

MITSUBISHI (OPTICAL DEVICES)
FU-427SLD-F1M54

1.3 μm LD MODULE WITH SINGLEMODE FIBER PIGTAIL

DESCRIPTION

Module type FU-427SLD-F1M54 has been developed for coupling a singlemode optical fiber and a 1.3μm wavelength InGaAsP LD (Laser diode).

FU-427SLD-F1M54 is suitable to light source for measuring instruments(especially,OTDR).

FEATURES

- High optical output power
 - Emission wavelength is in 1.3μm band
 - MQW* active layer
 - FSBH** structure fabricated by all MOCVD process
- *Multiple quantum well
 **Facet selective-growth buried heterostructure



APPLICATION

OTDR

ABSOLUTE MAXIMUM RATINGS (Tc=25°C)

| Parameter | | Symbol | Conditions | Rating | Unit |
|----------------------------|-----------------|--------|---------------|---------|------|
| Laser diode | Reverse voltage | Vrl | - | 2 | V |
| | Forward current | Ifl | Pulse(Note 1) | 300 | mA |
| Photodiode for monitoring | Reverse voltage | Vrd | - | 15 | V |
| | Forward current | Ild | - | 2 | mW |
| Operating case temperature | | Tc | - | 0~+60 | °C |
| Storage temperature | | Tstg | - | -40~+70 | °C |

Note 1. Pulse condition : Pulse width≤10μs,Duty ratio≤1%

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ELECTRICAL/OPTICAL CHARACTERISTICS

| Parameter | Symbol | Test Conditions (Note 2) | Limits | | | Unit |
|---|---------------------------------|---|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| Threshold current | I _{thp} | Pulse(Note 1), T _c =25°C | - | 7 | 15 | mA |
| Operating current | I _{opp} | Pulse(Note 1), T _c =25°C | - | 200 | 250 | mA |
| Operating Voltage | V _{opp} | Pulse(Note 1), I _f =I _{opp} , T _c =25°C | - | - | 3.5 | V |
| Optical output power from fiber end | P _{fp} | Pulse(Note 1), I _f =I _{opp} , T _c =25°C | 20 | - | - | mW |
| | | Pulse(Note 1), I _f =I _{opp} , T _c =60°C | 10 | - | - | |
| Output power variation over temperature | ΔP _{fp} | Pulse(Note 1), I _f =I _{opp} , T _c =0~60°C | -3 | - | -3 | dB |
| Center wavelength (Note 4) | λ _{cp} | Pulse(Note 1), I _f =I _{opp} , T _c =25°C | 1290 | 1310 | 1330 | nm |
| | | Pulse(Note 1), I _f =I _{opp} , T _c =0~60°C | 1276 | - | 1352 | |
| Spectral width(RMS) (Note 4) | Δλ _p | Pulse(Note 1), I _f =I _{opp} , T _c =25°C | - | - | 10 | nm |
| Pulse droop (Note 5) | ΔP _f | Pulse(Note 1), I _f =I _{opp} , T _c =25°C | - | - | 20 | % |
| Rise and fall times | t _r , t _f | I _b =I _{th} , 10~90%(Note 3) , T _c =25°C | - | 0.5 | 2 | ns |

Note 1. Pulse condition : Pulse width≤10μs, Duty ratio≤1%

Note 2. I_f : Forward current(LD)

Note 3. I_b : Bias current(LD)

Note 4. $\lambda_{cp} = (\sum a_i \cdot \lambda_i) / \sum a_i$

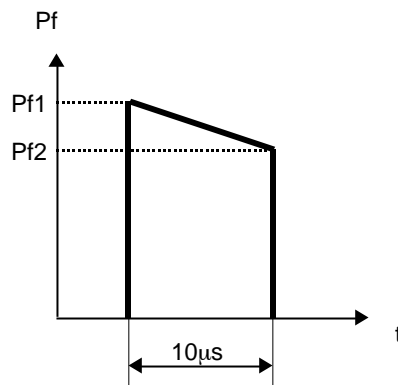
$$\Delta\lambda_p = ((\sum a_i \cdot (\lambda_i - \lambda_c)^2) / \sum a_i)^{1/2}$$

Where $a_i \geq a_p \times 0.01$

a_i: Relative intensity of laser spectral emission modes

a_p: Peak of laser spectral emission modes

Note 5. $\Delta P_{fp} = (P_{f1} - P_{f2}) / P_{f1} \times 100$



OPTICAL FIBER SPECIFICATION

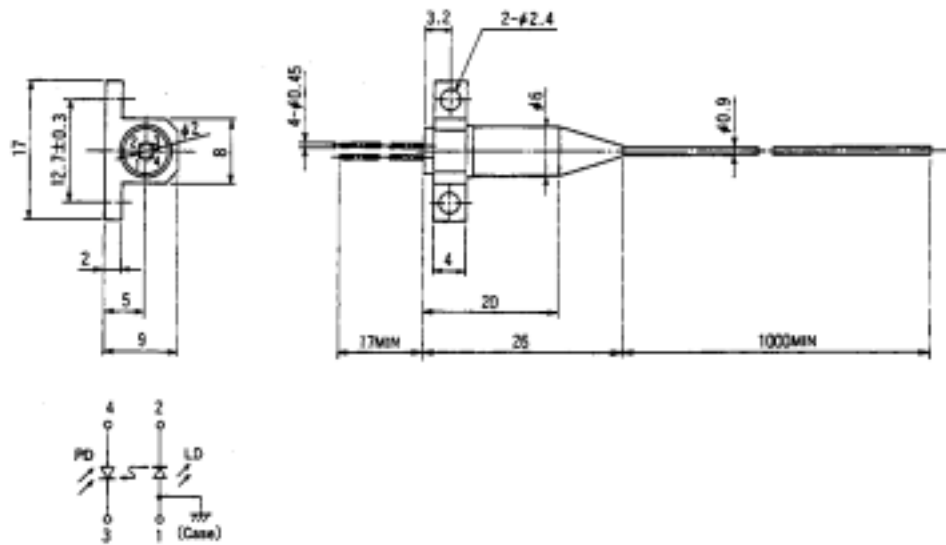
| Parameter | Limits | Unit |
|-----------------|----------|------|
| Type | SM | - |
| Mode field dia. | 9.5±1 | μm |
| Cladding dia. | 125±2 | μm |
| Jacket dia. | 0.9 typ. | mm |

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OUTLINE DIAGRAM

(Unit : mm)



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