



**THE DATASHEET OF
QTLP610CPDTR**



Right Angle Surface Mount Infrared Phototransistor

QTLP610CPD

Description

QTLP610CPD is a phototransistor in miniature SMD package molded in a water clear plastic with right angle lens.

Features

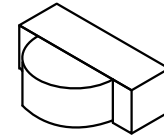
- NPN Silicon Phototransistor
- Right Angle Surface Mount Package
- Matched Emitters: QTLP610CIR
- Available in 0.315" (8 mm) width tape on 7" (178 mm) diameter reel; 2,000 Units per Reel
- High Photo Sensitivity
- Low Junction Capacitance
- Fast Response Time
- Water Clear Lens
- This Device is Pb-Free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

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

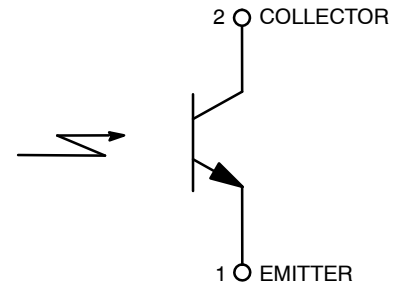
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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



CHIPLED DETECTOR SIDELOOKER
 CASE 100CQ

SCHEMATIC



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](#).

QTLP610CPD

ELECTRICAL/OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
λ_{PS}	Peak Sensitivity Wavelength		–	860	–	nm
Θ	Reception Angle		–	± 80	–	$^\circ$
I_D	Dark Current	$V_{CE} = 20\text{ V}, E_e = 0$	–	–	100	nA
BV_{CEO}	Collector–Emitter Breakdown	$I_C = 100\ \mu\text{A}, E_e = 0$	30	–	–	V
BV_{ECO}	Emitter–Collector Breakdown	$I_E = 100\ \mu\text{A}, E_e = 0$	5	–	–	V
$I_{C(ON)}$	On–State Collector Current	$E_e = 1\ \text{mW}/\text{cm}^2, V_{CE} = 5\ \text{V}$	0.1	0.5	–	mA
$V_{CE(SAT)}$	Saturation Voltage	$E_e = 1\ \text{mW}/\text{cm}^2, I_C = 2\ \text{mA}$	–	–	0.4	V
t_r	Rise Time	$V_{CE} = 5\ \text{V}, R_L = 1000\ \Omega, I_C = 1\ \text{mA}$	–	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.

QTLP610CPD

TYPICAL PERFORMANCE CHARACTERISTICS

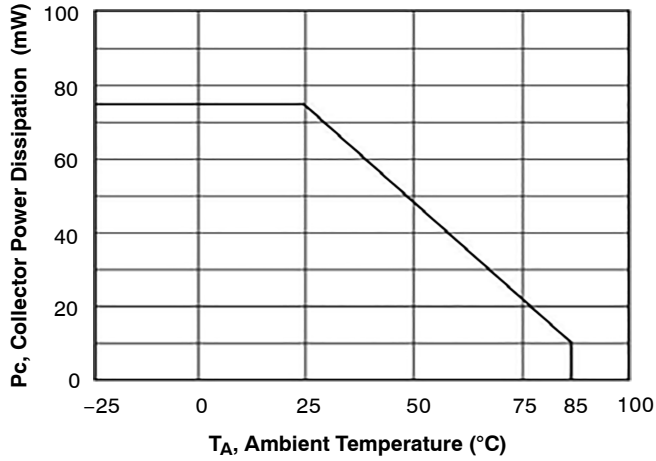


Figure 1. Collector Power Dissipation vs. Ambient Temperature

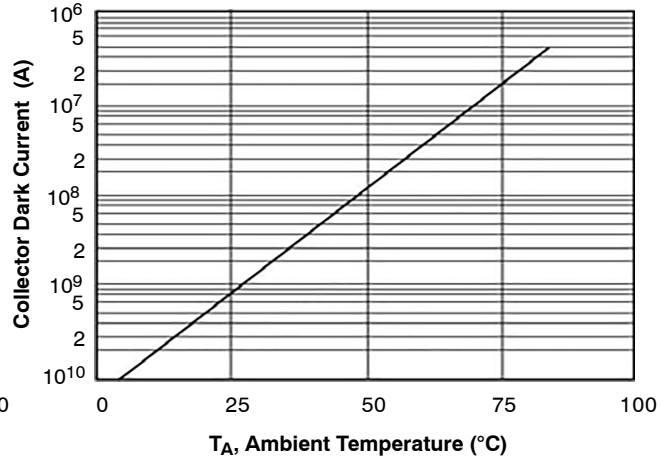


Figure 2. Collector Dark Current vs. Ambient temperature

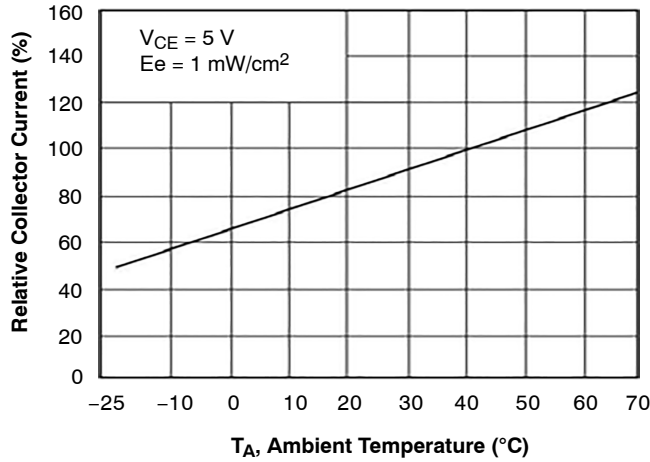


Figure 3. Relative Collector Current vs. Ambient Temperature

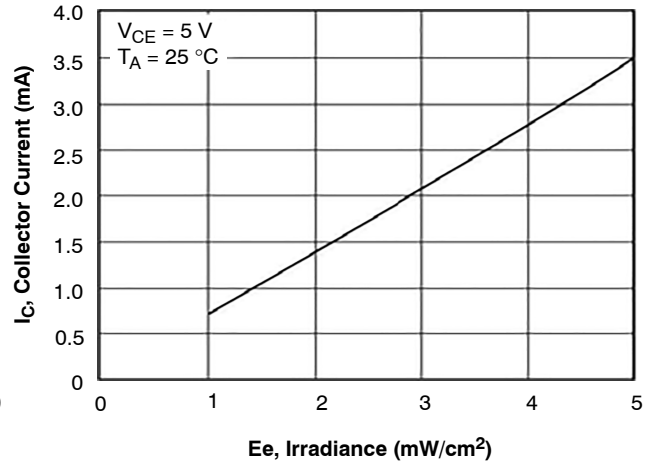


Figure 4. Collector Current vs. Irradiance

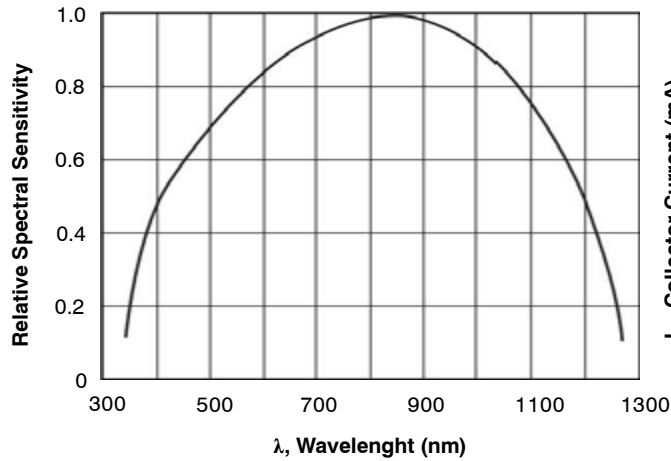


Figure 5. Spectral Sensitivity

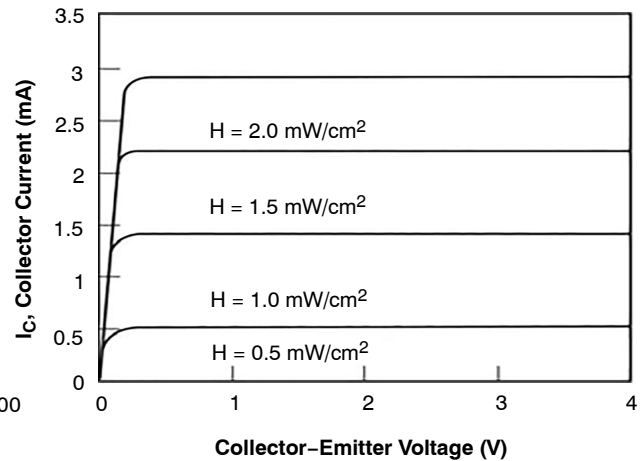
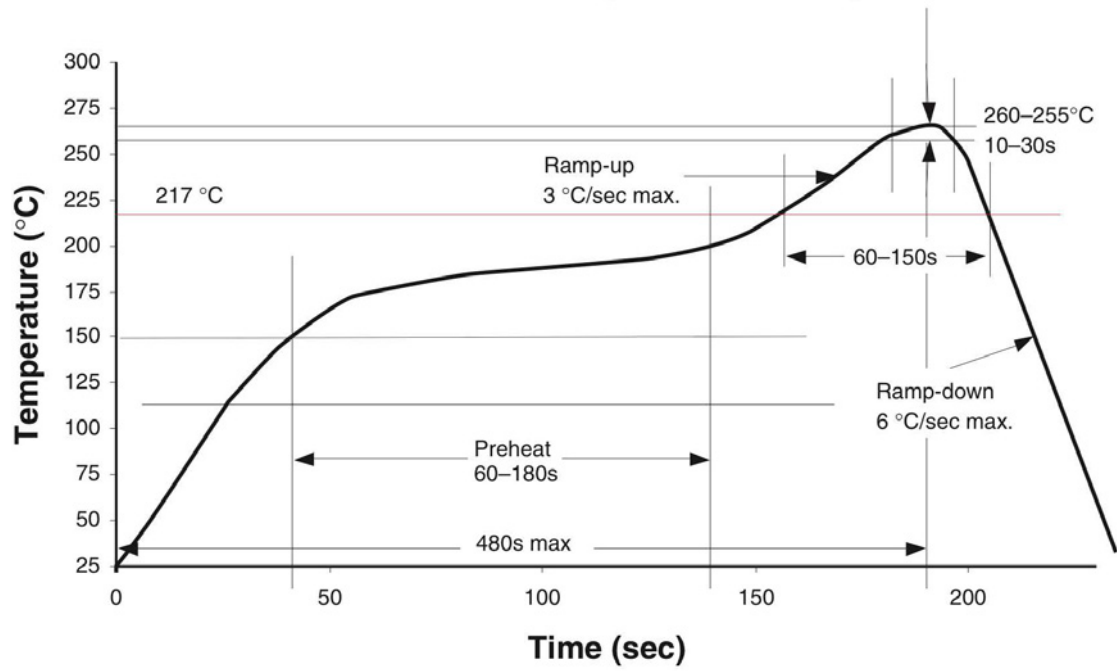


Figure 6. Collector Current vs. Collector-Emitter Voltage

QTLP610CPD

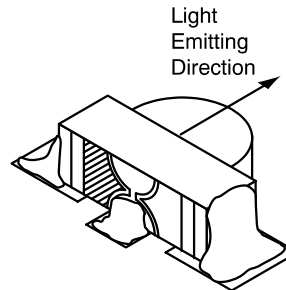
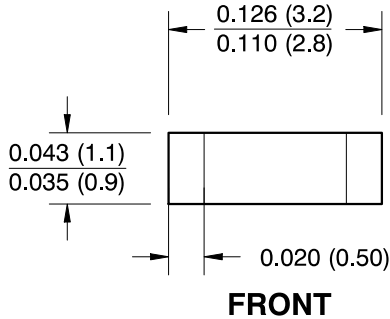
RECOMMENDED IR REFLOW SOLDERING PROFILE

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

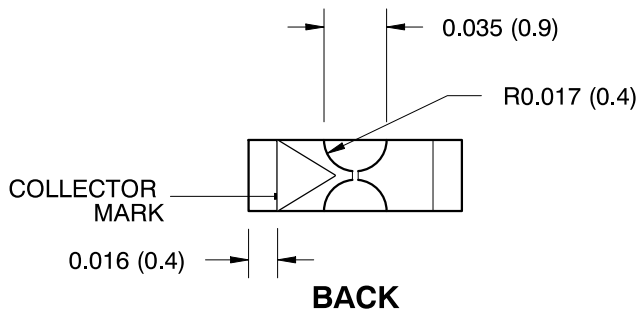
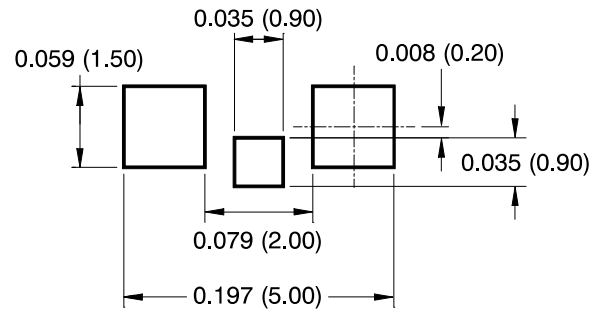
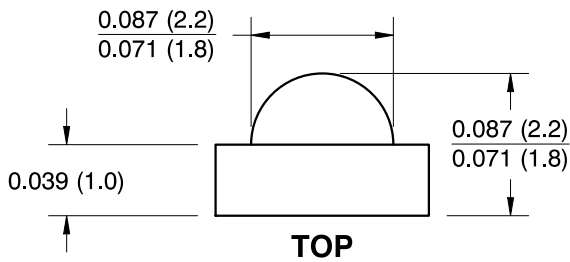


CHIPLED DETECTOR SIDELOOKER
CASE 100CQ
ISSUE O

DATE 30 NOV 2016



MOUNTING EXAMPLE



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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