

# TSD-8A20-702

## Implant VCSEL Emitter(850nm)

### ELECTRO-OPTICAL CHARACTERISTICS:

| PARAMETERS        | SYMBOL      | MIN | TYP  | MAX | UNIT   | TEST CONDITIONS               |
|-------------------|-------------|-----|------|-----|--------|-------------------------------|
| Threshold Current | $I_{th}$    | 2   | 3.5  | 5   | mA     |                               |
| Output Power      | $P_o$       | 2.5 | 3    | 3.6 | mW     | $I_F=12\text{ mA}$            |
| Wavelength        | $\lambda_p$ | 840 | 850  | 865 | nm     | $I_F=12\text{ mA}$            |
| Forward Voltage   | $V_F$       | 1.8 | 1.95 | 2.1 | V      | $I_F=12\text{ mA}$            |
| Beam Divergence   | $\theta$    |     |      | 15  | degree | $I_F=6\text{ mA}$ ( $1/e^2$ ) |
| ESD               | $V_{ESD}$   |     | 600  |     | V      | Human body mode               |

Notes:

All parameters except mentioned are measured at 25°C, CW operation.

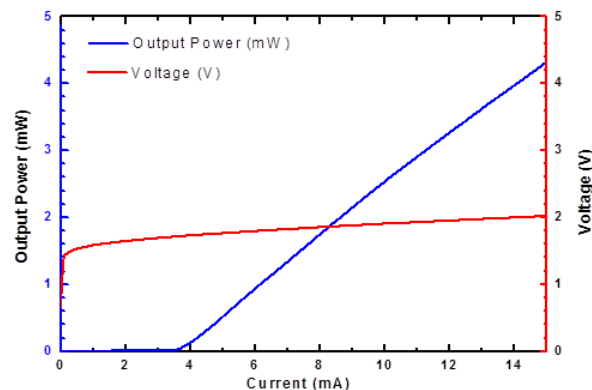
### THERMAL CHARACTERISTICS:

| PARAMETERS                          | MIN | TYP  | MAX | UNIT  | CONDITIONS                                    |
|-------------------------------------|-----|------|-----|-------|-----------------------------------------------|
| $P_O$ Temperature Coefficient       |     | -1.0 |     | %/°C  | $T_a=0\sim70^\circ\text{C} / I_F=12\text{mA}$ |
| $V_F$ Temperature Coefficient       |     | -2.5 |     | mV/°C | $T_a=0\sim70^\circ\text{C} / I_F=12\text{mA}$ |
| $\lambda_p$ Temperature Coefficient |     | 0.06 |     | nm/°C | $T_a=0\sim70^\circ\text{C} / I_F=12\text{mA}$ |

### ABSOLUTE MAXIMUM RATINGS:

| PARAMETERS                 | MIN | MAX | UNIT | CONDITIONS |
|----------------------------|-----|-----|------|------------|
| Storage Temperature        | -40 | 125 | °C   |            |
| Operating Temperature      | -20 | 70  | °C   |            |
| Continuous Forward Current |     | 12  | mA   |            |
| Continuous Reverse Voltage |     | 5   | V    | 10μA       |

### TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES( $T_a=25^\circ\text{C}$ ):



**OUTLINE DIAGRAM:**

- Chip length: 170  $\mu\text{m}$
- Chip width: 170  $\mu\text{m}$
- Chip thickness: 200  $\pm$  15  $\mu\text{m}$

