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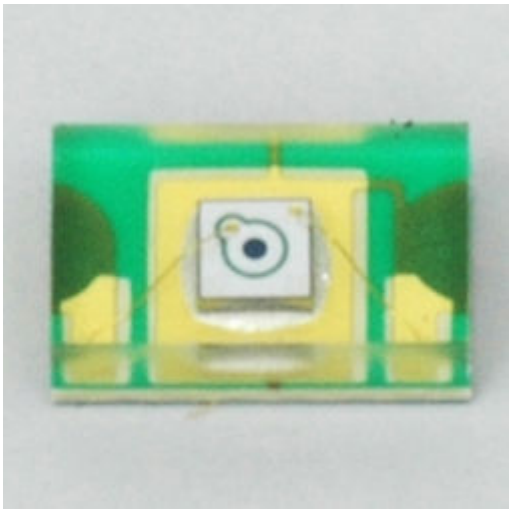
Si APD S12427-02

Low bias operation
For 760nm band
Small package



■ Features

- Miniature and thin package 1.8 x 3.1 x 1.0^{t} mm
- Stable operation at low bias
- High-speed response
- High sensitivity
- Low noise

■ Application

- Optical rangefinder
- Laser Rader
- FSO (free space optics)

■ General ratings

Parameter	Symbol	S12427-02	Unit
Active area size *1	A	φ0.2	mm
Effective active area	-	0.03	mm^2
Package	-	Plastic	-

*1:Active area in which a typical gain can be obtained

■ Absolute maximum ratings

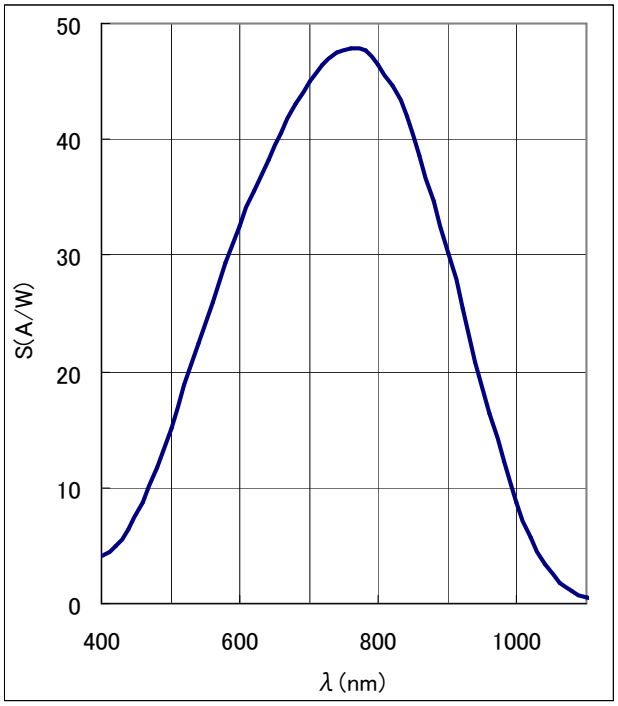
Parameter	Symbol	Value	Unit
Operating temperature	Topr	-20 to +60	ºC
Storage temperature	Tstg	-40 to +80	ºC
Reverse current	Irmax	200	μA
Forward current	Ifmax	10	mA

■ Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	S12427-02			Unit
			Min.	Typ.	Max.	
Spectral response range	λ	M=1		400 to 1000		nm
Peak sensitivity wavelength	λp	M=100	-	760	-	nm
Photo sensitivity	S	M=1, λ=760nm	-	0.48	-	A/W
Quantum efficiency	QE	M=1, λ=760nm	-	78	-	%
Breakdown voltage	V_{BR}	I_D=100μA	80	100	120	V
Temperature coefficient of V_{BR}	γ		-	0.42	-	V/°C
Dark current	ID	M=100	-	0.05	0.5	nA
Cut-off frequency	fc	M=1, λ=760nm R_L=50Ω, -3dB	-	1500	-	MHz
Terminal capacitance	Ct	M=100, f=1MHz	-	1.2	-	pF
Excess noise index	x	M=100, λ=760nm	-	0.3	-	
Gain	M	λ=760nm	-	100	-	

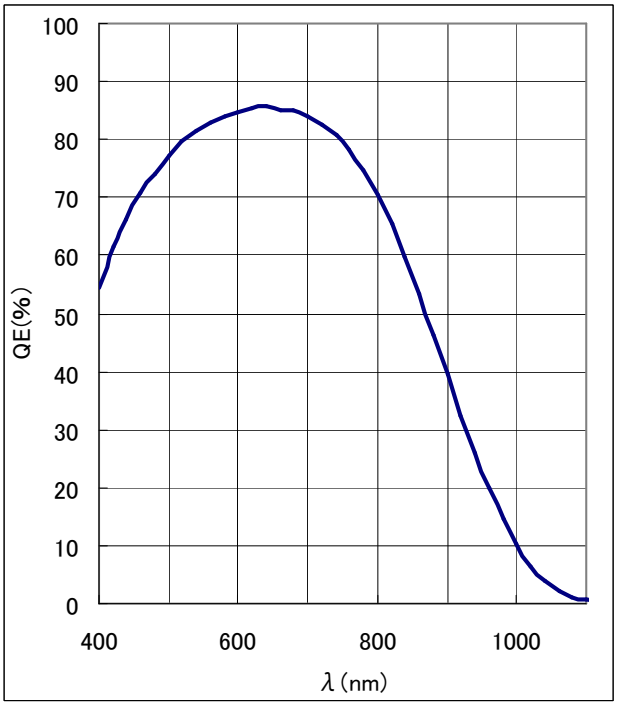
■ Spectral response

(Typ. Ta=25 °C , M=100)

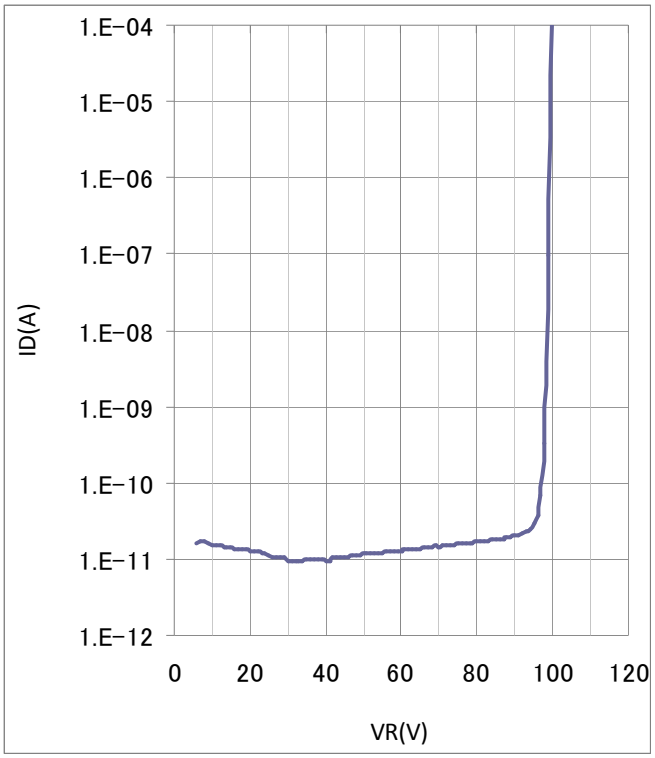


■ Quantum efficiency vs. wavelength

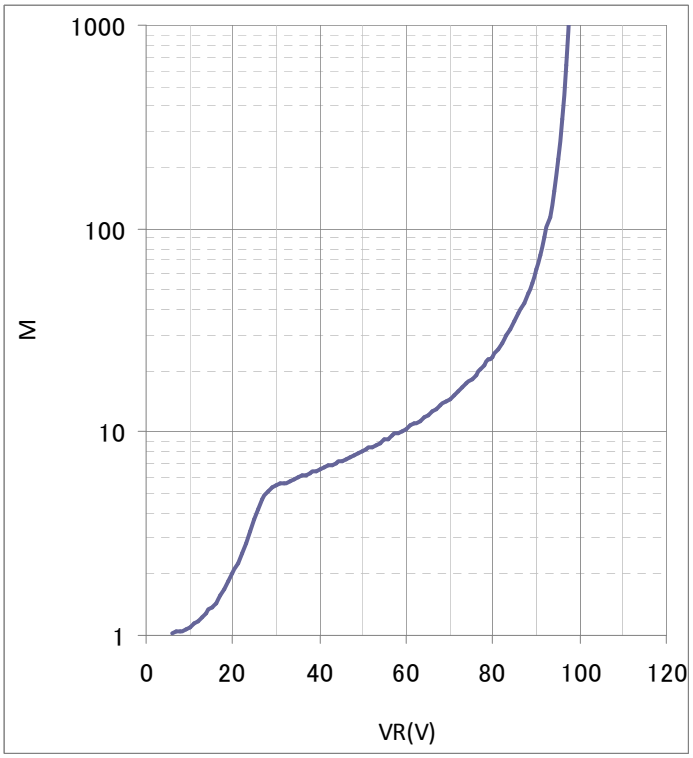
(Typ. Ta=25 °C)



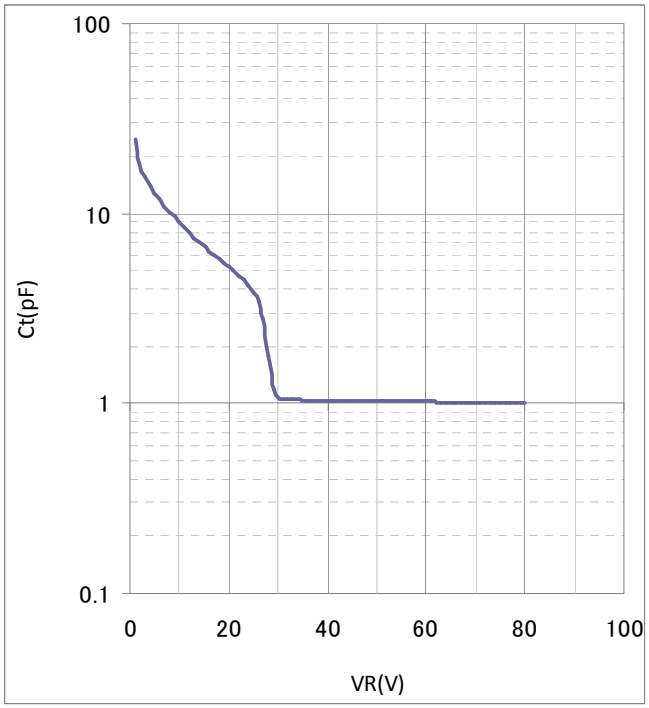
■ Dark current vs. reverse voltage
(Typ. Ta=25 °C)



■ Gain vs. reverse voltage
(Typ. Ta=25 °C)

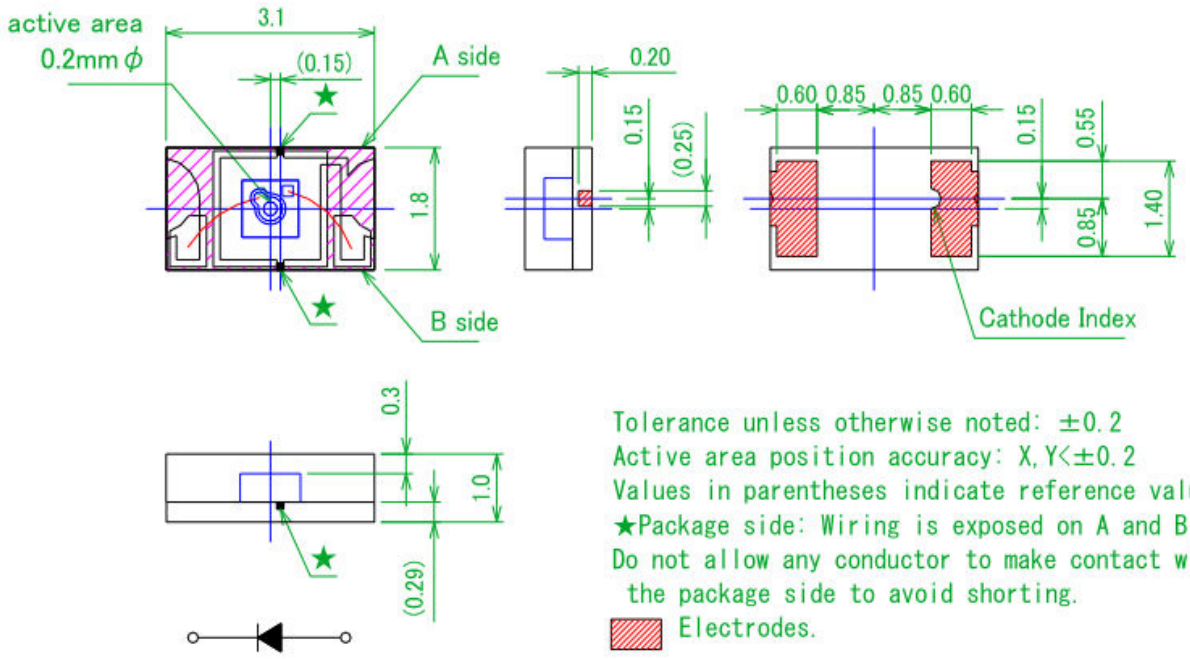


■ Terminal capacitance vs. reverse voltage
(Typ. Ta=25 °C, f=1MHz)

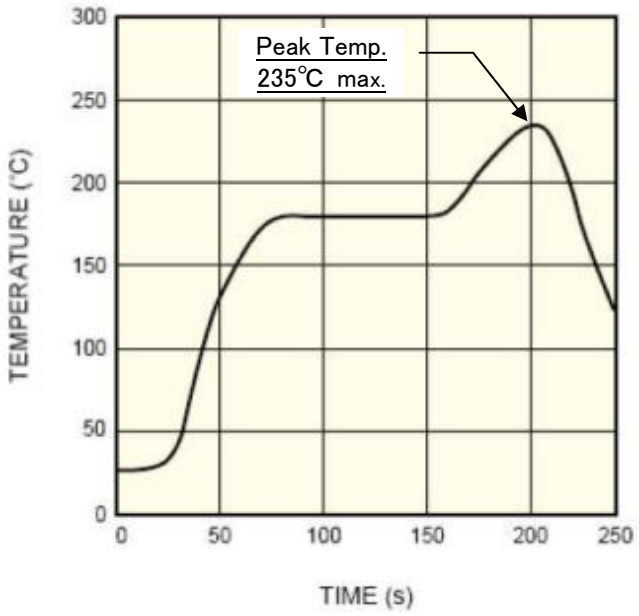


■ Dimensional outline (unit: mm, Tolerance: ±0.2 mm unless otherwise noted)

S12427-02



■ Recommended solder reflow condition



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