Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

Fairchild Semiconductor
QTLP610CPDTR

For any questions, you can email us directly:
sales@integrated-circuit.com

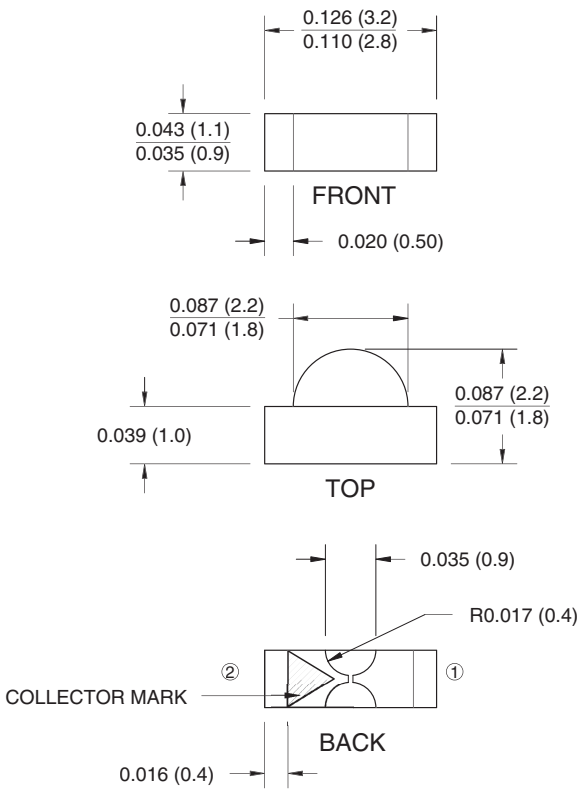
Distributor of Fairchild Semiconductor: Excellent Integrated System Limited
Datasheet of QTLP610CPDTR - EMITTER RA 940NM SMD
Contact us: sales@integrated-circuit.com Website: www.integrated-circuit.com

FAIRCHILD SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED PHOTOTRANSISTOR

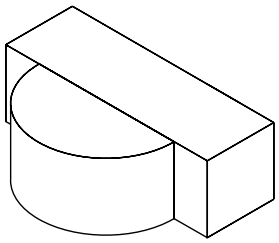
QTLP610CPD

PACKAGE DIMENSIONS

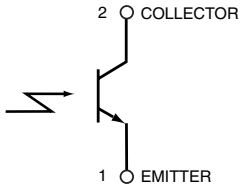


NOTE:

1. Emitter
2. Collector
3. Tolerance of ± .010 (.25) on all non nominal dimensions unless otherwise specified.
4. Dimensions for all drawings are in inches (mm).



SCHEMATIC



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” (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

© 2005 Fairchild Semiconductor Corporation

FAIRCHILD SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED PHOTOTRANSISTOR

QTLP610CPD

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

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-25 to +85	°C
Storage Temperature	T_{STG}	-40 to +90	°C
Soldering Temperature (Iron)(2,3,4)	T_{SOL-I}	240 for 5 sec	°C
Soldering Temperature (Flow)(2,3)	T_{SOL-F}	260 for 10 sec	°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: tp = 100µs, T = 10 ms.

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

PARAMETER	TEST CONDITIONS (λ_P = 940nm)	SYMBOL	MIN.	TYP.	MAX.	UNITS
Peak Sensitivity Wavelength		λPS	—	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, RL = 1000Ω	t_r	—	15	—	µs
Fall Time	I_C = 1mA	t_f	—	15	—	µs

© 2005 Fairchild Semiconductor Corporation

FAIRCHILD SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED PHOTOTRANSISTOR

QTLP610CPD

TYPICAL PERFORMANCE CURVES

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

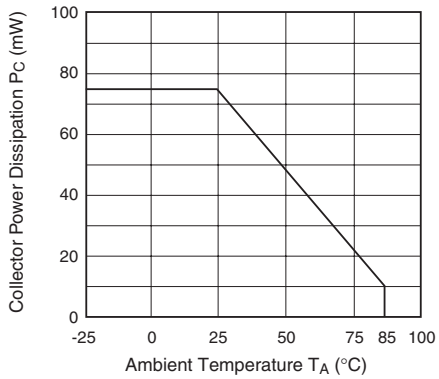


Fig. 2 Collector Dark Current vs. Ambient Temperature

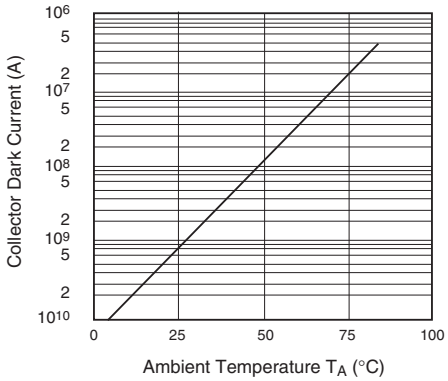


Fig. 3 Relative Collector Current vs. Ambient Temperature

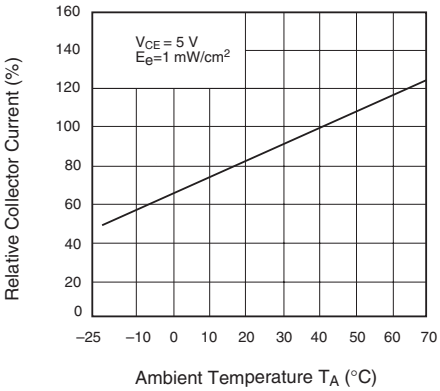


Fig. 4 Collector Current vs. Irradiance

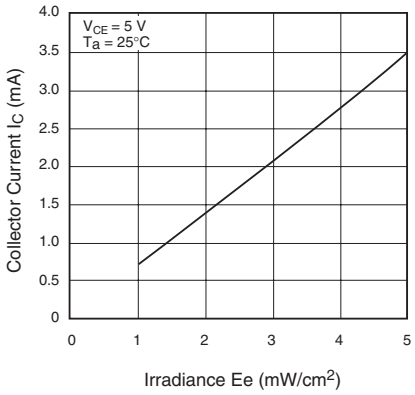


Fig. 5 Spectral Sensitivity

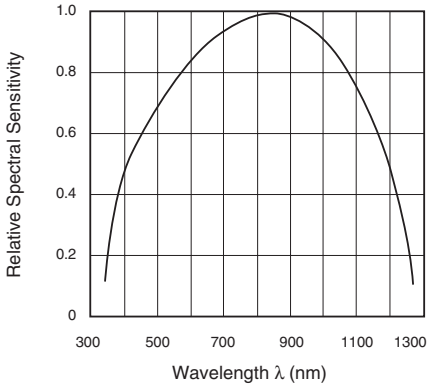
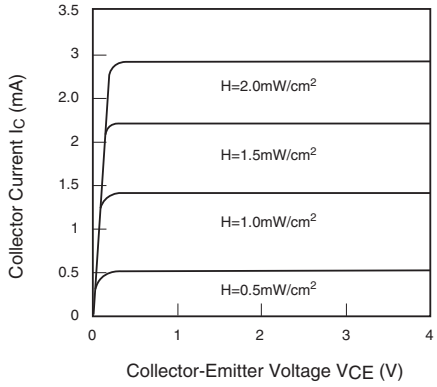


Fig. 6 Collector Current vs. Collector-Emitter Voltage



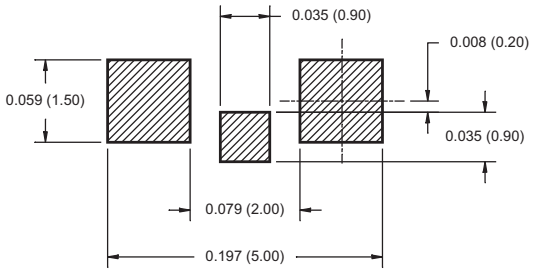
© 2005 Fairchild Semiconductor Corporation

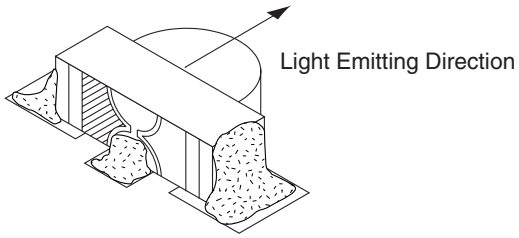
FAIRCHILD SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED PHOTOTRANSISTOR

QTLP610CPD

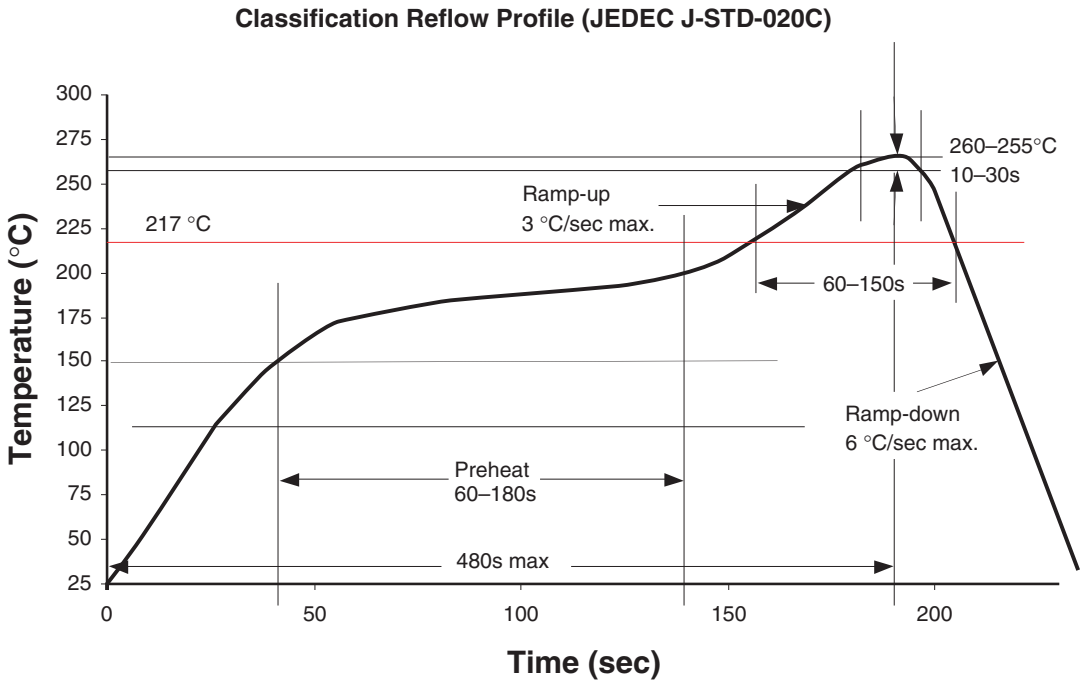
RECOMMENDED PRINTED CIRCUIT BOARD PATTERN





Mounting Example

RECOMMENDED IR REFLOW SOLDERING PROFILE



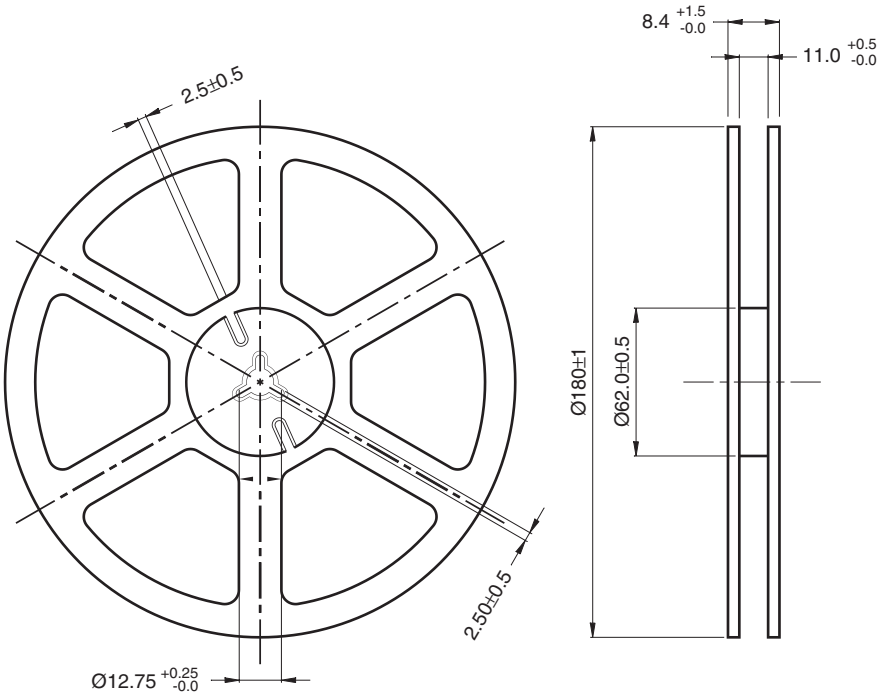
© 2005 Fairchild Semiconductor Corporation

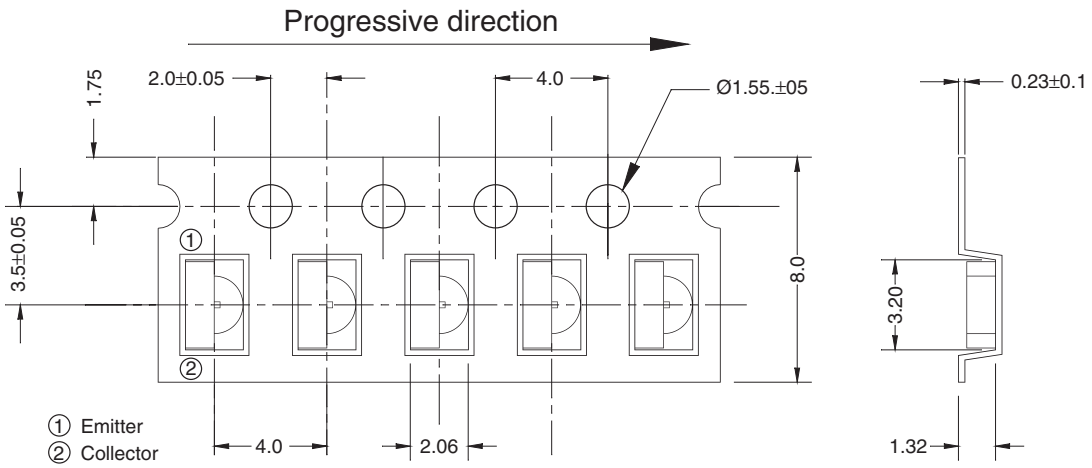
FAIRCHILD SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED PHOTOTRANSISTOR

QTLP610CPD

TAPE AND REEL DIMENSIONS





Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm

RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CPD

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

© 2005 Fairchild Semiconductor Corporation