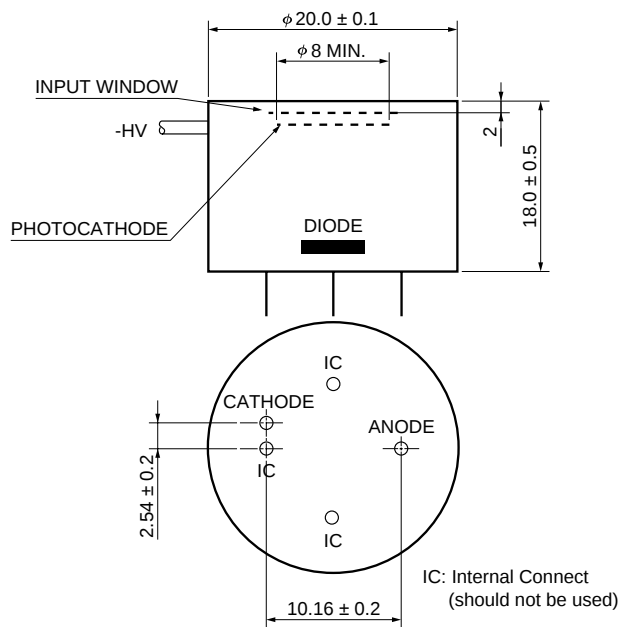


Figure 3: Connection Example for Pulse Height Analysis



TPMHC0145EC

Figure 4: Dimensional Outline (Unit: mm)



TPMHA0397EC

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HAMAMATSU PHOTONICS K.K., Electron Tube Center

314-5, Shimokanzo, Toyooka-village, Iwata-gun, Shizuoka-ken, 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

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.: 8, 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

United Kingdom: Hamamatsu Photonics UK Limited: Lough Point, 2 Gladbeck Way, Windmill Hill, Enfield, Middlesex EN2 7JA, United Kingdom, Telephone: 44(20)8-367-3560, Fax: 44(20)8-367-6384 E-mail: 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

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

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