

MITSUBISHI (OPTICAL DEVICES)  
**FU-427SLD-F1**

1.3  $\mu\text{m}$  LD MODULE WITH SINGLEMODE FIBER PIGTAIL

**DESCRIPTION**

Module type FU-427SLD-F1 has been developed for coupling a singlemode optical fiber and a 1.3  $\mu\text{m}$  wavelength InGaAsP LD (Laser diode). FU-427SLD-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 1.3 $\mu\text{m}$  band
  - Low threshold current (7mA 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** ( $T_c=25^\circ\text{C}$ )

Parameter		Symbol	Conditions	Rating	Unit
Laser diode	Optical output power from fiber end	Pf	CW	3	mW
	Reverse voltage	Vrl	-	2	V
Photodiode for monitoring	Reverse voltage	Vrd	-	15	V
	Forward current	Ild	-	2	mA
Operating case temperature		Tc	-	-20~+75	$^\circ\text{C}$
Storage temperature		Tstg	-	-40~+85	$^\circ\text{C}$

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**1.3 μm LD MODULE WITH SINGLEMODE FIBER PIGTAIL**

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

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Threshold current	I <sub>th</sub>	CW	3	7	15	mA
Operating current	I <sub>op</sub>	CW	-	20	40	mA
Operating Voltage	V <sub>op</sub>	CW, I <sub>f</sub> =I <sub>op</sub> (Note 1)	-	1.1	1.5	V
Optical output power from fiber end	P <sub>f</sub>	CW, I <sub>f</sub> =I <sub>op</sub>	1.0	2	-	mW
Center wavelength	λ <sub>c</sub>	CW, I <sub>f</sub> =I <sub>op</sub>	1285	1300	1330	nm
Spectral bandwidth (RMS) (Note 3)	Δλ	CW, I <sub>f</sub> =I <sub>op</sub>	-	1.2	4	nm
Rise and fall times	t <sub>r</sub> , t <sub>f</sub>	I <sub>b</sub> =I <sub>th</sub> , 10~90% (Note 2)	-	0.3	1	ns
Tracking error (Note 4)	E <sub>r</sub>	T <sub>c</sub> =0~75°C, APC	-	0.4	1.5	dB
Differential efficiency	η	-	-	0.15	-	mW/mA
Monitor current	I <sub>mon</sub>	CW, I <sub>f</sub> =I <sub>op</sub> , V <sub>rd</sub> =3V	0.1	0.6	-	mA
Dark current (Photodiode)	I <sub>d</sub>	V <sub>rd</sub> =5V	-	0.1	0.5	μA
Capacitance (Photodiode)	C <sub>t</sub>	V <sub>rd</sub> =5V, f=1MHz	-	-	20	pF

Note 1. I<sub>f</sub> : Forward current (LD)

2. I<sub>b</sub> : Bias current (LD)

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

Where a<sub>i</sub> ≥ a<sub>p</sub> × 0.01

a<sub>i</sub>: Relative intensity of laser spectral emission modes

a<sub>p</sub>: Peak of laser spectral emission modes

4. E<sub>r</sub> = MAX|10 × log(P<sub>f</sub>(T<sub>c</sub>)/P<sub>f</sub>(25°C))|

\* Module up to 85°C in operating case temperature (T<sub>c</sub>) is also available.

Please consult with sales office about specification and so on, if necessary.

**OPTICAL FIBER SPECIFICATION**

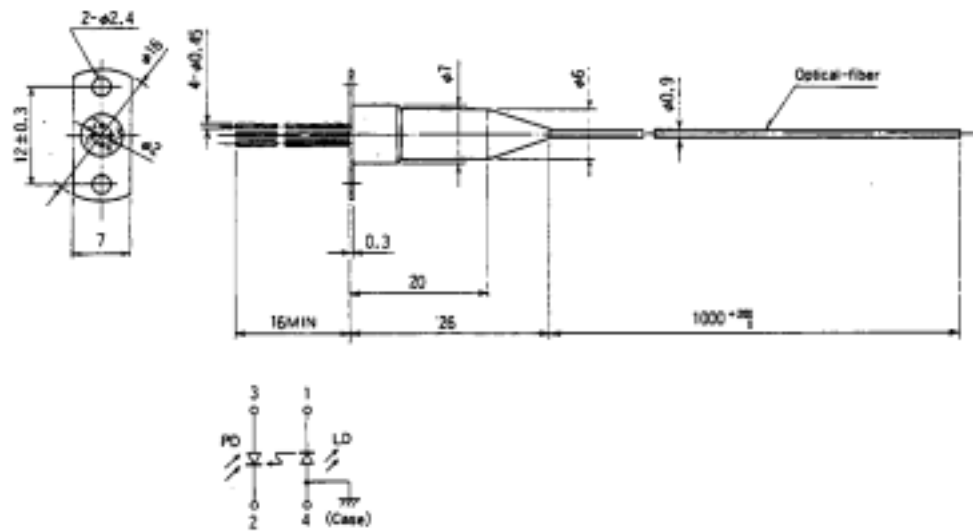
Parameter	Limits	Unit
Type	SM	-
Mode field dia.	9.5±1	μm
Cladding dia.	125±2	μm
Jacket dia.	0.9 typ.	mm

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OUTLINE DIAGRAM

(Unit : mm)



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This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.