

Si-APD-Array SAH1L12LCC44-Series

Description

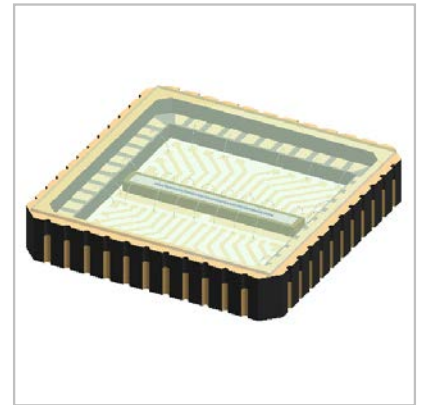
The SAH1L12-Series is a linear Si-APD-array with 12 elements in a LCC44 package with protective window. Responsivity is optimised for 850 nm.

Features

- 12 element APD array
- Very narrow gap
- High quantum efficiency
- Low noise, high speed
- 620 μm x 190 μm active area per element
- Wide operating temperature range
- Low crosstalk

Applications

- Rangefinding
- LIDAR ACC
- Laser scanner



Electro-Optical Characteristics, $T_a = 25\text{ }^{\circ}\text{C}$

| Parameter | Condition | Min | Typ | Max | Unit |
|-----------------------------|----------------------------------------------------------------|-----------|---------|----------|---------------|
| # of elements | | 12 | | | |
| Active area | | 620 x 190 | | | μm |
| Gap | | 40 | | | μm |
| Dark current I_d | $M = 100$, $\lambda = 905\text{ nm}$, per element | | 4 | 10 | nA |
| Capacitance, C | $M = 100$, per element | | 3 | | pF |
| Responsivity, R_l | $M = 100$, $\lambda = 905\text{ nm}$ | 40 | 50 | | A/W |
| Rise time, t_r | $M = 100$, $\lambda = 905\text{ nm}$, $R_L = 50\text{ Ohms}$ | | 1000 | | psec |
| Breakdown voltage, V_{BR} | $I_R = 10\text{ }\mu\text{A}$ | 80 | 150 | 200 | V |
| Temperature coefficient | $I_R = 10\text{ }\mu\text{A}$ | | 0.44 | | V/K |
| Crosstalk | $\lambda = 905\text{ nm}$ | | 50 | | dB |
| Dark current uniformity | $M = 100$ | | ± 5 | ± 20 | % |
| Photo current uniformity | $M = 100$, $\lambda = 905\text{ nm}$ | | ± 5 | ± 20 | % |

Absolute Maximum Ratings

| Parameter | | Min | Max | Unit |
|-----------------------------|----------|-----|-------|--------------------|
| Storage temperature | | -55 | 100 | $^{\circ}\text{C}$ |
| Operating temperature | | -40 | 85 | |
| Soldering (15s) | | | 260 | |
| Reverse current (Peak) | CW | | 0.200 | mA |
| | 1s Pulse | | 1 | |
| Forward current (Avg) | CW | | 10 | |
| | 1s Pulse | | 50 | |
| Max total power dissipation | | | 60 | mW |

Curves

Fig. 1: Spectral Response

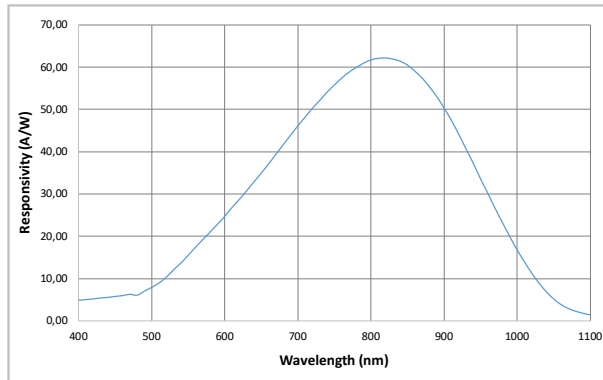


Fig. 2: Quantum Efficiency

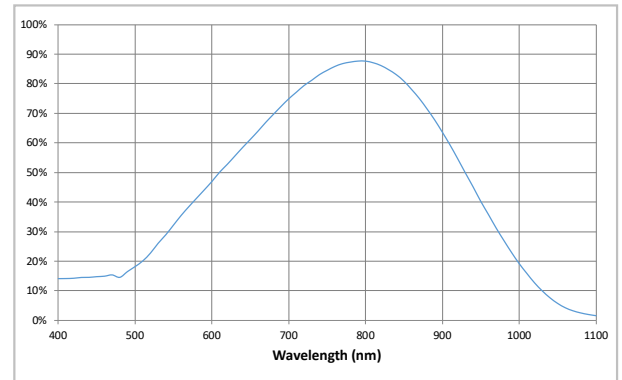


Fig. 3: Multiplication

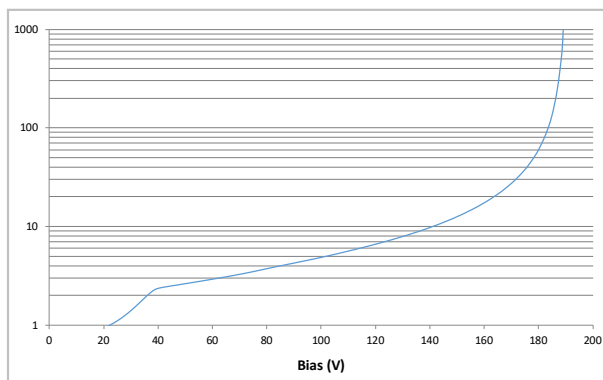


Fig. 4: Current vs. Reverse Voltage

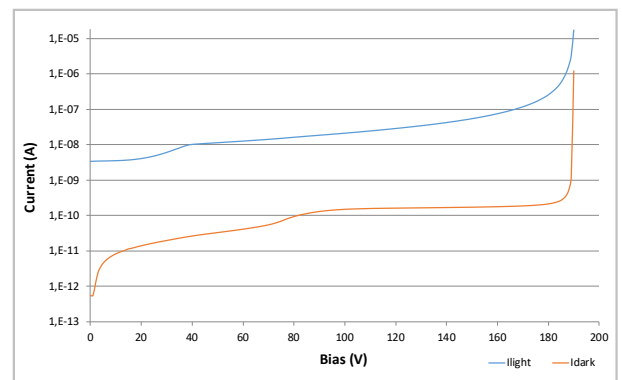


Fig. 5: Capacitance vs. Reverse Voltage

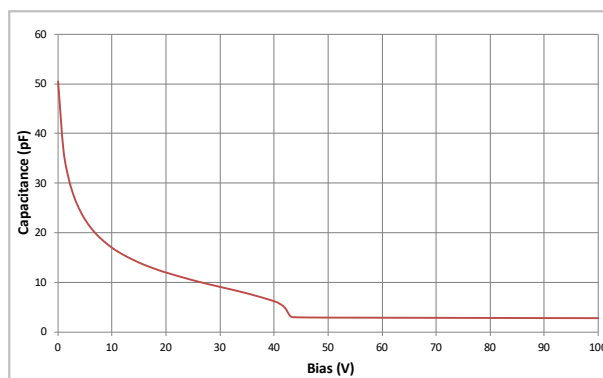
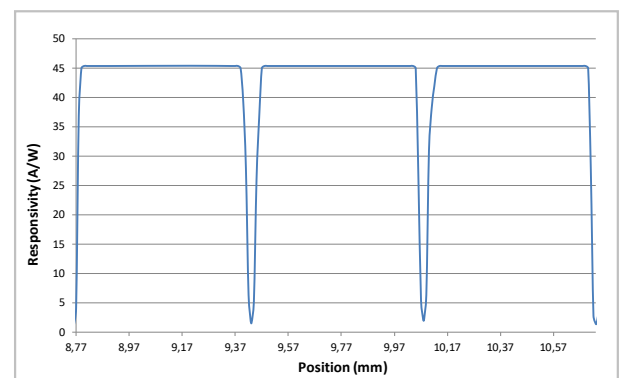
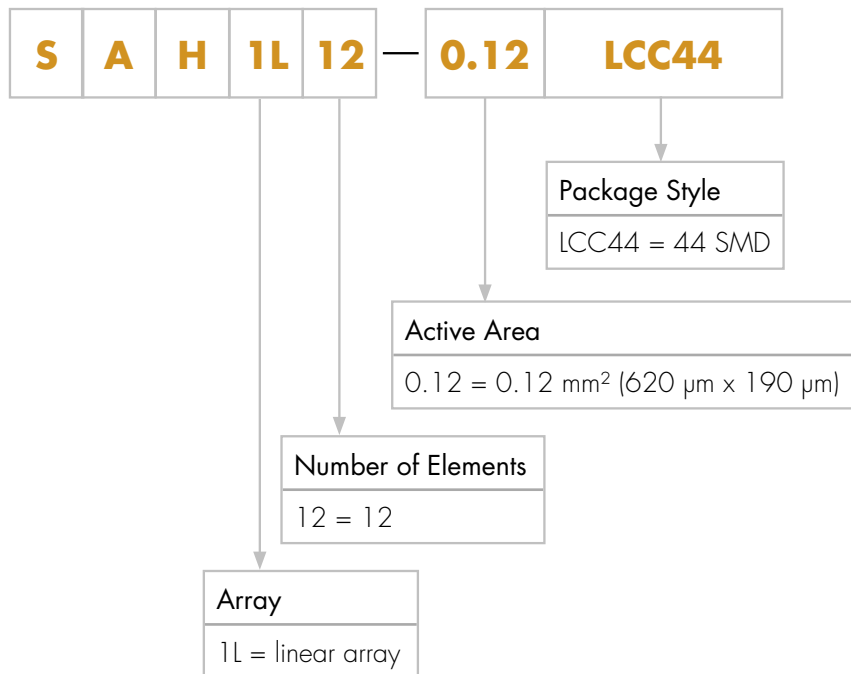


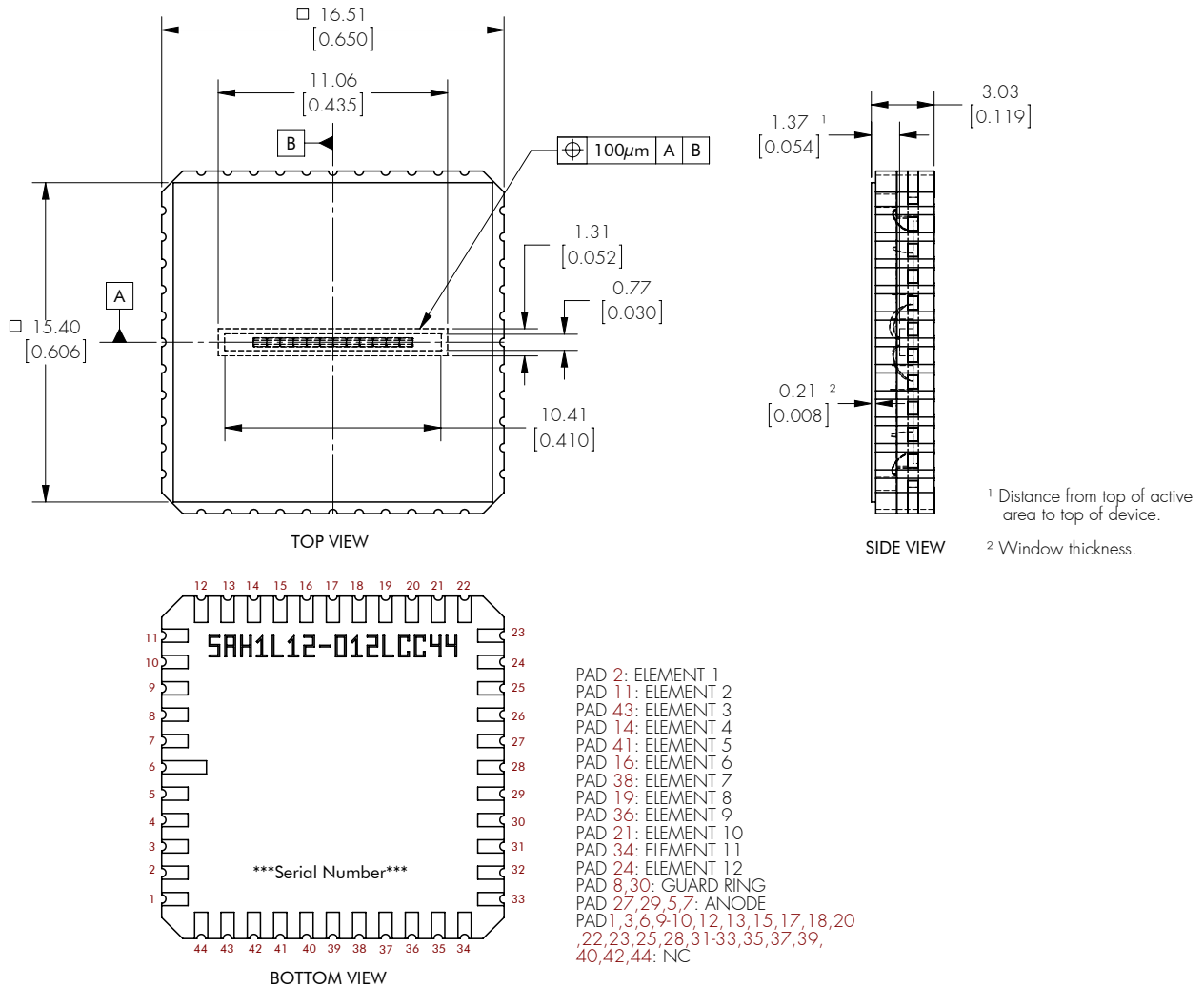
Fig. 6: Spot Scan



Product Number Designation



Package Drawings



Product Changes

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