

MPPC S15643 series

Feb. 28, 2020

SPECIFICATION SHEET

■ Feature

- Small photosensitive area : 1x1mm/channel
- Linear array type : 1x16ch
- Pixel pitch : 25 / 50 μm

■ Structure

Parameters	S15643-1025N-16	S15643-1050N-16	Unit
Number of channels	1x16		
Effective photosensitive area /channel	1.0x1.0		mm^2
Pixel pitch	25	50	μm
Number of pixels / channel	1584	396	-
Geometrical fill factor	47	74	%
Package	Surface mount type		-
Window	Glass		-
Window refractive index	1.51		-

■ Absolute Maximum Ratings

Parameters	Symbol	S15643 series	Unit
Operating temperature ^{*1}	T _{opr}	-20 to +60	°C
Storage temperature ^{*1}	T _{stg}	-20 to +80	°C
Reflow soldering conditions	T _{sol}	Peak temperature: 240°C, twice ^{*2}	-

^{*1}: No condensation

^{*2}: JEDEC level 5a

■ Electrical and optical characteristics (Typ. T_a=25 deg C)

Parameters	Symbol	S15643-1025N-16	S15643-1050N-16	Unit
Spectral response range	λ	320 to 900		nm
Peak sensitivity wavelength	λ_p	450		nm
Photon detection efficiency at λ_p ^{*3}	PDE	25	40	%
Breakdown voltage	V _{BR}	53 ±5		V
Recommended operating voltage ^{*4}	V _{op}	V _{BR} + 5	V _{BR} + 3	V
Vop Variation between channels (+/-) Typ. Max.		0.05		V
		0.15		
DarkCount Typ. Max.	-	90		kcps
		270		
Crosstalk probability Typ.	-	3	10	%
Terminal capacitance	Ct	40		pF
Gain ^{*5}	M	7.0x10 ⁵	1.7x10 ⁶	-
Temperature coefficient of recommended reverse voltage	ΔT _{Vop}	54		mV/ °C

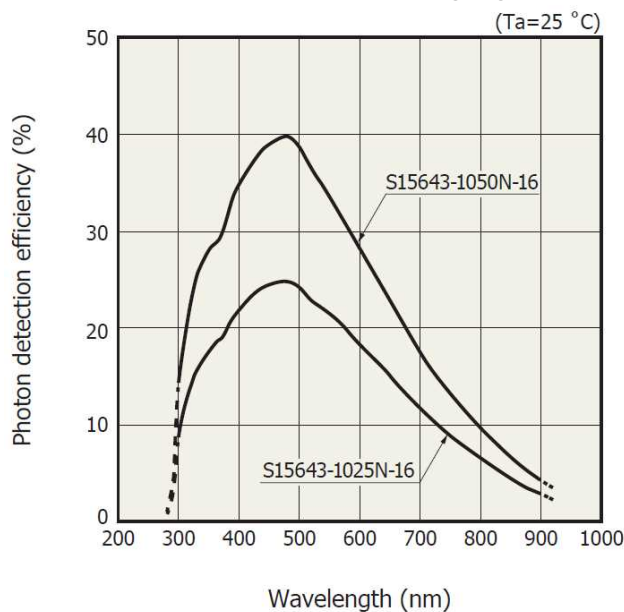
^{*3}: Photon detection efficiency does not include crosstalk and after pulse.

^{*4}: Refer to the data attached for each product.

^{*5}: Characteristics change with applied over voltage. Please refer to next section in detail.

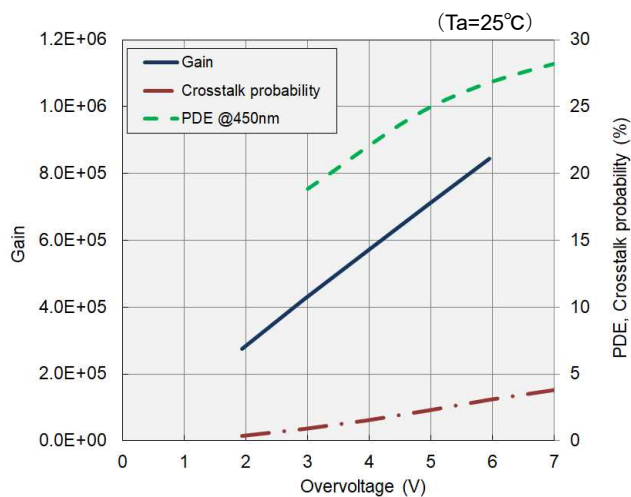
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■ Photon detection efficiency(typical example)

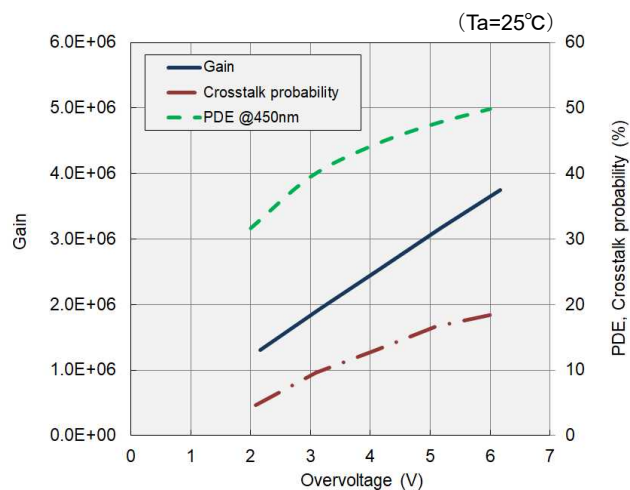


■ Gain, crosstalk probability, photon detection efficiency vs. over voltage (typical example)

S15643-1025N-16

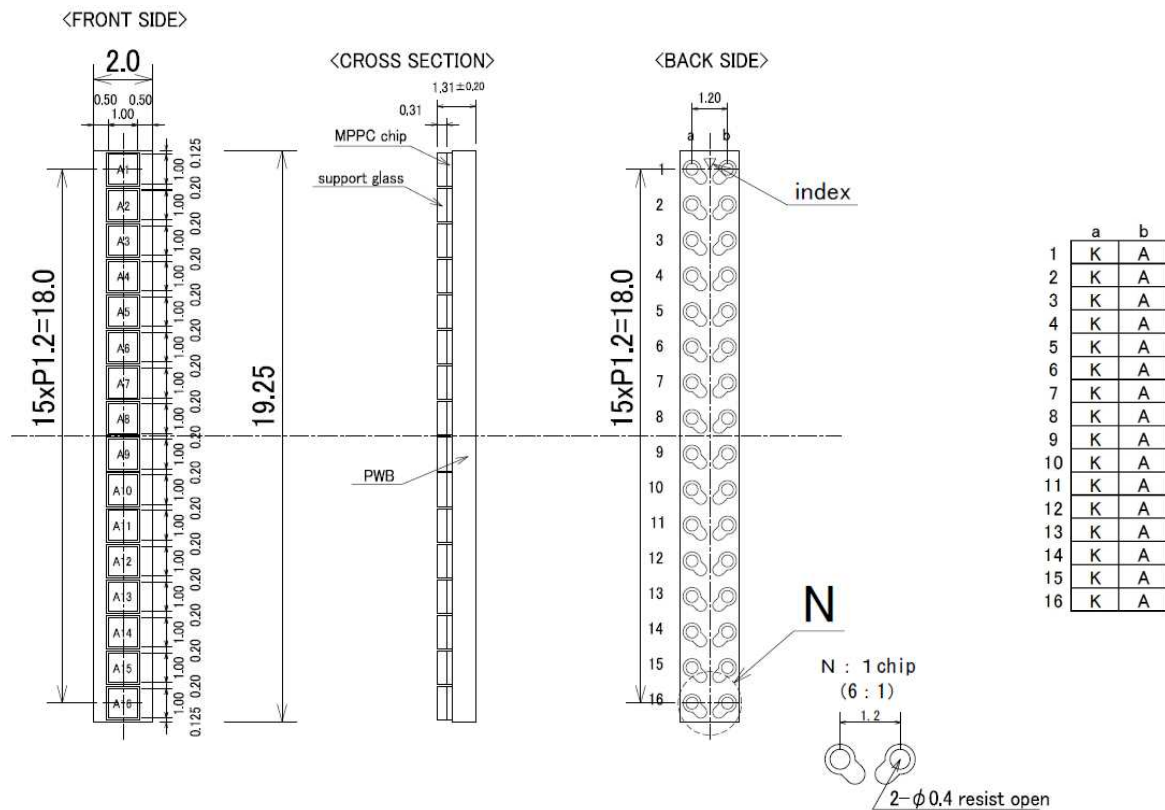


S15643-1050N-16



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■ Dimensional outlines (unit: mm)



■ Recommended land pattern(unit: mm)

