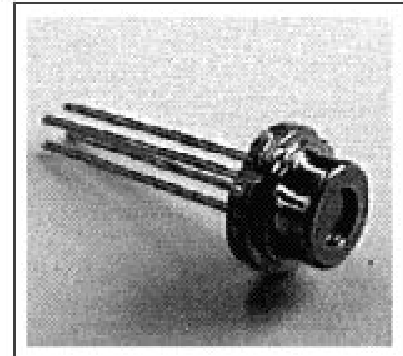


## 1300 nm Laser in Coaxial TO-Package

STH 51001Z

- Designed for application in fiber-optic networks
- Laser diode with Multi-Quantum Well structure
- Suitable for bit rates up to 1 Gbit/s
- Ternary photodiode at rear mirror for monitoring and control of radiant power
- Hermetically sealed subcomponent, similar to TO 18



Type	Ordering Code
STH 51002Z	Q62702-P3013

Component with other pinout on request.

Component with integrated Silicon-Optics for direct high efficiency single mode fiber coupling on request.

### Maximum Ratings

Output power ratings refer to the optical port. The operating temperature of the submount is identical to the case temperature.

Parameter	Symbol	Values	Unit
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#### Module

Operating temperature range at case	$T_C$	- 40 ... + 85	°C
Storage temperature range	$T_{stg}$	- 40 ... + 85	°C
Soldering temperature $t_{max} = 10$ s, 2 mm distance from bottom edge of case	$T_S$	260	°C

#### Laserdiode

Direct forward current	$I_{F\ max}$	120	mA
Radiant power CW	$\Phi_e$	10	mW
Reverse voltage	$V_{R\ max}$	2	V

**Maximum Ratings (cont'd)**

Parameter	Symbol	Values	Unit
<b>Monitor Diode</b>			
Reverse voltage	$V_{R \text{ max}}$	10	V

**Characteristics**

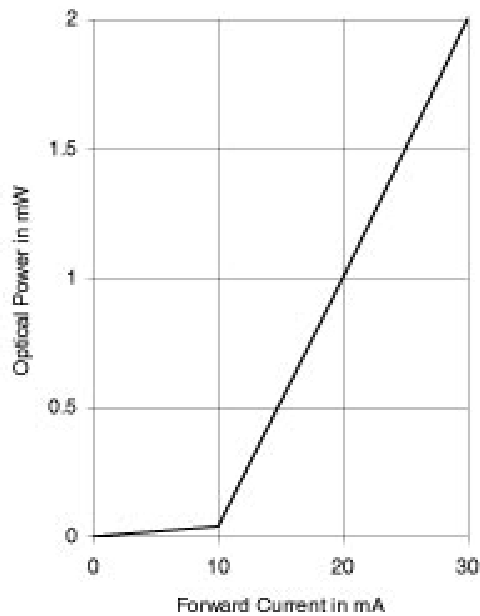
Parameter	Symbol	Values	Unit
<b>Laser Diode</b>			
Optical output power	$\Phi_e$	5	mW
Emission wavelength center of range $\Phi_e = 2 \text{ mW}$	$\lambda$	1280 ... 1330	nm
Spectral bandwidth $\Phi_e = 2 \text{ mW}$ (RMS)	$\Delta\lambda$	< 5	nm
Threshold current	$I_{th}$	< 15	mA
Forward voltage $\Phi_e = 2 \text{ mW}$	$V_F$	< 1.5	V
Radiant power at threshold	$\Phi_{eth}$	< 50	$\mu\text{W}$
Slope efficiency	$\eta$	> 100	mW/A
Differential series resistance	$r_S$	< 8	$\Omega$
Rise time/fall time	$t_R, t_F$	< 1	ns

**Monitor Diode**

Dark current, $V_R = 5 \text{ V}, \Phi_e = 0$	$I_R$	< 500	nA
Photocurrent, $\Phi_e = 2 \text{ mW}$	$I_P$	150 ... 1500	$\mu\text{A}$

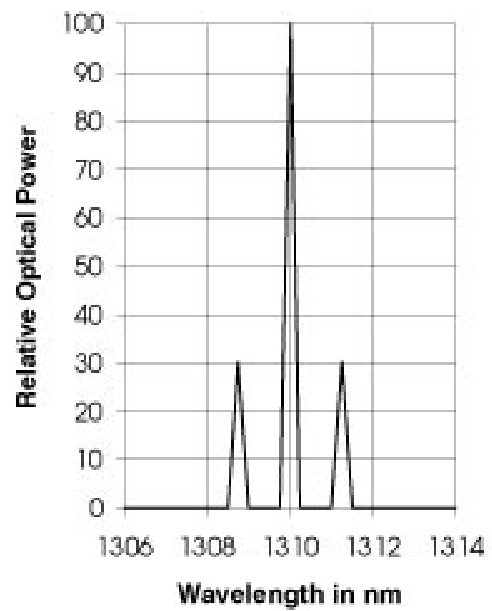
**Laser Diode**

Radiant Power in Singlemode Fiber



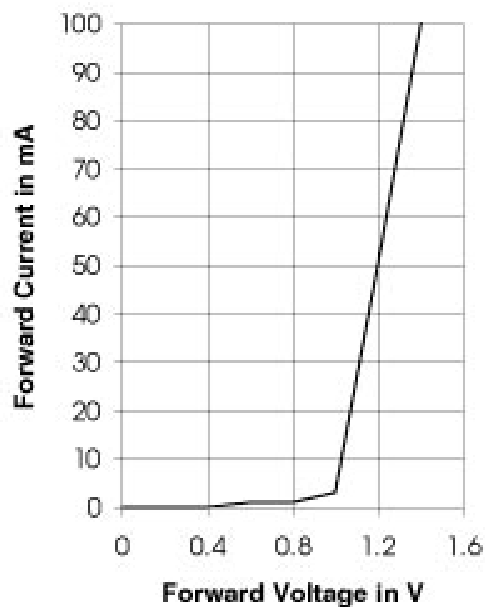
**Relative Radiant Power**

$\Phi_e = f(\lambda)$



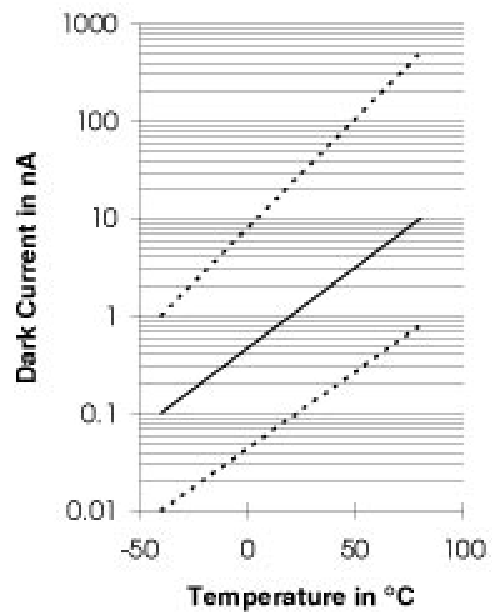
**Laser Forward Current**

$I_F = f(V_F)$

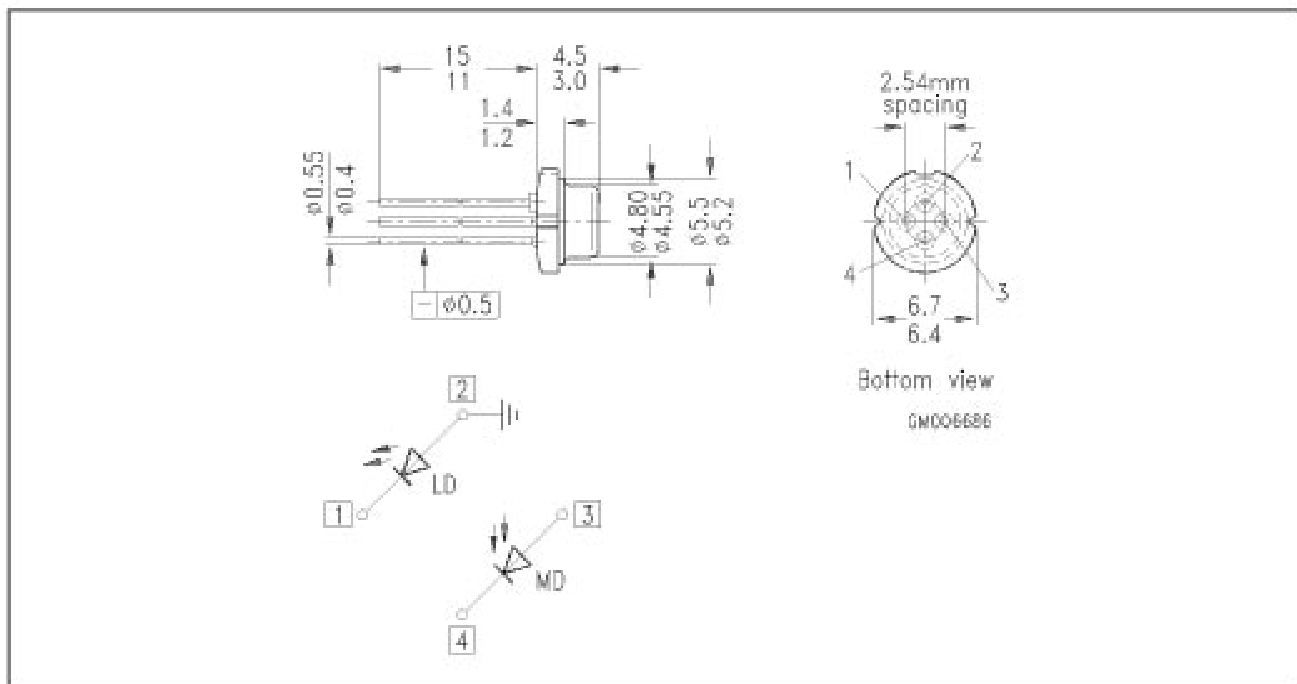


**Monitor Diode Dark Current  $I_R = f(T_A)$**

$\Phi_{port} = 0, V_R = 5 V$



## Package Outlines (Dimensions in mm)



STH 51001Z