

# FU-427SDF

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

### DESCRIPTION

Module type FU-427SDF has been developed for coupling a singlemode optical fiber and a 1.3  $\mu\text{m}$  wavelength InGaAsP DFB LD (Laser diode). FU-427SDF is suitable to light source for high-speed short haul and long haul digital optical communication systems.

### FEATURES

- MQW-DFB laser diode module
- High-speed response
- Emission wavelength is in 1.3 $\mu\text{m}$  band



### APPLICATION

High-speed short haul and long haul digital optical communication systems.

### ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub>=25°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	Ifd	-	2	mA
Operating case temperature		Tc	-	0~+85	°C
Storage temperature		Tstg	-	-40~+85	°C

**mitsubishi (optical devices)**  
**FU-427SDF**

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**ELECTRICAL/OPTICAL CHARACTERISTICS** ( $T_c=25^\circ\text{C}$ , unless otherwise noted)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Threshold current	$I_{th}$	CW	-	15	40	mA
Operating current	$I_{op}$	CW	-	38	90	mA
Operating Voltage	$V_{op}$	CW, $I_f=I_{op}$ (Note 1)	-	1.2	1.6	V
Optical output power from fiber end	$P_f$	CW, $I_f=I_{op}$	2	-	-	mW
Center wavelength	$\lambda_c$	CW, $I_f=I_{op}$	1290	1310	1330	nm
Side mode suppression ratio	SMSR	CW, $I_f=I_{op}$	30	35	-	dB
Rise and fall times	$t_r, t_f$	$I_b=I_{th}$ , 10~90% (Note 2)	-	0.3	-	ns
Tracking error (Note 3)	$E_r$	$T_c=0\sim+85^\circ\text{C}$ , APC	-	0.5	-	dB
Differential efficiency	$\eta$	-	-	0.08	-	mW/mA
Monitor current	$I_{mon}$	CW, $I_f=I_{op}$ , $V_{rd}=5\text{V}$	0.1	0.5	-	mA
Dark current (Photodiode)	$I_d$	$V_{RD}=5\text{V}$	-	0.1	0.5	$\mu\text{A}$
Capacitance (Photodiode)	$C_t$	$V_{RD}=5\text{V}$ , $f=1\text{MHz}$	-	-	20	pF

Note 1.  $I_f$  : Forward current (LD)

2.  $I_b$  : Bias current (LD)

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

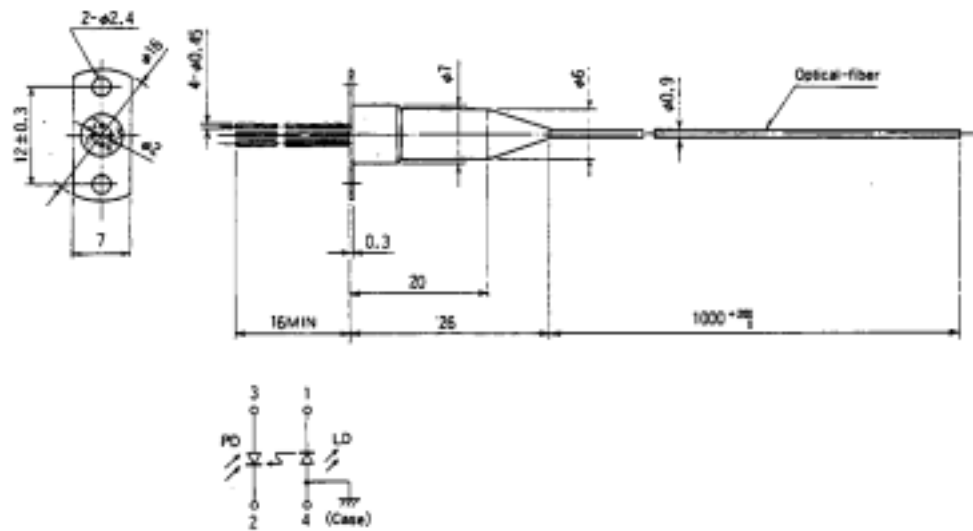
**OPTICAL FIBER SPECIFICATION**

Parameter	Limits	Unit
Type	SM	-
Mode field dia.	$9.5 \pm 1$	$\mu\text{m}$
Cladding dia.	$125 \pm 2$	$\mu\text{m}$
Jacket dia.	0.9 typ.	mm

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**OUTLINE DIAGRAM**

(Unit : mm)



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