New Products

Micro-Bidirectional
Optical Subassembly
(µ-BOSA)

Nowadays, single fiber bidirectional optic modules used in FTTH system are expected to be miniaturized and have a low cost of production. Conventional BOSA products use laser diode (LD)/photodiode (PD) canned packages in rugged metal housings. Thus, lowering the product cost is almost saturated in the market today.

We have developed micro-bidirectional optical subassembly (µ-BOSA) using novel silicon platform architecture that combines LD and PD chips on a small silicon base. Product appearance is shown in Fig. 1. Table 1 summarizes the typical specifications, and Figs. 2 and 3 show the typical optical performance of this µ-BOSA product.

The features of the products are as follows:
1. Realization of miniaturization and reduced cost by adapting silicon platform technology. Conventional optic modules use hermetic sealed can packages for LD and PD, independently. On the contrary, µ-BOSA module uses silicon chip inside one hermetic sealed can package. Thus, the total number of parts can be reduced, and µ-BOSA makes it possible to miniaturize and reduce cost at the same time. The coaxial structure also reduces the cost of driving electric circuit.
2. Lining up receptacle type and pigtail type for µ-BOSA module responding for use.

Table 1. µ-BOSA module specifications.

<table>
<thead>
<tr>
<th>Items</th>
<th>Contents</th>
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<tbody>
<tr>
<td>Data rate</td>
<td>1.25 Gbit/s</td>
</tr>
<tr>
<td>Transmission wavelength</td>
<td>1280–1350 nm</td>
</tr>
<tr>
<td>Reception wavelength</td>
<td>1480–1500 nm</td>
</tr>
<tr>
<td>Operating current</td>
<td>20–70 mA (2.8 mW)</td>
</tr>
<tr>
<td>Minimum sensitivity</td>
<td>Less than –26 dBm</td>
</tr>
<tr>
<td>Current consumption</td>
<td>50 mA</td>
</tr>
</tbody>
</table>
| Size              | 6.75 mm(φ) × 16 mm(L) *
*Receptacle type, exclude pin length

Fig. 1. Appearance.

Fig. 2. Minimum sensitivity.

Fig. 3. Optical waveform (1.25 Gbit/s).

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