1550nm DFB 10GHz EML Laser

1. Description:

The 10G laser diodes is a electro-absorption modulator integrated with DFB laser diode for 10G bit/s optical transmission, which are fabricated in a hermetically sealed butterfly package. Which built-in modulator, TEC, thermistor, monitor photodiode, optical isolator to secure high quality laser performance. We also have full customer selection of output powers, package types and output fibers of SM fibers, PM fibers and other special fibers. This module complies described in Telcordia GR-468-CORE requirement.

2. Features:

- Modulation bandwidth: 10GHz or more;
- Industry-standard butterfly package;
- High-performance, multiquantum well(MQW)
- Built-in TEC and optical isolator;
- distributed-feedback (DFB) chip.

3. Applications:

- SONET/SDH line and client transponders;
- DWDM/CWDM transponders;
- Line Cards.

4. Absolute Maximum Ratings：

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Storage temperature	T_S	-	-40	-	85	°C
Operating case temperature	T_{op}	-	-20	-	70	°C
Peak Optical Output Power	P_F	CW	5	-	-	mW
Forward current	I_F	CW	-	-	150	mA
Laser Reverse Voltage	V_{LR}	CW	-	-	2	V
Forward voltage of modulator	V_m	CW	-5	-	1	V
PD Forward Current	I_{FPD}	-	-	-	1	mA
PD Reverse Voltage	V_{RPD}	-	-	-	10	V

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
ON level modulator voltage	V_O	-	-0.7	-	0	V
Threshold current	I_{TH}	CW,V_m=V_0	-	15	30	mA
Operating current	I_{OP}	-	40	-	100	mA
Dispersion penalty	d_P	*1	-	-	2.0	dB
Forward voltage	V_F	CW,I_f=I_{op}	-	1.4	2.0	V
Modulation voltage	V_{PP}	-	-	2	2.6	V
Extinction ratio	R_{EXT}	*2	10	-	-	dB

Peak oscillation wavelength	λ_P	*2	1530	-	1565	nm
Side-mode Suppression Ratio	SMSR	CW	35	-	-	dB
Rise Time	t_R	20 to 80%*2	-	20	25	ps
Fall Time	t_F	20 to 80%*2	-	20	25	ps
Monitor Current	I_m	CW, $I_F=I_{OP,}$ Vm=Vo, $V_{DR}=5V$	40	-	1100	μA
Monitor Dark Current	I_D	$V_{DR}=5V$	-	2	100	nA
Monitor Capacitance	C_T	$V_{DR}=5V$	-	2	15	pF
TEC Current	I_{TEC}	TL = 25 °C, TC = 70°C	-	-	1.0	A
TEC Voltage	V_{TEC}	TL = 25 °C, TC = 70°C	-	-	2.4	V
Cooler power consumption	P_C	CW, $I_F=I_{OP}$, $Vm=V_O$, $T_{C(OP)}$=-20°C to +70°C	-	-	2.4	W
Thermistor Resistance	R_{TH}	$T_{C(OP)}$ =+25°C	9.5	-	10.5	kΩ
Thermistor B constant	B	-	3270	3450	3630	K
Tracking error	TE	CW, $I_F=I_{OP}$, $V_m=V_O$, $T_{C(OP)}$=－20°C to ＋70°C	-0.5	-	+0.5	dB
Input Impedance	Z_{IN}	-	-	50	-	Ω
High-frequency return loss	S_{11}	f=5GHz 50Ω test set, $V_m=V_{O,}$ $I_F=I_{OP}$	8	-	-	dB
		f=10GHz 50Ω test set, $V_m=V_{O,}$ $I_F=I_{OP}$	5	-	-	dB
Cut off frequency	S_{21}	-3dB band width 50Ω test set, $V_m=V_O-0.5V_{pp}$, $I_F=I_{OP}$	10	-	-	GHz
Relative Intensity Noise	RIN	CW, output power 5mW	-	-	-120	dB/Hz
Isolation	I_S	$T_{C(OP)}$=-20°C to +70°C	25	35	-	dB

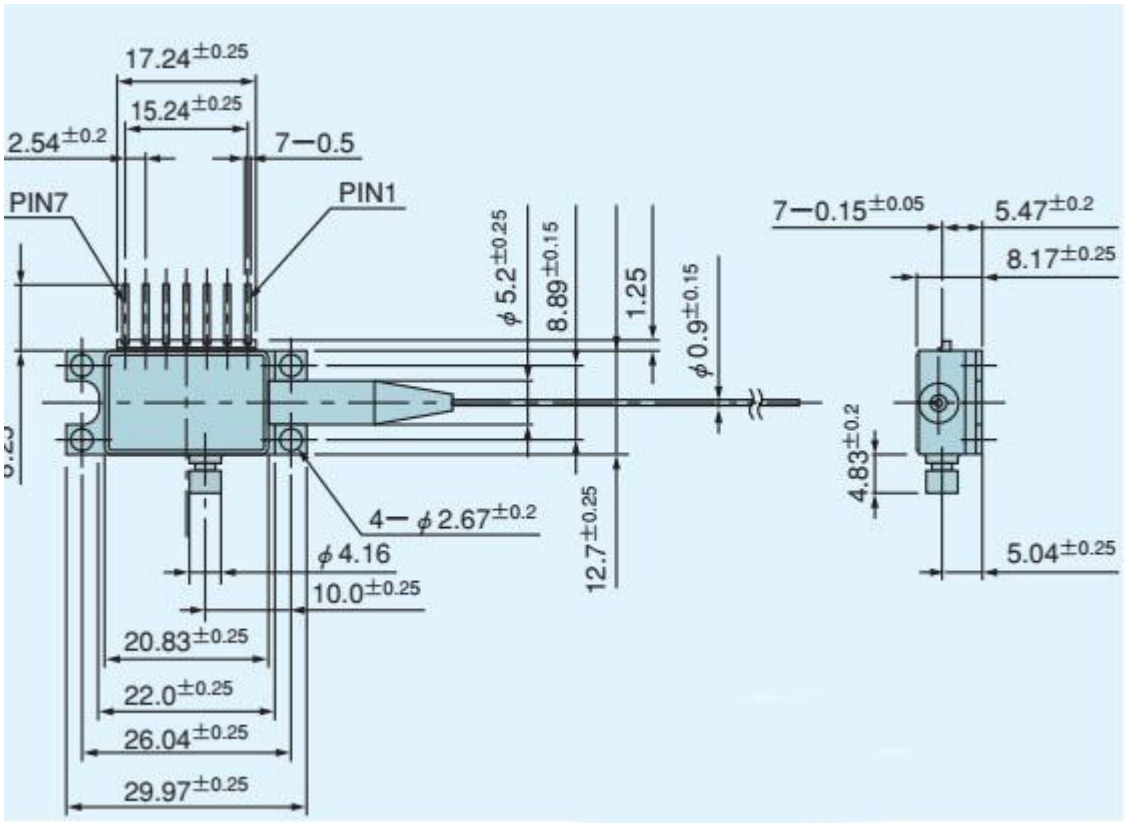
*1：9.95328G bit/s, PRBS=223－1，$I_b=I_{OP}$，$V_m=V_O/(V_O-V_{PP})$ V, Dispersion=1600ps/nm Bit error rate=1×10－10，T_{LD}=Tset

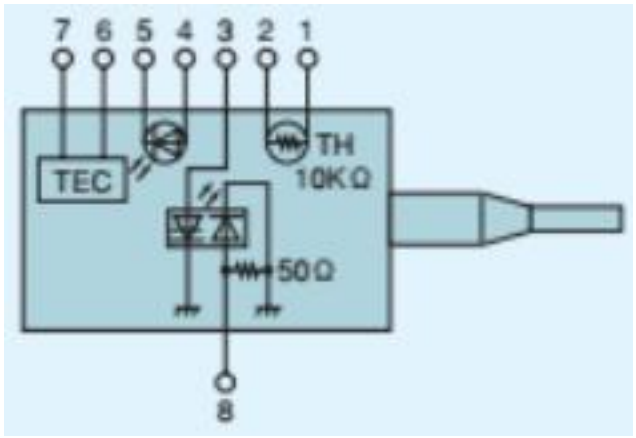
*2：9.95328G bit/s, PRBS=223－1，$I_F=I_{OP}$，$V_m=V_O/（V_O-V_{PP}）$V

6. FOptical Fiber Specifications:

Parameters	Description
Fiber Type	SM fiber
Loose tube	900μm loose tube
Pigtail Length	1.0±0.1m
Connector Type	FC/APC

7. Package drawing&PIN-OUT Definition:





PIN	Description
1	Thermistor
2	Thermistor
3	Laser dc Bias (Cathode)(–)
4	PD Monitor Anode(-)
5	PD Monitor Cathode(+)
6	TEC(+)
7	TEC(–)
8	Modulation(－)

8. Ordering Information:

BRLD	**-XXX**	**-XX**	**-XX**	**-XX**
Laser type	Wavelength(nm)	Output power(mW)	Fiber type	Connector type
Modulation Laser	1530: 1530nm 1550: 1550nm Other	05: 5 10: 10	SM : Single mode PM : Polarization maintaining	FA : FC/APC SA : SC/APC N0: Null

E.g.:BRLD-1550-10SM-FA (Order information: 1550nm Modulation laser with SM fiber, 10mW output power and with FC/APC connector).