

### OEL-512A-C310-53GB01

53Gbd EML Cooled TO CAN, For 100G ER1-30km

#### FEATURES

- ✧ 8pins cooled TO-CAN package
- ✧ 50Ω single-ended data input
- ✧ Case operating temperature range from - 5°C to +75°C

#### APPLICATION

- ✧ 100G ER1-30km Application

#### DESCRIPTION

| ELECTRICAL AND OPTICAL CHARACTERISTICS (T <sub>ld</sub> =53°C, unless otherwise specified) |                                    |  |        |      |        |      |
|--|------------------------------------|--|--------|------|--------|------|
| Symbol   | Parameter                          | Test Conditions                                      | Min.   | Typ. | Max.   | Unit |
| I <sub>th</sub>  | Threshold Current                  | CW   |        | 23   | 30     | mA   |
| V <sub>OP</sub>  | Operating Voltage                  | CW, I <sub>op</sub> =100mA, V <sub>ea</sub> =0V      |        | 1.3  | 1.8    | V    |
| PL   | Optical output power from lens     | CW, I <sub>op</sub> =100mA, V <sub>ea</sub> =0V      | 12.6   |      |        | mW   |
| DC ER  | DC Extinction Ratio, fiber coupled | CW, I <sub>op</sub> =100mA, V <sub>ea</sub> =0 ~ -2V | 12     |      |        | dB   |
| V <sub>ea</sub>  | EA Operating voltage               | CW, I <sub>op</sub> =100mA, V <sub>pp</sub> =1V      | -2     |      | -0.2   | V    |
| FL   | Focal distance                     |  | 7.7    |      | 9.3    | mm   |
| λ <sub>c</sub>   | Center Wavelength*                 | CW, I <sub>op</sub> =100mA                           | 1304.5 | 1311 | 1317.5 | nm   |
| SMSR   | Side Mode Suppression Ratio        | CW, I <sub>op</sub> =100mA                           | 35     |      |        | dB   |

\*All wavelengths are available upon request by customers.

| THERMAL CHARACTERISTICS |                               |                 |      |      |      |      |
|-------------------------|-------------------------------|-----------------|------|------|------|------|
| Symbol                  | Parameter                     | Test Conditions | Min. | Typ. | Max. | Unit |
| R <sub>th</sub>         | Thermistor resistance         | 25°C            | 9.5  |      | 10.5 | kΩ   |
| B                       | B constant of R <sub>th</sub> | 25°C/50°C       |      | 3930 |      | K    |
| I <sub>TEC</sub>        | TEC Current                   | ΔT=30°C         |      |      | 0.6  | A    |
| V <sub>TEC</sub>        | TEC Voltage                   | ΔT=30°C         | -1.5 |      | 1.5  | V    |
| P <sub>TEC</sub>        | TEC Power                     | ΔT=30°C         |      |      | 0.9  | W    |

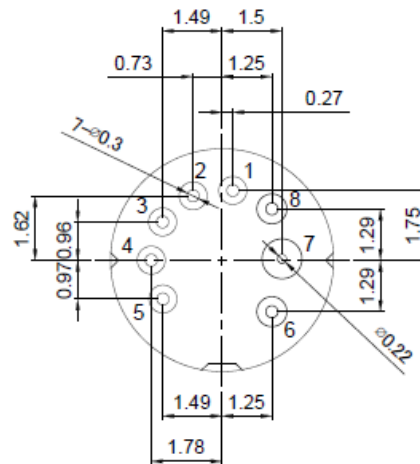
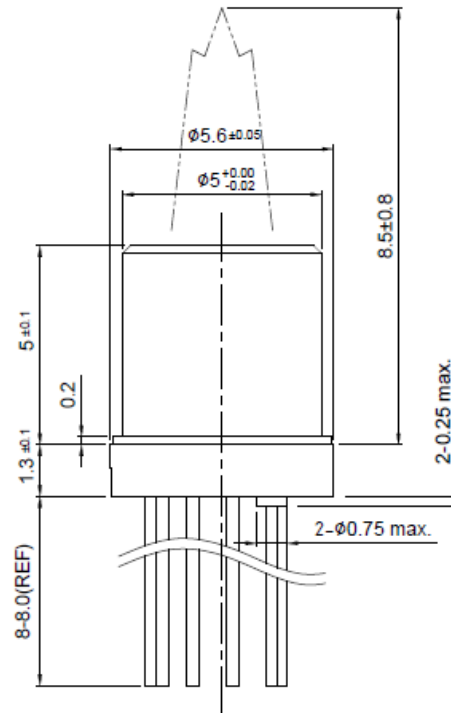
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| ABSOLUTE MAXIMUM RATINGS |                           |     |     |      |
|--------------------------|---------------------------|-----|-----|------|
| Symbol                   | Parameter                 | Min | Max | Unit |
| V <sub>RL</sub>          | LD Reverse Voltage        |     | 2   | V    |
| I <sub>f</sub>           | LD Forward Current        |     | 120 | mA   |
| P <sub>o</sub>           | Optical Output Power      |     | 40  | mW   |
| V <sub>RM</sub>          | EA Modulator Reverse Bias | -4  | 0.5 | V    |
| V <sub>pe</sub>          | TEC Voltage               |     | 1.8 | V    |
| I <sub>pe</sub>          | TEC Current               |     | 1   | A    |
| T <sub>opr</sub>         | Operating Temperature     | -5  | 75  | °C   |
| T <sub>stg</sub>         | Storage Temperature       | -40 | 85  | °C   |

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### MECHANICAL DIMENSION (mm) and PIN ASSIGNMENT

| PIN | Description |
|-----|-------------|
| 1   | TEC+        |
| 2   | TEC-        |
| 3   | MPD+        |
| 4   | LD+         |
| 5   | THERMISTOR  |
| 6   | SIGNAL GND  |
| 7   | EAM+        |
| 8   | SIGNAL GND  |



### Revision History

| Version | Subject           | Release Date |
|---------|-------------------|--------------|
| 1.0     | Initial datasheet | 2023/10/1    |
|         |                   |              |
|         |                   |              |
|         |                   |              |