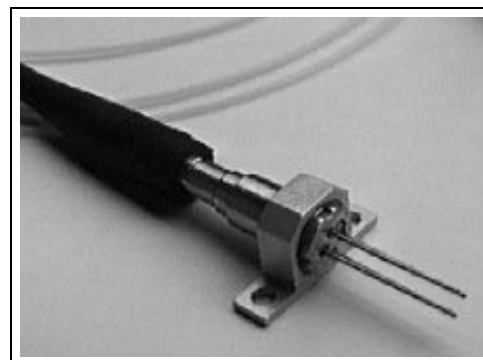


1300 nm Laser in Receptacle Package, Medium Power

STM 51004X
STM 51005X

- 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 51004G	Q62702-P3001	FC / without flange
STM 51004A	Q62702-P3050	DIN / without flange
STM 51005G	Q62702-P3061	FC / with flange
STM 51005A	Q62702-P3056	DIN / with flange

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
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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	Φ_e	2	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

All optical data refer to a coupled 10/125 μm SM fiber, $T_C = 25^\circ\text{C}$.

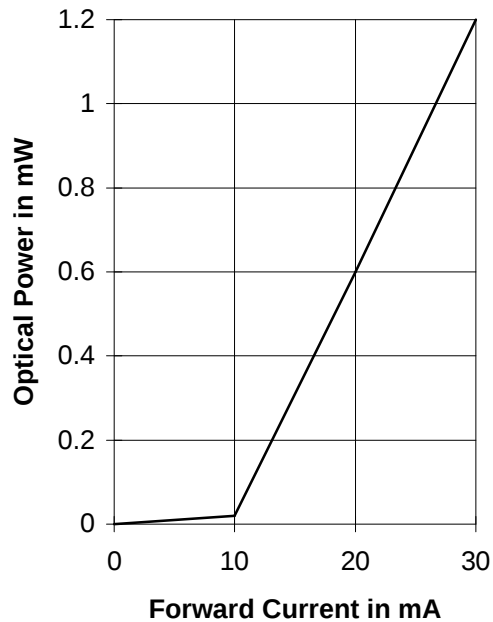
Parameter	Symbol	Values	Unit
Laser Diode			
Optical output power	Φ_e	> 1.2	mW
Emission wavelength center of range $\Phi_e = 0.5 \text{ mW}$	λ	1280 ... 1330	nm
Spectral bandwidth $\Phi_e = 0.5 \text{ mW}$ (RMS)	$\Delta\lambda$	< 5	nm
Threshold current (– 40 ... + 85 $^\circ\text{C}$)	I_{th}	2 ... 45	mA
Forward voltage $\Phi_e = 0.5 \text{ mW}$	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, $V_R = 5 \text{ V}$, $\Phi_e = 0$	I_R	< 500	nA
Photo current, $\Phi_e = 0.5 \text{ mW}$	I_P	100 ... 1000	μA

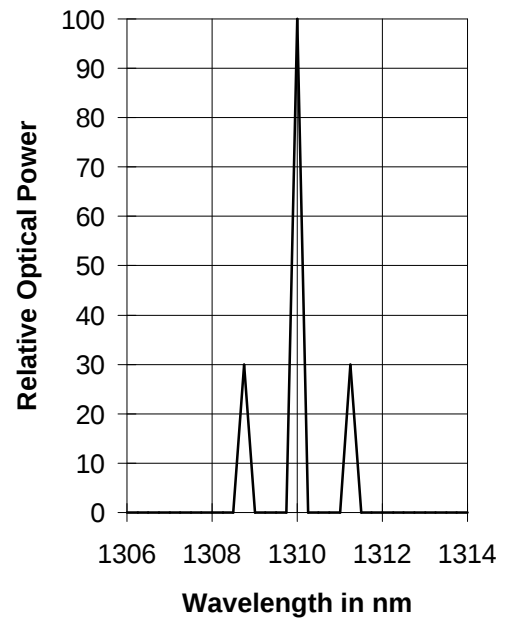
Laser Diode

Radiant Power in Singlemode Fiber



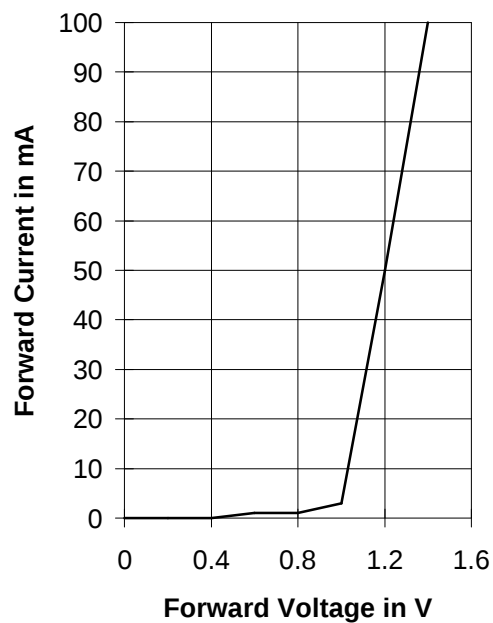
Relative Radiant Power

$$\Phi_e = f(\lambda)$$



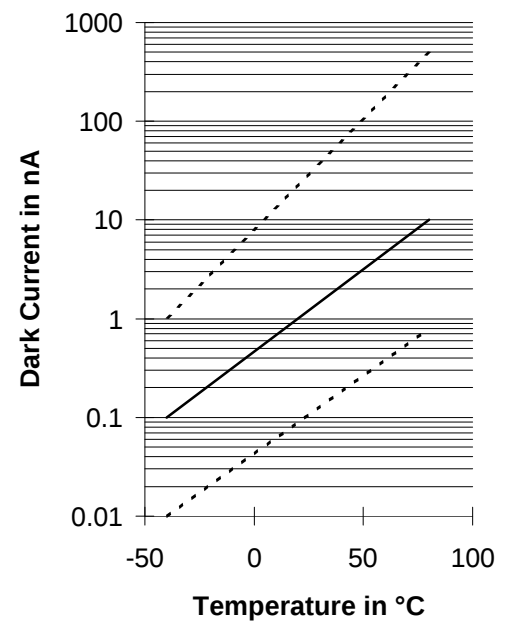
Laser Forward Current

$$I_F = f(V_F)$$

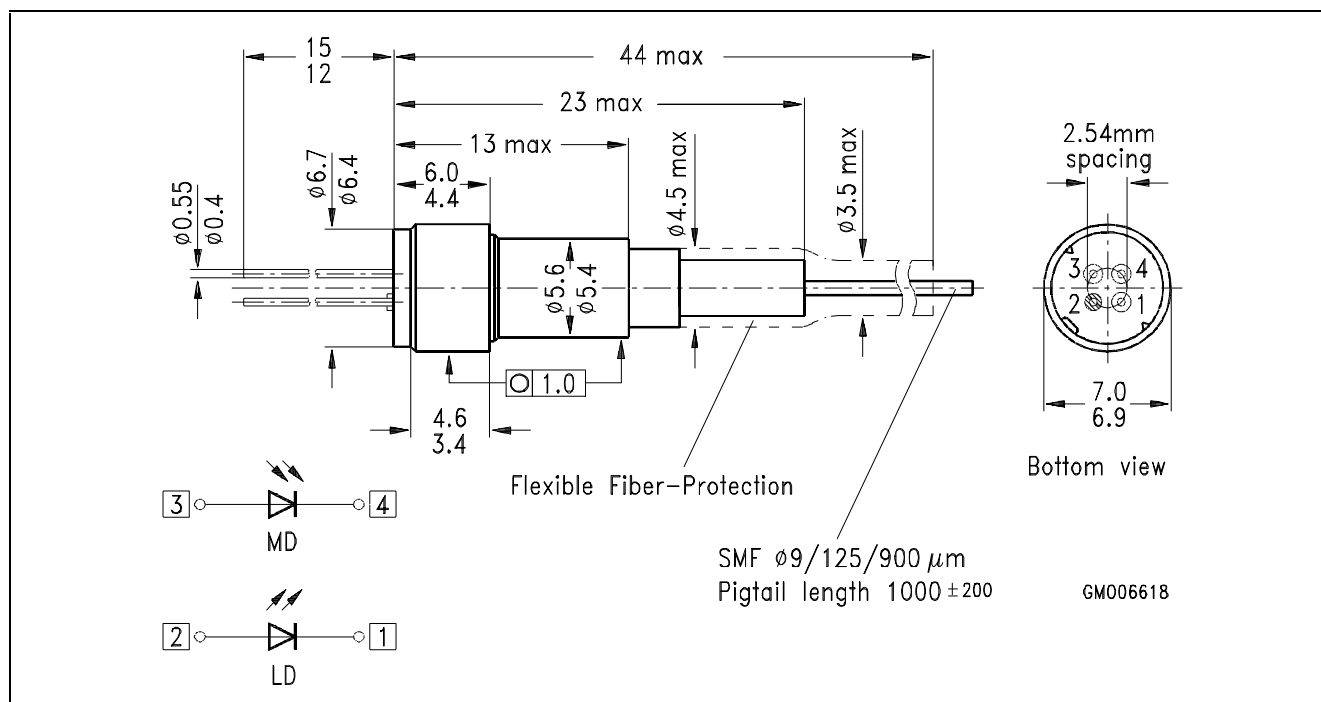


Monitor Diode Dark Current $I_R = f(T_A)$

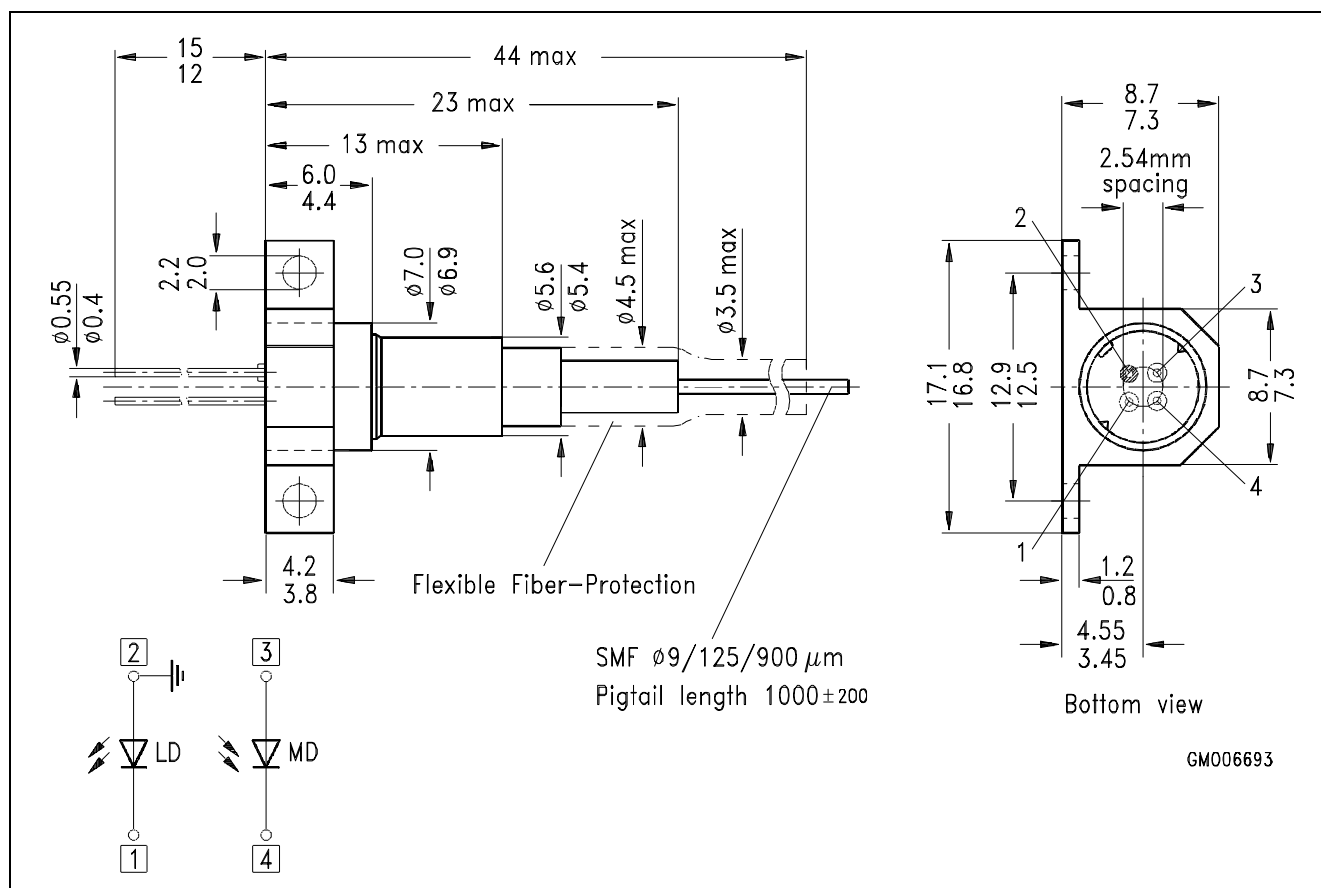
$$\Phi_{\text{port}} = 0, V_R = 5 \text{ V}$$



Package Outlines (Dimensions in mm)



STM 51004X



STM 51005X (with flange)