HAMAMATSU

PRELIMINARY DATA
JUL. 2001

PHOTOMULTIPLIER TUBE MODULE
H8443

OVERVIEW

The H8443 is a photomultiplier tube (PMT) module consisting of a 25 mm (1 ") head-on PMT and a low power consumption high-voltage power supply, integrated into a compact case.
The H8443 operates on a low voltage supply (+ 11.5 V to + 15.5 V) and offers high sensitivity, wide dynamic range and high-speed response, which are superior to conventional light sensors.

PMOF0055

FEATURES

- **High sensitivity**
- **Low power consumption**
- **Easy handling**
- **Low cost**

APPLICATIONS

- **O/E converter**
- **Low-light-level detection**
- **Portable high-sensitivity light detector**

SPECIFICATIONS

GENERAL RATINGS

Parameter	H8443	Unit
External Dimensions	$\phi 34 \times 121$	mm
Supply Voltage (Vcc)	+ 11.5 to + 15.5	V
Input Current (at maximum output)	40	mA
Sensitivity Adjustable Range	1: 10^4	—
Settling Time Ⓐ	0.2	s
Effective Photocathode Area	22	mm dia.
Weight	Approx. 210	g

ⒶTime required for output to settle down following to an adjustment (change) of the control voltage from + 1 V to + 0.5 V.

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter	H8443	Unit
Supply Voltage (Vcc)	+ 18	V
Operating Temperature Range	+ 5 to + 45	°C
Storage Temperature Range	- 20 to + 50	°C
Output Signal Current Ⓑ	100	µA
Control Voltage	1.8	V

ⒷOutput current when the control voltage is set at + 0.5 V or more.
Averaged over any interval of 30 seconds maximum.

CHARACTERISTICS (at 25 °C)

Parameter			H8443	Unit
Sensitive Spectral Range			300 to 650	nm
Sensitivity Ⓒ	Luminous Sensitivity (Typ.)		190	A/lm
	Radiant Sensitivity (Typ.)	300 nm	50×10^{-6}	A/nW
		400 nm	170×10^{-6}	A/nW
		600 nm	26×10^{-6}	A/nW
		800 nm	—	A/nW
Dark Current Ⓒ		Typ.	2	nA
		Max.	15	nA
Ripple Noise ⒸⒹ (peak-to-peak)			1	mV
Time Characteristic Ⓒ		Rise Time	1.6	ns
Recommended Output Current (Max.)			10	µA
Recommended Control Voltage Adjustable Range			+ 0.75 to + 1.5	V

ⒸAt control voltage of + 1.25 V.

ⒹThe diagram for this measurement is shown in Figure. 3.

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Figure 1: Typical Spectral Response

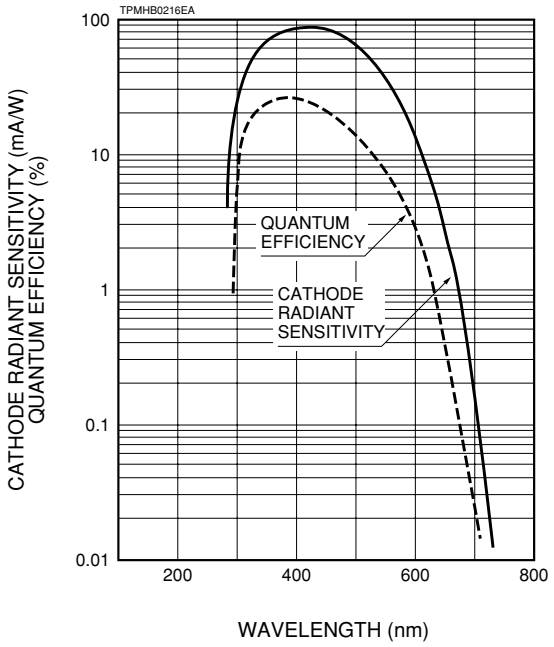


Figure 2: Typical Gain Characteristics

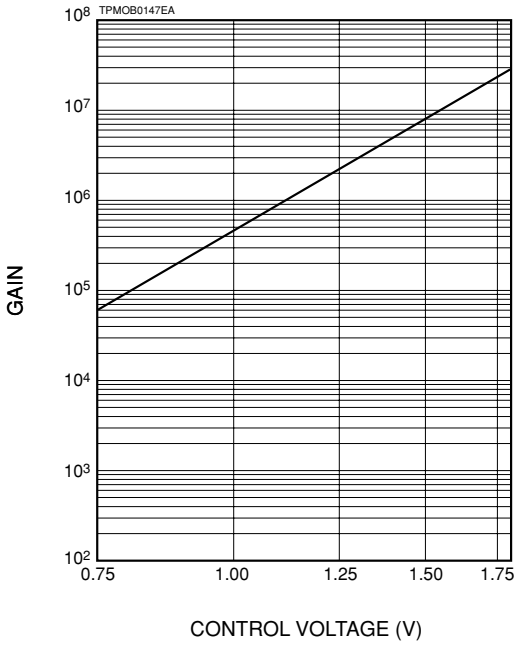


Figure 3: Block Diagram for Measuring the Ripple Noise

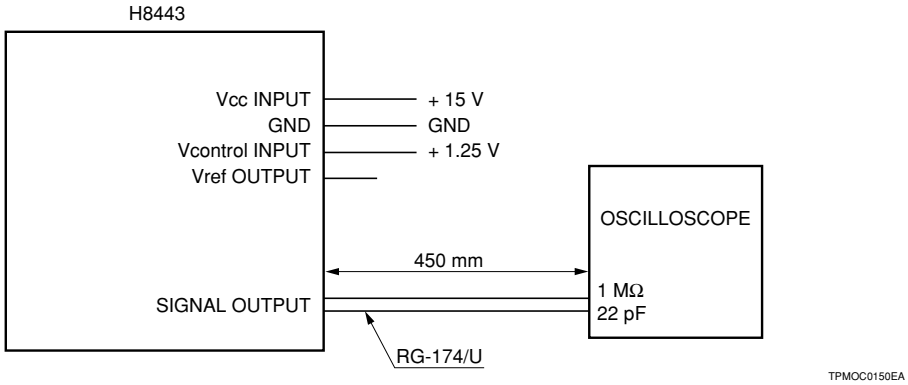


Figure 4: Module Functional Diagram

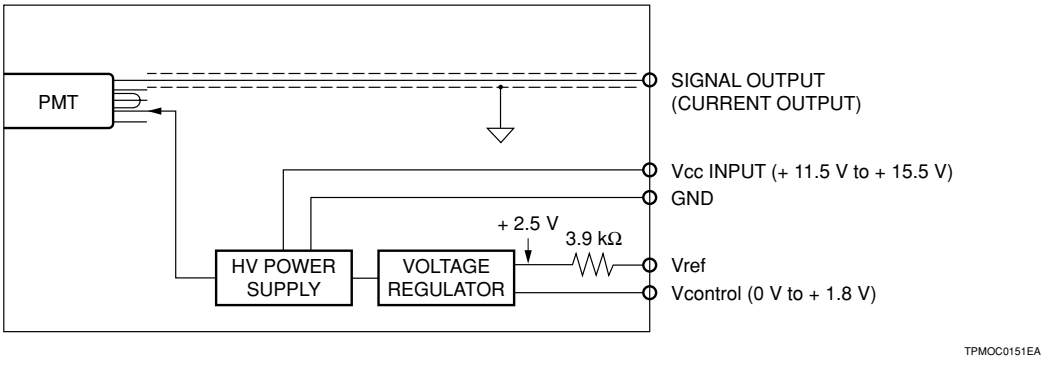


Figure 5: Wiring Examples for Sensitivity Adjustment

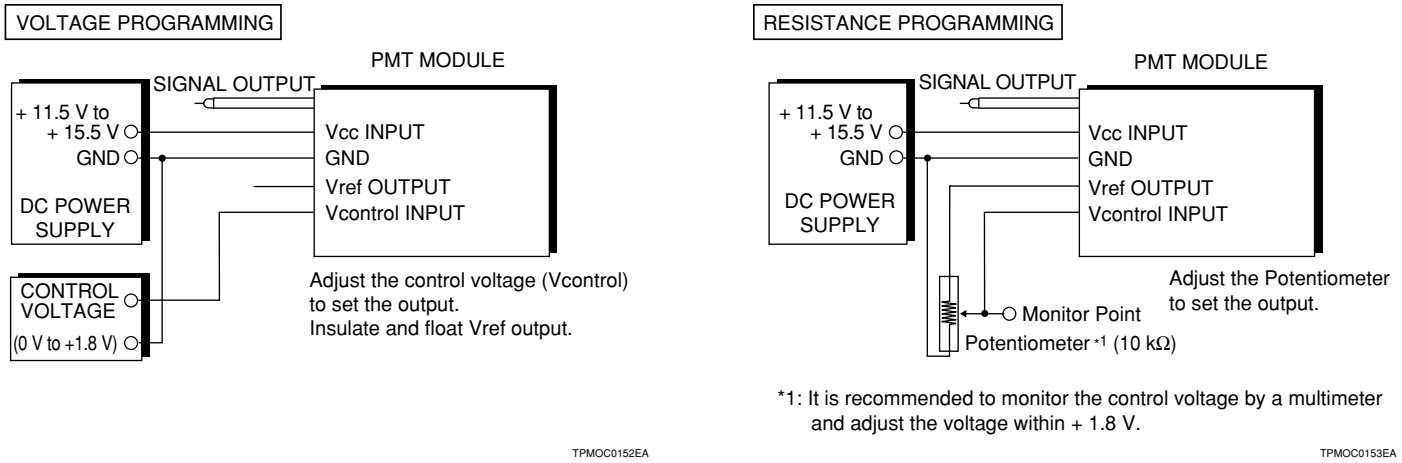
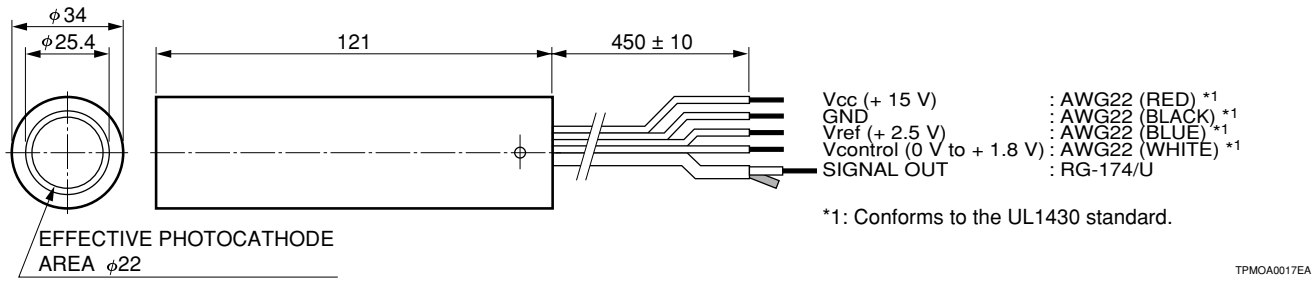


Figure 6: Dimensional Outline (Unit: mm)



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