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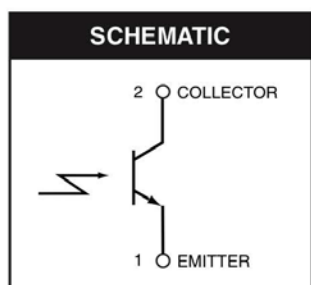
QTLP610CPD

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.

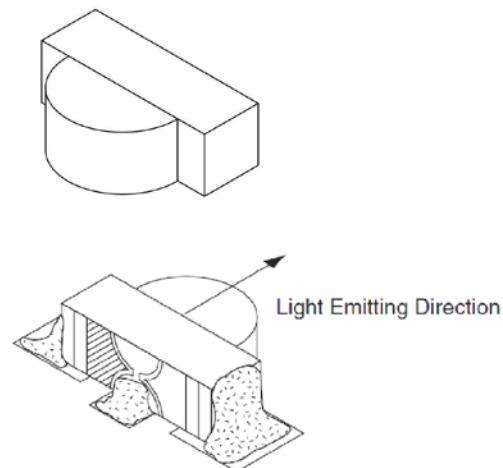
FEATURES

- 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)	$T_{\text{SOL-I}}$	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) ^(2,3)	$T_{\text{SOL-F}}$	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

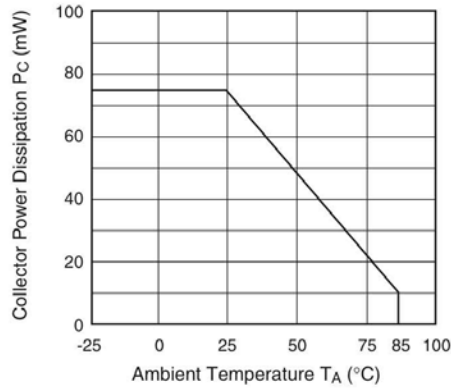


Fig. 2 Collector Dark Current vs. Ambient Temperature

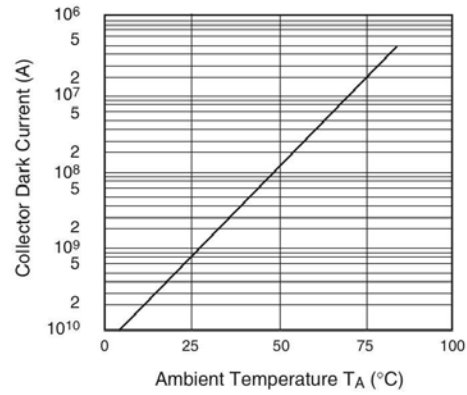


Fig. 3 Relative Collector Current vs. Ambient Temperature

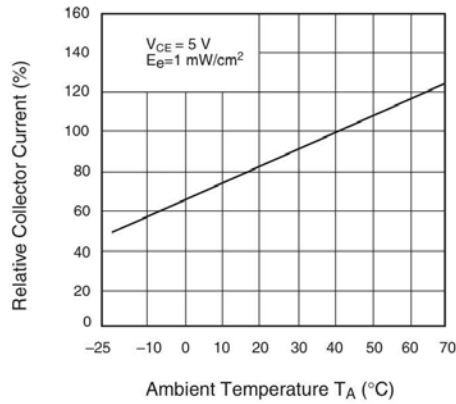


Fig. 4 Collector Current vs. Irradiance

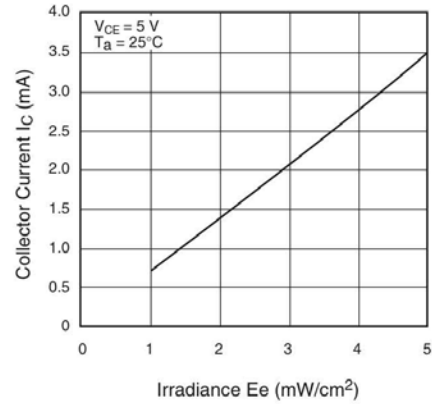


Fig. 5 Spectral Sensitivity

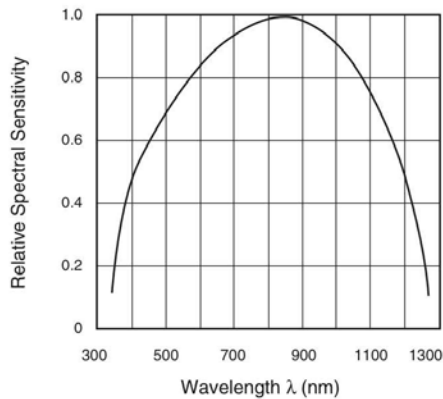
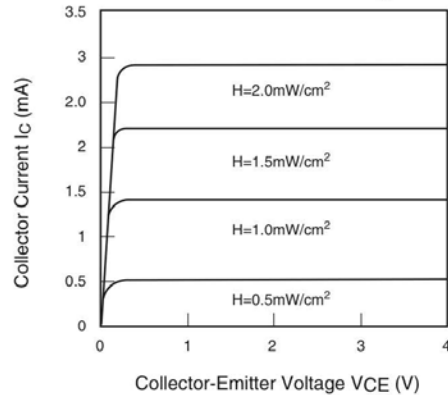
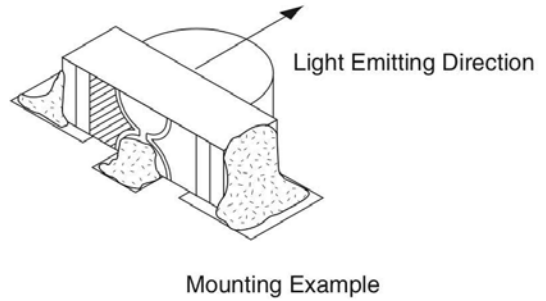
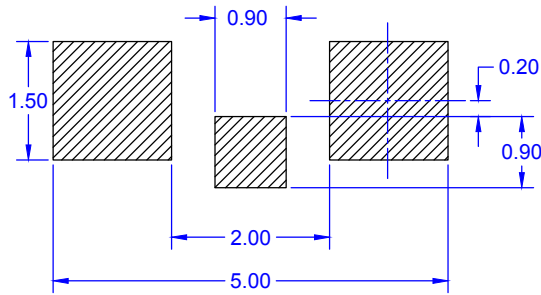


Fig. 6 Collector Current vs. Collector-Emitter Voltage

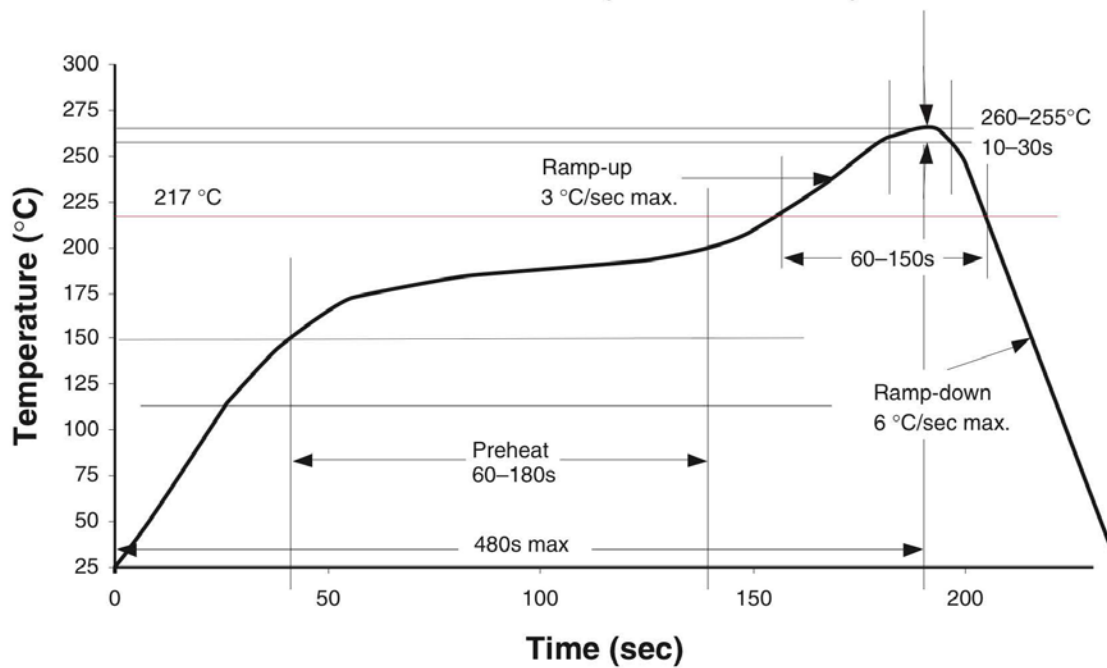


RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE

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

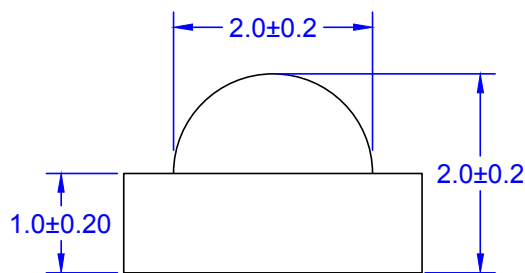


Dimensional tolerance is $\pm 0.1\text{mm}$ unless otherwise specified

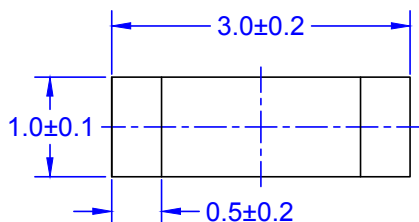
Unit: mm



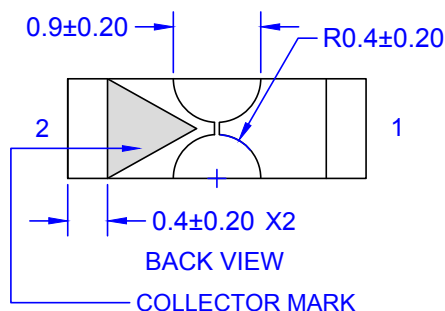
PACKAGE DIMENSIONS



TOP VIEW

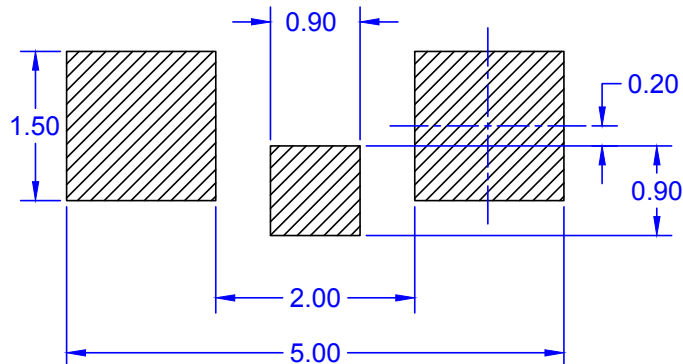


FRONT VIEW

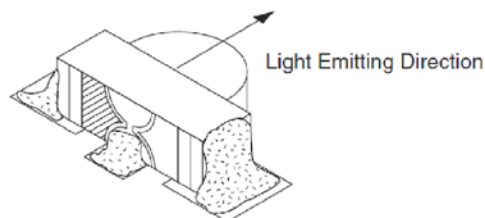


BACK VIEW

COLLECTOR MARK



LAND PATTERN RECOMMENDATION



Mounting Example

NOTES:

- A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. COLLECTOR: PIN 2 EMITTER: PIN1
- D. DRAWING FILENAME: MKT-DCE212ArevO

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