

Infrared Emitter LTE-302-M

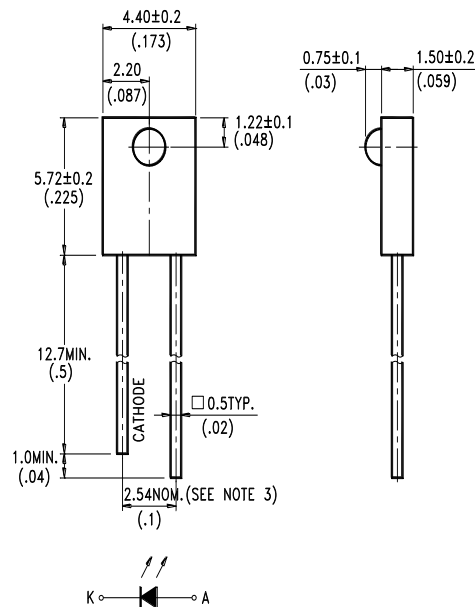
1. Description

Lite-On offers a broad range of discrete infrared components for application such as remote control, IR wireless data transmission, security alarm & etc. Customers need infrared solutions featuring high power, high speed and wide viewing angels. The product line includes GaAs 940nm IREDs, AlGaAs high speed 850nm IREDs, PIN Photodiodes and Phototransistors. Photodiodes and Phototransistors can be provided with a filter that reduces digital light noise in the sensor function, which enables a high signal-to-noise ratio.

1.1. Features

- Selected To Specific On-Line Intensity And Radiant Intensity Ranges
- Low Cost Plastic Side Looking Package
- Mechanically And Spectrally Matched To The LTR-5576D Series of Phototransistor

2. Outline Dimensions



Notes :

- All dimensions are in millimeters.
- Tolerance is ± 0.25 mm unless otherwise noted.
- Lead spacing is measured where the leads emerge from the package.
- Specifications are subject to change without notice.

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3. Absolute Maximum Ratings at TA=25°C

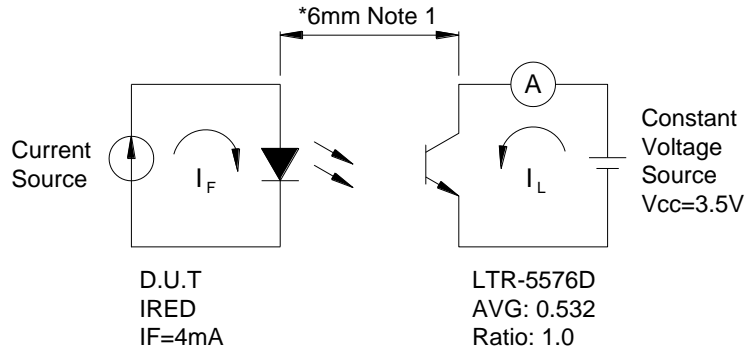
| Parameter | Maximum Rating | Unit |
|--|---------------------|------|
| Power Dissipation | 75 | mW |
| Peak Forward Current (300pps, 10μs pulse) | 1 | A |
| Continuous Forward Current | 50 | mA |
| Reverse Voltage | 5 | V |
| Operating Temperature Range | -40°C to + 85°C | |
| Storage Temperature Range | -55°C to + 100°C | |
| Lead Soldering Temperature [1.6mm(.063") From Body] | 260°C for 5 Seconds | |

4. Electrical / Optical Characteristics at TA=25°C

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Condition | BIN No. | Marking |
|---|------------------|------|------|------|------|------------------------------|---------|---------|
| Average Axis Intensity(Light Current) Setting of LITE-ON Production($I_{L1}+I_{L2}$)/2) | I_L | 0.25 | | 0.35 | mA | $I_F = 4mA$ $V_{CC}=3.5V$ | BIN C | Blue |
| | | 0.35 | | 0.45 | | | BIN D | Green |
| | | 0.45 | | 0.55 | | | BIN E | Black |
| | | 0.55 | | 0.65 | | | BIN F | Red |
| | | 0.65 | | 0.75 | | | BIN G | Gold |
| | | 0.75 | | 0.85 | | | BIN H | Silver |
| Average Axis Intensity(Light Current) Setting Q.C Limits ($I_{L1}+I_{L2}$)/2) | I_L | 0.2 | | 0.42 | mA | $I_F = 4mA$ $V_{CC}=3.5V$ | BIN C | Blue |
| | | 0.28 | | 0.54 | | | BIN D | Green |
| | | 0.36 | | 0.66 | | | BIN E | Black |
| | | 0.44 | | 0.78 | | | BIN F | Red |
| | | 0.52 | | 0.90 | | | BIN G | Gold |
| | | 0.60 | | 1.02 | | | BIN H | Silver |
| Peak Emission Wavelength | λ_{Peak} | | 940 | | nm | $I_F = 20mA$ | | |
| Spectral Line Half-Width | $\Delta \lambda$ | | 50 | | nm | $I_F = 20mA$ | | |
| Forward Voltage | V_F | | 1.2 | 1.6 | V | $I_F = 20mA$ | | |
| Reverse Current | I_R | | | 100 | μA | $V_R = 5V$ | | |
| Viewing Angle (See FIG.6) | $2\theta_{1/2}$ | | 40 | | deg. | | | |

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4. Infrared axis in intensity test method.



Note: 1. Lead frame to lead frame

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5. Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

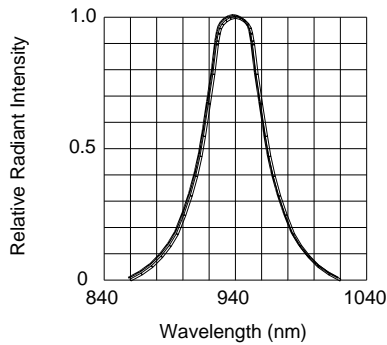


FIG.1 SPECTRAL DISTRIBUTION

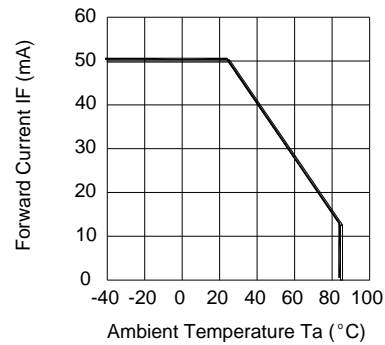


FIG.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

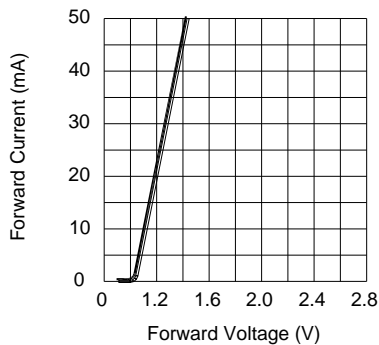


FIG.3 FORWARD CURRENT VS. FORWARD VOLTAGE

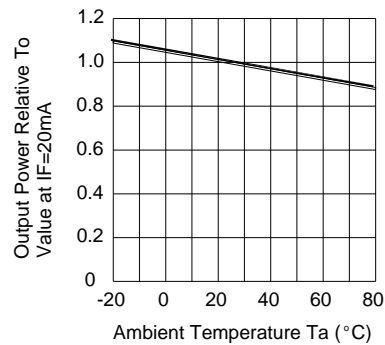


FIG.4 RELATIVE RADIANT INTENSITY VS. AMBIENT TEMPERATURE

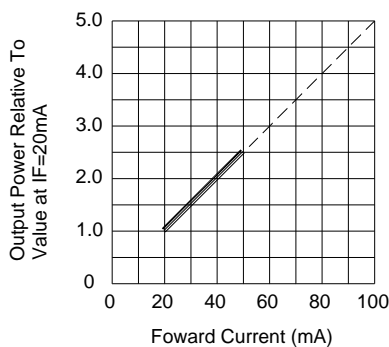


FIG.5 RELATIVE RADIANT INTENSITY VS. FORWARD CURRENT

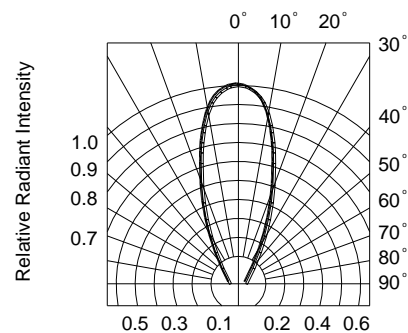


FIG.6 RADIATION DIAGRAM