

MITSUBISHI LASER DIODES

# ML7xx32 SERIES

Notice: Some parametric limits are subject to change

10Gbps InGaAsP DFB LASER DIODE

**TYPE  
NAME**

## ML792E32/ML792H32

### DESCRIPTION

ML7xx32 series are uncooled DFB (Distributed Feedback) laser diodes for 10Gbps transmission emitting light beam at 1310nm.  $\lambda/4$  phase shifted grating structure is employed to obtain excellent SMSR performance under 10Gbps modulation. Furthermore, ML7xx32 is able to operate in the wide temperature range from 0°C to 85°C without temperature control.

### APPLICATION

10Gbps Ethernet/Short Reach

### \*\*\*Specification Note

| Type                       | Matching Resistance :Rs |
|----------------------------|-------------------------|
| ML792E32-01<br>ML792H32-01 | 42 $\pm$ 1 ohm          |

### FEATURES

- $\lambda/4$  phase shifted grating structure
- Wide temperature range operation ( 0°C to 85°C )
- High side-mode-suppression-ratio (typical 45dB)
- High resonance frequency (typical 15GHz)
- Chip-on-carrier

### ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter             | Conditions | Ratings   | Unit |
|--------|-----------------------|------------|-----------|------|
| If     | Laser forward current | -          | 120       | mA   |
| VRL    | Laser reverse voltage | -          | 2         | V    |
| Tc     | Operation temperature | -          | 0 ~ +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                                 | -      | 9    | 20   | mA    |
|                      |                                  | CW, Tc=85°C                        | -      | 30   | 40   | mA    |
| Iop                  | Operation current                | CW, Po=5mW                         | -      | 30   | 40   | mA    |
|                      |                                  | CW, Po=5mW, Tc=85°C                | -      | 70   | 90   | mA    |
| Vop                  | Operating voltage                | CW, Po=5mW                         | -      | 1.1  | 1.8  | V     |
| $\eta$               | Slope efficiency                 | CW, Po=5mW                         | 0.20   | 0.25 | -    | mW/mA |
| $\lambda_p$          | Peak wavelength                  | CW, Po=5mW, Tc= 0°C ~ +85°C        | 1290   | 1310 | 1330 | nm    |
| SMSR                 | Side mode suppression ratio      | CW, Po=5mW, Tc= 0°C ~ +85°C        | 35     | 45   | -    | dB    |
| $\theta_{\parallel}$ | Beam divergence angle (parallel) | CW, Po=5mW                         | -      | 25   | 40   | deg.  |
| $\theta_{\perp}$     | (perpendicular)                  | CW, Po=5mW                         | -      | 30   | 45   | deg.  |
| f <sub>r</sub>       | Resonance frequency              | 10Gbps, Ex=7dB, Vpp=2.0V           | -      | 15   | -    | GHz   |
| tr                   | Rise time(20%-80%)               | 10Gbps, Ex=7dB, Vpp=2.0V           | -      | 30   | 40   | psec  |
| tf                   | Fall time(20%-80%)               | 4th order Bessel - Thompson Filter | -      | 30   | 40   |       |



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## OUTLINE DRAWINGS

