

MITSUBISHI LASER DIODES
ML7xx16 SERIES
 2.5Gbps InGaAsP DFB LASER DIODE

**TYPE
NAME**

ML725B16F

DESCRIPTION

ML7xx16 series are uncooled DFB (Distributed Feedback) laser diodes for 2.5Gbps transmission emitting light beam at 1310nm. $\lambda/4$ shifted grating structure is employed to obtain excellent SMSR performance under 2.5Gbps modulation. Furthermore, ML7xx16 can operate in the wide temperature range from -20°C to 85°C without any temperature control.

FEATURES

- $\lambda/4$ phase shifted grating structure
- Wide temperature range operation (-20°C to 85°C)
- High side-mode-suppression-ratio (typical 45dB)
- High resonance frequency (typical 11GHz)

APPLICATION

2.5Gbps transmission

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Conditions | Ratings | Unit |
|--------|-----------------------|------------|------------|------|
| Po | Output power | CW | 6 | mW |
| IF | Laser forward current | - | 200 | mA |
| VRL | Laser reverse voltage | - | 2 | V |
| IRD | PD forward current | - | 2 | mA |
| VRD | PD reverse voltage | - | 20 | V |
| Tc | Operation temperature | - | -20 ~ +85 | °C |
| Tstg | Storage temperature | - | -40 ~ +100 | °C |

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

| Symbol | Parameter | Conditions | Limits | | | Unit |
|------------------|----------------------------------|--|--------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| Ith | Threshold current | CW | - | 10 | 15 | mA |
| | | CW, Tc=85°C | - | 35 | 50 | mA |
| Iop | Operation current | CW, Po=5mW | - | 30 | 40 | mA |
| | | CW, Po=5mW, Tc=85°C | - | 75 | 100 | mA |
| Vop | Operating voltage | CW, Po=5mW | - | 1.1 | 1.8 | V |
| η | Slope efficiency | CW, Po=5mW | 0.18 | 0.25 | - | mW/mA |
| λ_p | Peak wavelength | CW, Po=5mW, Tc=-20°C~+85°C | 1290 | 1310 | 1330 | nm |
| SMSR | Side mode suppression ratio | CW, Po=5mW, Tc=-20°C~+85°C | 35 | 45 | - | dB |
| $\theta_{ }$ | Beam divergence angle (parallel) | CW, Po=5mW | - | 25 | 40 | deg. |
| θ_{\perp} | (perpendicular) | CW, Po=5mW | - | 30 | 47 | deg. |
| fr | Resonance frequency | 2.48832Gbps, I _{bias} =I _{th} , I _{pp} =40mA | - | 11 | - | GHz |
| tr,tf | Rise and fall time(10%-90%) | 2.48832Gbps, I _{bias} =I _{th} , I _{pp} =40mA not including package | - | 100 | 150 | psec |
| Im | Monitoring current (PD) | CW, Po=5mW, VRD=1V | 0.1 | - | 2.0 | mA |
| Id | Dark current (PD) | VRD=5V | - | - | 1.0 | A |
| Ct | Capacitance (PD) | VRD=5V, f=1MHz | - | 10 | 20 | pF |



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OUTLINE DRAWINGS

