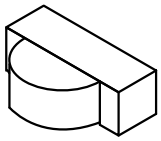
Right Angle Surface Mount Infrared Phototransistor

QTLP610CPD



CHIPLED DETECTOR SIDELOOKER
CASE 100CQ

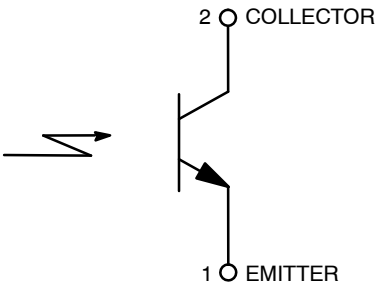
Description

QTLP610CPD 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” (8 mm) width tape on 7” (178 mm) diameter reel; 2,000 Units per Reel
- High Photo Sensitivity
- Low Junction Capacitance
- Fast Response Time
- Water Clear Lens
- This Device is Pb−Free and Halide Free

SCHEMATIC



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
T_{OPR}	Operating Temperature	−25 to +85	°C
T_{STG}	Storage Temperature	−40 to +90	°C
T_{SOL-I}	Soldering Temperature (Iron) (Notes 2, 3, 4)	240 for 5 s	°C
T_{SOL-F}	Soldering Temperature (Flow) (Notes 2, 3)	260 for 10 s	°C
V_{CE}	Collector Emitter Voltage	30	V
V_{EC}	Emitter Collector Voltage	5	V
P_D	Power Dissipation (Note 1)	75	mW

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. At 25°C or below.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Pulse conditions: tp = 100 μs, T = 10 ms

ORDERING INFORMATION

Device	Package	Shipping†
QTLP610CPDTR	CHIPLED DETECTOR SIDELOOKER (Pb−Free)	2000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

ELECTRICAL/OPTICAL CHARACTERISTICS (T_A = 25°C)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
λ_{PS}	Peak Sensitivity Wavelenght		–	860	–	nm
Θ	Reception Angle		–	±80	–	°
I_D	Dark Current	V_{CE} = 20 V, E_e = 0	–	–	100	nA
BV_{CEO}	Collector−Emitter Breakdown	I_C = 100 μA, E_e = 0	30	–	–	V
BV_{ECO}	Emitter−Collector Breakdown	I_E = 100 μA, E_e = 0	5	–	–	V
$I_{C(ON)}$	On−State Collector Current	Ee = 1 mW/cm^2, V_{CE} = 5 V	0.1	0.5	–	mA
$V_{CE(SAT)}$	Saturation Voltage	Ee = 1 mW/cm^2, I_C = 2 mA	–	–	0.4	V
t_r	Rise Time	V_{CE} = 5 V, R_L = 1000 Ω, I_C = 1 mA	–	15	–	μs
t_f	Fall Time		–	15	–	μs

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL PERFORMANCE CHARACTERISTICS

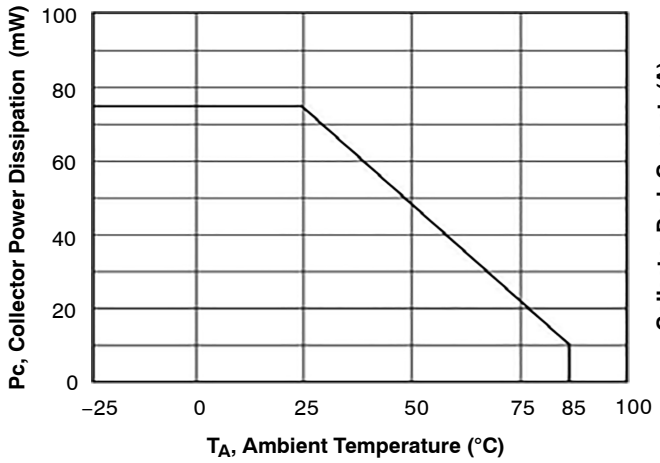


Figure 1. Collector Power Dissipation vs. Ambient Temperature

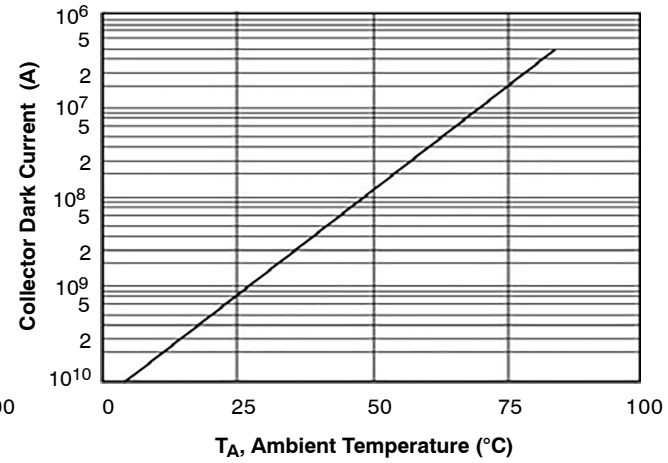


Figure 2. Collector Dark Current vs. Ambient temperature

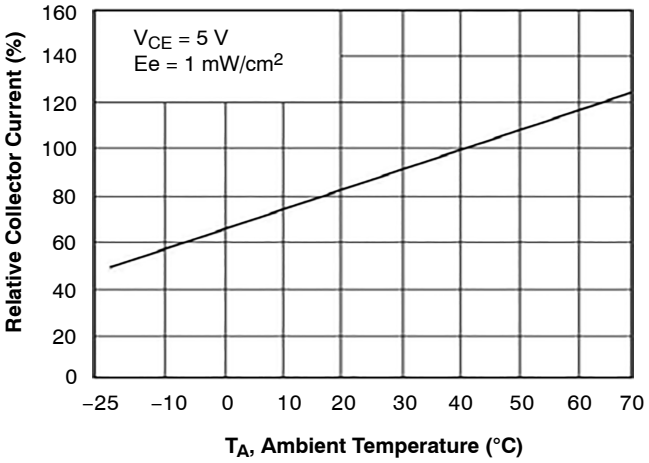


Figure 3. Relative Collector Current vs. Ambient Temperature

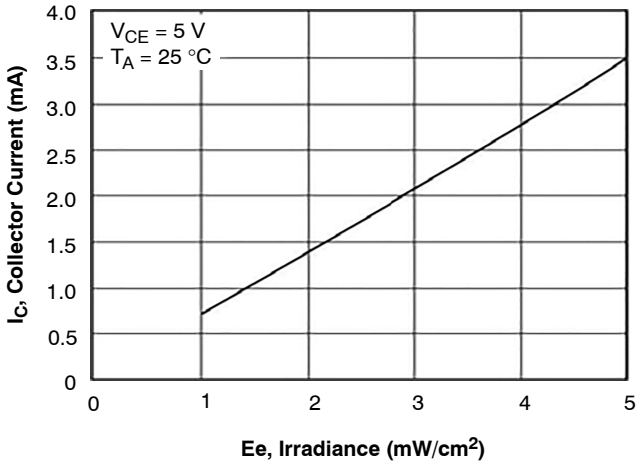


Figure 4. Collector Current vs. Irradiance

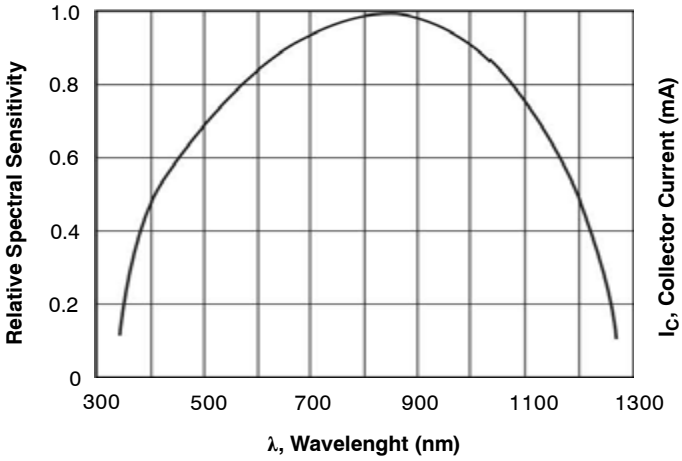


Figure 5. Spectral Sensitivity

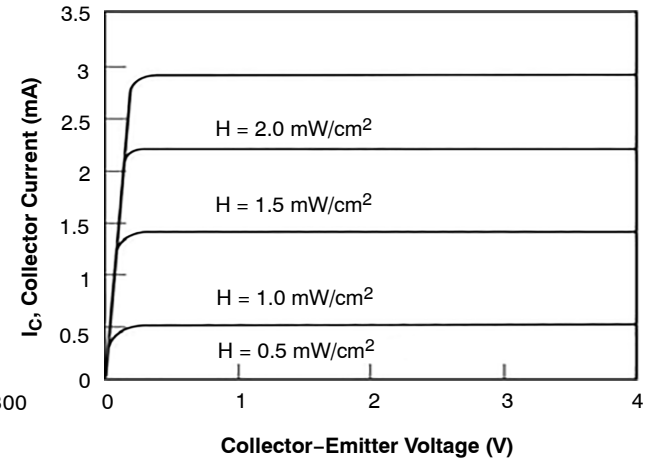
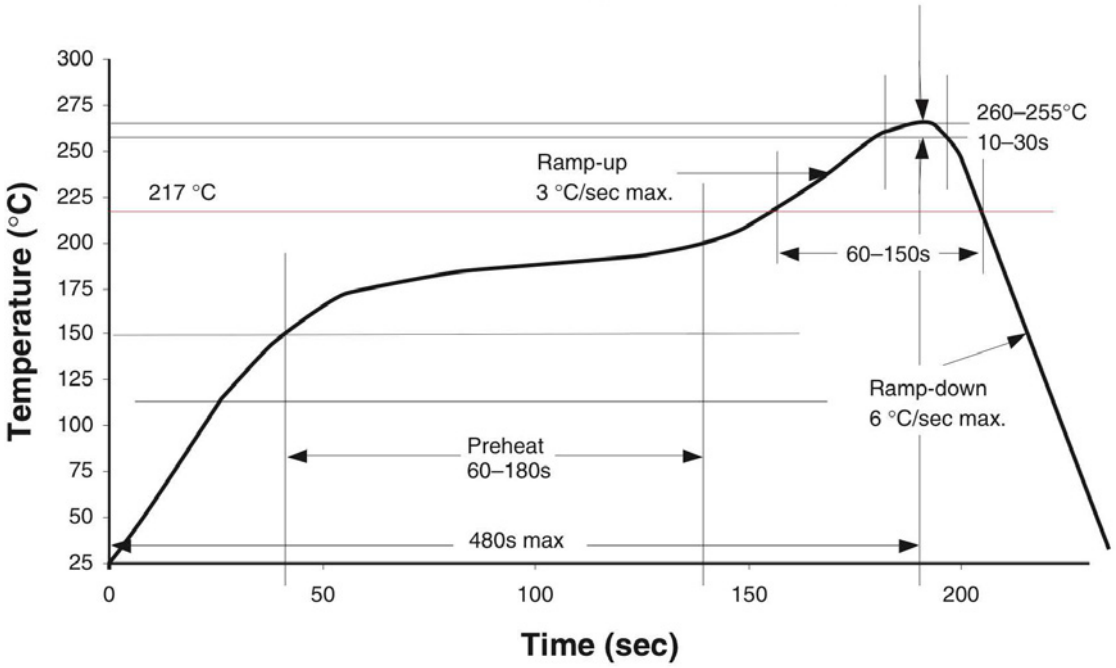


Figure 6. Collector Current vs. Collector−Emitter Voltage

RECOMMENDED IR REFLOW SOLDERING PROFILE

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



CHIPLED DETECTOR SIDELOOKER
CASE 100CQ
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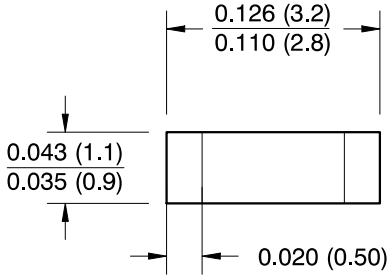
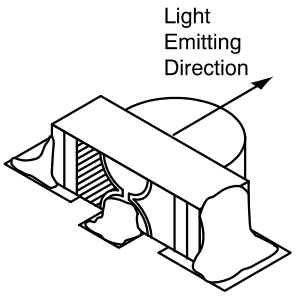
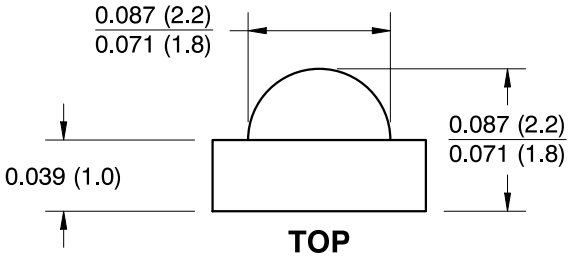


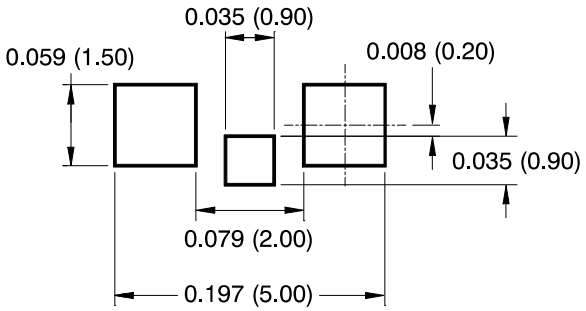
FRONT



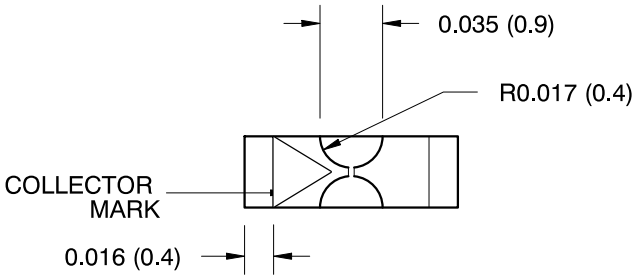
MOUNTING EXAMPLE



TOP



FOOTPRINT



BACK

Notes:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of ±0.010 (0.25) on all non-nominal dimensions unless otherwise specified.

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