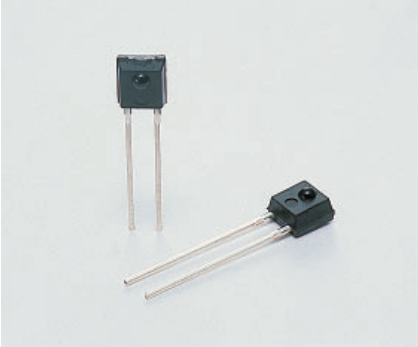
HAMAMATSU

Phototransistor



S4404-01

High sensitivity phototransistor

S4404-01 is a high sensitivity phototransistor molded into a visible-cut plastic package.

Features

- **Miniature plastic package with lens**
- **Visible-cut package**
- **High sensitivity: 2.5 mA (1000 *lx*)**

Applications

- **Tape start/end mark sensor for VTRs, etc.**
- **Rotary encoders**
- **Touch screen**

Absolute maximum ratings (Ta=25 °C)

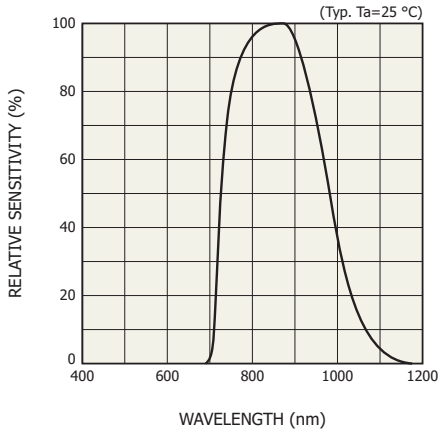
Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	15	V
Emitter-collector voltage	V_{ECO}	4	V
Collector current	Ic	20	mA
Collector dissipation	Pc	80	mW
Operating temperature	Topr	-30 to +85	°C
Storage temperature	Tstg	-40 to +100	°C
Soldering	-	260 °C, 3 s, at least 2.5 mm away from package surface	-

Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak sensitivity wavelength	λp		-	870	-	nm
Photocurrent *	Ic	V_{CE}=5 V, 1000 *lx*	1.5	2.5	-	mA
Dark current	I_{CEO}	V_{CE}=15 V, 0 *lx*	-	-	100	nA
Collector-emitter saturation voltage	V_{CE}(sat)	Ic=0.5 mA, 1000 *lx*	-	-	0.4	V
Rise time	tr	V_{CE}=5 V, Ic=1 mA	-	6	30	μs
Fall time	tf	R_L=100 Ω	-	8	30	μs

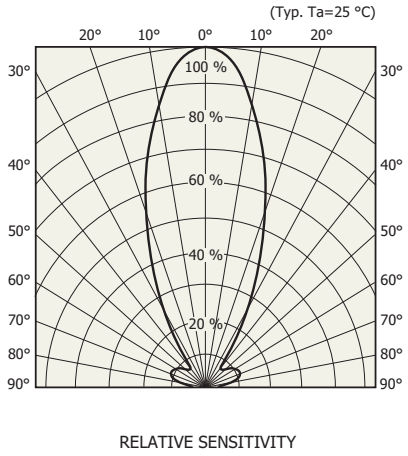
* Measured with a CIE standard "A" light source at 2856 K

Spectral response



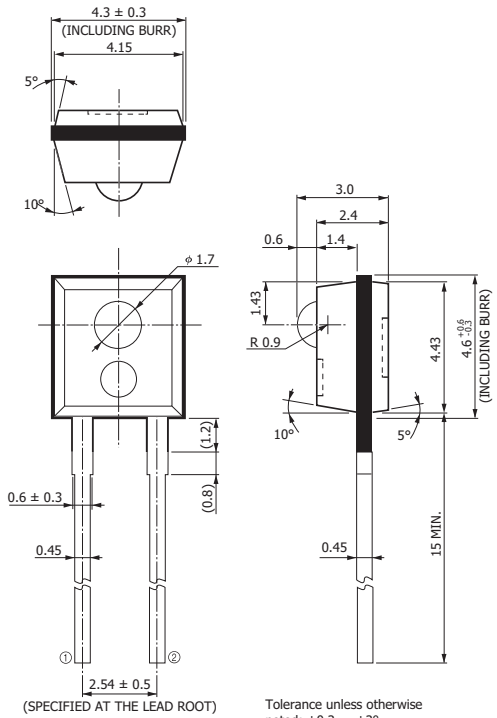
KPTRB0006EA

Directivity



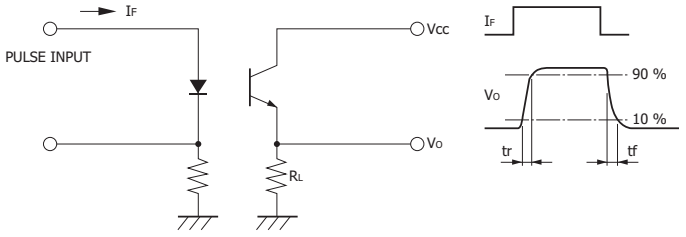
KPTRB0001EA

Dimensional outline (unit: mm)



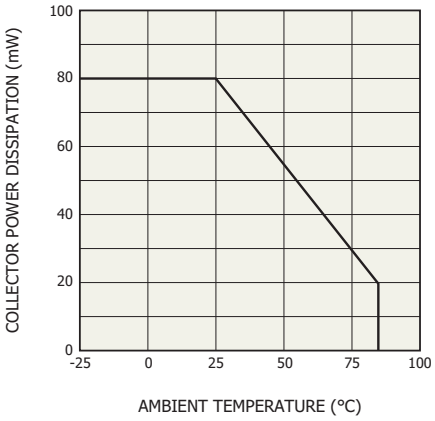
KPTRA0002EA

Response time measurement circuit



KPTRB0001EA

Collector power dissipation vs. ambient temperature



KPCB0001EA

Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions.
Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein.
Type numbers of products listed in the specification sheets or supplied as samples may have a suffix "(X)" which means tentative specifications or a suffix "(Z)" which means developmental specifications. ©2009 Hamamatsu Photonics K.K.

HAMAMATSU www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Solid State Division
1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81) 53-434-3311, Fax: (81) 53-434-5184
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
Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 8152-375-0, Fax: (49) 8152-265-8
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
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
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
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