

Specification

Coax-BIDI™ 1550/1310 nm

- Designed for application in fiber-optic networks
- Laser Diode with Multi-Quantum Well structure
- Ternary photodiode at rear mirror for monitoring and control of radiant power
- Hermetically sealed component, similar to TO 46
- SM Pigtail with optional flange or receptacle
- Ternary photodiode coupled with WDM for receiving operation

Maximum Ratings

Output power ratings refer to the SM fiber output. The operating temperature of the submount is identical to the case temperature

Module	Symbol	Values	Unit
Operating Temperature range at case	T_C	- 40... +85	°C
Storage Temperature range	T_{stg}	- 40... +85	°C
Soldering Temperature $T_{max} = 10 \text{ s}$, 2 mm distance from bottom edge of case	T_S	260	°C

Laserdiode	Symbol	Values	Unit
Direct forward current	$I_{F \text{ max}}$	120	mA
Radiant power CW	Φ_e	1	mW
Reverse Voltage	$V_{R \text{ max}}$	2	V

Monitor Diode	Symbol	Values	Unit
Reverse Voltage	$V_{R \text{ max}}$	10	V

Characteristics

All optical data refer to the optical port (10/125µm SM fiber), $T_C = -40...+85^\circ\text{C}$

Laser Diode	Symbol	Values	Unit
Optical Output Power	Φ_e	>0,4	mW
Emission wavelength center of range $\Phi_e = 0,2 \text{ mW}$	λ	1510...1590	nm

Spectral bandwidth $\Phi_e = 0,2 \text{ mW (RMS)}$	$\Delta\lambda$	<5	nm
Threshold current	I_{th}	2...55	mA
Forward voltage $\Phi_e = 0,2 \text{ mW}$	V_F	< 1,5	V
Radiant power at threshold	Φ_{eth}	< 40	μW
Slope Efficiency	η	10...150	mW/A
Differential series resistance	r_S	< 8	Ω
Rise Time/Fall Time	t_R, t_F	< 1	ns

Monitor Diode	Symbol	Values	Unit
Dark Current, $V_R = 5\text{V}$, $\Phi_e = 0$	I_R	<200	nA
Photocurrent, $\Phi_e = 0,2\text{mW}$		30 ... 400	μA
Capacitance, $V_R = 5\text{V}$, $f = 1\text{MHz}$	C_5	<10	pF
Tracking Error, $V_R = 2\text{V}$ (see note 1)	TE	-1...1	dB

Detector	Symbol	Values	Unit
Dark Current, $V_R = 2\text{V}$, $\Phi_e = 0$	I_R	< 100	nA
Spectral Sensitivity, $V_R = 2\text{V}$, $\lambda = 1300 / 1550 \text{ nm}$,	S_λ	> 0,30	A / W
Capacitance, $V_R = 2 \text{ V}$, $f = 1\text{MHz}$	C_2	<1,5	pF
Rise and Fall Time, $V_R = 2\text{V}$, 10%-90%	t_r, t_f	< 1	ns
Optical Crosstalk (see note 2)	CRTopt	<-27	dB
Electrical Crosstalk (see note 3)	CRTel	<-50	dB

Note 1: The tracking error TE is the variation rate of Φ_e at constant current I_{mon} over a specified temperature range and relative to the reference point: $I_{mon,ref} = I_{mon}(T = 25^\circ\text{C}, \Phi_e = 0,2 \text{ mW})$. Thus, TE is given by:

$$TE [dB] = 10 \times \log \frac{\phi_e [T_c] - \phi_e [25^\circ C]}{\phi_e [25^\circ C]}$$

Note 2: Optical Crosstalk is defined as $CRT_{opt} = 10 \times \log(I_{Det,0}/I_{Det,1})$ with: $I_{Det,0}$ the photo-current with $\Phi_e = 0,2\text{mW}$, CW laser operation, $V_R = 2\text{V}$, with

minimum optical return loss from fiber end and $I_{\text{Det},1}$ the photocurrent without Φ_e , but 0,2mW optical input power, $\lambda = 1550\text{nm}$ (1300nm).

Note 3: Electrical Crosstalk is defined as $\text{CRTel} = 20 \cdot \log(I_{\text{Det,el}} / I_{\text{Laser}})$ with: $I_{\text{Det,el}}$ the current in the photodiode generated by electrical crosstalk (measured with laser bias below threshold) and I_{Laser} the modulation current for 100% modulation.
The specified value is valid in connection with a crosstalk optimized test-fixture

Ordering Information:

Type	Ordering Code	Connector
SKL87374A	Q?????-Pxxxx	DIN
SKL87374G	Q?????-Pxxxx	FC / PC

Component with other connector types on request

Package Dimension:

