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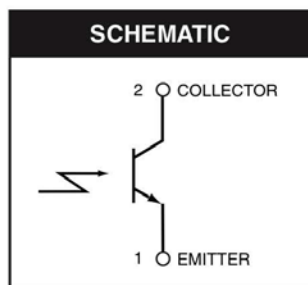
QTLP610CPD

Right Angle Surface Mount Infrared Phototransistor

QTLP61 OCPD is a phototransistor in miniature SMD package molded in a water clear plastic with right angle lens.

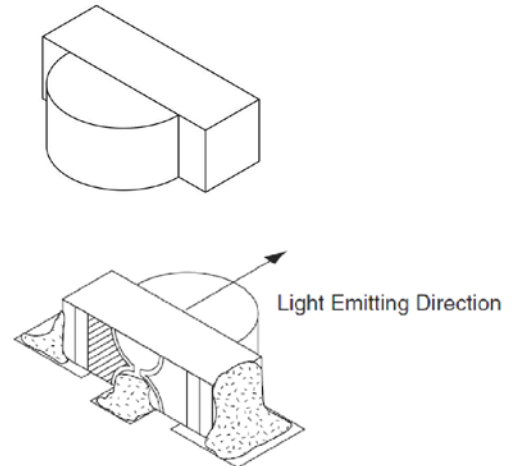
FEATURES

- NPN Silicon Phototransistor
- Right Angle Surface Mount Package
- Matched Emitters: QTLP610CIR
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel
- High Photo Sensitivity
- Low Junction Capacitance
- Fast Response Time
- Water Clear Lens



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ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Rating | Unit |
|---|-------------|----------------|------------------|
| Operating Temperature | T_{OPR} | -25 to +85 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -40 to +90 | $^\circ\text{C}$ |
| Soldering Temperature (Iron) ^(2,3,4) | T_{SOL-I} | 240 for 5 sec | $^\circ\text{C}$ |
| Soldering Temperature (Flow) ^(2,3) | T_{SOL-F} | 260 for 10 sec | $^\circ\text{C}$ |
| Collector Emitter Voltage | V_{CE} | 30 | V |
| Emitter Collector Voltage | V_{EC} | 5 | V |
| Power Dissipation ⁽¹⁾ | P_D | 75 | mW |

Notes:

1. At 25°C or below.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Pulse conditions: $t_p = 100\mu\text{s}$, $T = 10\text{ ms}$.

| ELECTRICAL / OPTICAL CHARACTERISTICS (T _A =25°C) | | | | | | |
|---|---|----------------------|------|------|------|-------|
| PARAMETER | TEST CONDITIONS ($\lambda_p = 940\text{nm}$) | SYMBOL | MIN. | TYP. | MAX. | UNITS |
| Peak Sensitivity Wavelength | | λ_{PS} | — | 860 | — | nm |
| Reception Angle | | Θ | — | ±80 | — | Deg. |
| Dark Current | V _{CE} = 20 V, Ee = 0 | I _D | — | — | 100 | nA |
| Collector-Emitter Breakdown | I _C = 100μA, Ee = 0 | BV _{CEO} | 30 | — | — | V |
| Emitter-Collector Breakdown | I _E = 100μA, Ee = 0 | BV _{ECO} | 5 | — | — | V |
| On-State Collector Current | Ee = 1 mW/cm ² V _{CE} = 5V | I _{C(ON)} | 0.1 | 0.5 | — | mA |
| Saturation Voltage | Ee = 1 mW/cm ² I _C = 2mA | V _{CE(SAT)} | — | — | 0.4 | V |
| Rise Time | V _{CE} = 5V, R _L = 1000Ω | t _r | — | 15 | — | μs |
| Fall Time | I _C = 1mA | t _f | — | 15 | — | μs |

TYPICAL PERFORMANCE CURVES

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

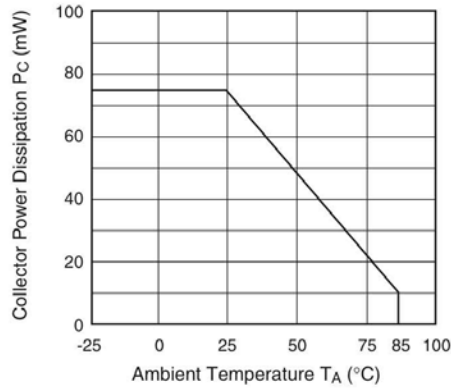


Fig. 2 Collector Dark Current vs. Ambient Temperature

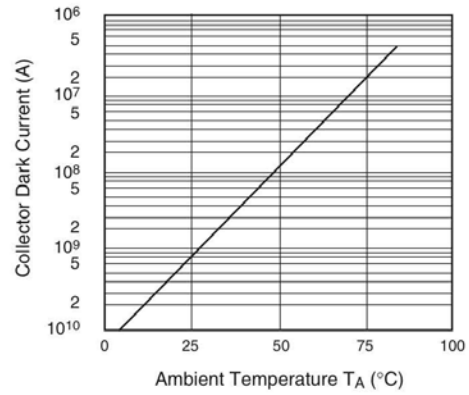


Fig. 3 Relative Collector Current vs. Ambient Temperature

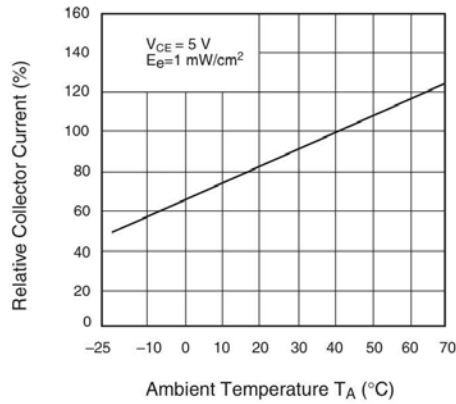


Fig. 4 Collector Current vs. Irradiance

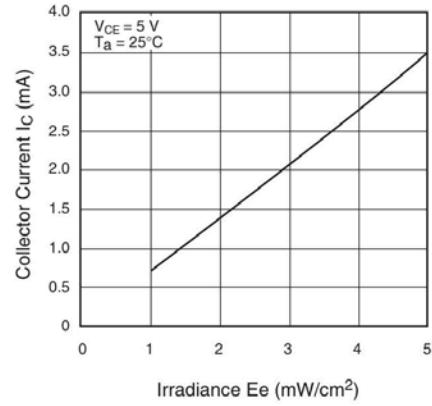


Fig. 5 Spectral Sensitivity

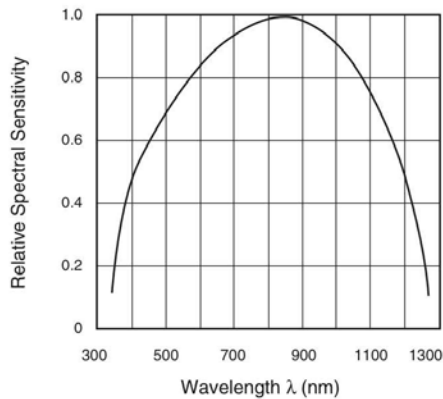
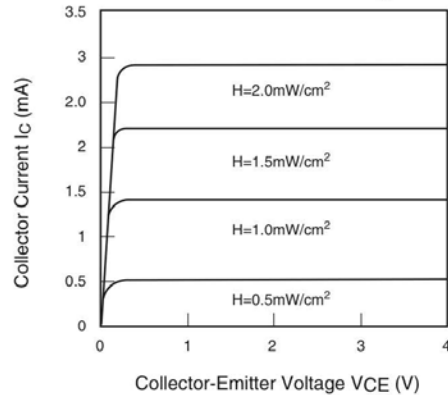
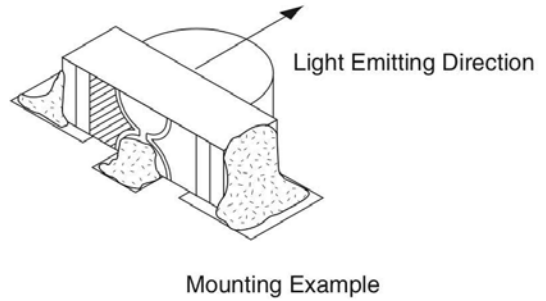
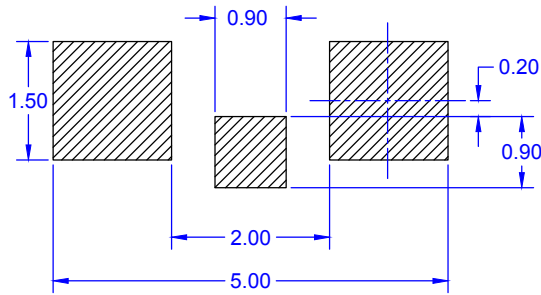


Fig. 6 Collector Current vs. Collector-Emitter Voltage

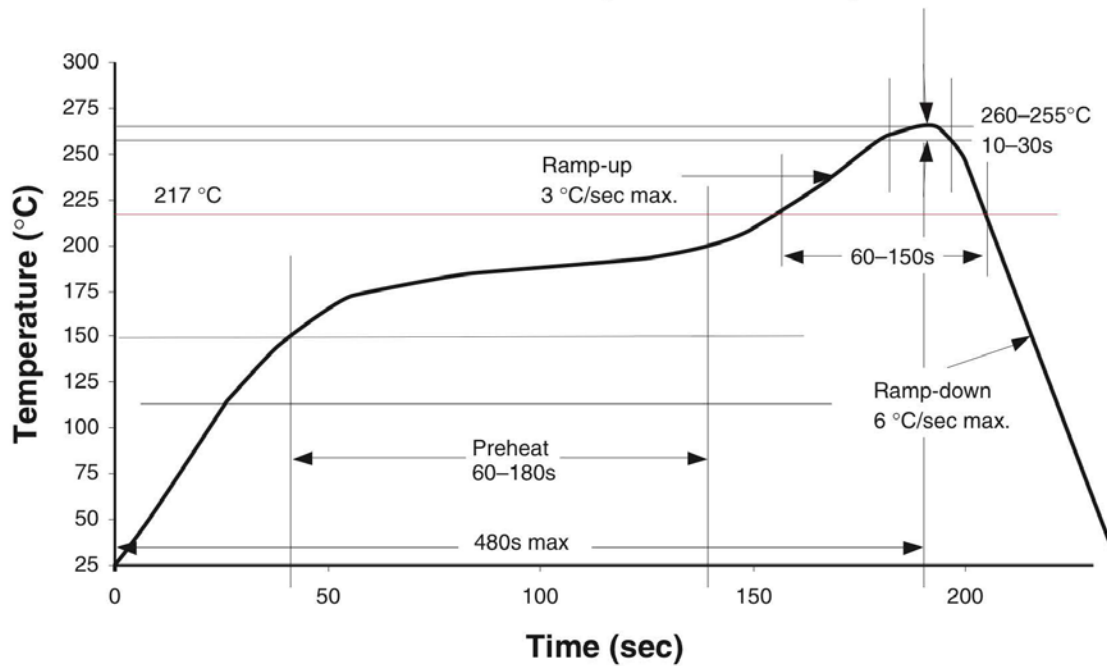


RECOMMENDED PRINTED CIRCUIT BOARD PATTERN

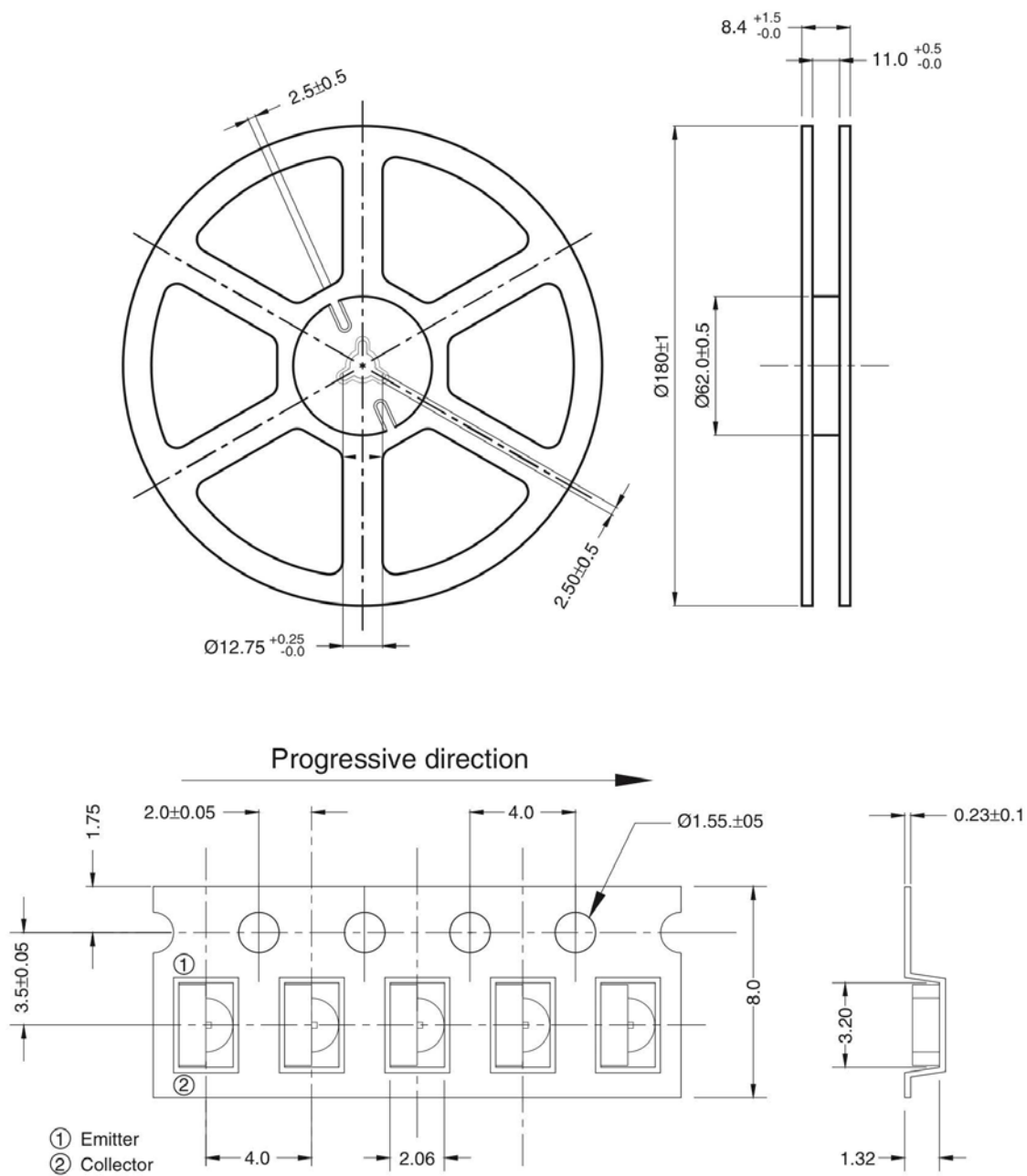


RECOMMENDED IR REFLOW SOLDERING PROFILE

Classification Reflow Profile (JEDEC J-STD-020C)



TAPE AND REEL DIMENSIONS

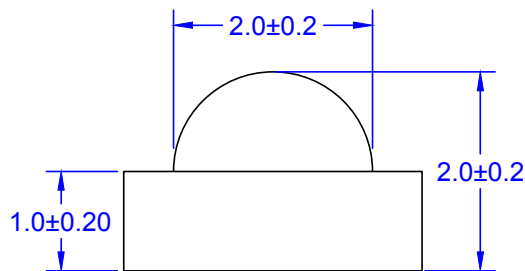


Dimensional tolerance is $\pm 0.1\text{mm}$ unless otherwise specified

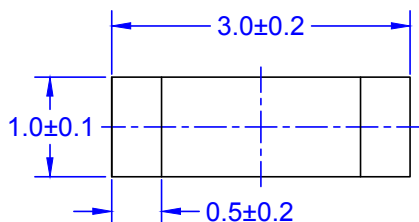
Angle: ± 0.5

Unit: mm

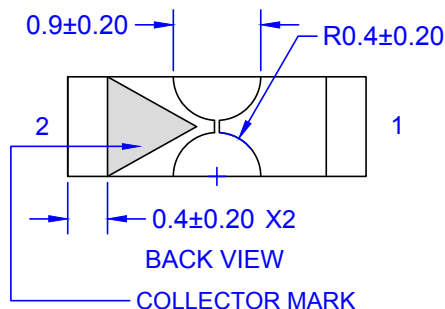
PACKAGE DIMENSIONS



TOP VIEW

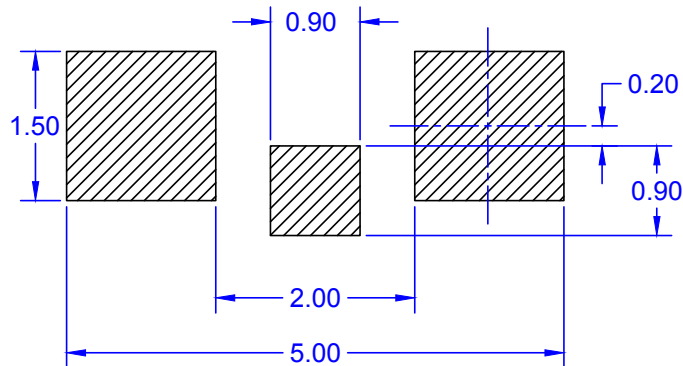


FRONT VIEW

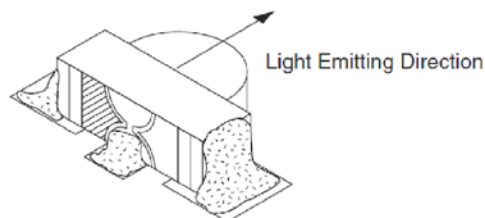


BACK VIEW

COLLECTOR MARK



LAND PATTERN RECOMMENDATION



Mounting Example

NOTES:

- A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
- B. ALL DIMENSIONS ARE IN MILLIMETERS
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- D. DRAWING FILENAME: MKT-DCE212ArevO

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105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

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