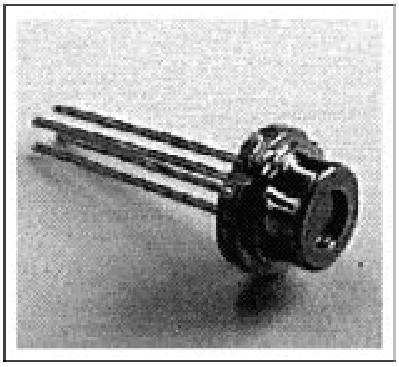
SIEMENS

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
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	Φ_e	10	mW
Reverse voltage	$V_{R\ max}$	2	V

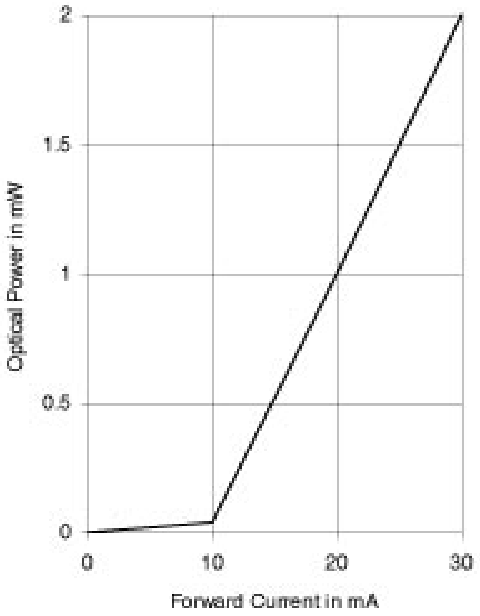
Maximum Ratings (cont'd)

Parameter	Symbol	Values	Unit
Monitor Diode			
Reverse voltage	$V_{R\ max}$	10	V

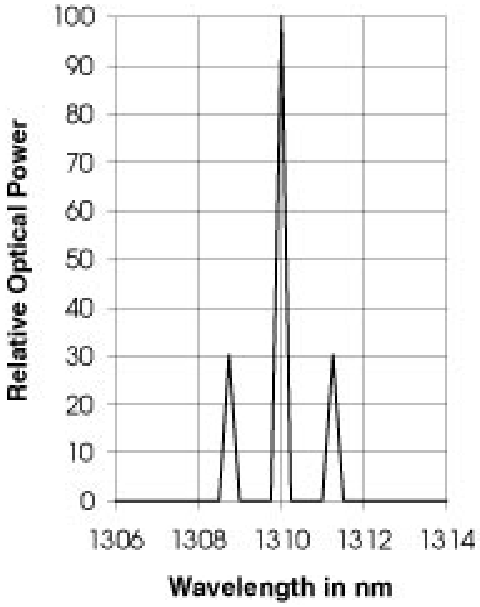
Characteristics

Parameter	Symbol	Values	Unit
Laser Diode			
Optical output power	Φ_e	5	mW
Emission wavelength center of range Φ_e = 2 mW	λ	1280 ... 1330	nm
Spectral bandwidth Φ_e = 2 mW (RMS)	$\Delta\lambda$	< 5	nm
Threshold current	I_{th}	< 15	mA
Forward voltage Φ_e = 2 mW	V_F	< 1.5	V
Radiant power at threshold	Φ_{eth}	< 50	µW
Slope efficiency	η	> 100	mW/A
Differential series resistance	r_S	< 8	Ω
Rise time/fall time	t_R, t_F	< 1	ns
Monitor Diode			
Dark current, V_R = 5 V, Φ_e = 0	I_R	< 500	nA
Photocurrent, Φ_e = 2 mW	I_P	150 ... 1500	µA

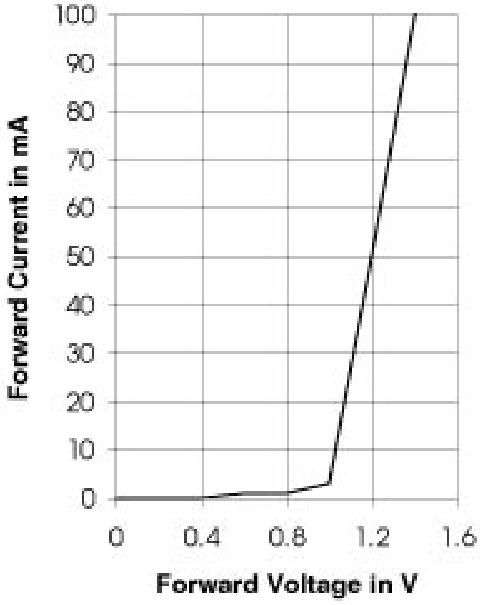
Laser Diode
Radiant Power in Singlemode Fiber



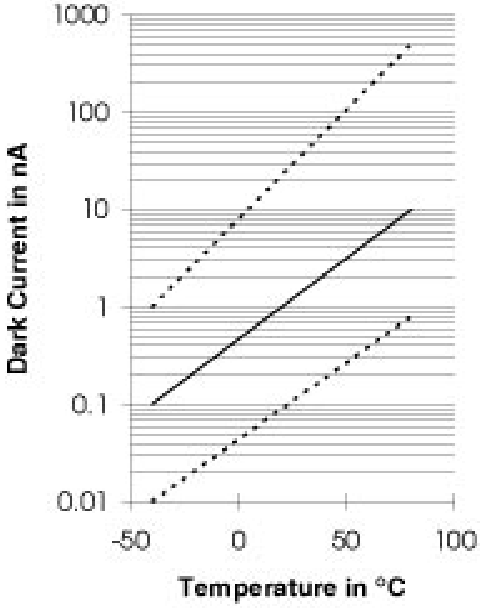
Relative Radiant Power
$\Phi_e = f(\lambda)$



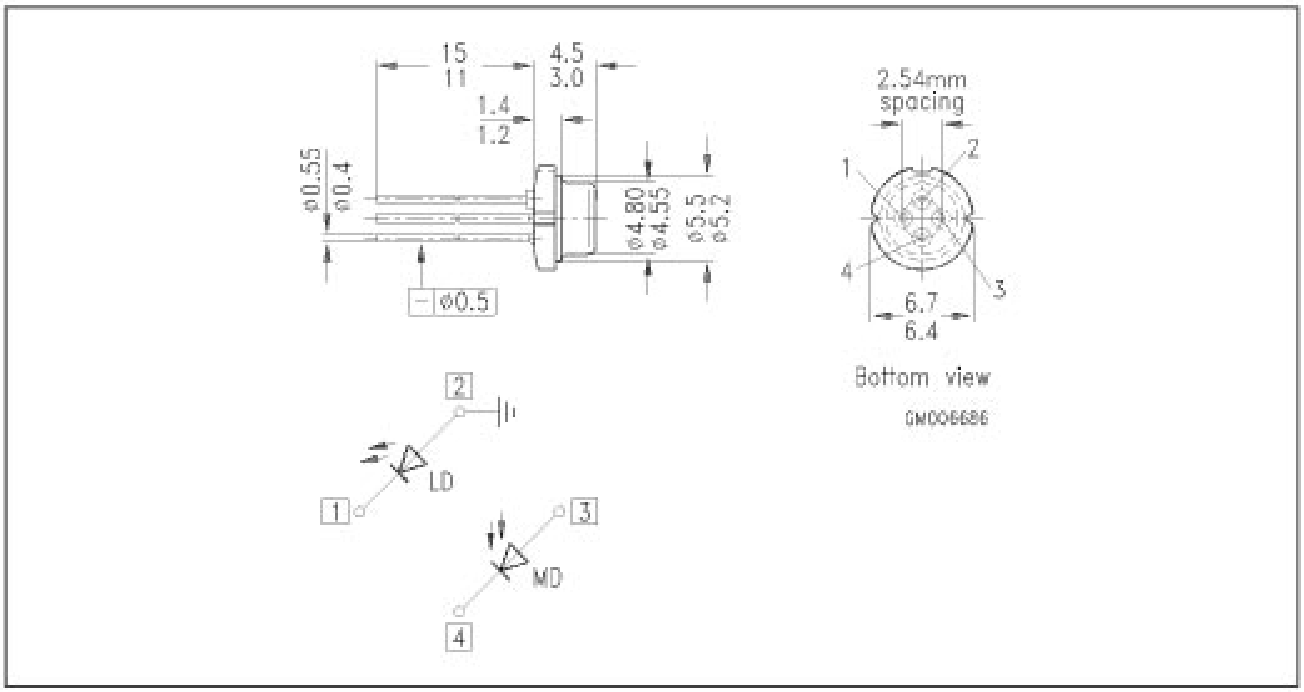
Laser Forward Current
$I_F = f(V_F)$



Monitor Diode Dark Current $I_R = f(T_A)$
$\Phi_{port} = 0$, $V_R = 5$ V



Package Outlines (Dimensions in mm)



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