# 870nm single color LED Diode

## Product Description

The 870nm IR emitter series is designed for applications requiring high output and precise optical / mechanical axis alignment. Custom package solutions and sorting are available.

## Product features

Hermetically Sealed TO-46；High Output Power；Narrow Beam Angle ；High Reliability

## Part Number

MP-LED-870-10-TO46

## Application area

Optical Switches / Security Systems | Linear & Rotary Encoder | Remote Controls / Robotics | Card Readers / Medical Electronics

## Core parameters

| Center wavelength |
|---|
| 870nm |

## General Parameters

Absolute Maximum Ratings (Ta=25°C)

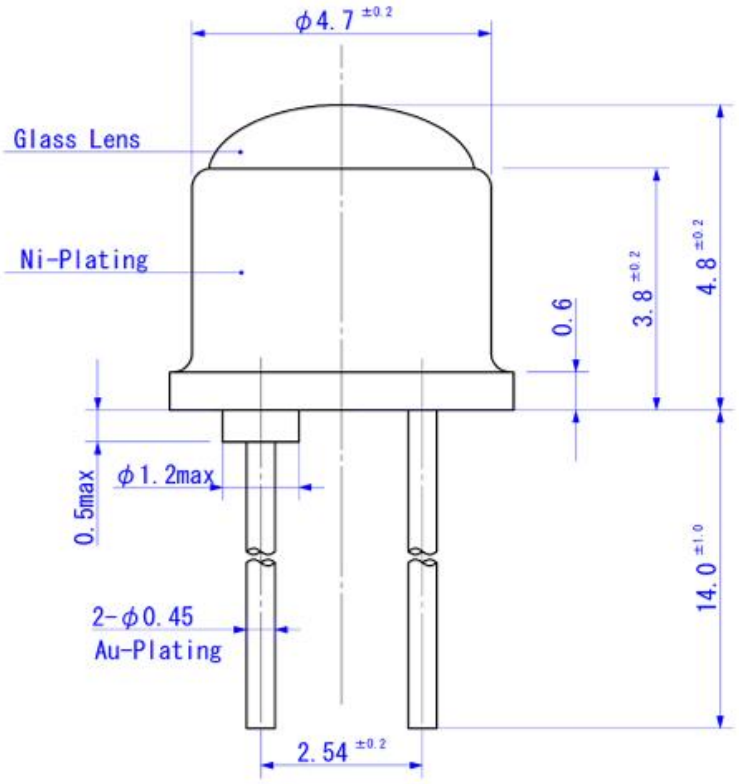
| Items | Symbol | Ratings | Unit |
|---|---|---|---|
| Forward Current(DC) | IF | 100 | mA |
| Forwared Current(Pulse)*1 | IFP | 1 | A |
| Reverse Voltage | VR | 5 | V |
| Power Dissipation | PD | 200 | mW |
| Operating Temperature Range | Topr | -30 ~ +100 | °C |
| Storage Temperature Range | Tstg | -40 ~ +125 | °C |
| Junction Temperature | Tj | 125 | °C |
| Lead Soldering Temperature*2 | Tls | 260 | °C |

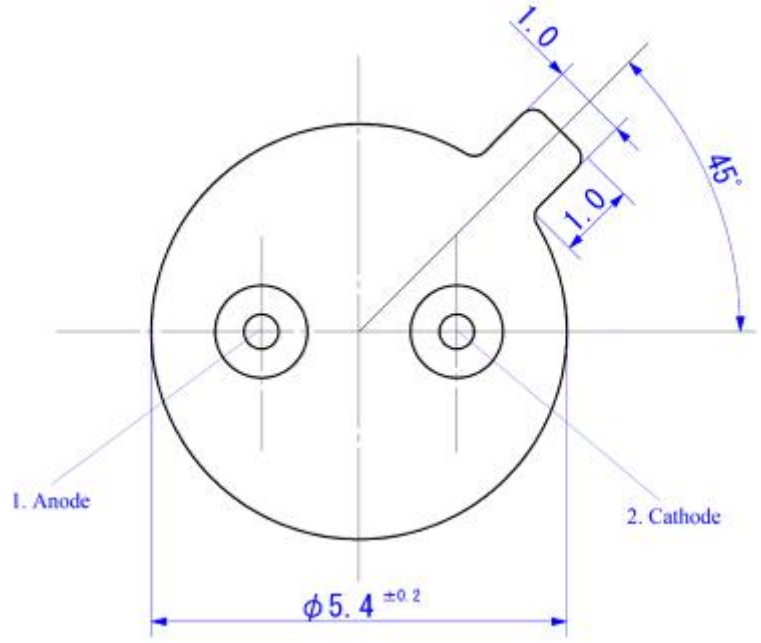
*1: Tw=10μsec, T=10msec. *2: Time 5 Sec max, Position: Up to 3mm from the body.

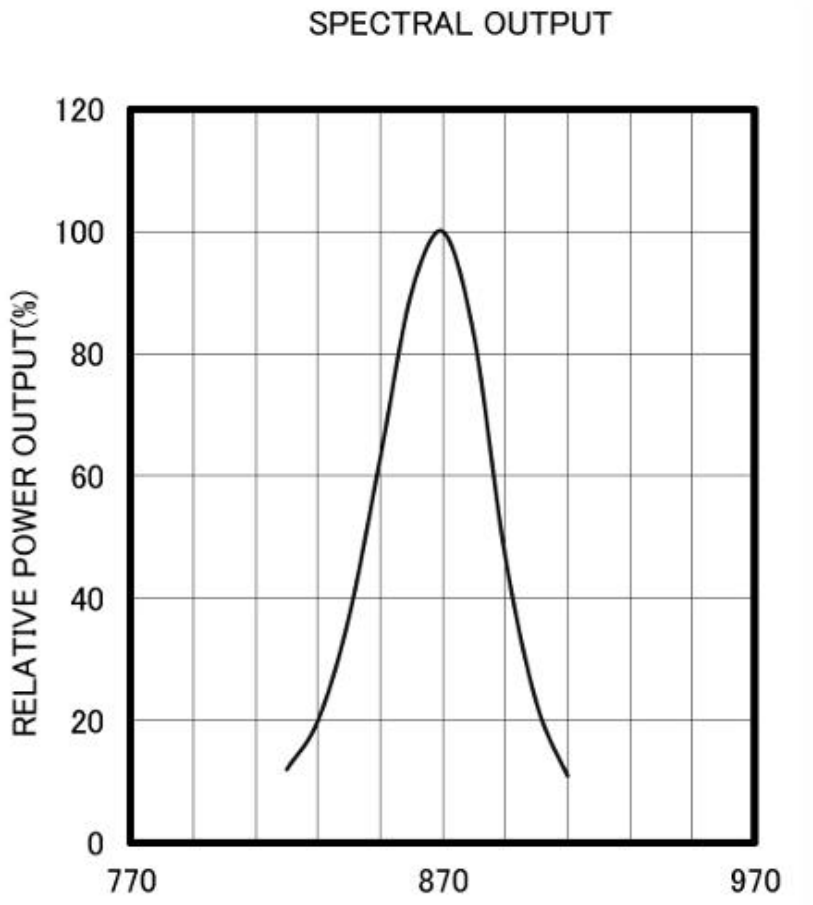
## Electrical & Optical Characteristics (Ta = 25°C)

| Items | Symbol | Test Condition | Min. | Typical | Max. | Unit |
|---|---|---|---|---|---|---|
| Power Output | PO | IF=50mA | -- | 10.0 | -- | mW |
| Forward Voltage | VF | IF=50mA | -- | 1.5 | 2.0 | V |
| Reverse Current | IR | VR=5V | -- | -- | 100 | μA |
| Peak Emission Wavelength | λp | IF=50mA | -- | 870 | -- | nm |
| Spectra Line Half Width | Δλ | IF=50mA | -- | 45 | -- | nm |
| Half Intensity Beam Angle | Θ | IF=50mA | -- | ±6 | -- | ° |

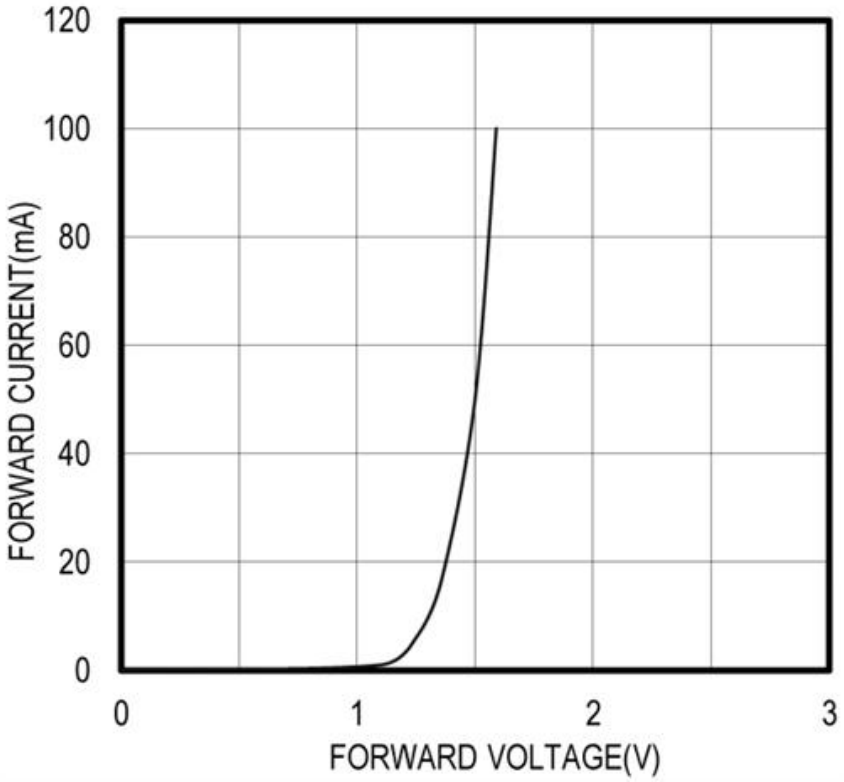
## Package Dimensions and Electro-Optical Characteristics



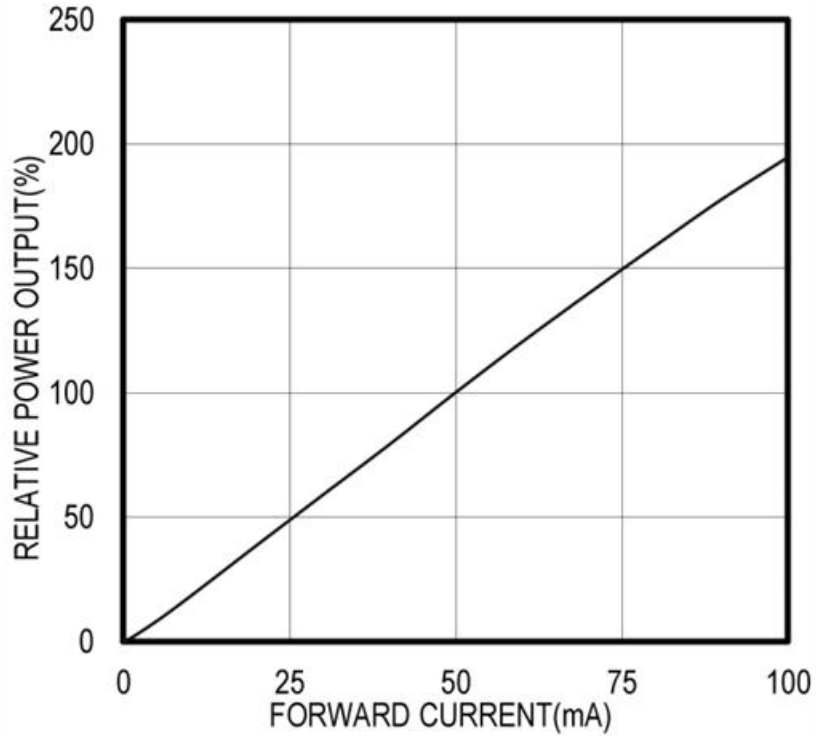

1.0
45°
1.0
1. Anode
2. Cathode
φ5.4 ±0.2


SPECTRAL OUTPUT
RELATIVE POWER OUTPUT(%)
120
100
80
60
40
20
0
770
870
970

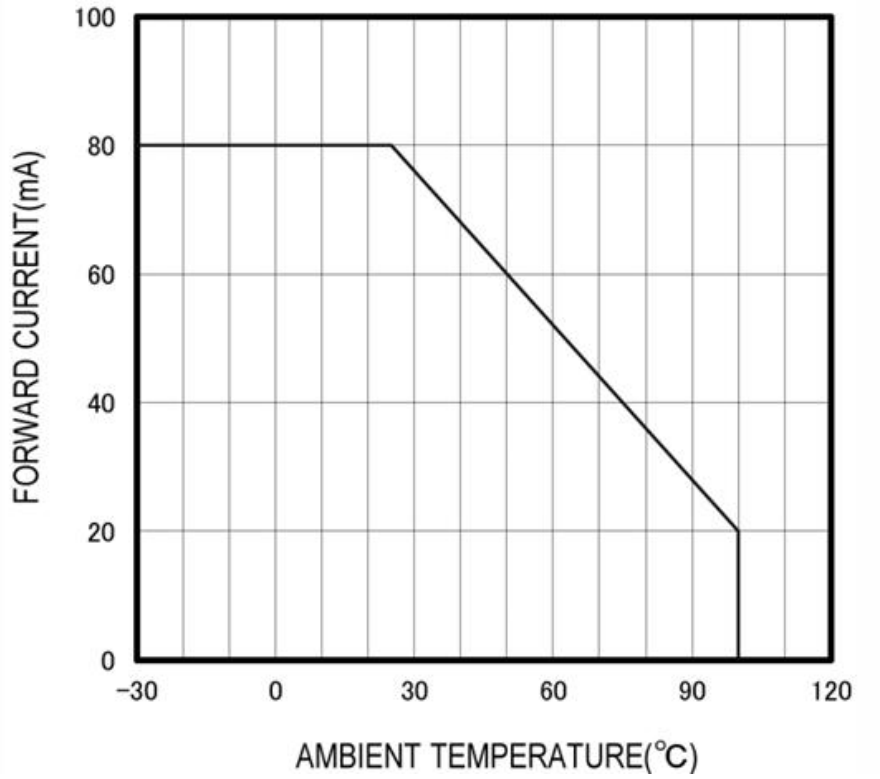
FORWARD I-V CHARACTERISTICS




RELATIVE POWER vs FORWARD CURRENT



THERMAL DERATING CURVE




RADIATION PATTERN