

1.31 μm SOA (Chip Carrier Type) AA3T115FYB

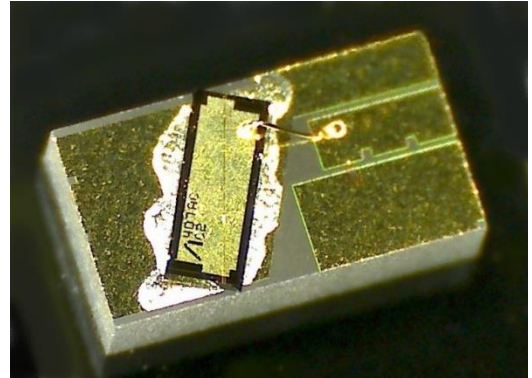
The AA3T115FYB is 1.31 μm high gain and low polarization dependent gain SOA (Semiconductor Optical Amplifier) chip on carrier. The SOA chip is p-side up mounted on an AlN sub-mount of the size of 1.1 \times 2.0 mm.

FEATURES

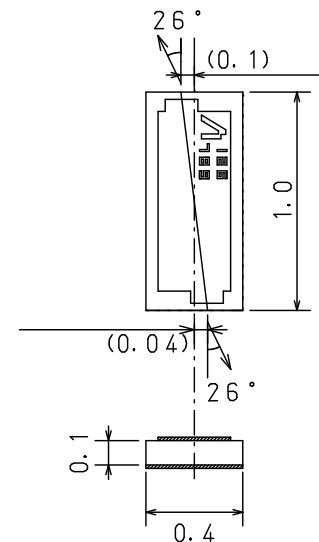
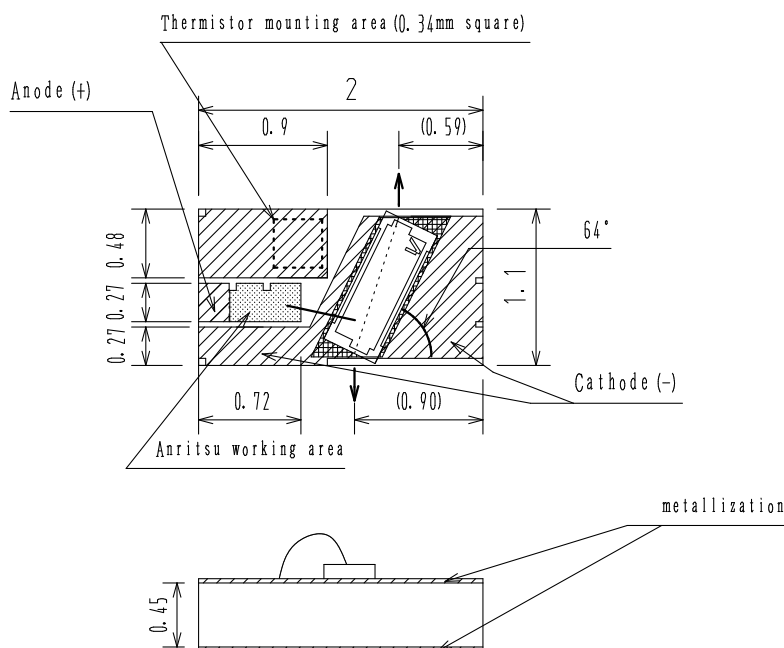
- Gain : 17 dB
- Polarization Dependent Gain (PDG) : 1.5 dB
- Low Power Consumption : 0.18 W
- Operating Temperature : 45°C

APPLICATIONS

- Optical transceiver
- Preamplifier



DIMENSIONS (Unit: mm)



(Enlarged view of the SOA chip)

ABSOLUTE MAXIMUM RATINGS (T_{sub}=25°C)

| Item | Symbol | Rating | Unit |
|---------------------------------|------------------|------------|------|
| SOA Forward Current | I _F | 350 | mA |
| SOA Reverse Voltage | V _R | 2 | V |
| Storage Temperature *1 | T _{stg} | -40 to +85 | °C |
| Process/Soldering Temp. vs Time | | | |
| 300°C | | < 20 | s |
| 200°C | | < 2 | hour |
| 120°C | | < 100 | hour |
| ESD (Human Body Model) | ESD | 500 | V |

*Excess over the absolute maximum ratings may lead to damage.

*1 No condensation

OPTICAL AND ELECTRICAL SPECIFICATIONS ($T_{sub}=45^{\circ}C$)

| Item | Symbol | Test condition | Min. | Typ. | Max. | Unit |
|--------------------------------------------------|------------|-------------------------------------------------------------------------------|------|------|------|------|
| Gain | G | $I_F=120\text{ mA}$, $\lambda_{in}=1310\text{ nm}$, $P_{in}=-25\text{ dBm}$ | 16 | 17 | 22 | dB |
| Polarization Dependent Gain | PDG | $I_F=120\text{ mA}$, $\lambda_{in}=1310\text{ nm}$, $P_{in}=-25\text{ dBm}$ | -1.5 | 1 | 1.5 | dB |
| Saturation Power | P_S | $I_F=120\text{ mA}$, -3 dB , $\lambda_{in}=1310\text{ nm}$ | 7 | 8 | 10 | dBm |
| Noise Figure | NF | $I_F=120\text{ mA}$, $\lambda_{in}=1310\text{ nm}$, $P_{in}=-25\text{ dBm}$ | | 7.5 | | dB |
| Beam Divergence Angle Lateral (Parallel) | θ_t | $I_F=120\text{ mA}$, FAHM | | 22 | | deg. |
| Beam Divergence Angle Transverse (Perpendicular) | θ_p | $I_F=120\text{ mA}$, FAHM | | 31 | | deg. |
| Optical output | P_{ASE} | $I_F=120\text{ mA}$ | 0.5 | 0.6 | 1.0 | mW |
| Forward Voltage | V_F | $I_F=120\text{ mA}$ | 1.0 | 1.2 | 1.5 | V |

* The measured data may be different with these specifications depending on the measurement settings. The shipment inspection items include "Gain", "Polarization Dependent Gain", "Saturation Power", "Noise Figure", "ASE output" and "Forward Voltage"; "Beam Divergence Angle" is not inspected.

* Hermetic sealing is recommended for long term reliability.



CAUTION : Handle the fiber of the enclosed device(s) with extreme care ; glass fiber is subject to breakage if mishandled and permanent damage to the device may result. Do not pull the device by the fiber or protective sleeve.
Do not coil the fiber into a loop of than 5 mm in radius.

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