

FEATURES

- Low noise
- Compact
- For photon counting: R3550P
- High reliability for shock / vibration
Vibration: 200 m/s², Shock: 1000 m/s²

APPLICATIONS

- Chemiluminescence measurement
- Bioluminescence measurement
- Low level light detection



Left: R3550A, Right: R3550P

SPECIFICATIONS

GENERAL

Parameter		Description	Unit
Spectral response		300 to 650	nm
Peak wavelength		375	nm
Photocathode	Material	Low noise bialkali	—
	Minimum effective area	φ22	mm
Window material		Borosilicate glass	—
Dynode	Structure	Circular and linear-focused	—
	Number of stages	10	—
Base		14 pin glass base	—
Suitable socket		E678-14C (supplied)	—
Operating ambient temperature		-30 to +70	°C
Storage temperature		-80 to +70 (R3550A) / -30 to +70 (R3550P)	°C

MAXIMUM RATINGS (Absolute maximum values)

Parameter		Value	Unit
Supply voltage	Between anode and cathode	1250	V
	Between anode and last dynode	250	V
Average anode current		0.1	mA

CHARACTERISTICS (at 25 °C) with standard voltage divider

Parameter		Min.	Typ.	Max.	Unit
Cathode sensitivity	Luminous (2856 K)	30	50	—	μA/lm
	Quantum efficiency at 375 nm	—	18	—	%
	Blue sensitivity index	5	7	—	—
Anode sensitivity	Luminous (2856 K)	45	100	—	A/lm
Gain	R3550A	—	2.0 × 10 ⁶	—	—
	R3550P	1.5 × 10 ⁶	2.0 × 10 ⁶	—	—
Anode dark current (after 30 min storage in darkness)		—	0.5	4	nA
Anode dark count	R3550A	—	—	—	—
	R3550P	—	20	60	s ⁻¹
Time response	Anode pulse rise time	—	1.5	—	ns
	Electron transit time	—	17	—	ns

NOTE: Anode characteristics are measured with a voltage distribution ratio shown below.

STANDARD VOLTAGE DIVIDER AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio	3	1	1	1	1	1	1	1	1	1	1	1

Supply voltage: 1000 V, K: Cathode, Dy: Dynode, P: Anode

ENVIRONMENTAL TESTING

Shock.....1000 m/s², 11 ms, 3 impact shocks per direction (6 directions)

Vibration.....200 m/s², 50 Hz to 2000 Hz, 1 oct per minute, 3 sweeps per axis (3 axes)

PHOTOMULTIPLIER TUBE R3550A/R3550P

Figure 1: Typical spectral response

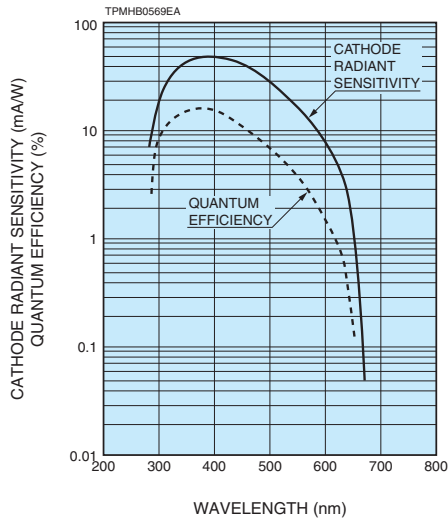


Figure 2: Typical gain and dark current characteristics

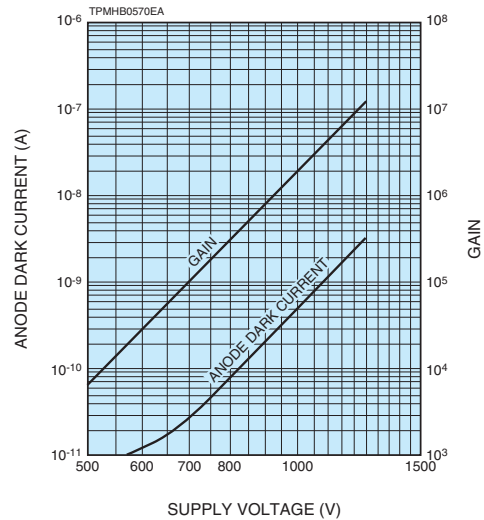


Figure 3: Typical characteristics of dark count (R3550P)

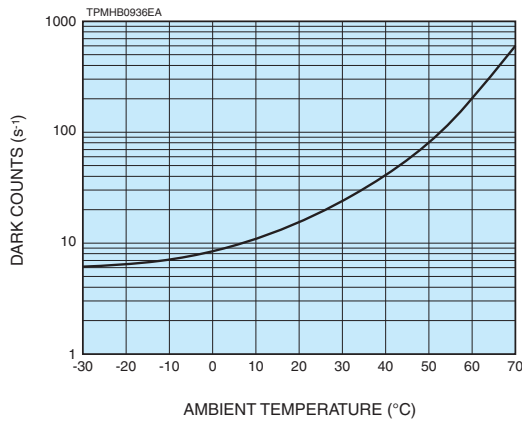


Figure 4: Dimensional outline and basing diagram (Unit: mm)

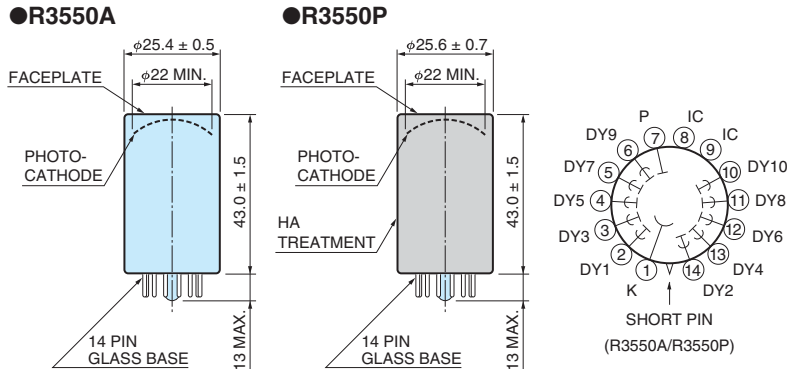
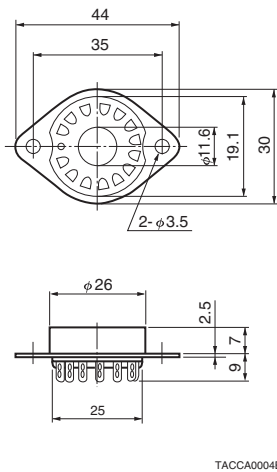


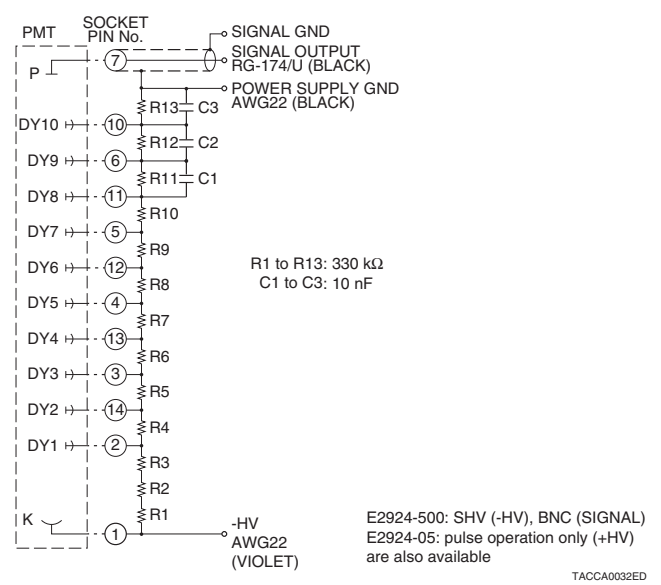
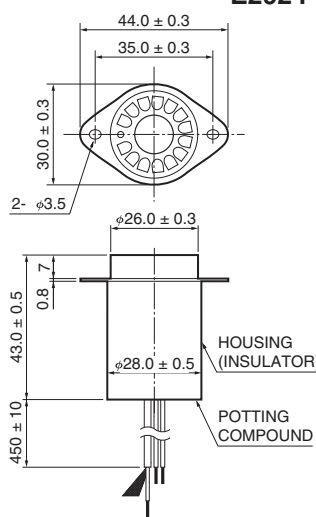
Figure 5: Accessories (Unit: mm)

Socket E678-14C (supplied)



D type socket assembly (sold separately)

E2924



* HAMAMATSU also provides C13890 series and C10940 series compact high voltage power supply modules.

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