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QTLP610CPD

Right Angle Surface Mount Infrared Phototransistor



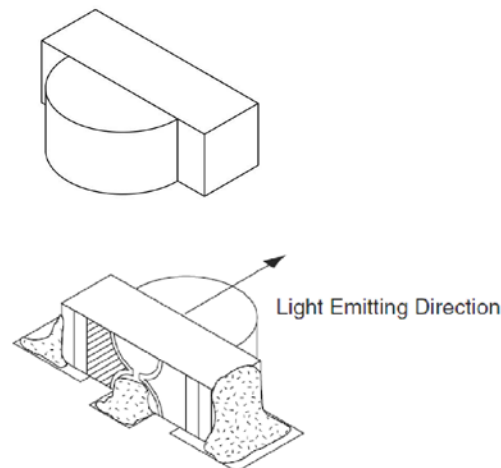
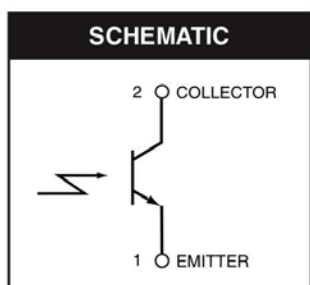
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QTLP61 OCPD is a phototransistor in miniature SMD package molded in a water clear plastic with right angle lens.

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



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 ($T_A = 25^\circ\text{C}$)						
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	$V_{CE} = 20\text{ V}, E_e = 0$	I_D	—	—	100	nA
Collector-Emitter Breakdown	$I_C = 100\mu\text{A}, E_e = 0$	BV_{CEO}	30	—	—	V
Emitter-Collector Breakdown	$I_E = 100\mu\text{A}, E_e = 0$	BV_{ECO}	5	—	—	V
On-State Collector Current	$E_e = 1\text{ mW/cm}^2$ $V_{CE} = 5\text{ V}$	$I_{C(ON)}$	0.1	0.5	—	mA
Saturation Voltage	$E_e = 1\text{ mW/cm}^2$ $I_C = 2\text{ mA}$	$V_{CE(SAT)}$	—	—	0.4	V
Rise Time	$V_{CE} = 5\text{ V}, R_L = 1000\Omega$	t_r	—	15	—	μs
Fall Time	$I_C = 1\text{ mA}$	t_f	—	15	—	μs

TYPICAL PERFORMANCE CURVES

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

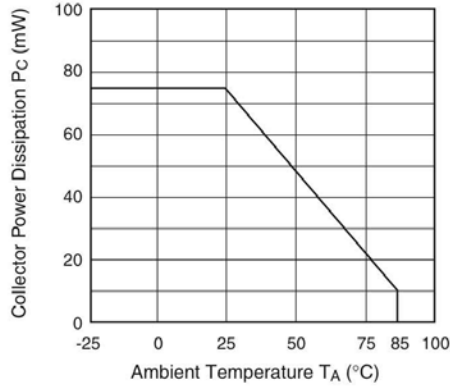


Fig. 2 Collector Dark Current vs. Ambient Temperature

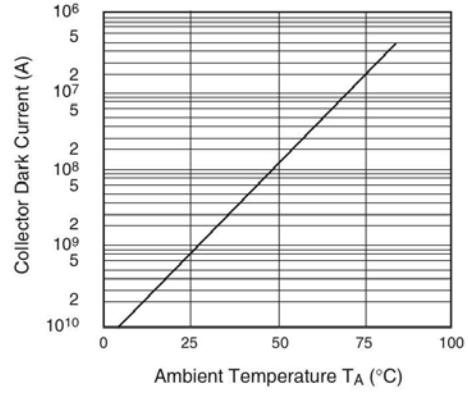


Fig. 3 Relative Collector Current vs. Ambient Temperature

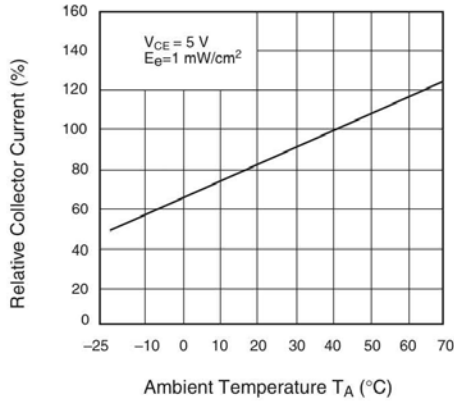


Fig. 4 Collector Current vs. Irradiance

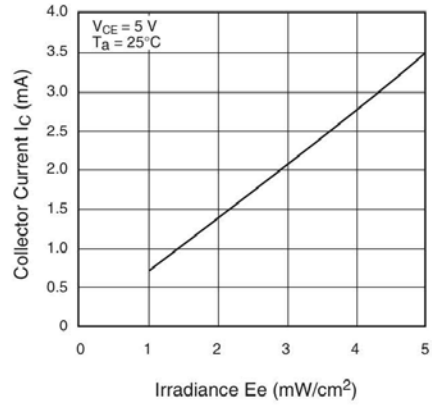


Fig. 5 Spectral Sensitivity

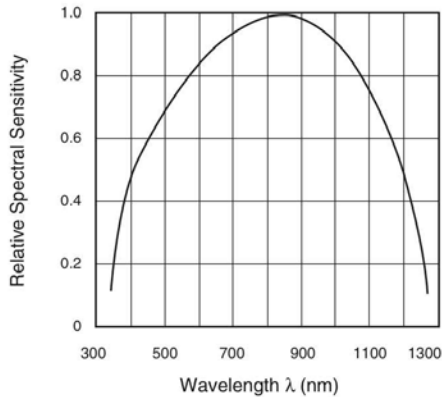
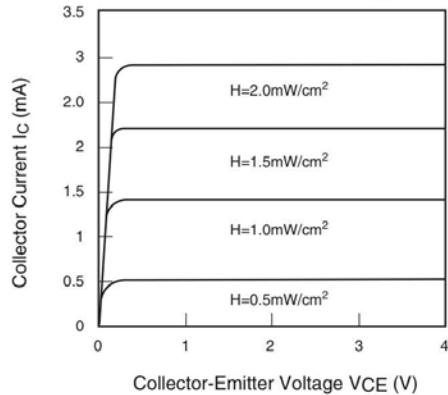
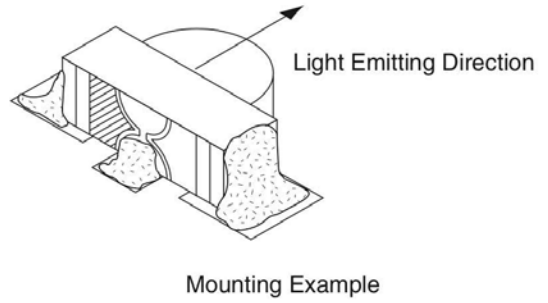
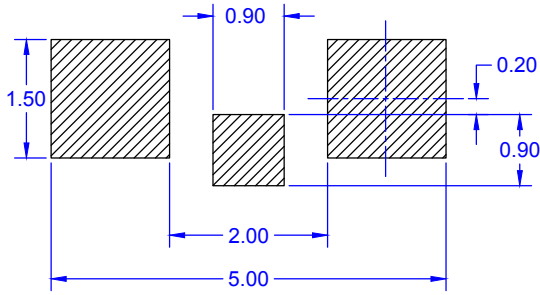


Fig. 6 Collector Current vs. Collector-Emitter Voltage

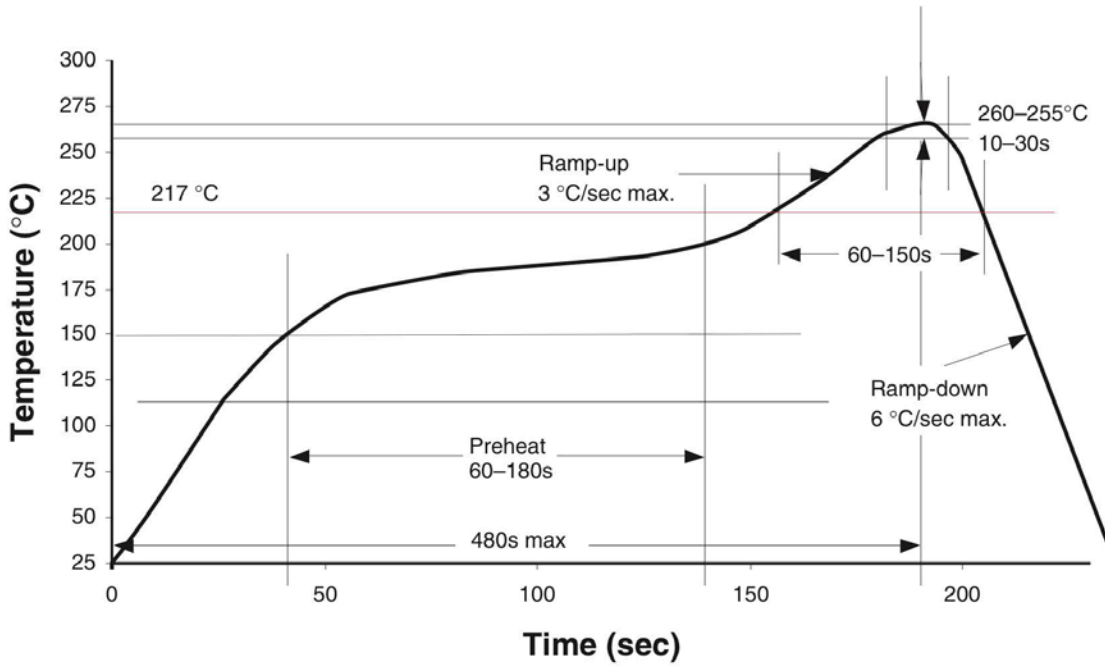


RECOMMENDED PRINTED CIRCUIT BOARD PATTERN

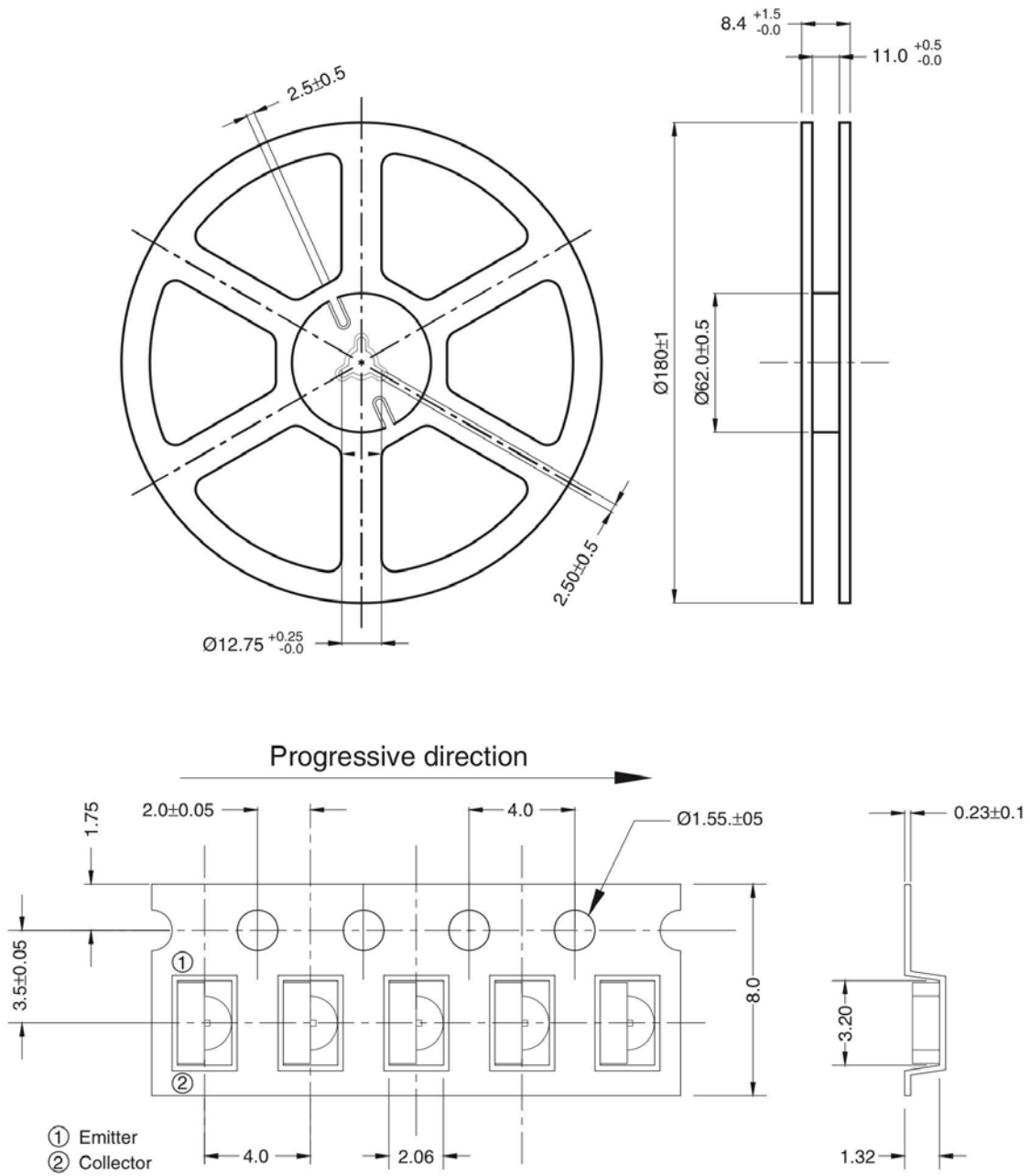


RECOMMENDED IR REFLOW SOLDERING PROFILE

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



TAPE AND REEL DIMENSIONS

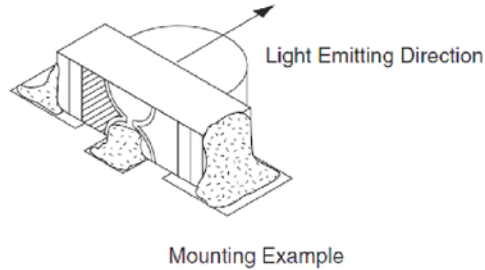
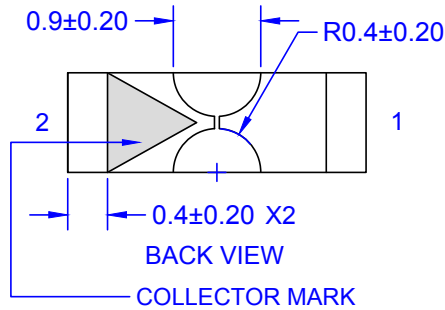
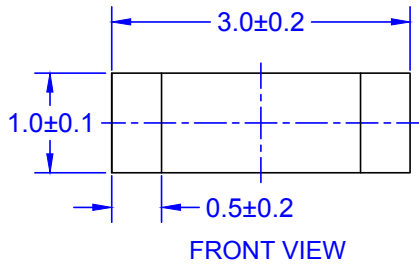
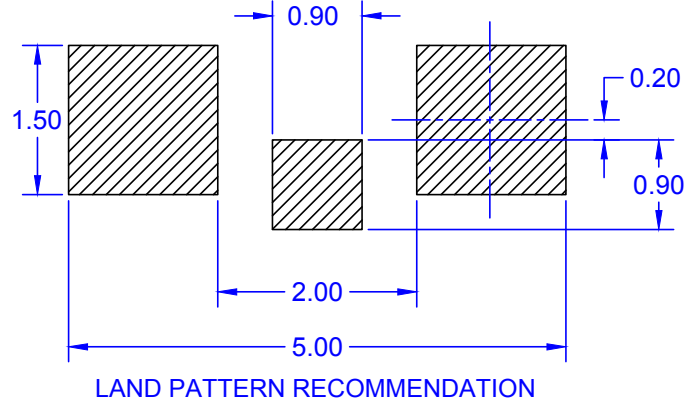
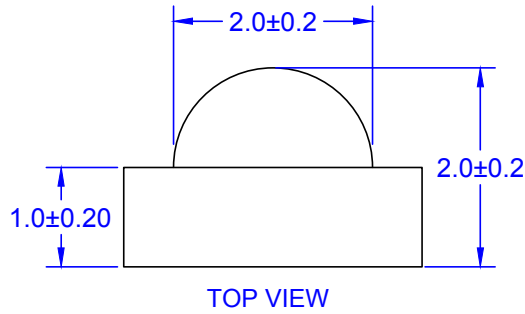


Dimensional tolerance is ± 0.1 mm unless otherwise specified

Angle: ± 0.5

Unit: mm

PACKAGE DIMENSIONS



NOTES:

- A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. COLLECTOR: PIN 2 EMITTER: PIN 1
- D. DRAWING FILENAME: MKT-DCE212ArevO

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