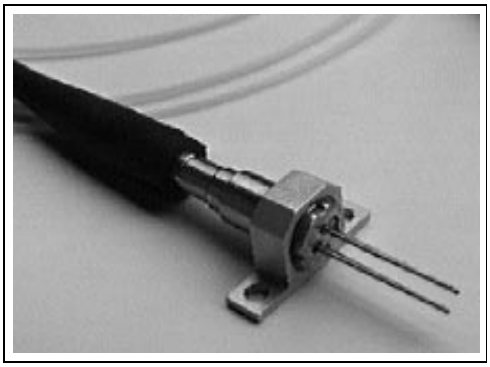
SIEMENS

1550 nm Laser in Coaxial Package with SM-Pigtail, Medium Power

STM 81004X
STM 81005X

- 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
- SM Pigtail with optional flange



Type	Ordering Code	Connector/Flange
STM 81004G	Q62702-Pxxxx	FC / without flange
STM 81004A	Q62702-Pxxxx	DIN / without flange
STM 81005G	Q62702-Pxxxx	FC / with flange
STM 81005A	Q62702-Pxxxx	DIN / with flange

Component with other connector types on request.

Maximum Ratings

Output power ratings refer to the SM fiber output. 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

Maximum Ratings (cont'd)

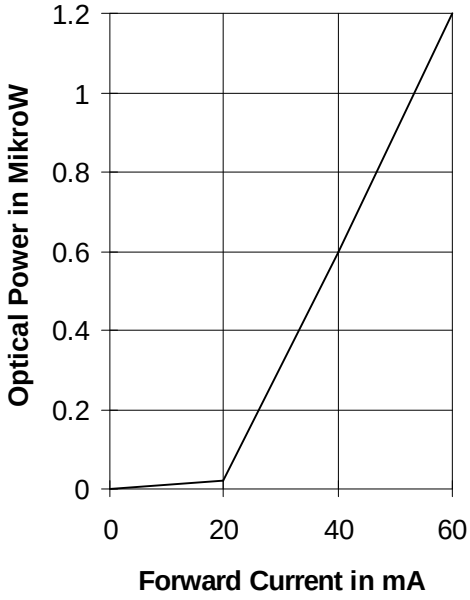
Parameter	Symbol	Values	Unit
Laser Diode			
Direct forward current	$I_{F\ max}$	120	mA
Radiant power CW	Φ_e	2	mW
Reverse voltage	$V_{R\ max}$	2	V
Monitor Diode			
Reverse voltage	$V_{R\ max}$	10	V

Characteristics

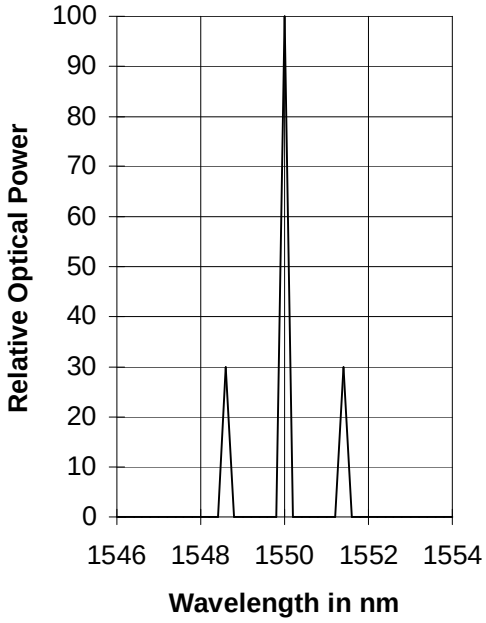
All optical data refer to a coupled 10/125 µm SM fiber, T_C = 25 °C.

Parameter	Symbol	Values	Unit
Laser Diode			
Optical output power	Φ_e	> 1.2	mW
Emission wavelength center of range Φ_e = 0.5 mW	λ	1510 ... 1590	nm
Spectral bandwidth Φ_e = 0.5 mW (RMS)	$\Delta\lambda$	< 5	nm
Threshold current (– 40 ... + 85 °C)	I_{th}	8 ... 60	mA
Forward voltage Φ_e = 0.5 mW	V_F	< 1.5	V
Radiant power at threshold	Φ_{eth}	< 40	µW
Slope efficiency	η	20 ... 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 = 0.5 mW	I_P	100 ... 1000	µA

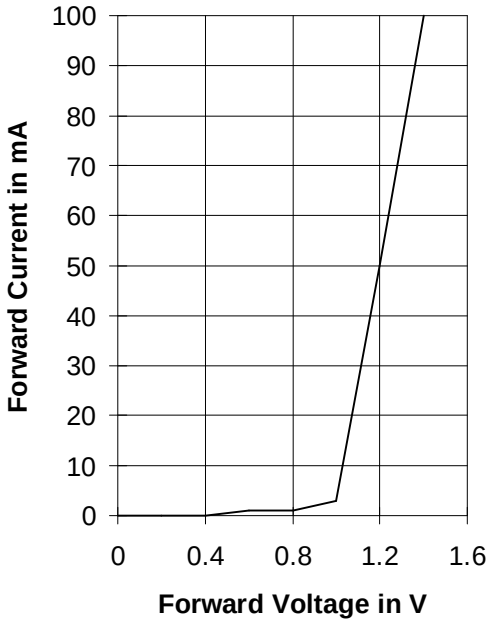
Laser Diode
Radiant Power in Singlemode Fiber



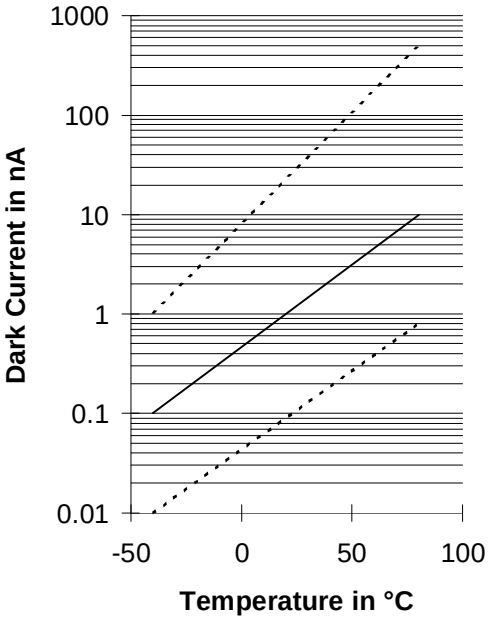
Relative Radiant Power
$\Phi_e = f(\lambda)$



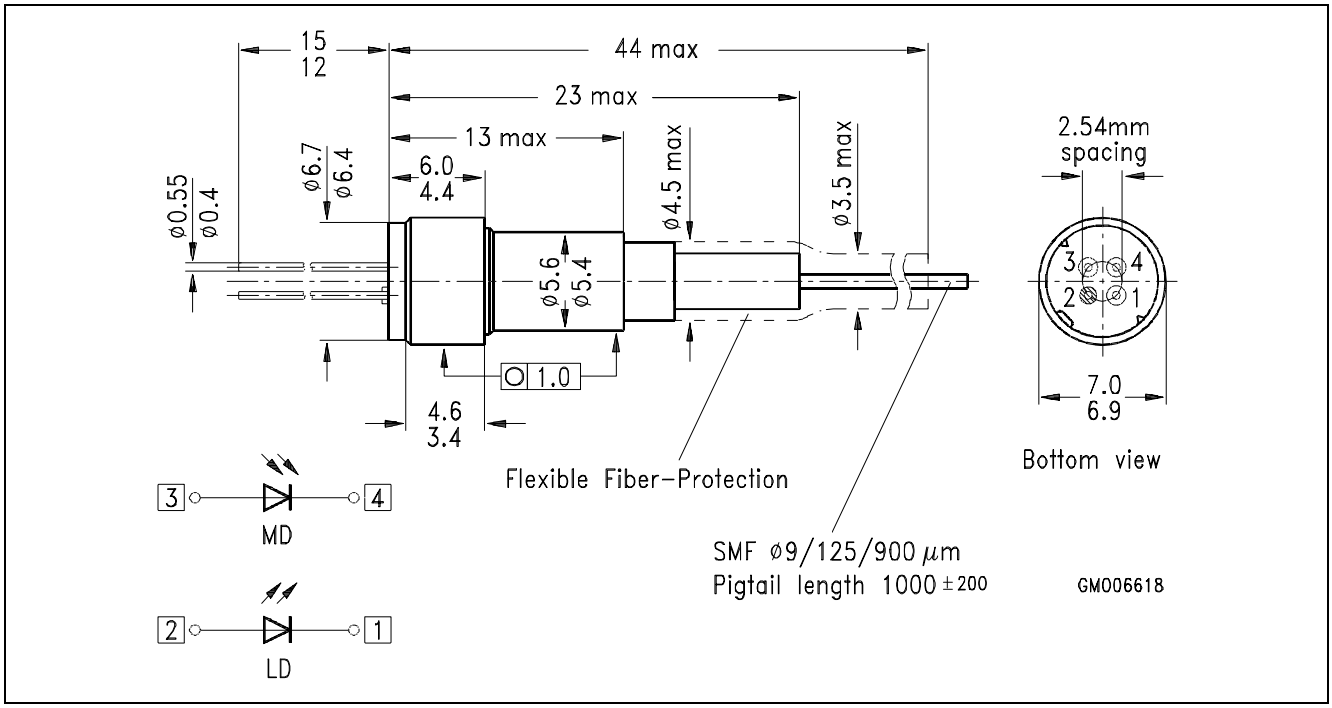
Laser Forward Current
$I_F = f(V_F)$



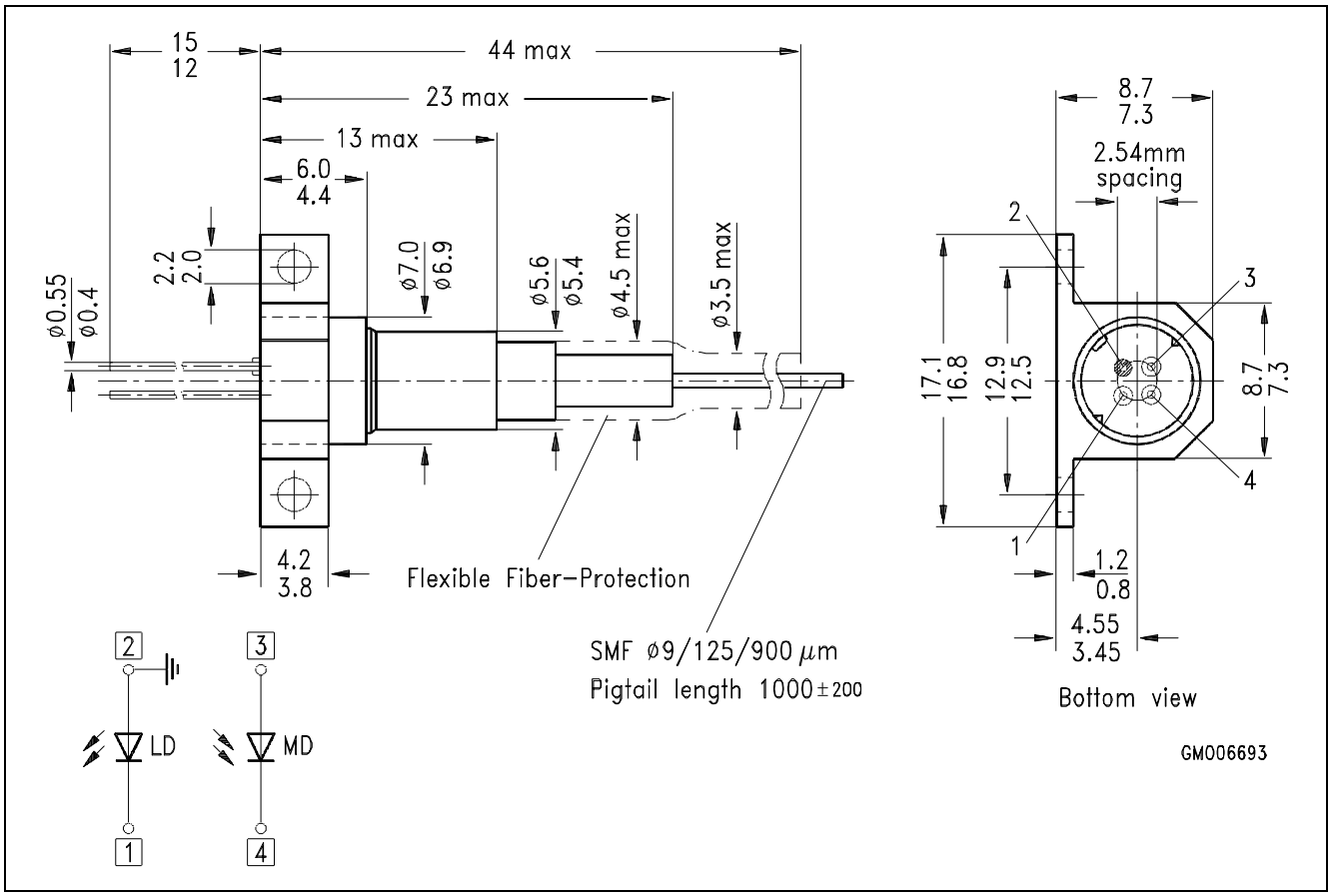
Monitor Diode Dark Current $I_R = f(T_A)$
$\Phi_{port} = 0$, $V_R = 5$ V



Package Outlines (Dimensions in mm)



STM 81004X



STM 81005X