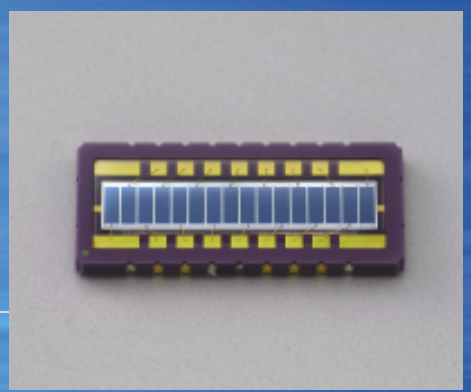


Si PIN photodiode array

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 ($\times 16$ elements)
- Ceramic chip carrier package for surface mount
- Suitable for solder reflow
- High sensitivity

Applications

- Spectrophotometers
- Position detection

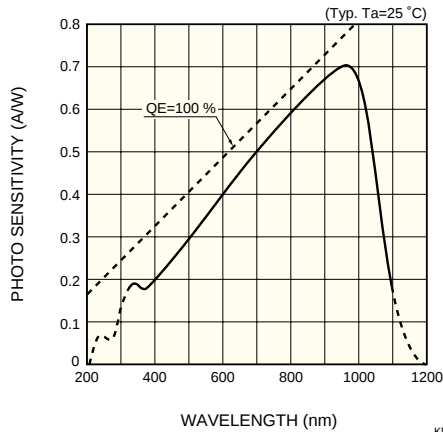
■ Absolute maximum ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Reverse voltage	V_R Max.	30	V
Operating temperature	T_{opr}	-40 to +100	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +125	$^\circ\text{C}$

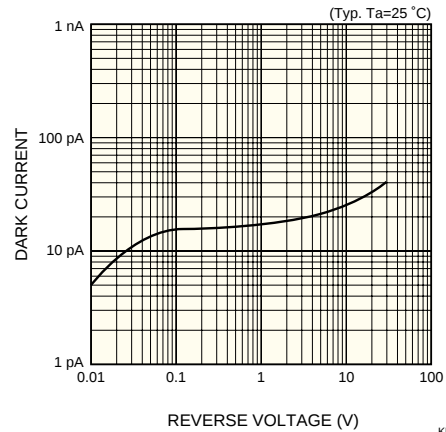
■ Electrical and optical characteristics ($T_a=25^\circ\text{C}$, per 1 element)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	320 to 1100	-	nm
Peak sensitivity wavelength	λ_p		-	960	-	nm
Photo sensitivity	S	$\lambda=660$ nm	-	0.45	-	A/W
		$\lambda=780$ nm	-	0.57	-	A/W
		$\lambda=830$ nm	-	0.62	-	A/W
		$\lambda=\lambda_p$	-	0.72	-	A/W
Short circuit current	I_{sc}	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/ $^\circ\text{C}$
Cut-off frequency	f_c	$V_R=10$ V, $R_L=50\ \Omega$ $\lambda=830$ nm, -3 dB	-	25	-	MHz
Terminal capacitance	C_t	$V_R=10$ V, $f=1$ MHz	-	5	10	pF
Noise equivalent power	NEP	$\lambda=\lambda_p$	-	5.6×10^{-15}	-	$\text{W/Hz}^{1/2}$

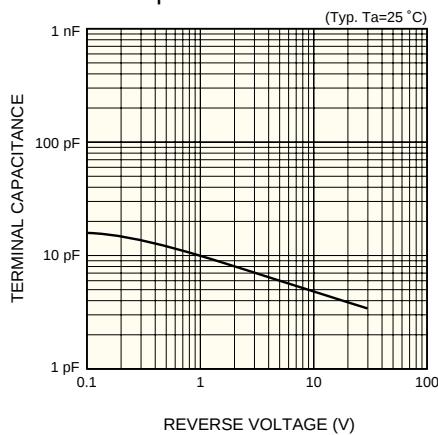
- Spectral response



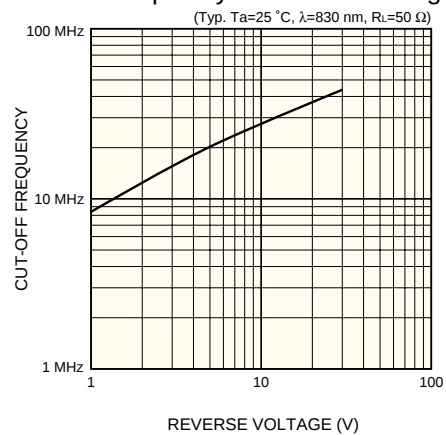
■ Dark current vs. reverse voltage



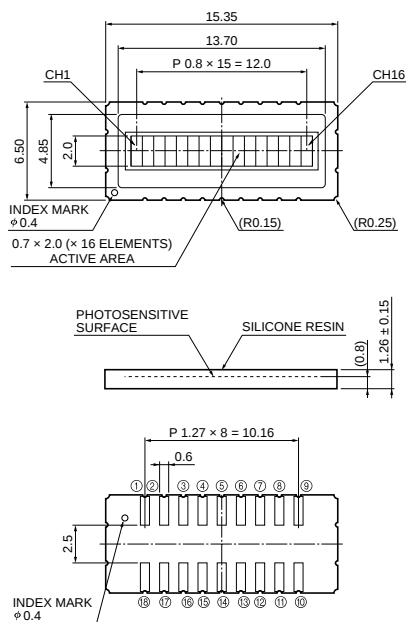
■ Terminal capacitance vs. reverse voltage



■ Cut-off frequency vs. reverse voltage



■ 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 $\leq \pm 0.3$

KMPDA0144EA

HAMAMATSU

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