

840nm Superluminescence Diode Module

1. Description:

The purpose of this document is to specify the requirements for the single-mode fiber-optic superluminescent light emitting diode (SLED) module used in high reliability applications. The document specifies module as well as the specific chip on submount which should be used to assemble the module. The requirements described herein include the optical, electrical, mechanical, qualification and screening requirements.

2. Features:

- High output power;
- 14PIN BTF Package;
- 3dB bandwidth of >40nm;
- Operating Temperature-45~+70°C;
- SM fiber or PM fiber pigtail.

3. Applications:

- Fiber optic gyroscopes;
- Fiber optical sensors;
- Fiber optic communications;
- Clinical healing equipment;
- Biomedical imaging device;
- Optical coherence topography;
- Optical test instrument.

4. Absolute Maximum Ratings:

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage temperature	T _s	-55	-	85	°C
Operating case temperature	T _c	-45	-	70	°C
Reverse voltage	V _{cc}	-	-	2.0	V
Forward current	I _c	-	-	200	mA
Thermoelectric cooler voltage	V	-	-	3.2	V
Thermoelectric cooler current	I	-	-	1.2	A
Storage humidity	-	5	-	85	%RH
Lead solder temperature	-	-	-	260	°C
Lead solder time	-	-	-	10	S
Tensile strength of pigtail	-	1	-	-	kgf
Fiber bend radius	-	30	-	-	mm

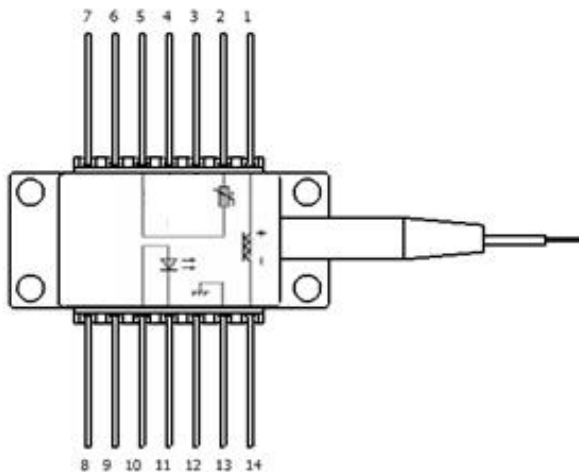
5. Electro-Optical Characteristics(25°C laser temperature):

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Operating current	I_{TH}	-	150	170	mA	CW
Power in fiber	P	5.0	7.0	8.0	mW	CW, $I_{TH} = 150\text{mA}$
3dB bandwidth	$\Delta\lambda$	40	-		nm	CW
Center length	λ_c	820	840	860	nm	CW
Spectrum modulation	-	-	0.1	0.2	dB	-
TEC current	I_C	-	-	2	A	$T_C = -45\sim+70^\circ\text{C}$
TEC voltage	V_C	-	-	3.5	V	$T_C = -45\sim+70^\circ\text{C}$
Thermistor resistance	R_{th}	9.5	10	10.5	K Ω	$T_C = 25^\circ\text{C}$
Thermistor B constant	B	-	3950	-	K	-

6. Fiber Pigtail Specifications:

Part	Description
SM Fibre	SM 5/125 Corning HI780 or equivalent
Pigtail type	900 μm loose tube
Optical connector	FC/APC
Fibre Pigtail Length	1m
SM Fibre	SM 5/125 Corning HI780 or equivalent

7. Package drawing&PIN-OUT Definition(Unit:mm):



PIN	Designations	PIN	Designations
1	TEC(+)	14	TEC(-)
2	Thermistor	13	Case Ground
3		12	NC
4		11	SLD Cathode
5	Thermistor	10	SLD Anode
6	NC	9	NC
7	NC	8	NC