

## FEATURES

- For low temperature operation  
down to -110 °C: R8520-406  
down to -186 °C: R8520-506
- Low radioactivity 26 mm (1 Inch) square
- High UV sensitivity by synthetic silica window

## APPLICATIONS

- High energy physics
- Astrophysics
- Academic research



## SPECIFICATIONS

### GENERAL

Parameter		Description / Value	Unit
Spectral response		160 to 650	nm
Wavelength of maximum response		420	nm
Window material		Silica glass	—
Photocathode	Material	Bialkali	—
	Minimum effective area	20.5 × 20.5	mm
Dynode	Structure	Metal channel	—
	Number of stages	10	—
Operating ambient temperature		-110 to +50 (R8520-406), -186 to +50 (R8520-506)	°C
Storage temperature		-110 to +50 (R8520-406), -186 to +50 (R8520-506)	°C
Weight		22.9	g

### MAXIMUM RATINGS (Absolute maximum values)

Parameter		Value	Unit
Supply voltage	Between anode and cathode	900	V
	Between anode and last dynode	150	V
Average anode current		0.1	mA

### CHARACTERISTICS (at 25 °C)

Parameter		R8520-406			R8520-506			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
Cathode sensitivity	Luminous (2856 K)	80	100	—	80	100	—	μA/lm
	Blue sensitivity index (CS 5-58)	—	11.0	—	—	9.5	—	—
	Radiant at 420 nm	—	100	—	—	80	—	mA/W
	Quantum efficiency at 175 nm	—	30	—	—	3	—	%
	Quantum efficiency at 420 nm	—	25	—	—	25	—	%
Anode sensitivity	Luminous (2856 K)	40	100	—	40	100	—	A/W
	Gain	—	1 × 10 <sup>6</sup>	—	—	1 × 10 <sup>6</sup>	—	—
Anode dark current (After 30 minute storage in darkness)		—	2	20	—	2	20	nA
Time response	Anode pulse rise time	—	1.8	—	—	1.8	—	ns
	Electron transit time	—	12.4	—	—	12.4	—	ns
	Transit time spread (FWHM)	—	0.8	—	—	0.8	—	ns
Pulse linearity (2 % deviation)		—	30	—	—	30	—	mA

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

### VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio	0.5	1.5	2	1	1	1	1	1	1	1	1	1	0.5

Supply voltage: 800 V, K: Cathode, G: Grid, Dy: Dynode, P: Anode

# PHOTOMULTIPLIER TUBE R8520-406/R8520-506

Figure 1: Typical spectral response

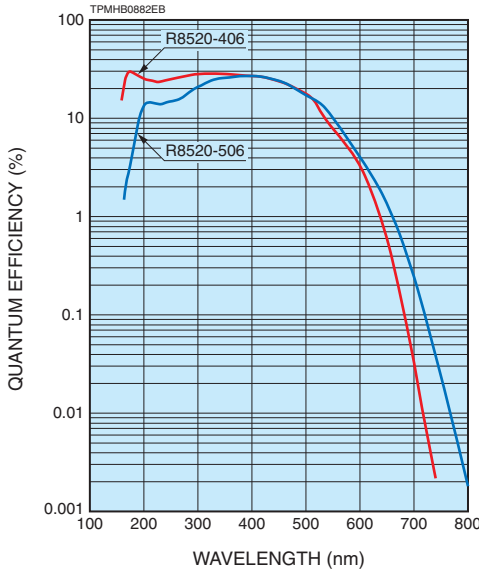


Figure 2: Typical gain

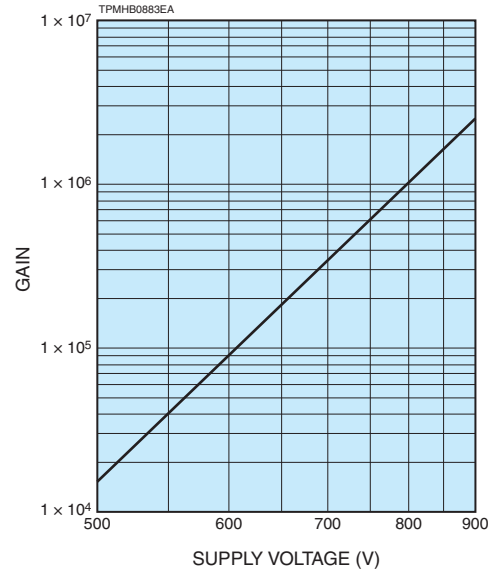
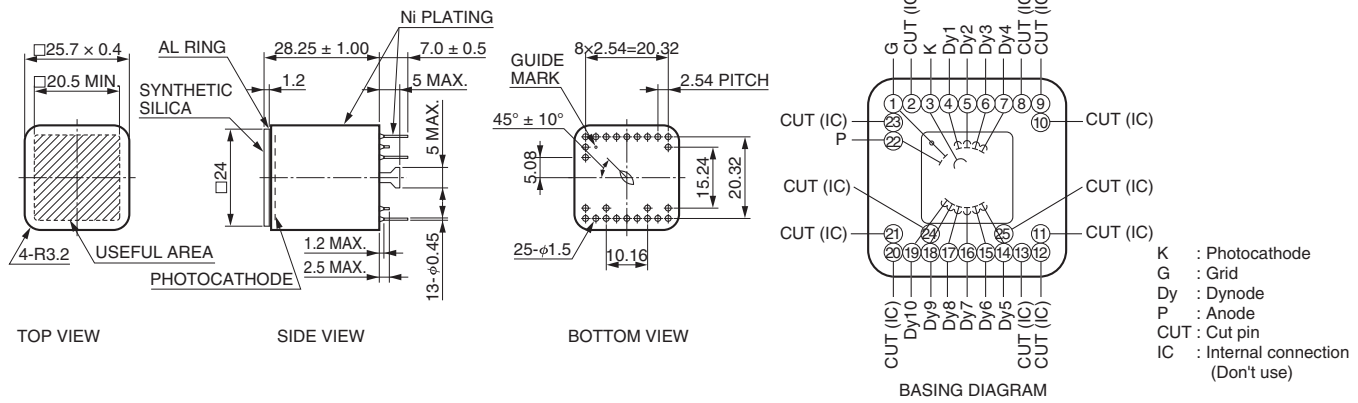
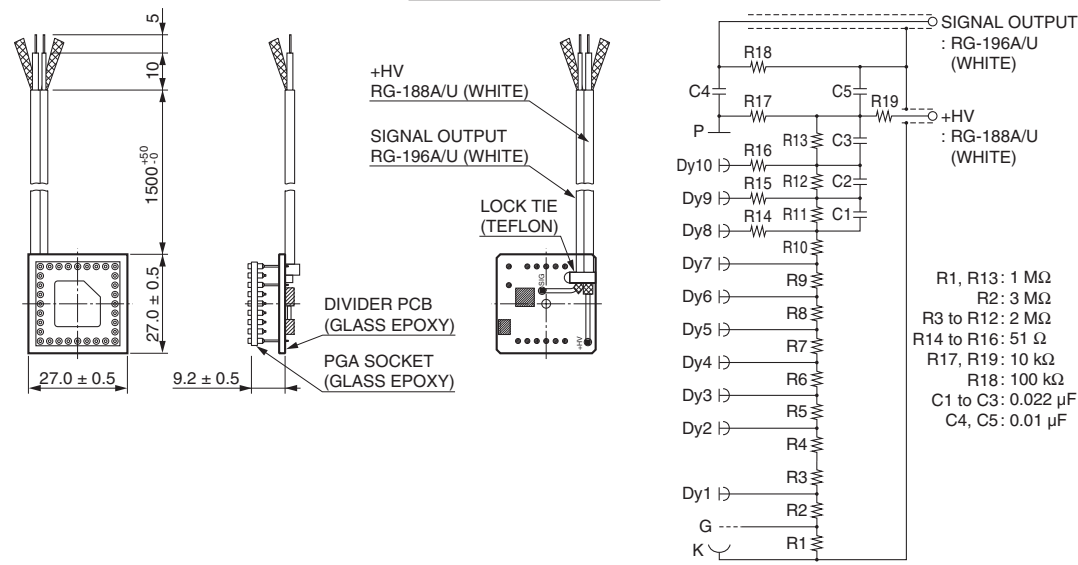


Figure 3: Dimensional outline (Unit: mm)



[ACCESSORIES] (Unit: mm)

●D type socket assembly E13416 **SOLD SEPARATELY**



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