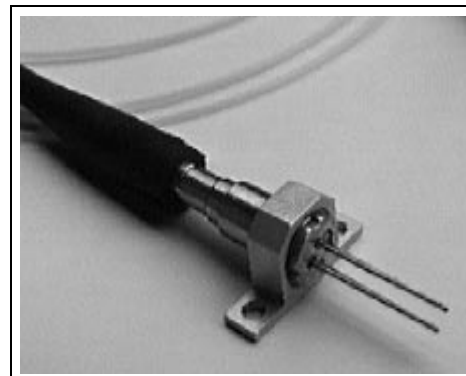


1550 nm Laser in Coaxial Package with SM-Pigtail, Low Power

STL 81004X
STL 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 |
|------------|---------------|----------------------|
| STL 81004H | Q62702-Pxxxx | FC / without flange |
| STL 81004A | Q62702-Pxxxx | DIN / without flange |
| STL 81005H | Q62702-Pxxxx | FC / with flange |
| STL 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 | 1 | 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, $T_C = 25^\circ\text{C}$.

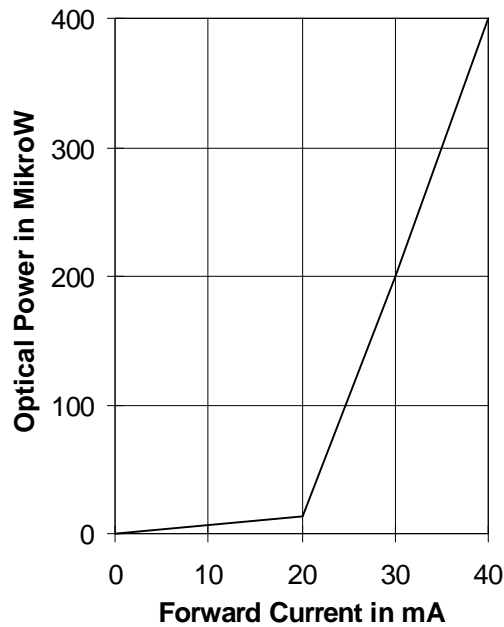
| Parameter | Symbol | Values | Unit |
|--|-----------------|---------------|---------------|
| Laser Diode | | | |
| Optical output power | Φ_e | > 0.4 | mW |
| Emission wavelength center of range $\Phi_e = 0.2 \text{ mW}$ | λ | 1510 ... 1590 | nm |
| Spectral bandwidth $\Phi_e = 0.2 \text{ mW}$ (RMS) | $\Delta\lambda$ | < 5 | nm |
| Threshold current ($-40 \dots +85^\circ\text{C}$) | I_{th} | 8 ... 60 | mA |
| Forward voltage $\Phi_e = 0.2 \text{ mW}$ | V_F | < 1.5 | V |
| Radiant power at threshold | Φ_{eth} | < 10 | μW |
| Slope efficiency | η | 8 ... 60 | 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 |
| Photocurrent, $\Phi_e = 0.2 \text{ mW}$ | I_P | 100 ... 1000 | μA |

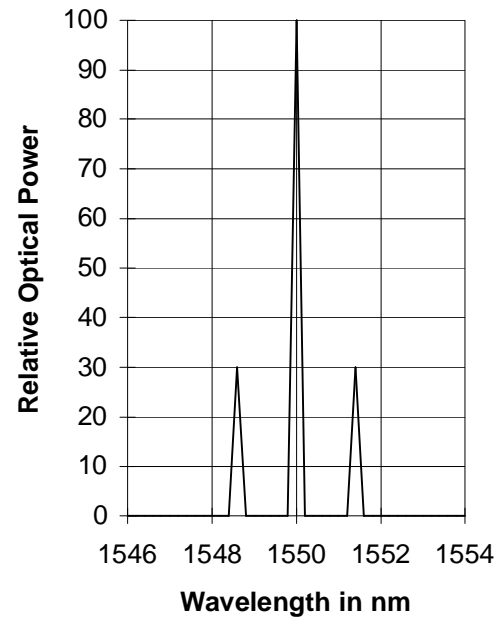
Laser Diode

Radiant Power in Singlemode Fiber



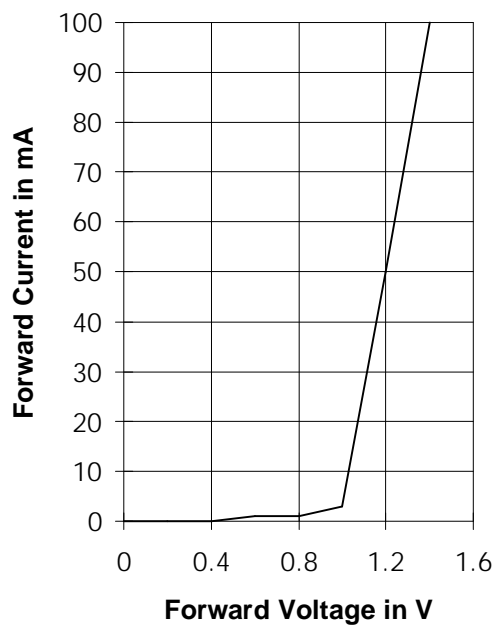
Relative Radiant Power

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



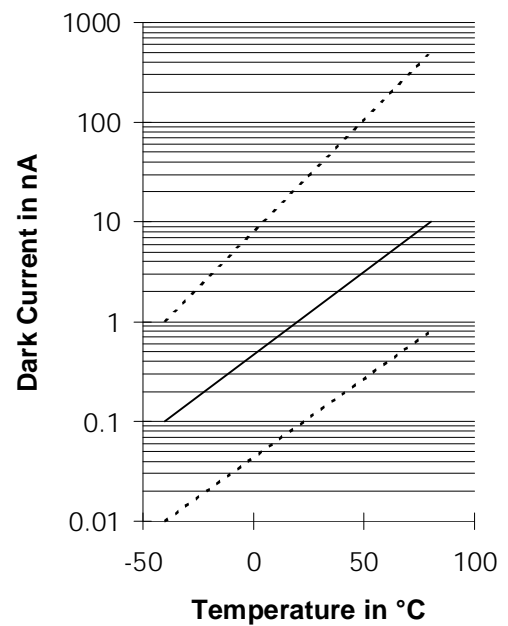
Laser Forward Current

$$I_F = f(V_F)$$

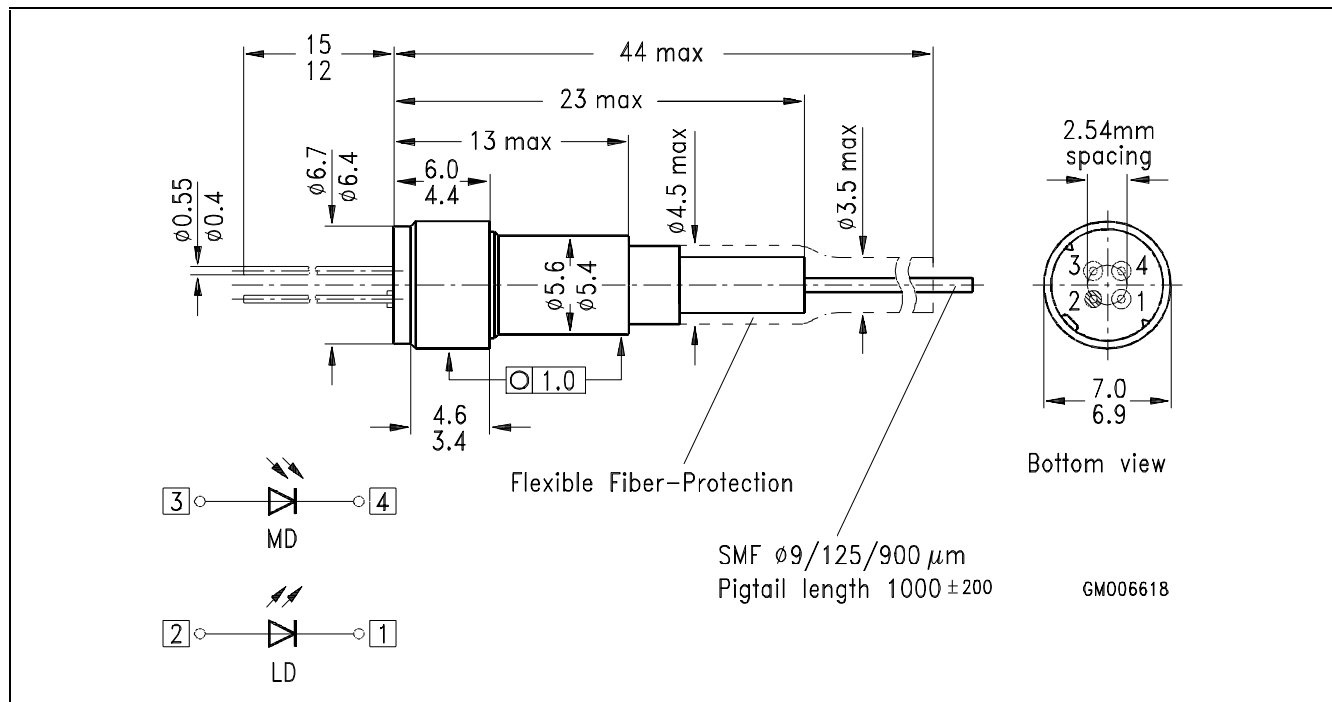


Monitor Diode Dark Current $I_R = f(T_A)$

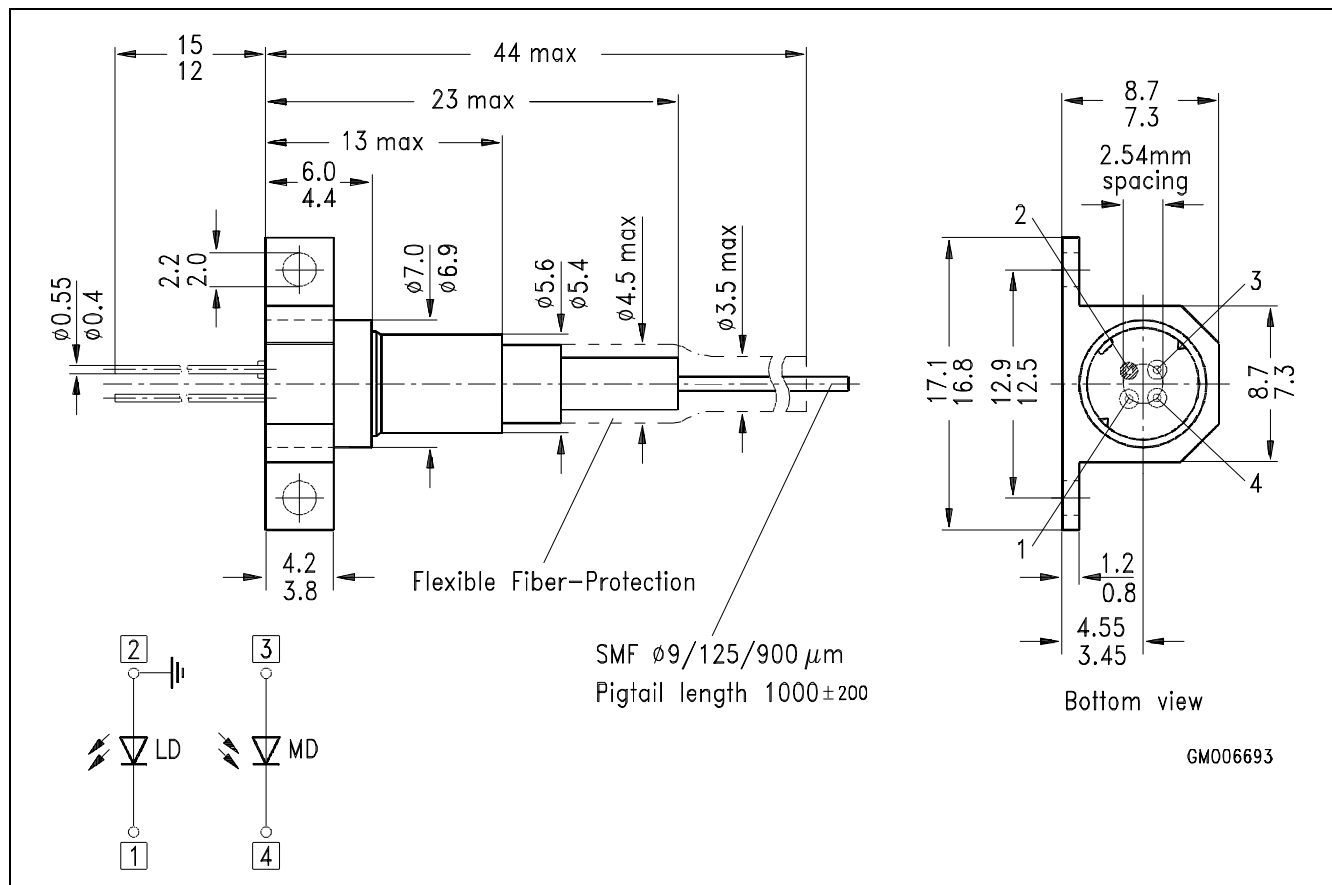
$$\Phi_{\text{port}} = 0, V_R = 5 \text{ V}$$



Package Outlines (Dimensions in mm)



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