

# FU-427SHL-4M21/4M22/8M21/8M22

1.3 μm LD MODULE WITH SINGLEMODE FIBER PIGTAIL

### DESCRIPTION

Module type FU-427SHL-XMXX has been developed for coupling a singlemode optical fiber and a 1.3μm wavelength InGaAsP LD (Laser diode). FU-427SHL-XMXX is suitable to light source for measuring instruments.(especially, OTDR)

### FEATURES

- High optical output power
- Emission wavelength is in 1.3μm band

### APPLICATION

OTDR

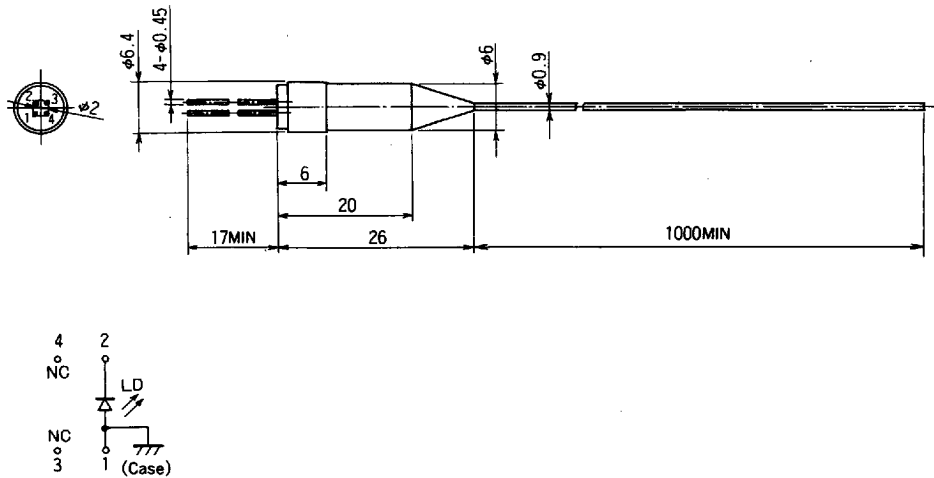
### ABSOLUTE MAXIMUM RATINGS (Tc = 25 °C)

Parameter	Symbol	Conditions	Rating	Unit	
Laser diode	Reverse voltage	V <sub>RL</sub>	-	2	V
	Forward current	I <sub>FL</sub>	Pulse (Note 1)	1	A
Operating case temperature	T <sub>c</sub>	-	- 20 ~ + 60	°C	
Storage temperature	T <sub>stg</sub>	-	- 40 ~ + 70	°C	

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

### OUTLINE DIAGRAM

(Unit : mm)



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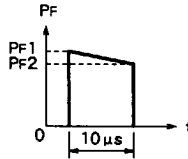
**CHARACTERISTICS** (Tc = 25°C, Unless otherwise noted)

Parameter	Symbol	Test conditions	Limits						Unit	
			FU-427SHL-4M2X (Note 4)			FU-427SHL-8M2X (Note 4)				
			Min.	Typ.	Max.	Min.	Typ.	Max.		
Threshold current	I <sub>th</sub>	-	-	20	50	-	20	50	mA	
Operating current	I <sub>OP</sub>	Pulse (Note 1)	400	450	800	400	450	800	mA	
Operating voltage	V <sub>OP</sub>	I <sub>F</sub> = I <sub>OP</sub> , Pulse (Note 1)	-	-	5	-	-	5	V	
Optical output power from fiber end (Note 4)	P <sub>F</sub>	I <sub>F</sub> = I <sub>OP</sub> , Pulse T <sub>C</sub> = 25°C (Note 1)	40	-	-	80	-	-	mW	
		I <sub>F</sub> = I <sub>OP</sub> , Pulse T <sub>C</sub> = 60°C (Note 1)	20	-	-	40	-	-		
-XM21	Central wavelength (Note 4)	λ <sub>c</sub>	I <sub>F</sub> = I <sub>OP</sub> , Pulse (Note 1)	1300	1310	1320	1300	1310	1320	nm
-XM22				1290	1310	1330	1290	1310	1330	
Spectral width (RMS)	Δλ	I <sub>F</sub> = I <sub>OP</sub> , Pulse (Note 1)	-	-	10	-	-	10	nm	
Pulse droop (Note 3)	ΔP <sub>F</sub>	I <sub>F</sub> = I <sub>OP</sub> , Pulse (Note 1)	-	-	20	-	-	20	%	
Rise and fall time	t <sub>r</sub> , t <sub>f</sub>	I <sub>b</sub> = I <sub>th</sub> , 10~90% (Note 2)	-	1	2	-	1	2	ns	

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

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

3. 
$$\Delta P_F = \frac{P_{F1} - P_{F2}}{P_{F1}} \times 100$$



4.

Type number	P <sub>F</sub> (25°C)	λ <sub>c</sub> (25°C)
FU-427SHL-4M21	40mW(min)	1310 ± 10nm
FU-427SHL-4M22		1310 ± 20nm
FU-427SHL-8M21	80mW(min)	1310 ± 10nm
FU-427SHL-8M22		1310 ± 20nm

**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



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## TYPICAL CHARACTERISTICS

