FU-423SLD-F3

1.3 μm LD MODULE WITH SINGLEMODE FIBER PIGTAIL

DESCRIPTION

Module type FU-423SLD-F3 has been developed for coupling a singlemode optical fiber and a 1.3μm wavelength InGaAsP LD (Laser diode).

FU-423SLD-F3 is suitable to light source for high-speed short haul and long haul digital optical communication systems.

FEATURES

- High-speed response
- Emission wavelength is in 1.3μm band
- Low threshold current (7mA typ.)
- With photodiode for optical output monitor

APPLICATION

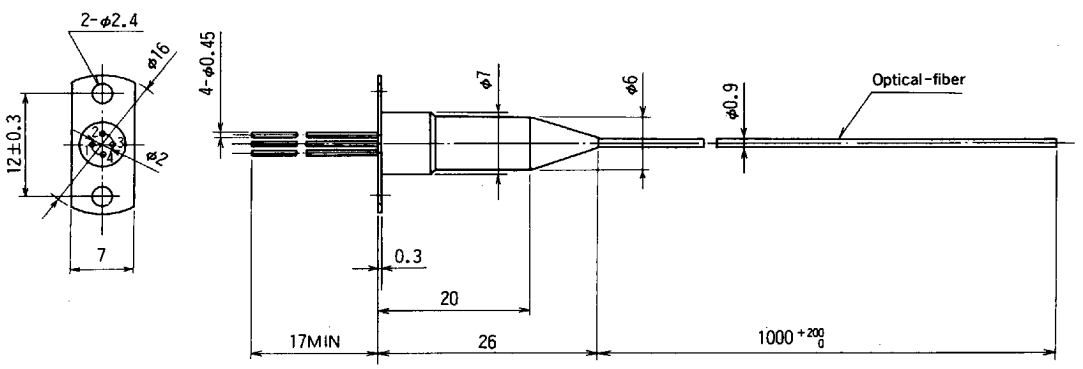
Trunk Line, FitL

ABSOLUTE MAXIMUM RATINGS (T_{LD} = 25℃)

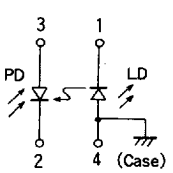
Parameter		Symbol	Conditions	Rating	Unit
Laser diode	Optical output power from fiber end	P_F	CW	0.3	mW
	Reverse voltage	V_{RL}	–	2	V
Photodiode for monitoring	Reverse voltage	V_{RD}	–	15	V
	Forward current	I_{FD}	–	2	mA
Operating case temperature		T_C	–	0~+75	℃
Storage temperature		T_{stg}	–	−40~+85	℃

OUTLINE DIAGRAM

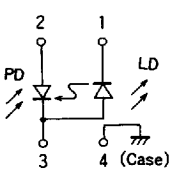
(Unit : mm)



FU-423SLD-F3



FU-421SLD-S3



MITSUBISHI ELECTRIC

ELECTRICAL/OPTICAL CHARACTERISTICS (TLD = 25℃, 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	–	17	37	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, $I_F = I_{OP}$	0.1	0.2	–	mW
Central wavelength	λ_C	CW, $I_F = I_{OP}$	1285	1300	1330	nm
Spectral bandwidth (RMS) (Note 3)	$\Delta\lambda$	CW, $I_F = I_{OP}$	–	1.2	4	nm
Rise and fall time	t_r, t_f	$I_B = I_{th}$, 10~90% (Note 2)	–	0.3	1	ns
Tracking error (Note 4)	E_r	Tc = 0~75℃, APC	–	0.4	1.5	dB
Differential efficiency	η	–	–	0.02	–	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
Cpacitance (Photodiode)	C_t	$V_{RD} = 5V$, f = 1MHz	–	–	20	pF

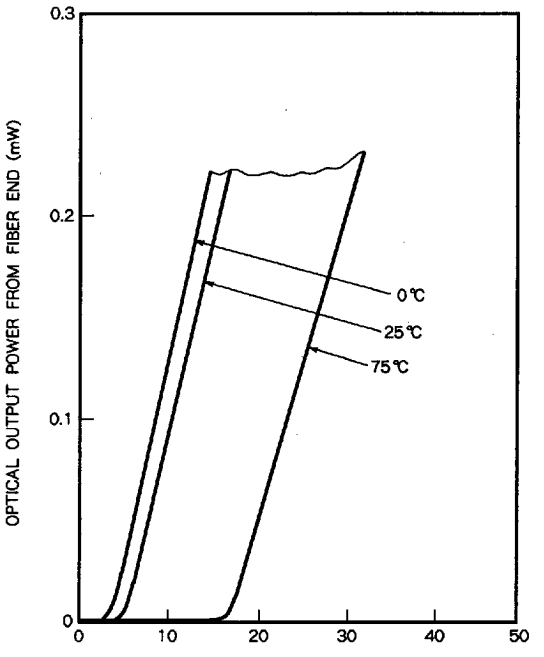
Note 1. I_F : Forward current (LD)
2. I_B : Bias current (LD)
3. $$\Delta\lambda = \sqrt{\frac{\Sigma ai\ (\lambda i - \lambda c)^2}{\Sigma ai}}$$
$(ai \geq ap \times 0.01)$
ai : Relative intensity of laser spectral emission modes
ap : Peak of laser spectral emission modes
4. $$Er = MAX\left|10 \cdot \log \frac{P_F}{P_F(25℃)}\right|$$

* Module up to 85℃ in operating case temperature (Tc) is also available.
Please consult with sales office about specification and so on, if necessary.

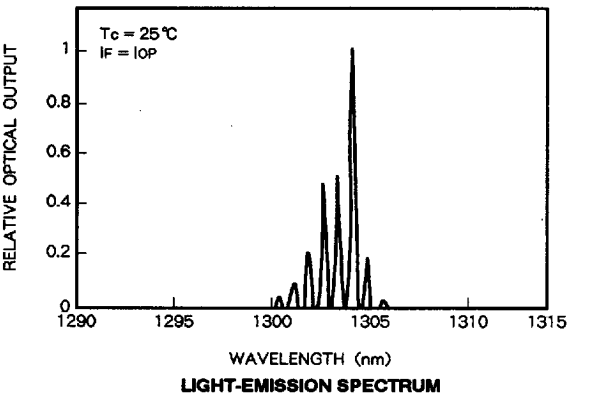
OPTICAL-FIBER SPECIFICATIONS

Parameter	Limits	Unit
Type	SM	–
Mode field dia.	10 ± 1	μm
Cladding dia.	125 ± 2	μm
Jacket dia.	0.9 typ.	mm

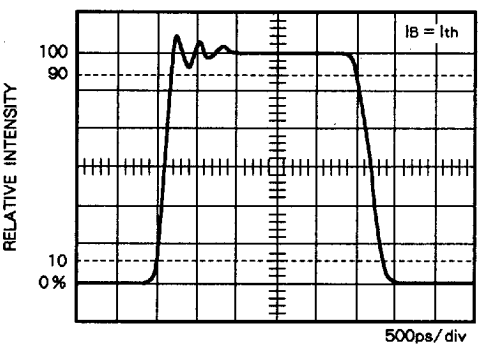
TYPICAL CHARACTERISTICS



FORWARD CURRENT VS. OPTICAL OUTPUT POWER



LIGHT-EMISSION SPECTRUM



PULSE RESPONSE