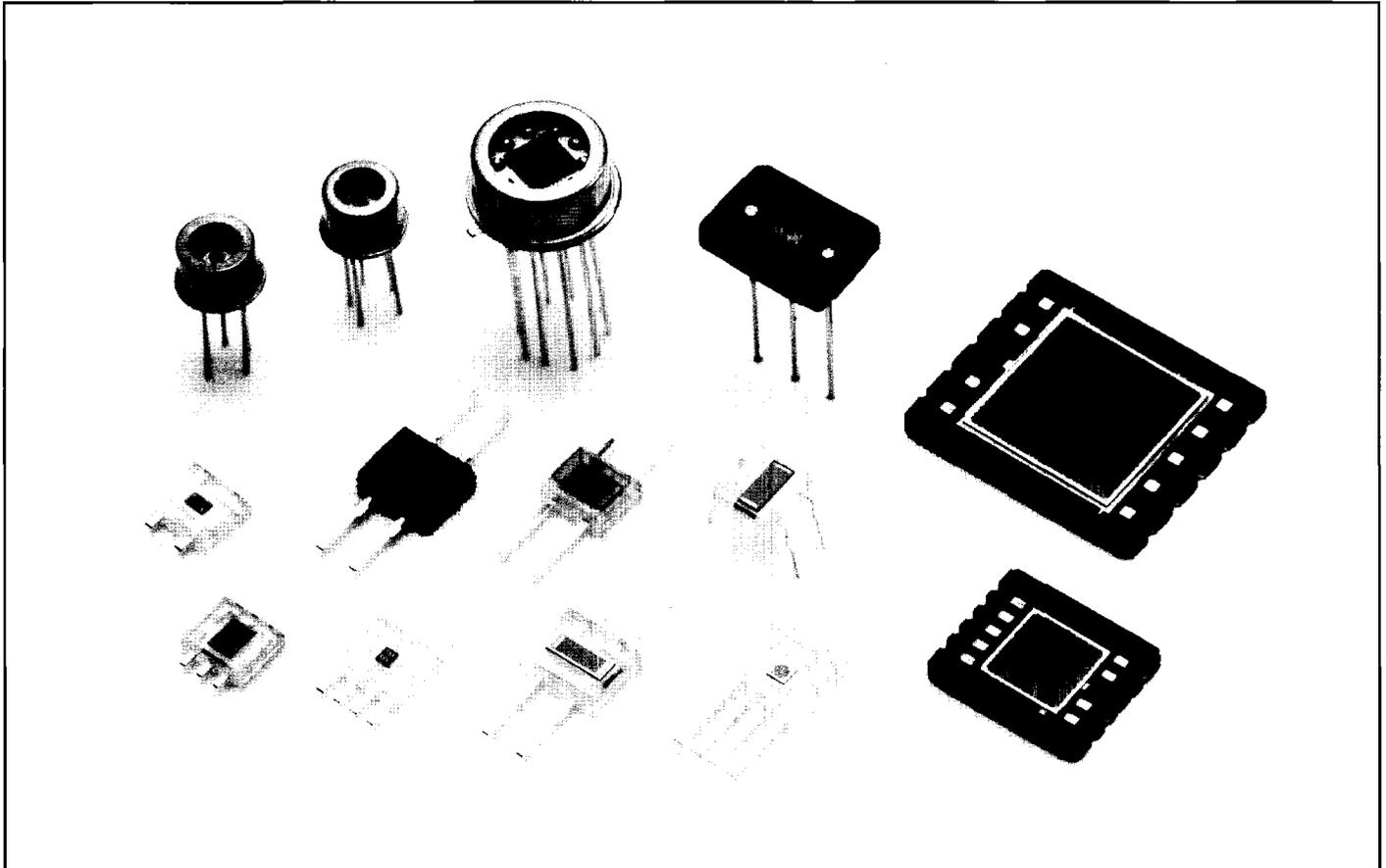


**A wide variety of configurations and performance.
Custom devices are available on request.**



FEATURES

- High sensitivity
- Uniform sensitivity between elements
- Low crosstalk

APPLICATIONS

- Optical pickup of compact disc (CD), video disc (VD), and optical magnetic disc (MO)
- Laser beam alignment
- Synchronous trigger detection of polygon mirror in laser beam printer
- Auto-focus
- Position detection
- Exposure meter, etc.

Hamamatsu manufactures various types of multi-element Si photodiodes to meet the growing demand in a wide range of applications. Featuring high sensitivity and low noise, these photodiodes also have achieved uniform sensitivity between elements and low crosstalk.

Custom-designed photodiodes (element configuration, number of elements, characteristics, and packaging) tailored to your specific needs are also available on request. Please feel free to contact your nearest Hamamatsu sales office.

MULTI-ELEMENT Si PHOTODIODES

Type No.	Features	Outlines (refer to page)	Window Material	Element Gap (μm)	Spectral Response Range Mark (P.4) (nm)	Peak Sensitivity Wavelength λ_p (nm)	Photo Sensitivity $\lambda = \lambda_p$ Typ. (A/W)
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Two-element Types (Plastic)

S3060-02	For position detection, AF, visible light cut-off	① (P.6)	Resin	20	760 to 1100/A	960	0.58
S4204	For position detection, MO, anti-reflection coating	② (P.6)			320 to 1100/B		
S2721-02	5 μm gap, for position detection, laser beam printer	③ (P.6)		5	320 to 1060/C	900	0.56
S2722-02	50 μm gap, for position detection, laser beam printer			50			
S2545-02	For position detection, AF, visible light cut-off	① (P.6)		30	760 to 1100/A	960	0.58
S3096-02	For position detection, AF	④ (P.6)			320 to 1100/D		
S6241	For position detection, MO	⑤ (P.6)		15	320 to 1060/E	900	0.65

Two-element: Round-in-square Type (Plastic)

S4364	For AE	⑥ (P.6)	Visible light compensating filter	—	320 to 730/F	560	0.30
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Two-element Type (Ceramic Case)

S4531	For CD, VD, MO, laser beam axis alignment	⑬ (P.7)	Resin	350	320 to 1060/K	920	0.57
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Four-element Types (Plastic)

S2856	For CD, VD, MO	⑦ (P.6)	Resin	10	320 to 1060/G	900	0.55	
S6058					320 to 1000/H	800		
S2544				⑧ (P.6)	20	320 to 1060/G		900
S6242					⑨ (P.6)			

Four-element Types (Metal Case)

S1651-03	For CD, VD, MO	⑩ (P.7)	Flat borosilicate	10	320 to 1060/M	900	0.57
S1557-03				20			
S4349	For laser beam axis alignment, low IR sensitivity	⑫ (P.7)	Quartz glass	100	190 to 1000/L	720	0.45

Four-element Types (Ceramic Case)

S4521	Large photosensitive area, low IR sensitivity, for laser beam axis alignment	⑭ (P.7)	Flat borosilicate	30	320 to 1000/N	800	0.5
S5980	Spatial light transmission, CD VD, MO	⑮ (P.7)	Resin		320 to 1100/O	960	0.72
S5981		⑯ (P.8)					

Six-element Types (Plastic)

S6344	For CD, VD	⑰ (P.7)	Resin	—	320 to 1060/I	920	0.65
S6795					320 to 1000/J	800	0.57

(Ta=25 °C)

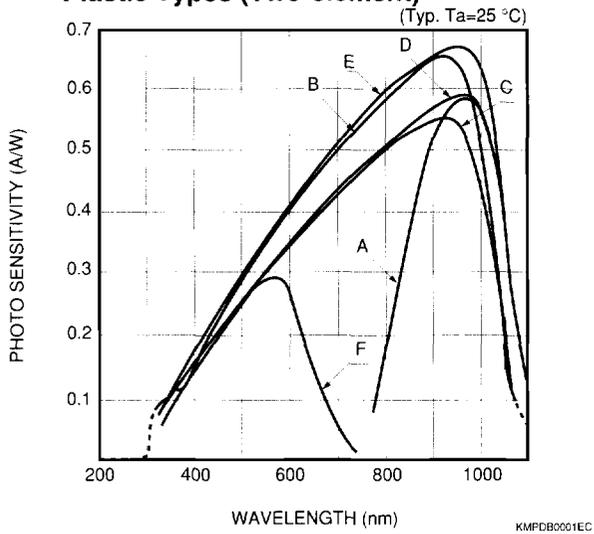
Dark Current to Vr=10 V Per all elements		Temperature Dependence of Id Typ. (Times/°C)	Terminal Capacitance Per all elements Vr=10 V, f=1 MHz Of Typ. (pF)	Cut-off Frequency fc Vr=10 V, Rl=50 Ω, λ=830 nm Typ. (MHz)	NEP Vr=10 V Typ. (W/Hz ^{1/2})	Absolute Maximum Ratings			Type No.
Typ. (nA)	Max. (nA)					Reverse Voltage Vr Max. (V)	Operating Temperature Topr (°C)	Storage Temperature Tstg (°C)	
0.05	0.5	1.15	7	30	6.9×10 ⁻¹⁵	20	-25 to +85	-40 to +100	S3060-02
0.1	1.0				8.7×10 ⁻¹⁵				S4204
	2.0		10	50	7.2×10 ⁻¹⁵				S2721-02
0.05	0.5			25	9.2×10 ⁻¹⁵				S2722-02
0.05*	1*		2*	40	6.2×10 ⁻¹⁵				S2545-02
									S3096-02
						S6241			
0.003 ^A	0.03 ^A	1.12	400 ^B	—	3.3×10 ⁻¹⁵ ^A	10	-10 to +60	-20 to +70	S4364
0.1*	2*	1.15	2.5*	20	1.0×10 ⁻¹⁴	30	-20 to +60	-20 to +70	S4531
0.04	0.2	1.15	5	100	6.5×10 ⁻¹⁵	20	-25 to +85	-40 to +100	S2856
0.04 ^F	0.2 ^F		6 ^F	150 ^F	6.5×10 ⁻¹⁵ ^F				S6058
0.04	0.2		5	80	6.5×10 ⁻¹⁵				S2544
0.1* ^C	2* ^C		4* ^C	40 ^C	8.7×10 ⁻¹⁵ ^C				S6242
0.03*	1*	1.15	1*	100	5.4×10 ⁻¹⁵	20	-20 to +100	-55 to +125	S1651-03
0.02*				80	4.4×10 ⁻¹⁵				S1557-03
0.01* ^C	0.2* ^C	1.12	25* ^C	20 ^C	4.0×10 ⁻¹⁵ ^C		-20 to +60	-55 to +80	S4349
0.15* ^C	3* ^C	1.15	100* ^C	20	1.4×10 ⁻¹⁴ ^C	30	-20 to +60	-20 to +80	S4521
0.3*	2*	1.15	10*	25	1.4×10 ⁻¹⁴		-40 to +100	-40 to +125	S5980
0.6*	4*		35*	20	1.9×10 ⁻¹⁴		S5981		
0.2	2	1.15	1*	60	1.2×10 ⁻¹⁴	20	-25 to +85	-40 to +100	S6344
0.1 ^C	1 ^C		1* ^C	200 ^C	9.9×10 ⁻¹⁵				S6795

- ^A Vr=1 V
 - ^B Vr=10 mV
 - ^C Vr=0 V, f=10 kHz
 - ^D Vr=0 V
 - ^E Vr=5 V
 - ^F Vr=3 V
 - ^G Vr=10 mV
- *: Value per element.

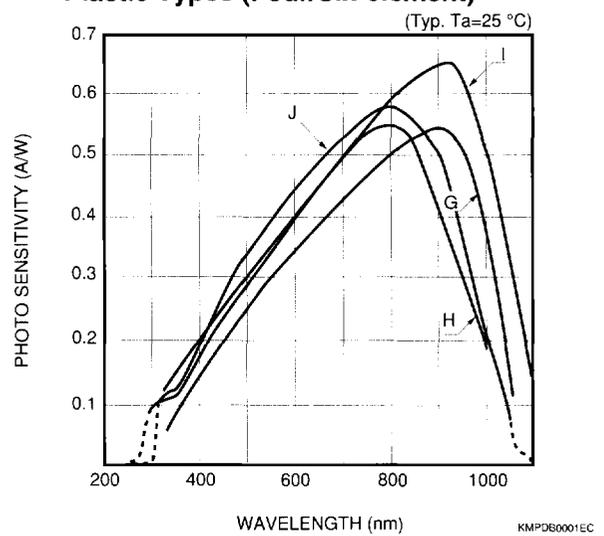
MULTI-ELEMENT Si PHOTODIODES

● Spectral Response

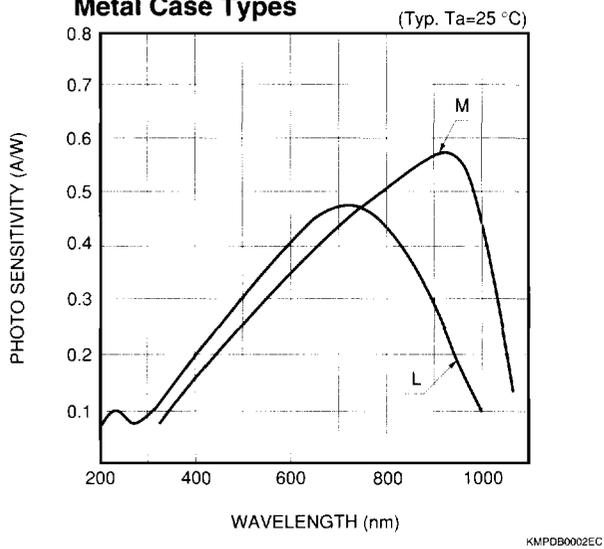
Plastic Types (Two-element)



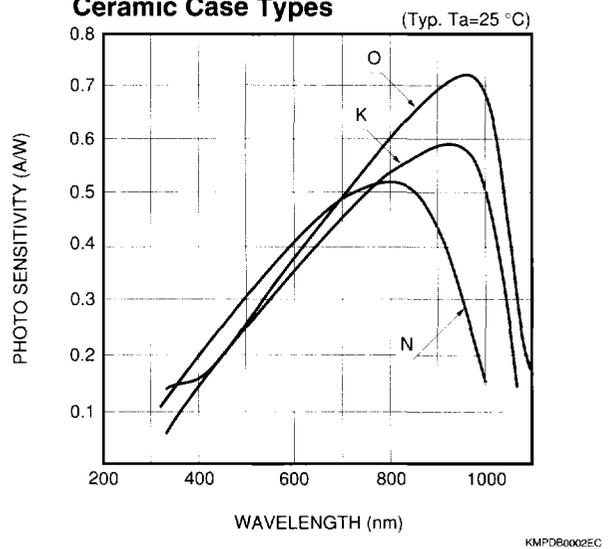
Plastic Types (Four/Six-element)



Metal Case Types

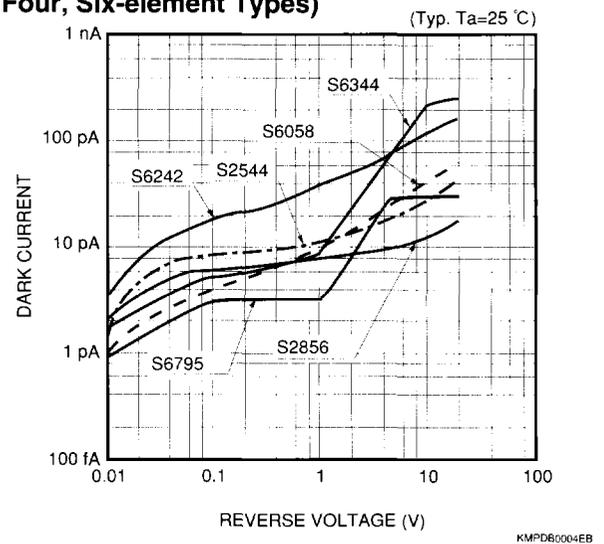
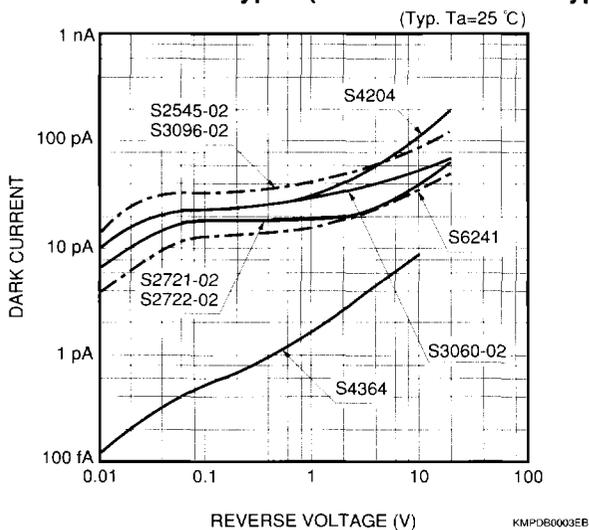


Ceramic Case Types

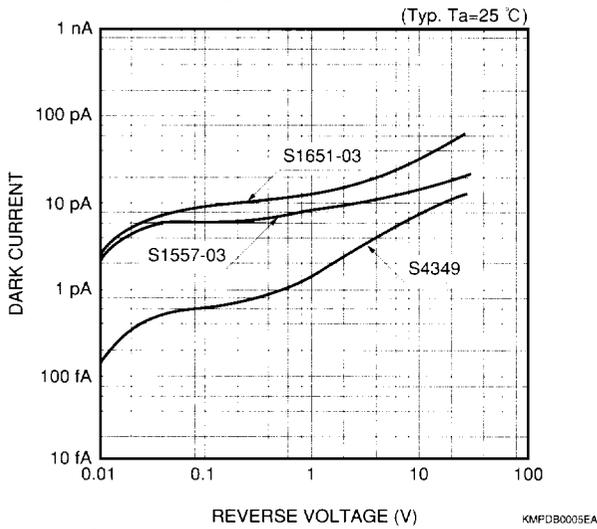


● Dark Current vs. Reverse Voltage

Plastic Mold Types (Left: Two-element Types. Right: Four, Six-element Types)



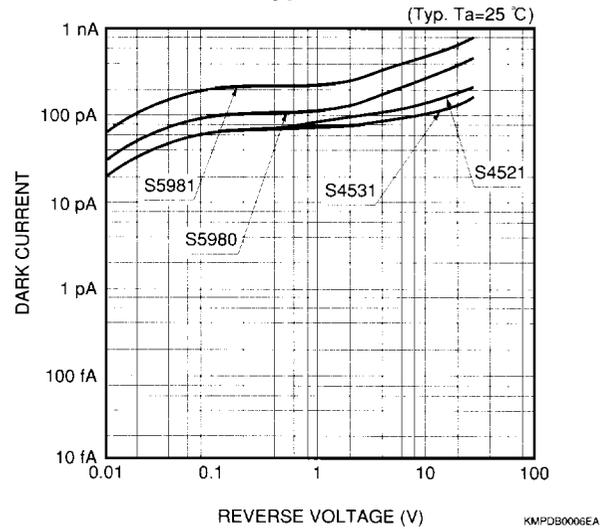
Metal Case Types*



*: Value per element.

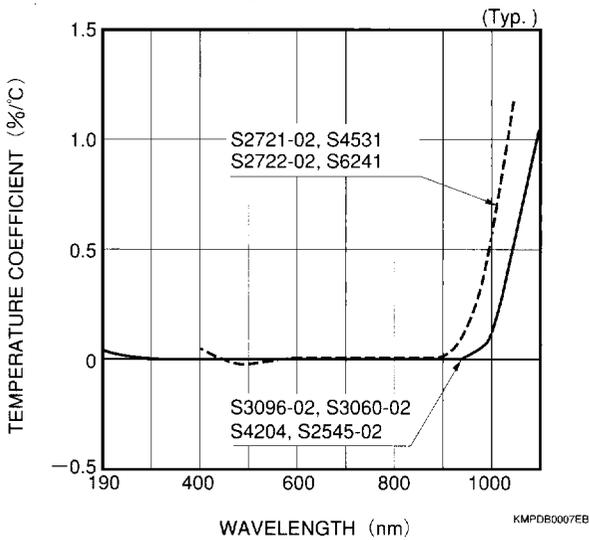
(The others are values per all elements.)

Ceramic Case Types*

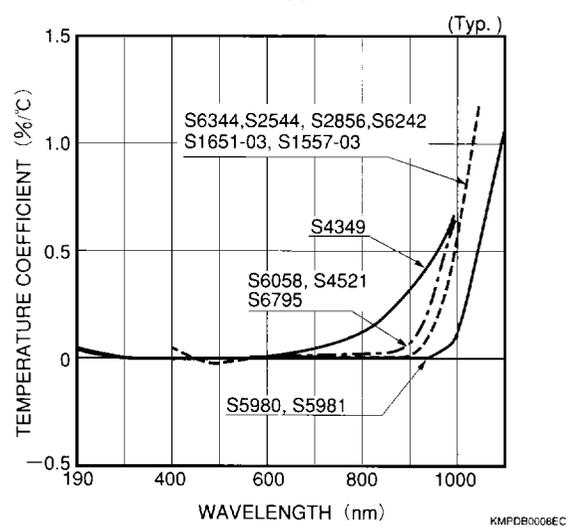


Temperature Characteristics of Spectral Response

Two-element Types

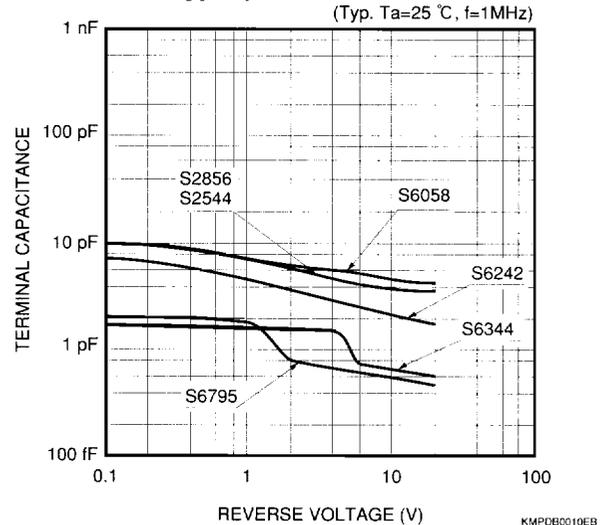
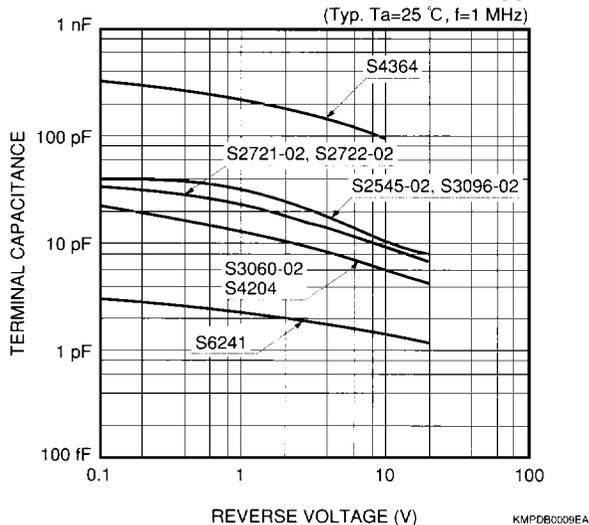


Four, Six-element Types



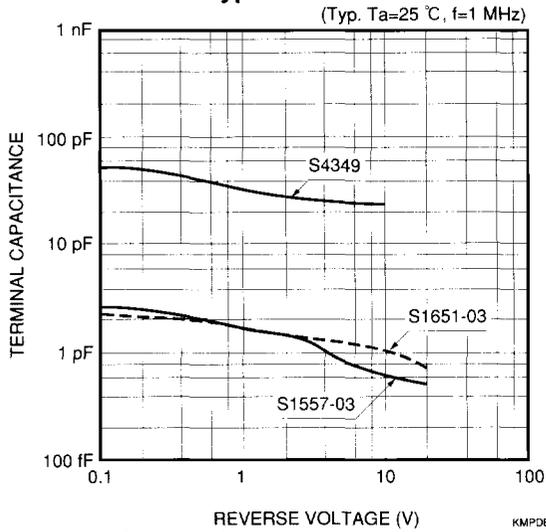
Terminal Capacitance vs. Reverse Voltage

Plastic Types (Left: Two-element Types, Right: Four, Six-element Types)

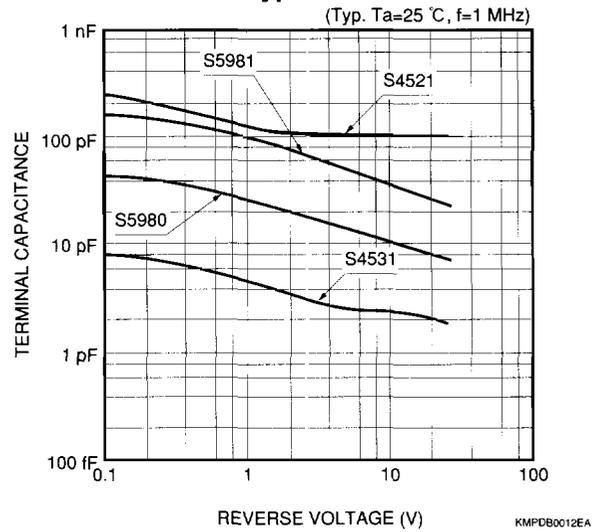


MULTI-ELEMENT Si PHOTODIODES

Metal Case Types*



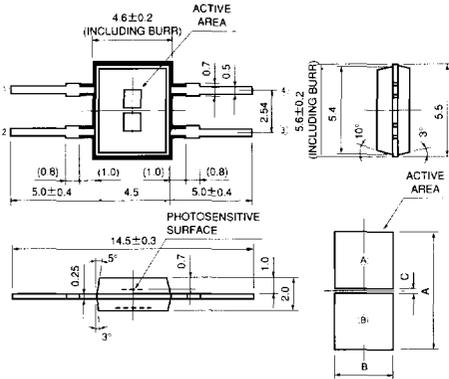
Ceramic Case Types*



*: Value per element.
(The others are values for all elements.)

Unit:mm

1 S3060-02, S2545-02



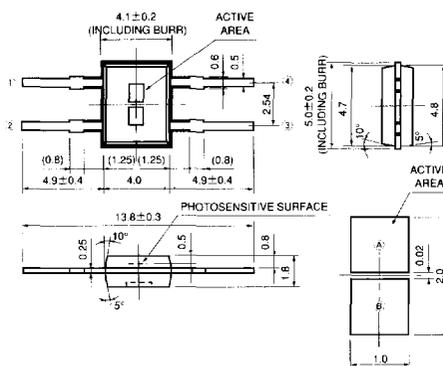
Pin Connection

- ① Anode (A)
- ② Cathode Common
- ③ Anode (B)
- ④ Cathode Common

	S3060-02	S2545-02
A	2.0	3.0
B	1.0	1.2
C	0.02	0.03

KMPDA0002EA

2 S4204

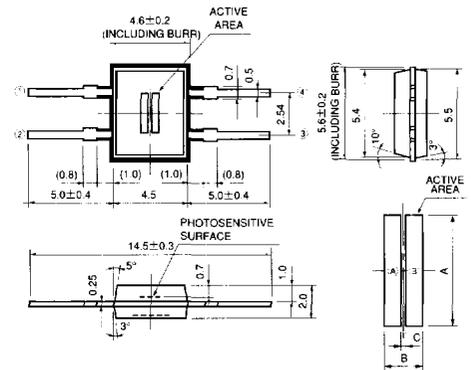


Pin Connection

- ① Anode (A)
- ② Cathode Common
- ③ Anode (B)
- ④ Cathode Common

KMPDA0006EA

3 S2721-02, S2722-02



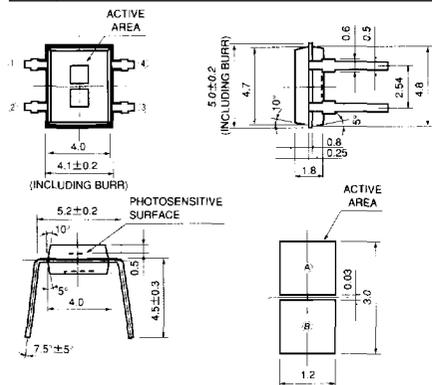
Pin Connection

- ① Anode (A)
- ② Cathode Common
- ③ Anode (B)
- ④ Cathode Common

	S2721-02	S2722-02
A	3.0	3.0
B	1.0	1.0
C	0.005	0.05

KMPDA0003EA

4 S3096-02

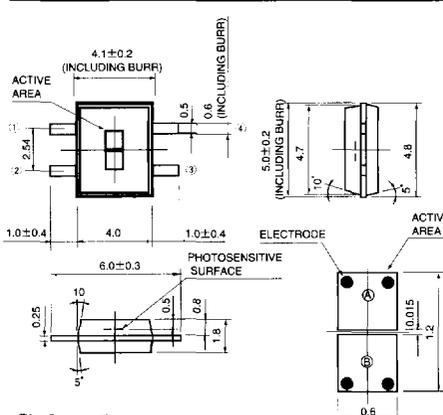


Pin Connection

- ① Anode (A)
- ② Cathode Common
- ③ Anode (B)
- ④ Cathode Common

KMPDA0004EB

5 S6241

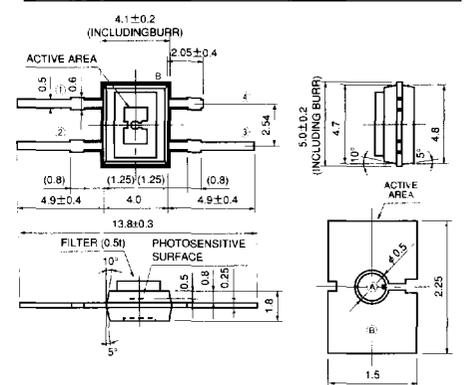


Pin Connection

- ① Anode (A)
- ② Cathode Common
- ③ Anode (B)
- ④ Cathode Common

KMPDA0051JA

6 S4364



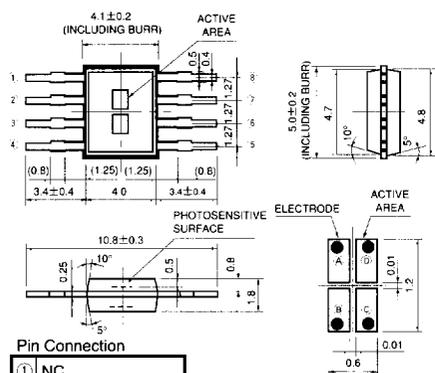
Pin Connection

- ① Anode (B)
- ② Cathode Common
- ③ Anode (A)
- ④ Cathode Common

KMPDA0005EA

Unit:mm

7 S2856, S6058

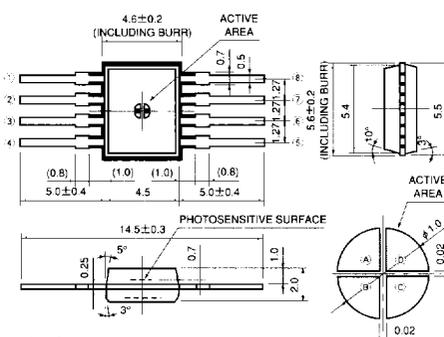


Pin Connection

①	NC
②	Anode (A)
③	Anode (B)
④	Cathode Common
⑤	NC
⑥	Anode (C)
⑦	Anode (D)
⑧	Cathode Common

KMPDA0007EA

8 S2544

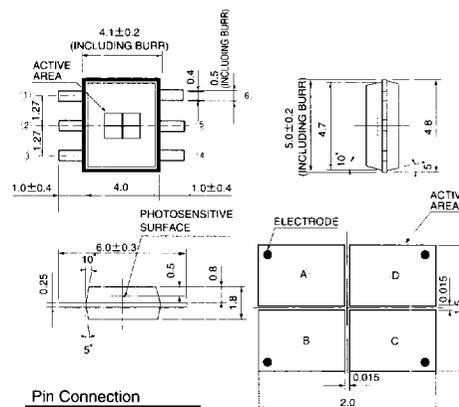


Pin Connection

①	NC
②	Anode (A)
③	Anode (B)
④	Cathode Common
⑤	NC
⑥	Anode (C)
⑦	Anode (D)
⑧	Cathode Common

KMPDA0008EA

9 S6242

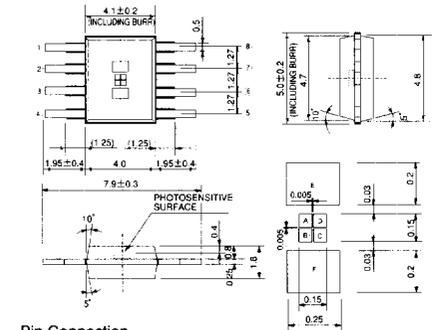


Pin Connection

①	Anode (A)
②	Cathode Common
③	Anode (B)
④	Anode (C)
⑤	Cathode Common
⑥	Anode (D)

KMPDA00052JA

10 S6344, S6795

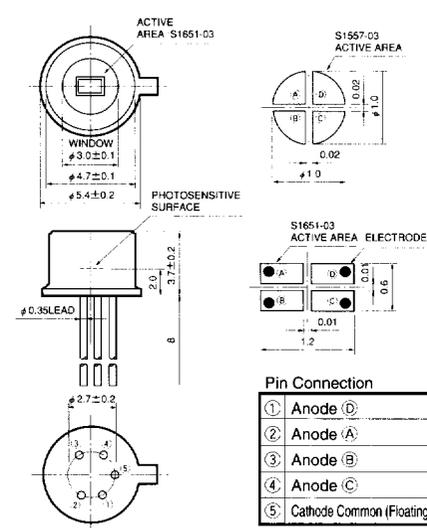


Pin Connection

①	Anode (E)
②	Cathode Common
③	Anode (A)
④	Anode (B)
⑤	Anode (F)
⑥	Cathode Common
⑦	Anode (C)
⑧	Anode (D)

KMPDA00050EA

11 S1557-03, S1651-03

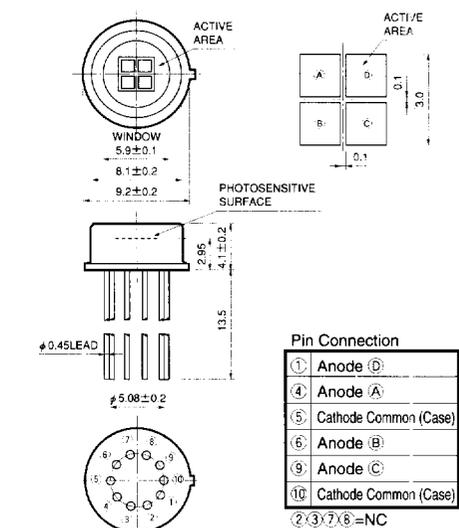


Pin Connection

①	Anode (D)
②	Anode (A)
③	Anode (B)
④	Anode (C)
⑤	Cathode Common (Floating)

KMPDA0017EB

12 S4349



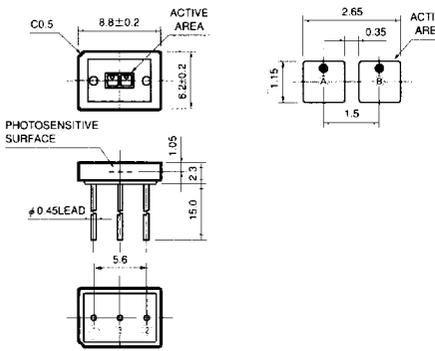
Pin Connection

①	Anode (D)
④	Anode (A)
⑤	Cathode Common (Case)
⑥	Anode (B)
⑨	Anode (C)
⑩	Cathode Common (Case)

②,③,⑦,⑧=NC

KMPDA0015EA

13 S4531

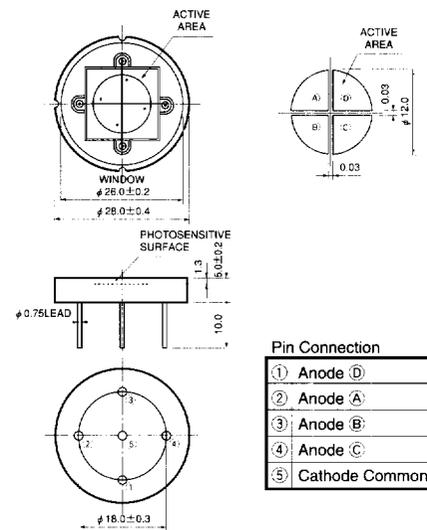


Pin Connection

①	Anode (A)
②	Anode (B)
③	Cathode Common

KMPDA0013EA

14 S4521

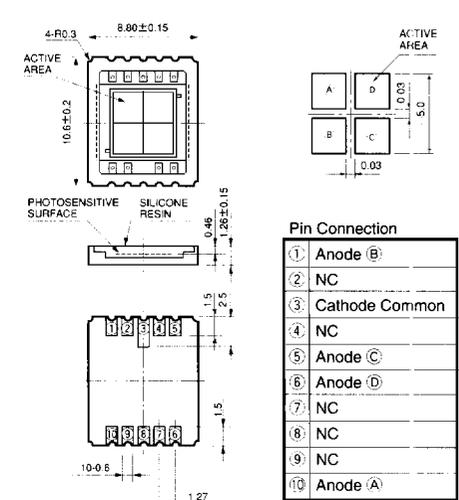


Pin Connection

①	Anode (D)
②	Anode (A)
③	Anode (B)
④	Anode (C)
⑤	Cathode Common

KMPDA0018EB

15 S5980



Pin Connection

①	Anode (B)
②	NC
③	Cathode Common
④	NC
⑤	Anode (C)
⑥	Anode (D)
⑦	NC
⑧	NC
⑨	NC
⑩	Anode (A)

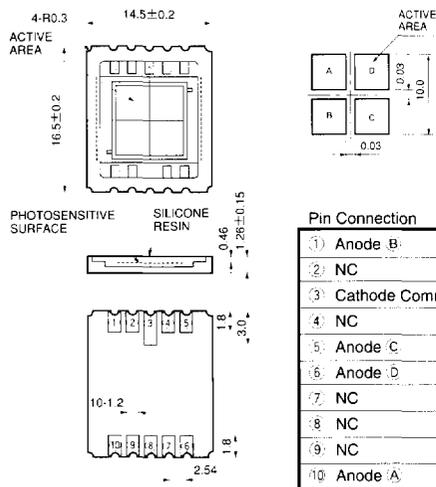
The burr of 0.3 mm maximum on each side should be allowed.

KPH4A0036EB

MULTI-ELEMENT Si PHOTODIODES

Unit:mm

16S5981



The burr of 0.3 mm maximum on each side should be allowed.

KPINA0037EB

Element Number	Element Shape	Element Size (mm)	Element Gap (mm)	Metal Case Type No.	Ceramic Case Type No.	Plastic Mold		
						Type No.	Package	Lead Shape
2		□1.15×2ch	0.35	—	S4531	—	—	—
		(0.6×1.2) /2ch	0.015	—	—	S6241	Transparent	Flat
		(1×2) /2ch	0.02	—	—	S3060-02	Visible light cut-off	Flat
		(1×2) /2ch	0.02	—	—	S4204	Transparent	Flat
		(1.2×3) /2ch	0.03	—	—	S2545-02	Visible light cut-off	Flat
		(1×3) 2ch	0.005	—	—	S3096-02	Transparent	DIP
		(1×3) 2ch	0.05	—	—	S2721-02	Transparent	Flat
4		(10×10) /2ch	0.03	—	S5870	—	—	—
		1.5×2.25, φ 0.5	—	—	—	S4364	With visible light compensating filter	Flat
		(0.6×1.2) 4ch	0.01	S1651-03	—	S2856, S6058	Transparent	Flat
		φ 1.0/4ch	0.02	S1557-03	—	S2544	Transparent	Flat
		(1.5×2) 4ch	0.015	—	—	S6242	Transparent	Flat
		(3×3) /4ch	0.1	S4349	—	—	—	—
		φ 12.0/4ch	0.03	—	S4521	—	—	—
6		(5×5) /4ch	0.03	—	S5980	—	—	—
		(10×10) /4ch	0.03	—	S5981	—	—	—
		Center: □0.15/4ch Side: (0.2×0.25)×2ch	—	—	—	S6344, S6795	Transparent	Flat

HAMAMATSU

HAMAMATSU PHOTONICS K.K., Solid State Division

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