

MITSUBISHI (OPTICAL DEVICES)
FU-427SLD-F1

1.3 μm LD MODULE WITH SINGLEMODE FIBER PIGTAIL

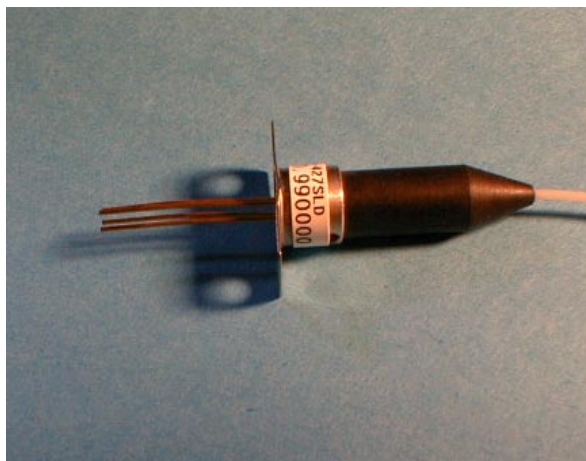
DESCRIPTION

Module type FU-427SLD-F1 has been developed for coupling a singlemode optical fiber and a 1.3 μm 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 μm 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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ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Threshold current	I _{th}	CW	3	7	15	mA
Operating current	I _{op}	CW	-	20	40	mA
Operating Voltage	V _{op}	CW, I _f =I _{op} (Note 1)	-	1.1	1.5	V
Optical output power from fiber end	P _f	CW, I _f =I _{op}	1.0	2	-	mW
Center wavelength	λ _c	CW, I _f =I _{op}	1285	1300	1330	nm
Spectral bandwidth (RMS) (Note 3)	Δλ	CW, I _f =I _{op}	-	1.2	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	-	-	0.15	-	mW/mA
Monitor current	I _{mon}	CW, I _f =I _{op} , V _{rd} =3V	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 ≥ a_p × 0.01

a_i: Relative intensity of laser spectral emission modes

a_p: Peak of laser spectral emission modes

4. E_r = MAX|10 × log(P_f(T_c)/P_f(25°C))|

* Module up to 85°C in operating case temperature (T_c) is also available.

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

OPTICAL FIBER SPECIFICATION

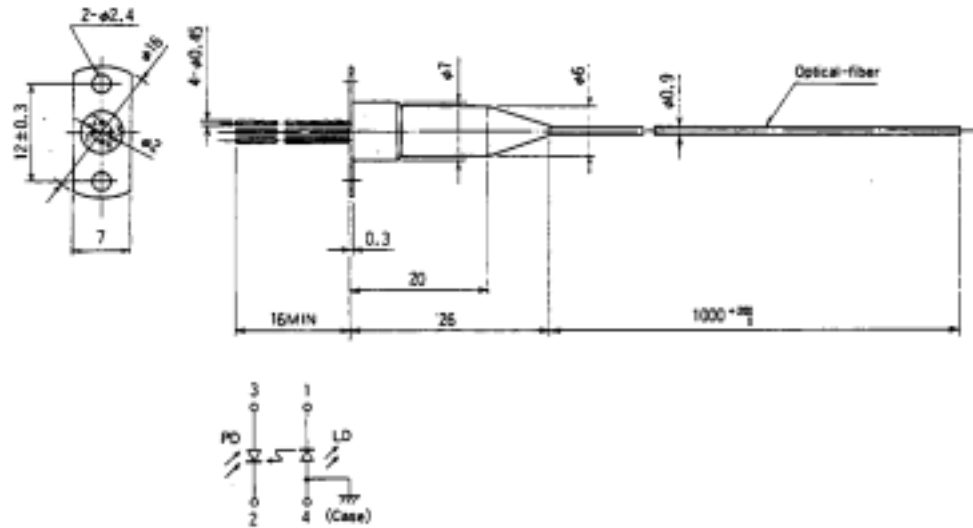
Parameter	Limits	Unit
Type	SM	-
Mode field dia.	9.5±1	μm
Cladding dia.	125±2	μm
Jacket dia.	0.9 typ.	mm

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OUTLINE DIAGRAM

(Unit : mm)



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