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DATA SHEET

PART NO. : PA-ITRLT8105

REV : A / 0

CUSTOMER'S APPROVAL : _____

DCC : _____

DRAWING NO. : DS-81P-22-0020

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LD-R/E020



INFRARED REMOTE CONTROL RECEIVER MODULE

PA-ITRLT8105

REV:A / 0

Descriptions

The PA-ITRLT8105 is a gallium arsenic infrared emitting diode which is coupled with a silicon photo transistor in a plastic housing. The packaging system is designed to optimize the mechanical resolution, coupling efficiency, and insulates ambient light. The slot in the housing provides a means of interrupting the signal with printer, scanner, copier, or other opaque material, switching the output from an "ON" to "OFF" state.

Features

- Wide gap between light emitter and detector(2.6 mm)
- High sensing accuracy
- Pb free
- The product itself will remain within RoHS compliant version.

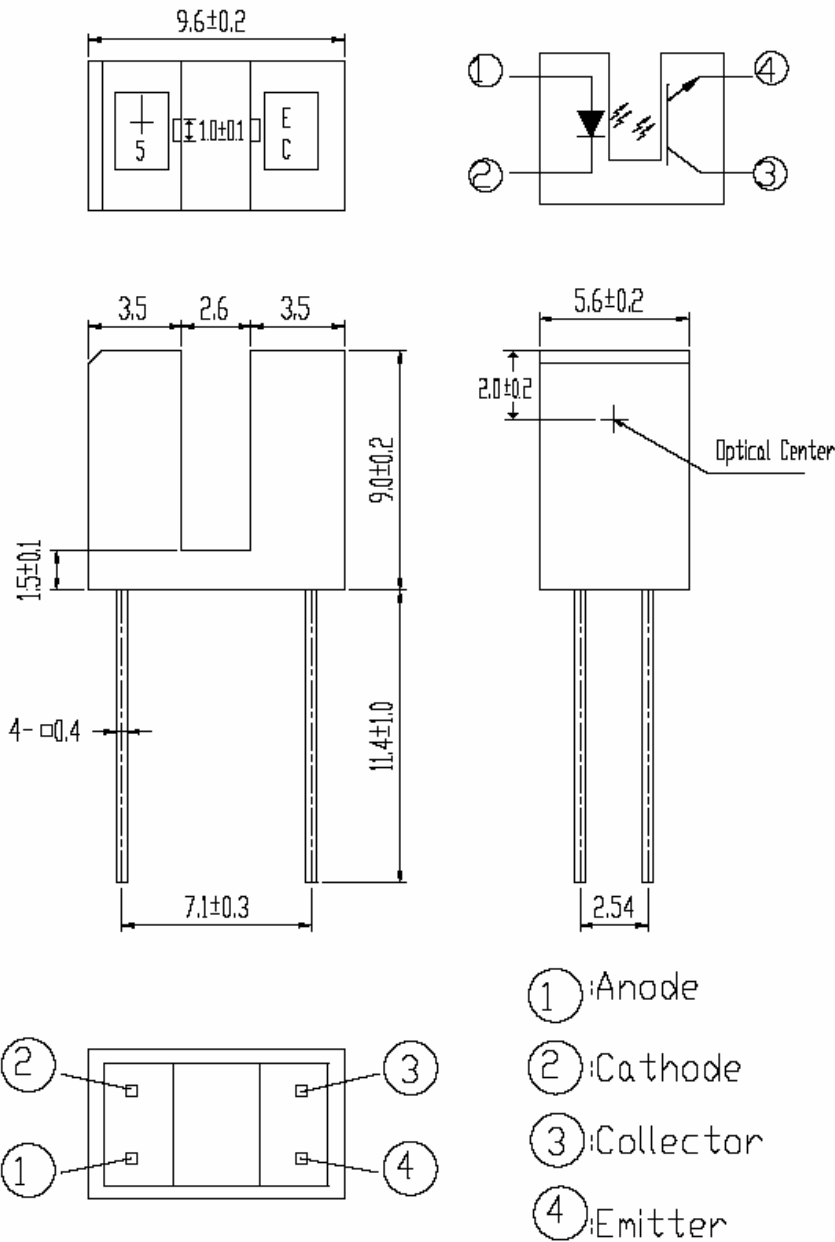
Applications

- Copier
- Printer
- Facsimile
- Ticket vending machine
- Opto-electronic switch

Device Selection Guide

| Device No. | Chip Material | LENS COLOR |
|------------|---------------|-------------|
| IR | GaAs | Water clear |
| PT | Silicon | Water clear |

Package Dimension



Note:

1. All dimensions are in millimeters.
2. Tolerances unless dimensions ± 0.3 mm.
3. Lead spacing is measured where the lead emerge from the package

Absolute Maximum Ratings

| Parameter | | Symbol | Ratings | Unit |
|---|--|------------------|---------|------|
| Input | Power Dissipation at(or below) 25°C Free Air Temperature | P _d | 75 | mW |
| | Reverse Voltage | V _R | 5 | V |
| | Forward Current | I _F | 50 | mA |
| | Peak Forward Current | I _{FP} | 1 | A |
| | Pulse width ≤ 100 μs, Duty cycle=1% | | | |
| Output | Collector Power Dissipation | P _C | 75 | mW |
| | Collector Current | I _C | 20 | mA |
| | Collector-Emitter Voltage | V _{CEO} | 30 | V |
| | Emitter-Collector Voltage | V _{ECO} | 5 | V |
| Operating Temperature | | T _{opr} | -25~+85 | °C |
| Storage Temperature | | T _{stg} | -40~+85 | °C |
| Lead Soldering Temperature (1/16 inch from body for 5 seconds) | | T _{sol} | 260 | °C |

Electro-Optical Characteristics

| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Condition |
|--------------------------|------------------------|----------------------|------|------|------|------|---|
| Input | Forward Voltage | V _F | -- | 1.2 | 1.6 | V | I _F =20mA |
| | Reverse Current | I _R | - | - | 10 | μA | V _R =5V |
| | Peak Wavelength | λ _P | - | 940 | - | nm | I _F =20mA |
| Output | Dark Current | I _{CEO} | - | - | 100 | nA | V _{CE} =10V |
| | C-E Saturation Voltage | V _{CE(sat)} | - | - | 0.4 | V | I _C =0.5mA, I _F =20mA |
| Transfer Characteristics | Collector Current | I _{C(ON)} | 1 | 4 | 15 | mA | V _{CE} =5V, I _F =10mA |
| | Rise Time | t _R | - | 20 | - | μs | V _{CE} =5V, I _C =1 mA , R _L =1 KΩ |
| | Fall Time | t _F | - | 20 | - | μs | |

Typical Electrical/Optical/Characteristics Curves for IR

Fig. 1 Forward Current vs. Ambient Temperature

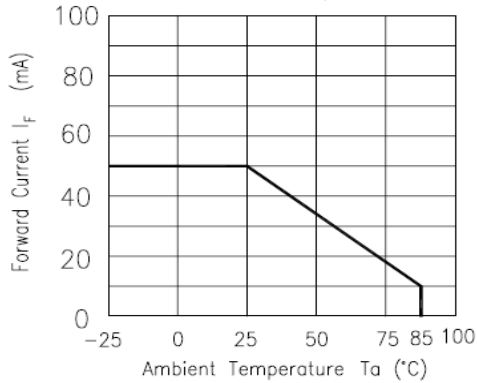


Fig. 2 Spectral Distribution

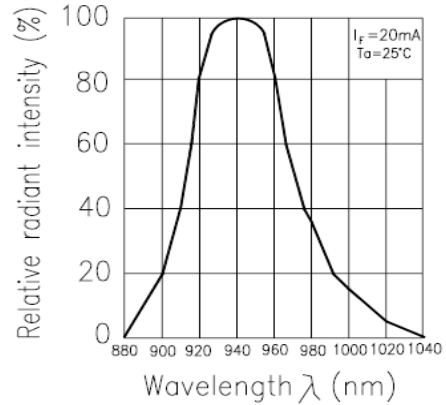


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

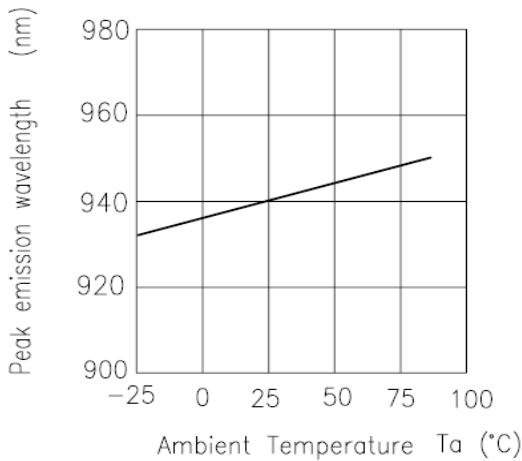


Fig. 4 Forward Current vs. Forward Voltage

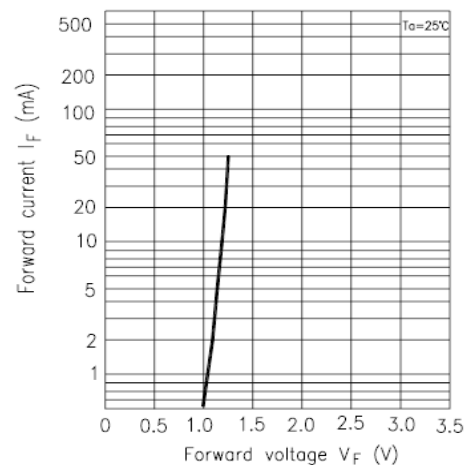


Fig. 5 Forward Voltage vs. Ambient Temperature

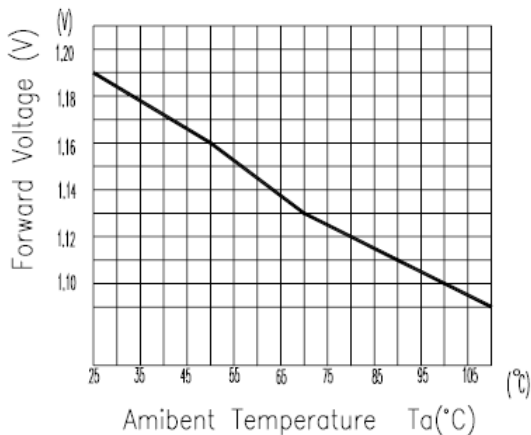
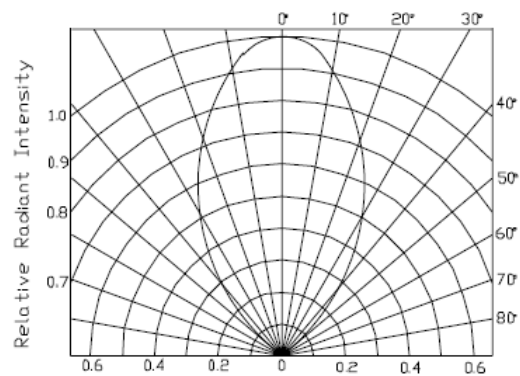


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

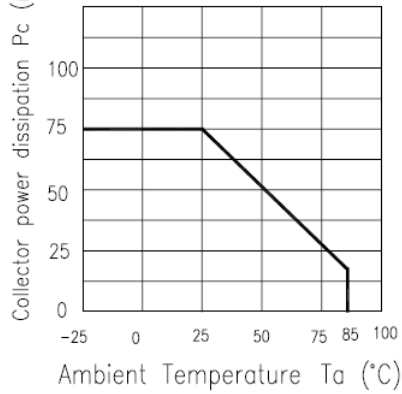


Fig.2 Collector Dark Current vs. Ambient Temperature

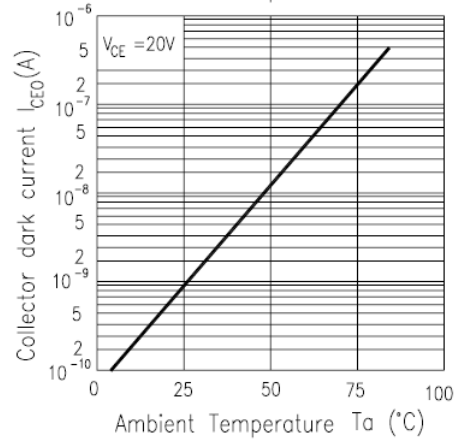


Fig.3 Spectral Sensitivity

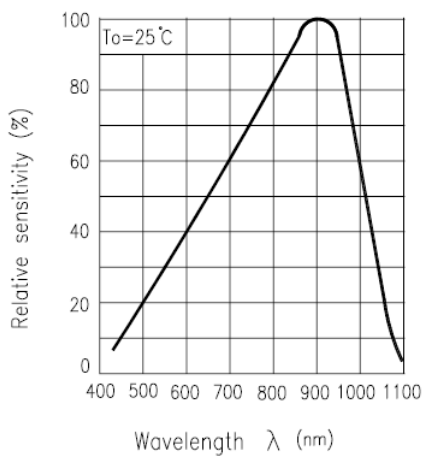
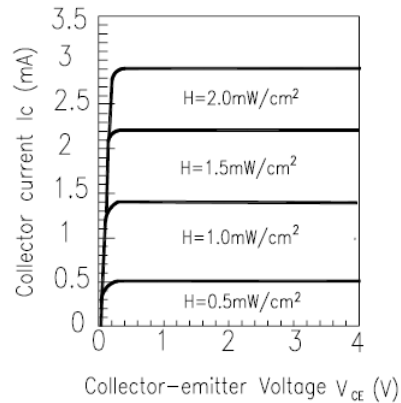


Fig.4 Collector Current vs. Collector-emitter Voltage



Typical Electrical/Optical/Characteristics Curves

Fig.1 Relative Collector Current vs. Shield Distance(1)

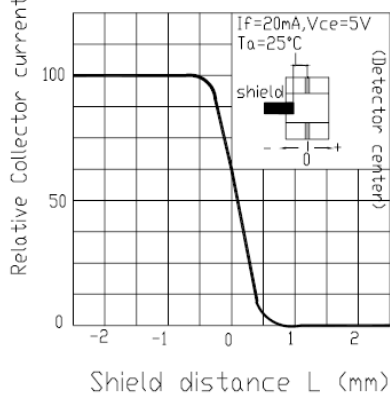
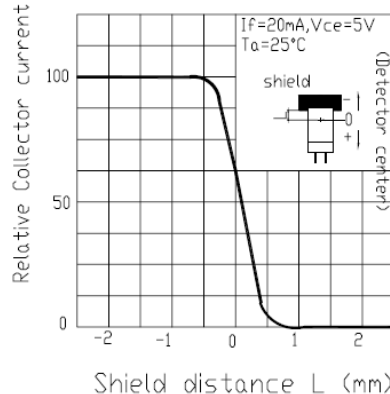


Fig.2 Relative Collector Current vs. Shield Distance(2)



● Reliability Test Item And Condition

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

Confidence level: 90%

LTPD: 10%

| NO. | Item | Test Conditions | Test Hours/ Cycles | Sample Sizes | Failure Judgement Criteria | Ac/Re |
|-----|------------------------------------|--|-----------------------|-----------------|--|-------|
| 1 | Solder Resistance | Ta = 260 ±3°C | 10 ± 1 sec | 22pcs | | 0/1 |
| 2 | Temperature Cycle | H : +85°C <div style="text-align: center;"> 15mins ↑ 5mins ↓ 15mins L : -55°C </div> | 50Cycles | 22pcs | V _F ≥ U×1.2 I _{C(ON)} ≤ L×0.8 | 0/1 |
| 3 | Thermal Shock | H :+85°C <div style="text-align: center;"> 5mins ↑ 10secs ↓ 5mins L :-55°C </div> | 50Cycles | 22pcs | U : Upper Specification Limit | 0/1 |
| 4 | High Temperature Storage | TEMP. : +100°C | 1000hrs | 22pcs | L : Lower Specification Limit | 0/1 |
| 5 | Low Temperature Storage | TEMP. : -55°C | 1000hrs | 22pcs | | 0/1 |
| 6 | DC Operating Life | V _{CE} =5V | 1000hrs | 22pcs | | 0/1 |
| 7 | High Temperature/ High Humidity | 85°C / 85% R.H | 1000hrs | 22pcs | | 0/1 |

Packing Quantity Specification

150 pcs/1bag, 4 bags/1box, 10 boxes/1carton



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PA-ITRLT8105

REV:A / 0

Notes

1. Above specification may be changed without notice. WE will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instruction for using outlined in these specification sheets. Para light assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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