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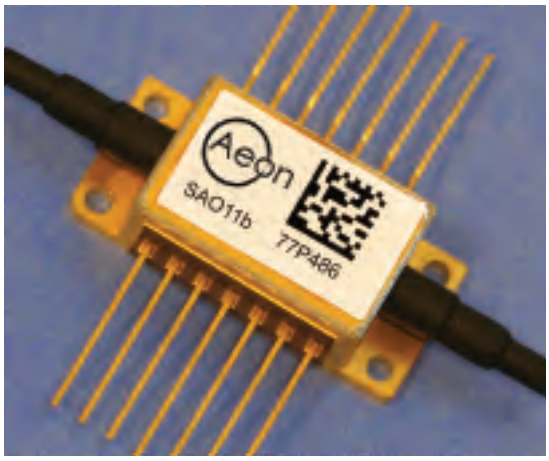
# Product Brief

# SAO11b and SAC11b

## QLight® Booster Amplifiers




### Features and Application

- Wide optical bandwidth
- O-Band and C-Band versions
- Supports rates up to 160 Gb/s
- High output power
- 14-Pin MSA package
- Booster Amplifier
- Telecom and datacom
- Loss compensation
- 40G and 100G amplifiers

### Description

The QLight® SAO11b and SAC11b are semiconductor optical amplifiers (SOA) for use as booster amplifiers. They significantly increase output power and are suitable for fixed and tunable ITU transmitters and transponders. They are based on the Aeon proprietary QLight technology platform for the manufacturing of advanced discrete photonic devices.

The amplifiers are available in a MSA compliant, 14-pin butterfly package, based on the Aeon standard packaging platform. The use of a laser-welded, hermetic, organics-free package ensures highly reliable operation. The package incorporates both a thermistor and a thermo-electric cooler to provide stable operation of the SOA over the full operating temperature range.

Aeon offers a broad range of SOAs supporting wavelengths from 1000 nm to 1600 nm, with gain options from 5 to 30 dB and we can optimize parameters to meet your specific application needs.

# SPECIFICATIONS

## Absolute Maximum Ratings*

| Parameter | Symbol | Min | Typ | Max | Unit | Note |
|---|---|---|---|---|---|---|
| Operating Temperature | $T_{case}$ | 0 | | 70 | ˚C | Case Temperature |
| Storage Temperature | $T_{store}$ | -40 | | 85 | ˚C | |
| Operating Bias Current | $I_f$ | | | 450 | mA | |
| Optical Amplifier Reverse Bias | $V_{rev}$ | | | 2 | V | |
| Thermistor Current | $I_{therm}$ | | | 5 | mA | |
| TEC Current | $I_{TEC}$ | | | 1.8 | A | |
| TEC Voltage | $V_{TEC}$ | | | 3.4 | V | |

* Stresses in excess of the Absolute Maximum Ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational section of the datasheet. Exposure to Absolute Maximum Ratings for extended periods can adversely affect the device reliability.

## Operating Specifications*

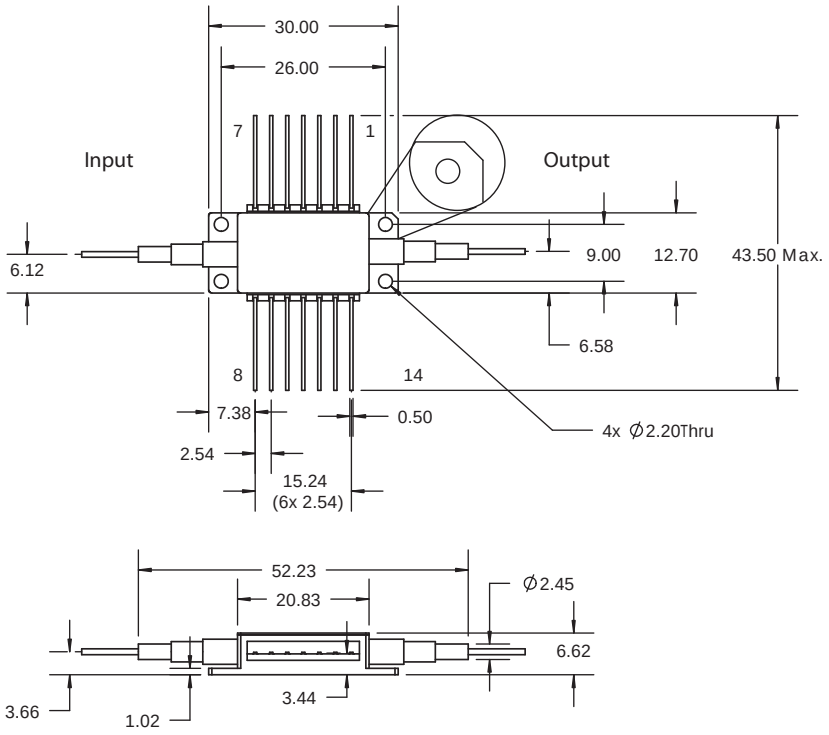
| | | SAO11b | | | SAC11b | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Symbol | Min | Typ | Max | Min | Typ | Max | Unit | Note |
| Operating Wavelength | λ | 1290 | | 1330 | 1530 | | 1570 | nm | |
| Peak Gain | $G_{pk}$ | 9.5 | | | 9.5 | | | dB | |
| Gain Ripple | GR | | 0.2 | | | 0.2 | | dB | |
| Saturation Output Power | $P_{3dB}$ | 11 | | | 12 | | | dBm | 3.0 dB gain compression |
| Forward Voltage | $V_f$ | | 2 | | | 2 | | V | |
| Operating Bias Current | $I_{op}$ | | 300 | | | 300 | | mA | |
| Thermistor Resistance | $R_{therm}$ | | 10 | | | 10 | | kΩ | At 25˚C |
| Total Power Consumption | P | | | 4 | | | 4 | W | $T_{case}$ = 70˚C, By design |

*Specifications are subject to change without notice.

**Additional gain and power options available upon request.

| Pin Assignments | | | |
|---|---|---|---|
| 1 | TEC (+) | 14 | TEC (-) |
| 2 | Thermistor | 13 | NC |
| 3 | NC | 12 | NC |
| 4 | NC | 11 | Chip (-) |
| 5 | Thermistor | 10 | Chip (+) |
| 6 | NC | 9 | NC |
| 7 | NC | 8 | NC |

*Note: Pin #1 is marked by a bevel (notch) at the base of the housing



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