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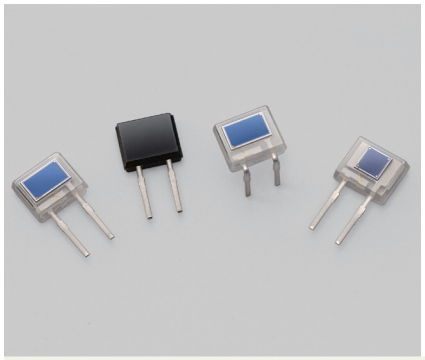
Si PIN photodiodes

S8385/S8729 series



SIP plastic package

The S8385/S8729 series is a family of large area Si PIN photodiodes molded into a miniature plastic SIP package (75% smaller in cubic volume than conventional types). Also available are lead forming types that save space when mounted on a PC board.

Features

- **Small plastic package: 4 × 4.8 × 1.8 ^{t} mm**
- **2-pin SIP lead type (lead length: 4.9 mm)**
- **High sensitivity, high-speed response**
- **2 types of spectral response characteristics available**
  S8385, S8729, S8729-10: for visible to infrared range (λ=320 to 1100 nm)
  S8729-04: for infrared (λ=760 to 1100 nm)
- **Lead forming type also available (S8729-10)**
- **Photosensitive area**
  S8385: 2 × 2 mm
  S8729 series: 2 × 3.3 mm

Applications

- **Barcode scanners**
- **FSO**
- **Optical switches**
- **Laser radar, etc.**

Structure / Absolute maximum ratings

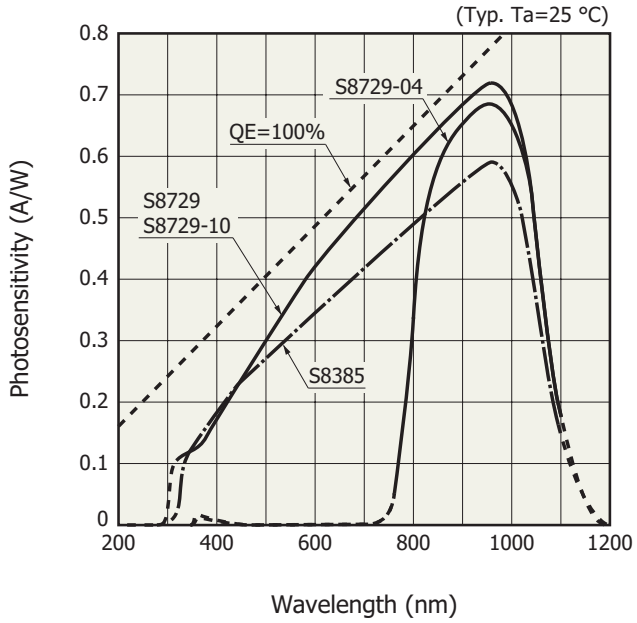
Type no.	Dimensional outline	Package	Photosensitive area size (mm)	Effective photosensitive area (mm^2)	Absolute maximum ratings			
					Reverse voltage V_R max (V)	Power dissipation P (mW)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S8385	①	Plastic	2 × 2	4	20	50	-25 to +85	-40 to +100
S8729			2 × 3.3	6.6				
S8729-04								
S8729-10	②							

Note) Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics

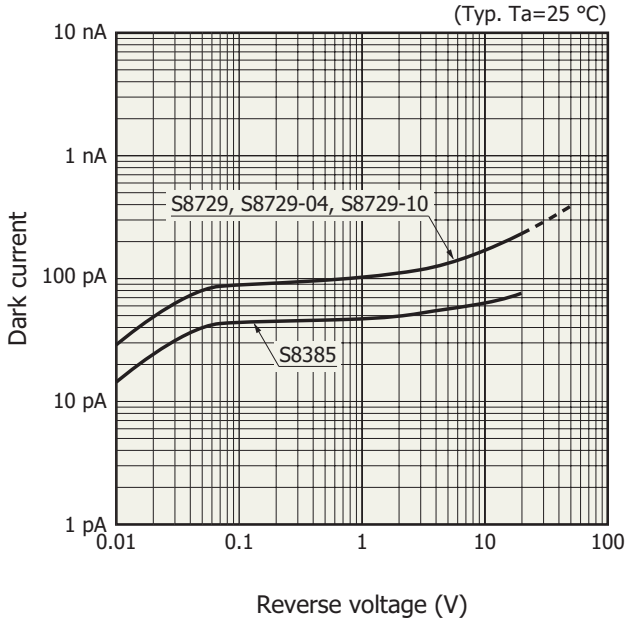
Type no.	Spectral response range λ (nm)	Peak sensitivity wavelength λp (nm)	Photosensitivity S (A/W)				Short circuit current Isc 100 lx (μA)	Dark current I_D V_R=5 V		Temperature coefficient of I_D T_{CID} (times/°C)	Cutoff frequency fc V_R=5 V λ=780 nm R_L=50 Ω -3 dB (MHz)	Terminal capacitance Ct V_R=5 V f=1 MHz (pF)	NEP λ=λp ($W/Hz^{1/2}$)
			λp	660 nm	780 nm	830 nm		Typ. (nA)	Max. (nA)				
S8385	320 to 1100	960	0.56	0.4	0.48	0.5	4.2	0.1	1.0	1.15	25	12	1.0×10^{-14}
S8729	320 to 1100		0.7	0.45	0.55	0.6	7.5	0.2	2.0			16	1.1×10^{-14}
S8729-04	760 to 1100		0.68	-	-	0.52	5						1.2×10^{-14}
S8729-10	320 to 1100		0.7	0.45	0.55	0.6	7.5						1.1×10^{-14}

Spectral response



KPINB0271EC

Dark current vs. reverse voltage



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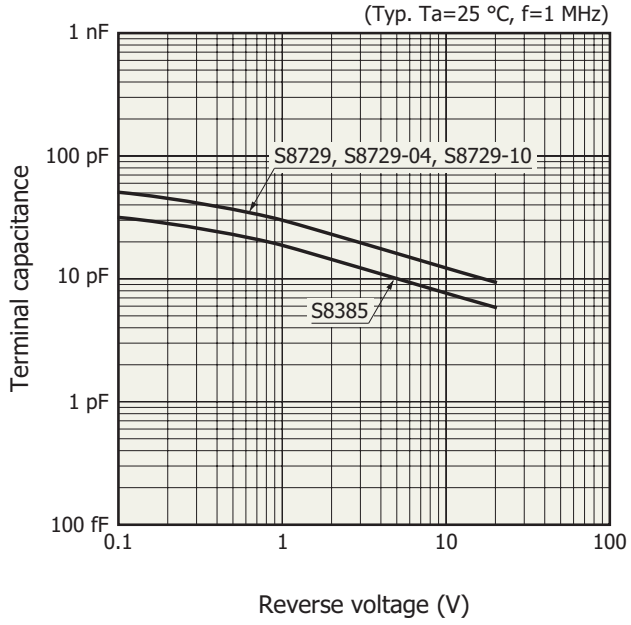
Terminal capacitance vs. reverse voltage



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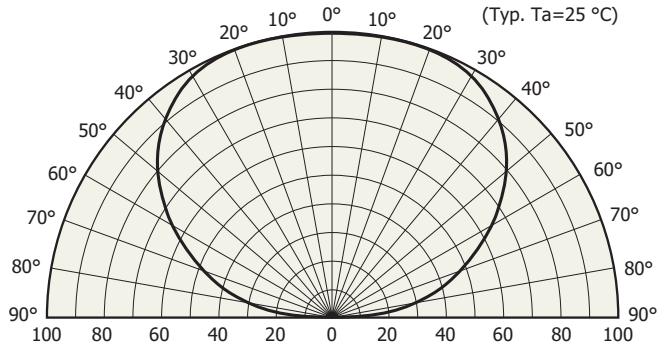
Directivity

S8385



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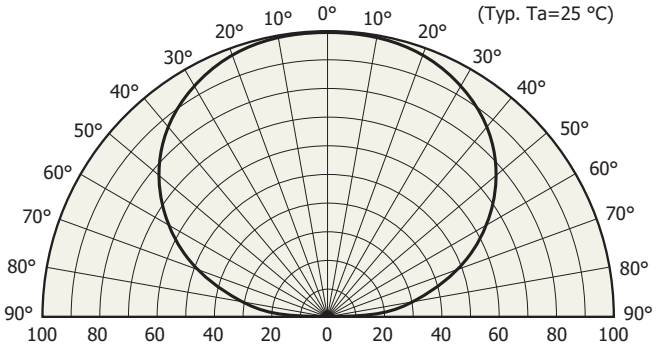
S8729



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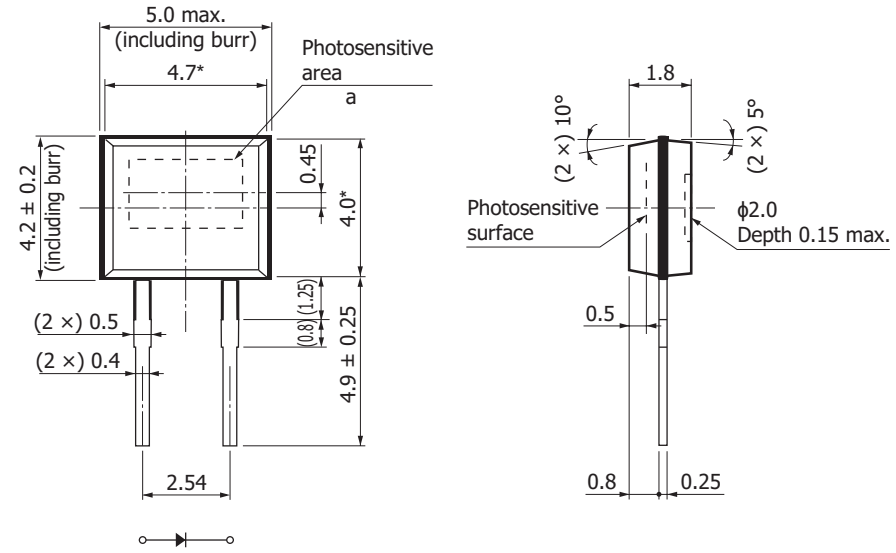
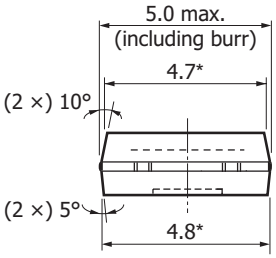
Dimensional outlines (unit: mm)

S8385, S8729, S8729-04





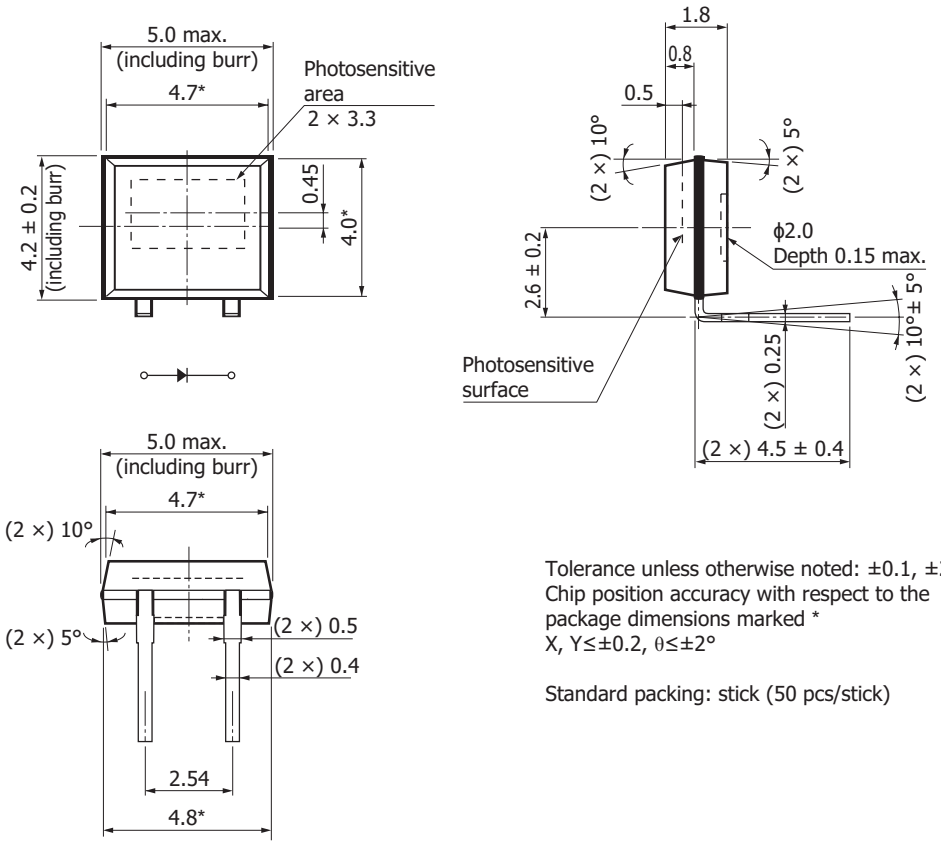
Symbol	S8385	S8729 S8729-04
a	2 × 2	2 × 3.3

Tolerance unless otherwise noted: ±0.1, ±2°
Chip position accuracy with respect to the package dimensions marked *
X, Y≤±0.2, θ≤±2°

Standard packing: stick (50 pcs/stick)

KPINA0090EC

S8729-10



Tolerance unless otherwise noted: ±0.1, ±2°
Chip position accuracy with respect to the package dimensions marked *
X, Y≤±0.2, θ≤±2°

Standard packing: stick (50 pcs/stick)

KPINA0091EC

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions

· Disclaimer
· Metal, ceramic, plastic package products

■ Technical information

· Si photodiode/Application circuit examples

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