

MITSUBISHI (OPTICAL DEVICES)
FU-627SLD-F1

1.55 μm LD MODULE WITH SINGLEMODE FIBER PIGTAIL

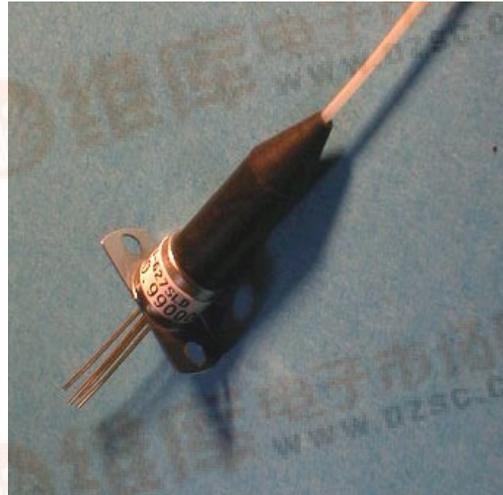
DESCRIPTION

Module type FU-627SLD-F1 has been developed for coupling a singlemode optical fiber and a 1.55 μm wavelength In GaAsP LD (Laser diode).

FU-627SLD-F1 is suitable to light source for high-speed long haul digital optical communication systems and measuring instruments.

FEATURES

- High-speed response
 - Emission wavelength is in 1.55μm band
 - Low threshold current (10mA typ.)
 - With photodiode for optical output monitor
 - MQW* active layer
 - FSBH** structure fabricated by all MOCVD process
- *Multiple quantum well
 **Facet selective-growth buried heterostructure



APPLICATION

Trunk Line, FitL

ABSOLUTE MAXIMUM RATINGS (Tc=25°C)

| Parameter | | Symbol | Conditions | Rating | Unit |
|----------------------------|-------------------------------------|--------|------------|---------|------|
| Laser diode | Optical output power from fiber end | Pf | CW | 2.4 | mW |
| | Reverse voltage | Vrl | - | 2 | V |
| Photodiode for monitoring | Reverse voltage | Vrd | - | 15 | V |
| | Forward current | lfd | - | 2 | mA |
| Operating case temperature | | Tc | - | -20~+75 | °C |
| Storage temperature | | Tstg | - | -40~+85 | °C |

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ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C, unless otherwise noted)

| Parameter | Symbol | Test Conditions | Limits | | | Unit |
|-------------------------------------|---------------------------------|---|--------|-------|------|-------|
| | | | Min. | Typ. | Max. | |
| Threshold current | I _{th} | CW | - | 10 | 35 | mA |
| Operating current | I _{op} | CW | - | 30 | 60 | mA |
| Operating Voltage | V _{op} | CW, I _f =I _{op} (Note 1) | - | 1.2 | 1.7 | V |
| Optical output power from fiber end | P _f | CW, I _f =I _{op} | 1.0 | 1.5 | - | mW |
| Center wavelength | λ _c | CW, I _f =I _{op} | 1520 | 1550 | 1580 | nm |
| Spectral bandwidth (RMS) (Note 3) | Δλ | CW, I _f =I _{op} | - | 2 | 4 | nm |
| Rise and fall times | t _r , t _f | I _b =I _{th} , 10~90% (Note 2) | - | 0.3 | 1 | ns |
| Tracking error (Note 4) | E _r | T _c =0~75°C, APC | - | 0.4 | 1.5 | dB |
| Differential efficiency | η | - | - | 0.075 | - | mW/mA |
| Monitor current | I _{mon} | CW, I _f =I _{op} , V _{rd} =5V | 0.1 | 0.6 | - | mA |
| Dark current (Photodiode) | I _d | V _{rd} =5V | - | 0.1 | 0.5 | μA |
| Capacitance (Photodiode) | C _t | V _{rd} =5V, f=1MHz | - | - | 20 | pF |

Note 1. I_f : Forward current (LD)

2. I_b : Bias current (LD)

3. $\Delta\lambda = (\sum a_i * (\lambda_i - \lambda_c)^2 / \sum a_i)^{1/2}$

Where $a_i \geq ap \times 0.01$

a_i: Relative intensity of laser spectral emission modes

a_p: Peak of laser spectral emission modes

4. $E_r = \text{MAX} |10 \times \log(P_f(T_c) / P_f(25^\circ\text{C}))|$

OPTICAL FIBER SPECIFICATION

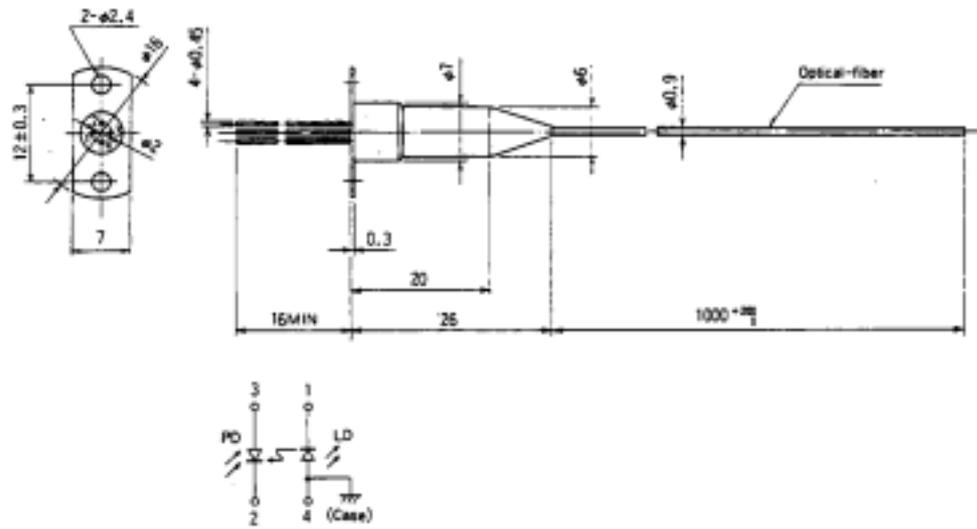
| Parameter | Limits | Unit |
|-----------------|----------|------|
| Type | SM | - |
| Mode field dia. | 9.5±1 | μm |
| Cladding dia. | 125±2 | μm |
| Jacket dia. | 0.9 typ. | mm |

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OUTLINE DIAGRAM

(Unit : mm)



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