

OD - S559

1310nm DFB-LD Module
with built-in optical isolator

FEATURES

- Operating frequency range $f=5\text{MHz to }200\text{MHz}$
- Distortion $\text{IMD2} \leq -45\text{dBc}$
 $\text{IMD3} \leq -65\text{dBc}$
- Noise $\text{RIN} \leq -145\text{dB/Hz}$
- Optical output power $P_f=2.0\text{mW}$
- Wavelength $\lambda =1310\text{nm}$
- Operation over wide temperature $T_c=-20 \text{ to } 85^\circ\text{C}$
- Built-in optical isolator
- Singlemode fiber pigtail with SC/APC connector

APPLICATIONS

- CATV return link

1. ABSOLUTE MAXIMUM RATINGS ($T_c=25^\circ\text{C}$ unless noted)

Parameter	Sym.	Min.	Max.	Unit
Fiber Output Power	Pf	—	4	mW
Laser Forward Current	$I_F(\text{LD})$	—	100	mA
Laser Reverse Voltage	$V_R(\text{LD})$	—	2	V
Monitor Forward Current	$I_F(\text{PD})$	—	1	mA
Monitor Reverse Voltage	$V_R(\text{PD})$	—	10	V
Operation Temperature	Top	-20	85	$^\circ\text{C}$
Storage Temperature	Tstg	-40	85	$^\circ\text{C}$

2. PERFORMANCE SPECIFICATIONS (Tc=-20 to +85°C unless noted)

Parameter	Sym.	Conditions	Min.	Typ.	Max.	Unit
Fiber Output Power	Pf	CW	2.0	—	—	mW
Threshold Current	Ith	CW, Tc=+25°C	—	10	30	mA
		CW	—	30	50	
Slope Efficiency	DQE	CW, Pf=2.0mW, Tc=+25°C	0.1	—	0.30	W/A
		CW, Pf=2.0mW	0.05	—	0.35	
Operating Current	Iop	CW, Pf=2.0mW	—	—	90	mA
Center Wavelength	λ_c	CW, Pf=2.0mW, Tc=+25°C	1290	—	1330	nm
		CW, Pf=2.0mW	1285	—	1335	
Side Mode Suppression Ratio (SMSR)	SMSR	CW, Pf=2.0mW	30	—	—	nm
Forward Voltage	V _F	CW, Pf=2.0mW	—	1	1.6	V
Monitor Photocurrent	I _m	CW, Pf=2.0mW	100	300	1000	μA
Monitor Dark Current	I _d	V _R =10V,	—	—	500	nA
Tracking Error	ΔPf	Tc=-20°C, 85°C Pf=2mW	—	±0.5	±1.5	dB
Isolation	—		—	30	—	dB
Modulation Bandwidth	B	1dB down, Pf=2.0mW	500	—	—	MHz
2 nd Order Inter-modulation Distortion	IMD2	Note 1	—	—	-45	dBc
3 rd Order Inter-modulation Distortion	IMD3	Note 1	—	—	-65	dBc
Relative Intensity Noise	RIN	Note 2	—	—	-145	dB/Hz

Note 1 Pf=2.0mW, Tc=25°C,
 2-Tone Test: f1=13MHz, f2=19MHz, 10%/tone Optical Modulation Index,
 Measurement Frequency(IMD2): f=6MHz, 32NHZ
 Measurement Frequency(IMD3): f=7MHz, 25MHz

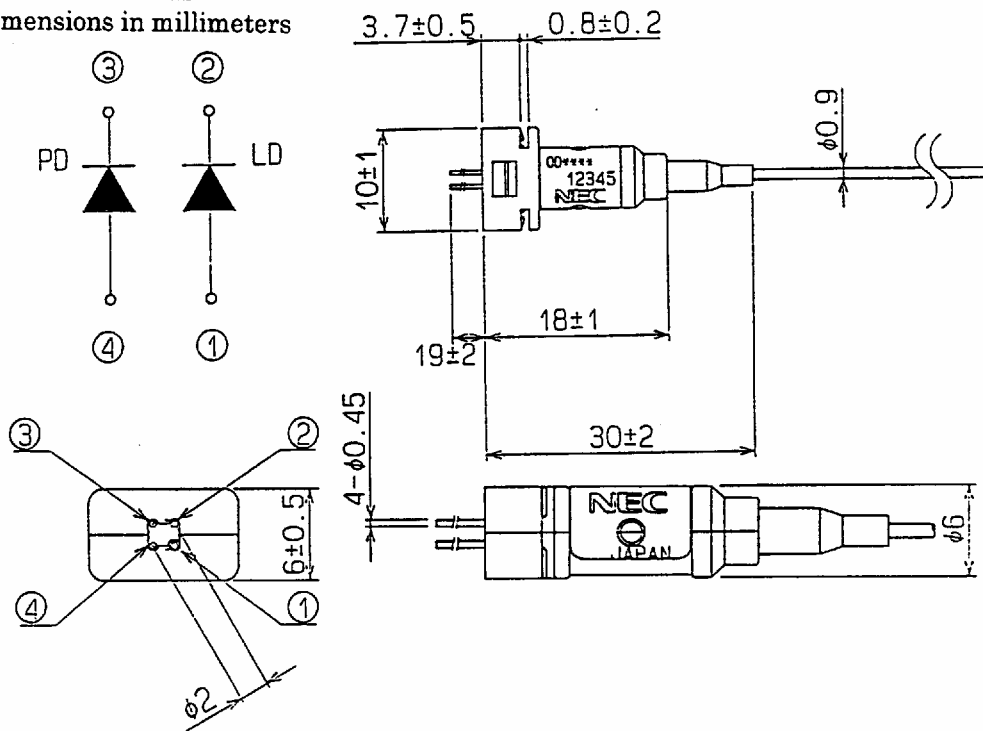
Note 2 CW, Pf=2.0mW, Tc=25°C,
 f=5MHz to 200MHz

3. MECHANICAL SPECIFICATIONS

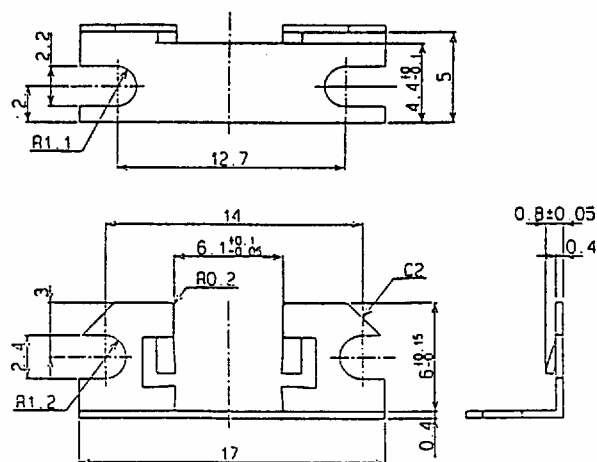
Fiber Type:	SMF
Buffer Diameter:	0.9 ± 0.1 mm
Fiber Length:	1 ± 0.1 m
Connector:	SC/APC (optical Return Loss ≥ 60 dB)

4. OUTLINE DRAWING

Dimensions in millimeters



The bracket for mounting the OD-S559 to a PWB is available optionally. Part number of the bracket is OD-S328B.



Dimension of the bracket (OD-S328B)