

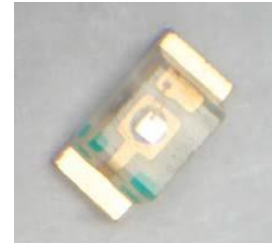


## 850nm Multi-mode VCSEL in Surface Mount 1608 Package

Part No. VCS-F85S20-MM

### Features

- Metric 1608 (or Imperial 0603) surface mount package
- Multimode 850nm VCSEL
- Low operating current and voltage
- Wide range operating temperature -40 to 85°C



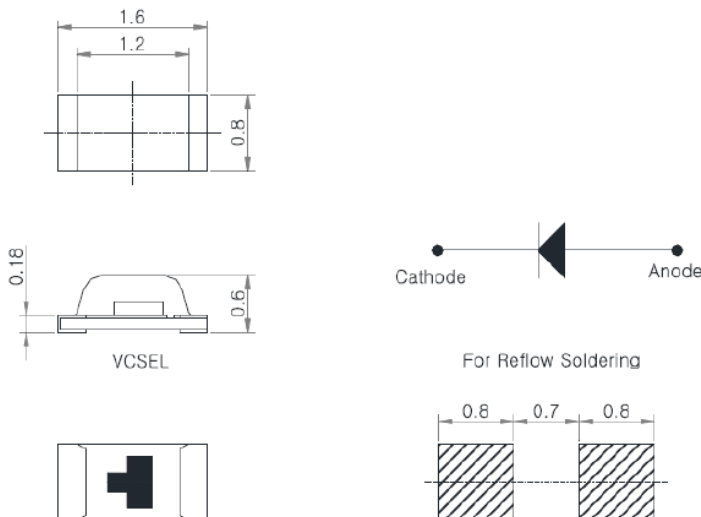
### Specifications

| Absolute Maximum Ratings   |      |      |      |            |  |  |
|----------------------------|------|------|------|------------|--|--|
| Parameters                 | Min. | Max. | Unit | Conditions |  |  |
| Storage Temperature        | -40  | 85   | °C   |            |  |  |
| Operating Temperature      | -40  | 85   | °C   |            |  |  |
| Lead Soldering Temperature |      | 260  | °C   | 5 seconds  |  |  |
| Continuous Forward Current |      | 12   | mA   |            |  |  |
| Continuous Reverse Voltage |      | 5    | V    | @10uA      |  |  |

| Electro-Optical Characteristics |                 |      |      |      |          |                                  |
|---------------------------------|-----------------|------|------|------|----------|----------------------------------|
| Parameters                      | Symbol          | Min. | Typ. | Max. | Unit     | Conditions                       |
| Threshold Current               | $I_{th}$        | -    | 1    | 2    | mA       | CW                               |
| Slope Efficiency                | $\eta$          | 0.2  | 0.35 | 0.5  | mW/mA    | $I_F=7mA$                        |
| Optical Output Power            | $P_o$           | -    | 2.2  | -    | mW       | $I_F=7mA$                        |
| Wavelength                      | $\lambda_P$     | 840  | 850  | 860  | nm       | $I_F=7mA$                        |
| Forward Voltage                 | $V_F$           | -    | 1.8  | 2.3  | V        | $I_F=7mA$                        |
| Breakdown Voltage               | $V_B$           | -    | -10  | -    | V        |                                  |
| Dynamic Resistance              | $R_d$           | 20   | 35   | 70   | $\Omega$ | $I_F=7mA$                        |
| Spectral Bandwidth (RMS)        | $\Delta\lambda$ | -    | -    | 0.85 | Nm       | $I_F=7mA$                        |
| Beam Divergence                 | $\Theta$        | 14   | -    | 30   | degree   | $I_F=7mA$ (Full width, $1/e^2$ ) |

| Thermal Characteristics           |                          |      |      |      |       |                                       |
|-----------------------------------|--------------------------|------|------|------|-------|---------------------------------------|
| Parameters                        | Symbol                   | Min. | Typ. | Max. | Unit  | Conditions                            |
| $I_{th}$ Temperature Variation    | $\Delta I_{th}$          |      | 1.5  |      | mA    | $T_a=-40$ to $85^\circ C$             |
| $\eta$ Temperature Coefficient    | $\Delta\eta/\Delta T$    |      | -0.5 |      | %/°C  | $T_a=-40$ to $85^\circ C$ , $I_F=7mA$ |
| $\lambda$ Temperature Coefficient | $\Delta\lambda/\Delta T$ |      | 0.06 |      | nm/°C | $T_a=-40$ to $85^\circ C$ , $I_F=7mA$ |

### Outline Dimensions (unit: mm)



Note: Specifications are subject to change without notice.