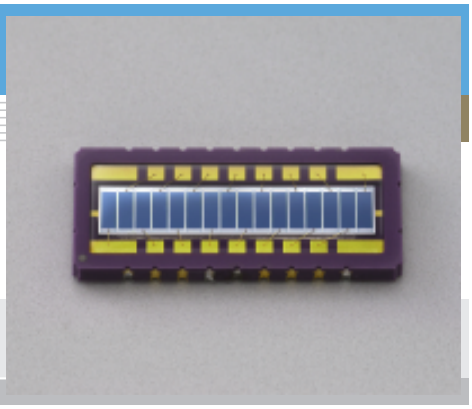
Si PIN photodiode array
S8558



Surface mountable 16-element photodiode array

S8558 is a 16-element Si PIN photodiode array in a ceramic chip carrier package suitable for surface mount using solder reflow techniques. S8558 can be used in a wide range of applications including spectrophotometer and position detection.

Features

- Active area: 0.7 × 2.0 mm (× 16 elements)
- Ceramic chip carrier package for surface mount
- Suitable for solder reflow
- High sensitivity

Applications

- Spectrophotometers
- Position detection

■ Absolute maximum ratings (Ta=25 °C)

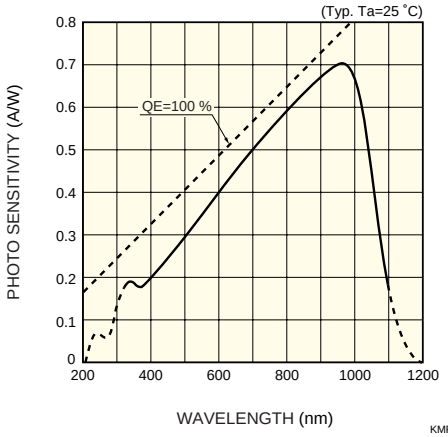
Parameter	Symbol	Value	Unit
Reverse voltage	V_R Max.	30	V
Operating temperature	Topr	-40 to +100	°C
Storage temperature	Tstg	-40 to +125	°C

■ Electrical and optical characteristics (Ta=25 °C, per 1 element)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	320 to 1100	-	nm
Peak sensitivity wavelength	λp		-	960	-	nm
Photo sensitivity	S	λ=660 nm	-	0.45	-	A/W
		λ=780 nm	-	0.57	-	A/W
		λ=830 nm	-	0.62	-	A/W
		λ=λp	-	0.72	-	A/W
Short circuit current	Isc	100 *lx*	-	1.0	-	μA
Dark current	I_D	V_R=10 V	-	0.05	1.0	nA
Temperature coefficient of I_D	T_{CID}		-	1.15	-	times/°C
Cut-off frequency	fc	V_R=10 V, R_L=50 Ω λ=830 nm, -3 dB	-	25	-	MHz
Terminal capacitance	Ct	V_R=10 V, f=1 MHz	-	5	10	pF
Noise equivalent power	NEP	V_R=10 V, λ=λp	-	5.6×10^{-15}	-	$W/Hz^{1/2}$

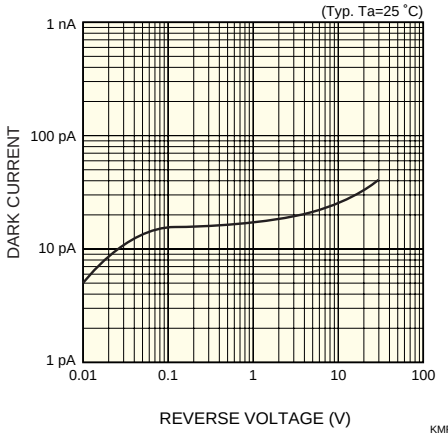
SOLID STATE DIVISION

■ Spectral response



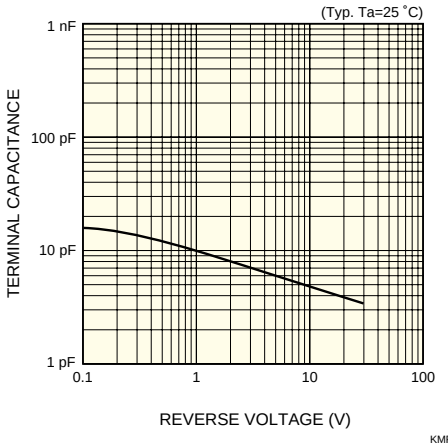
KMPDB0193EA

■ Dark current vs. reverse voltage



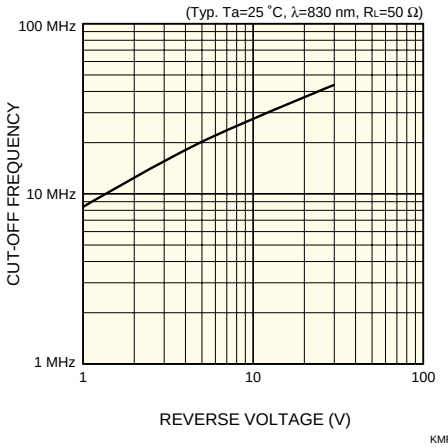
KMPDB0194EA

■ Terminal capacitance vs. reverse voltage



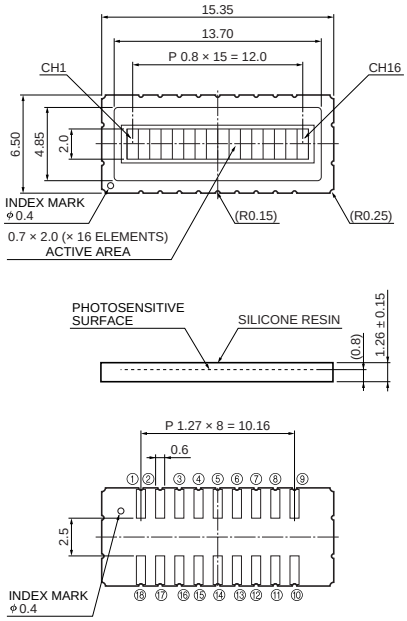
KMPDB0195EA

■ Cut-off frequency vs. reverse voltage



KMPDB0196EA

■ Dimensional outline (unit: mm)



① 1	⑩ 16
② 3	⑪ 14
③ 5	⑫ 12
④ 7	⑬ 10
⑤ 9	⑭ 8
⑥ 11	⑮ 6
⑦ 13	⑯ 4
⑧ 15	⑰ 2
⑨ KC	⑱ NC

Tolerance unless otherwise noted: ±0.25
Chip position accuracy with respect to the package center
X, Y ≤ ±0.3

KMPDA0144EA

HAMAMATSU PHOTONICS K.K., Solid State Division
1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 53-434-3311, Fax: (81) 53-434-5184, www.hamamatsu.com
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) 08152-3750, Fax: (49) 08152-2658
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

Cat. No. KMPD1062E01
Aug. 2006 DN