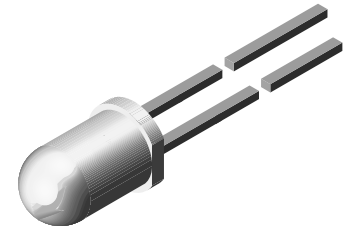


5mm Infrared LED (T-1 3/4)

Features

- High reliability
- High radiant intensity
- Peak wavelength $\lambda_p=940\text{nm}$
- 2.54mm lead spacing
- Low forward voltage
- RoHS compliance



QRE93BR5



Applications

- Free air transmission system
- Infrared remote control units with high power requirement
- Smoke detector
- Infrared applied system

Descriptions

- The device is specially matched with phototransistor, photodiode and infrared receiver module.
- The infrared emitting diode is a high intensity diode, molded blue transparent plastic package.

Device Selection Guide

| Part No. | Chip | Lens Color |
|------------------|----------|------------|
| | Material | |
| TIR940-R5B-33329 | GaAlAs | Blue |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Value | Unit |
|--|------------------------|-----------|------|
| Reverse Voltage | V_R | 5 | V |
| Continuous Forward Current | I_F | 100 | mA |
| Peak Forward Current *1 | I_{FP} | 1 | A |
| Power Dissipation at (or below) 25°C Free Air Temperature | P_d | 150 | mW |
| Soldering Temperature *2 | T_{sol} | 260 | °C |
| Operating Temperature | T_{opr} | -40 ~ +85 | °C |
| Storage Temperature | T_{stg} | -40 ~ +85 | °C |

Notes:

1. I_{FP} Conditions – Pulse Width ≤100us and Duty ≤1%
2. Soldering time ≤ 5 seconds

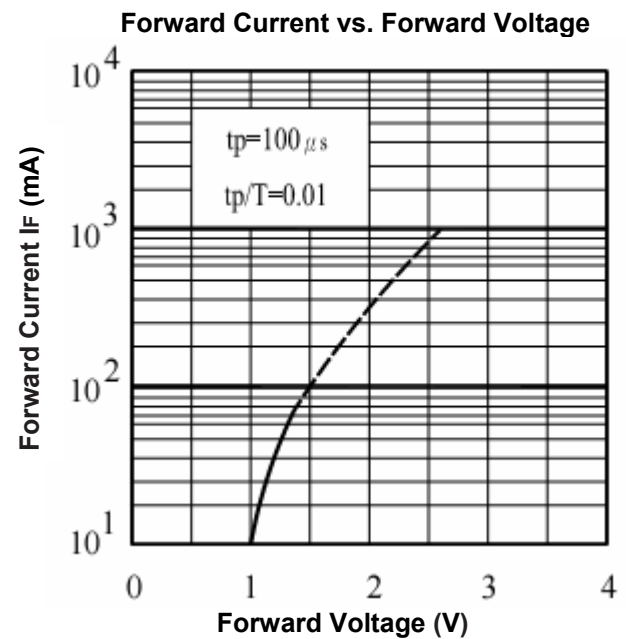
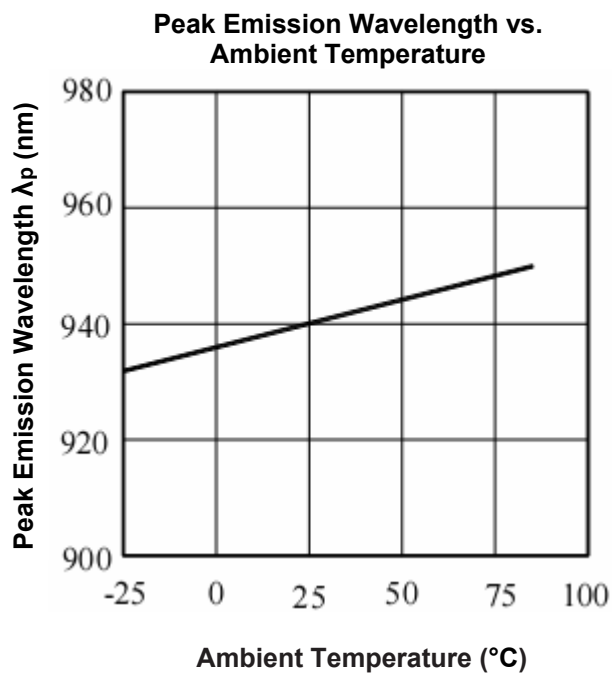
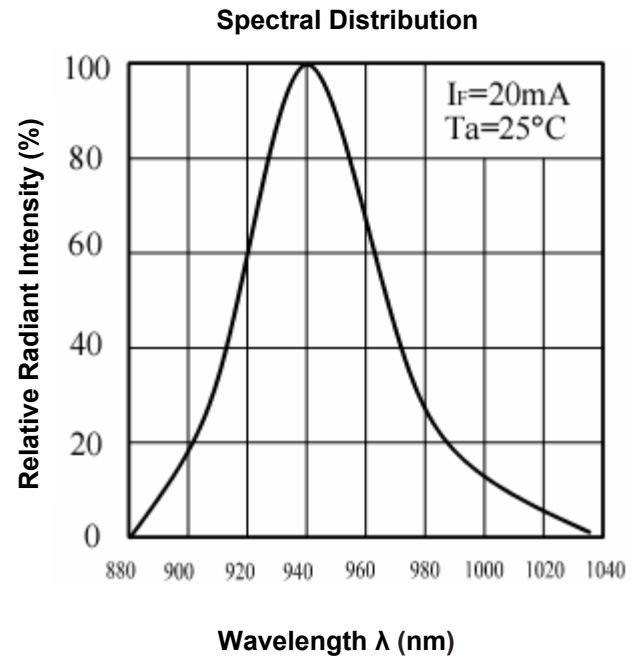
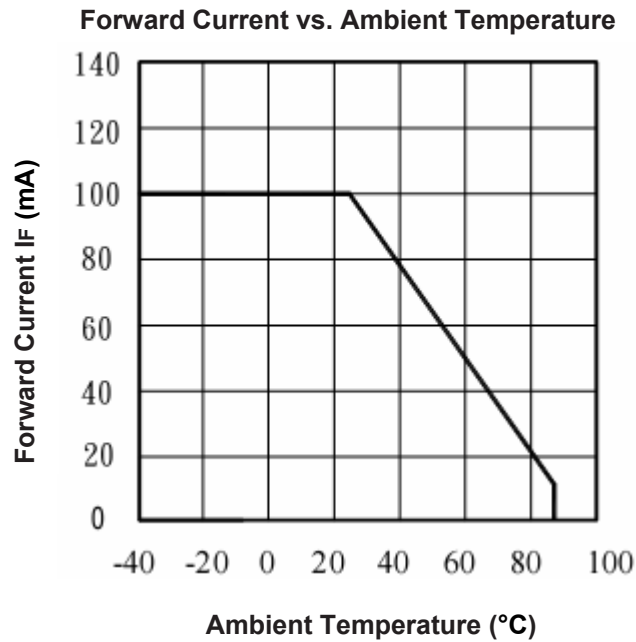
Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|-------------------------|------|------|------|-------|--------------|
| Radiant Intensity | E_e | 11 | 20 | ---- | mW/sr | IF =20mA |
| | | ---- | 85 | ---- | | IF =100mA *3 |
| | | ---- | 750 | ---- | | IF =1A *3 |
| Viewing Angle | 2θ_{1/2} | ---- | 20 | ---- | deg | IF =20mA |
| Peak wavelength | λ_p | ---- | 940 | ---- | nm | IF =20mA |
| Spectrum Radiation Bandwidth | Δλ | ---- | 45 | ---- | nm | IF =20mA |
| Forward Voltage | V_F | ---- | 1.2 | 1.5 | V | IF =20mA |
| | | ---- | 1.4 | 1.8 | | IF =100mA *3 |
| | | ---- | 2.6 | 4.0 | | IF =1A *3 |
| Reverse Current | I_R | ---- | ---- | 10 | μA | VR=5V |

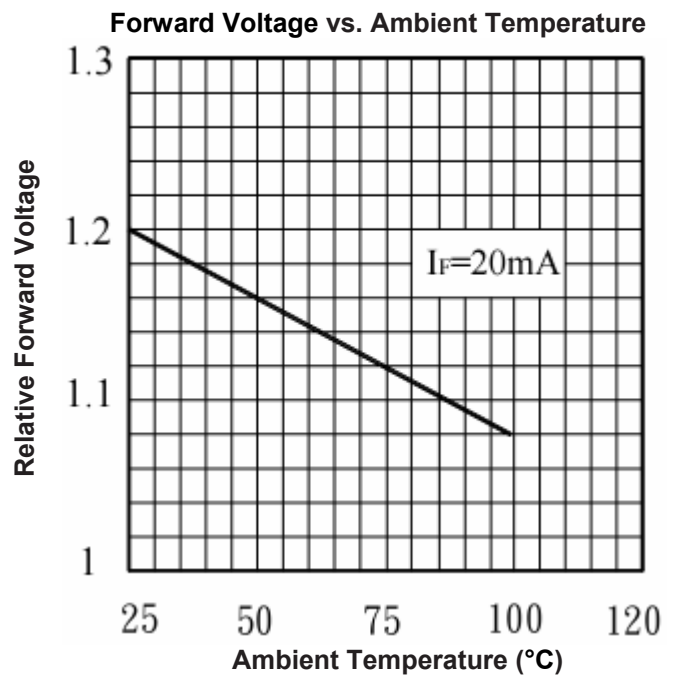
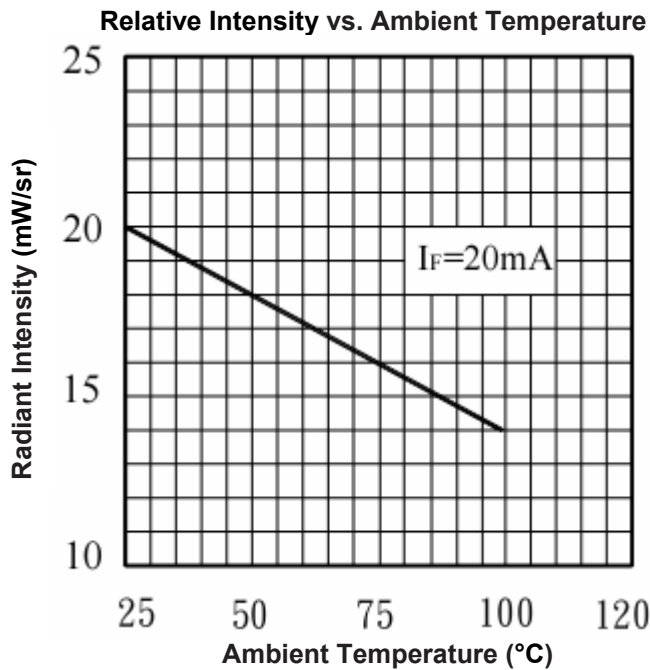
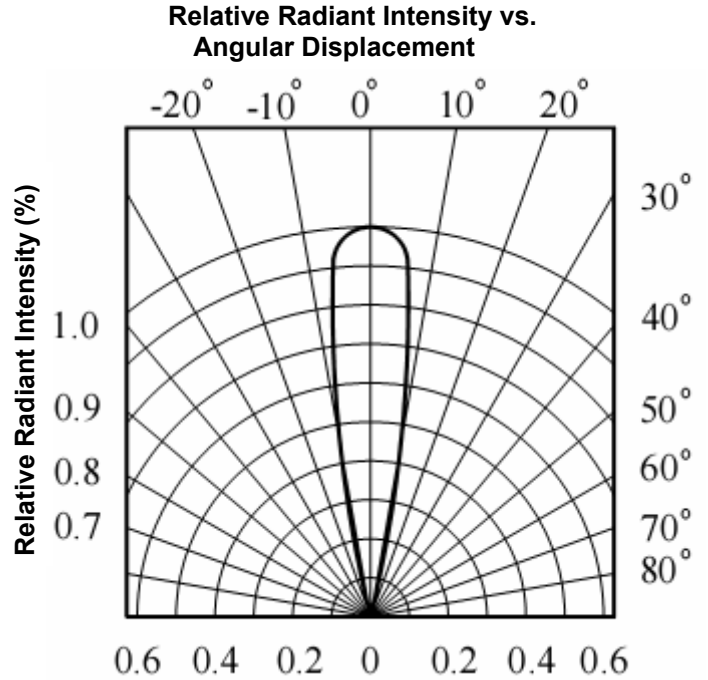
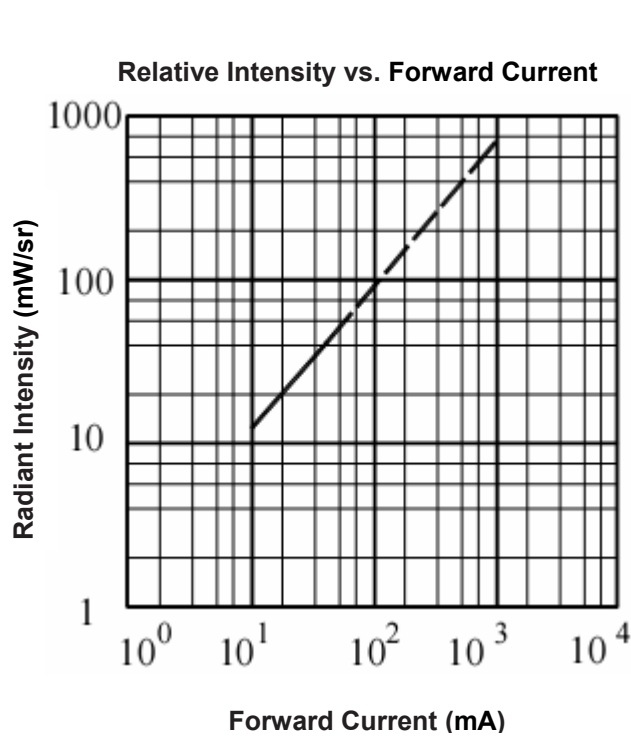
Notes:

3. Pulse Width ≤100us and Duty ≤1%

Typical Electro-Optical Characteristics Curves



Typical Electro-Optical Characteristics Curves



Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

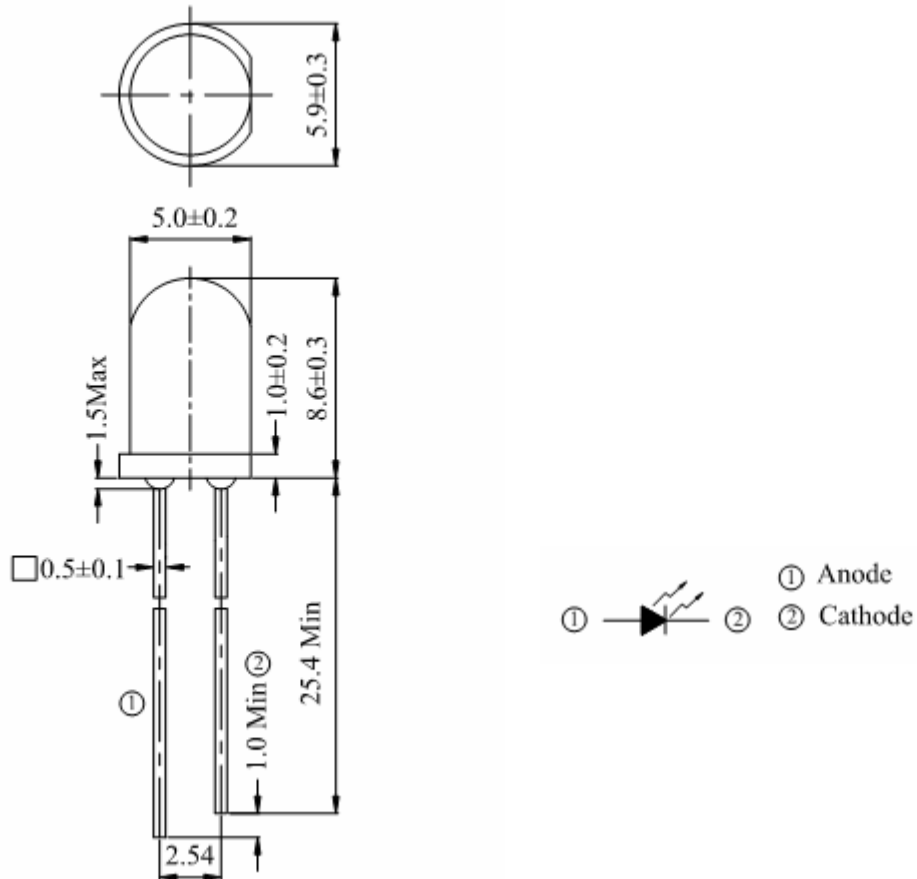
LTPD : 10%

| No. | Items | Test Condition | Test Hours / Cycles | Sample Size | Failure Judgement Criteria | Ac/Re |
|-----|----------------------------------|--|---------------------|-------------|--|-------|
| 1 | Soldering Heat | Temp.: 260°C ±5°C | 10 secs | 22 PCS | IR ≥ Ux2 Ee ≤ Lx0.8 VF ≥ Ux1.2 U: Upper Specification Limit L: Lower Specification Limit | 0/1 |
| 2 | Temperature Cycle | H: +100°C 15mins ↓ 5 mins L: -40°C 15mins | 300 Cycles | 22 PCS | | 0/1 |
| 3 | Thermal Shock | H: +100°C 5mins ↓ 10 secs L: -10°C 5mins | 300 Cycles | 22 PCS | | 0/1 |
| 4 | High Temperature Storage | Temp: 100°C | 1000 Hrs | 22 PCS | | 0/1 |
| 5 | Low Temperature Storage | Temp: -40°C | 1000 Hrs | 22 PCS | | 0/1 |
| 6 | DC Operating Life | IF = 20 mA | 1000 Hrs | 22 PCS | | 0/1 |
| 7 | High Temperature / High Humidity | 85°C / 85%RH | 1000 Hrs | 22 PCS | | 0/1 |

5mm Infrared LED

TIR940-R5B-33329

Package Dimensions (In mm)



Note:

1. All dimensions are in millimeters
2. Tolerances unless dimensions ± 0.25 mm

Packing Quantity Specification

1. 500 PCS / 1 Bag, 5 Bags / 1 Box
2. 10 Boxes / 1 Carton

Ordering Information



Rank of Radiant Intensity

Condition: $I_F=20\text{mA}$

Unit: mW/sr

| Bin Number | N | P | Q |
|------------|------|----|----|
| Min | 11 | 15 | 21 |
| Max | 17.6 | 24 | 34 |

How to contact us

US HEADQUARTERS

28040 WEST HARRISON PARKWAY, VALENCIA, CA 91355-4162

Tel: (800) TAITRON (800) 247-2232 (661) 257-6060

Fax: (800) TAITFAX (800) 824-8329 (661) 257-6415

Email: taitron@taitroncomponents.com

Http://www.taitroncomponents.com

TAITRON COMPONENTS MEXICO, S.A .DE C.V.

BOULEVARD CENTRAL 5000 INTERIOR 5 PARQUE INDUSTRIAL ATITALAQUIA, HIDALGO

C.P. 42970 MEXICO

Tel: +52-55-5560-1519

Fax: +52-55-5560-2190

TAITRON COMPONETS INCORPORATED E REPRESENTAÇÕES DO BRASIL LTDA

RUA DOMINGOS DE MORAIS, 2777, 2.ANDAR, SALA 24 SAÚDE - SÃO PAULO-SP 04035-001

BRAZIL

Tel: +55-11-5574-7949

Fax: +55-11-5572-0052

TAITRON COMPONETS INCORPORATED, SHANGHAI REPRESENTATIVE OFFICE

CROSS REGION PLAZA, 899 LINGLING ROAD, SUITE 18C, SHANGHAI, 200030, CHINA

Tel: +86-21-5424-9942

Fax: +86-21-5424-9931