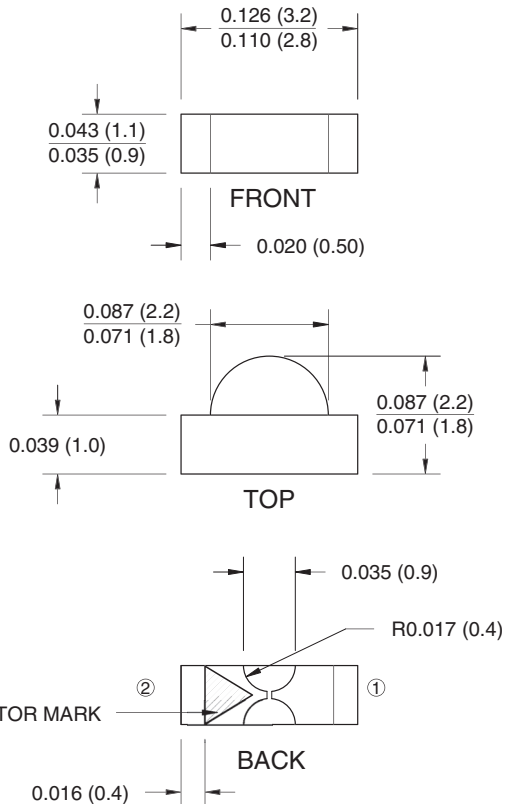
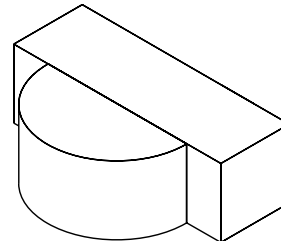


PACKAGE DIMENSIONS

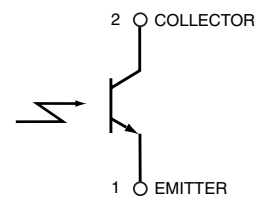


NOTE:

1. Emitter
2. Collector
3. Tolerance of $\pm .010$ (.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

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

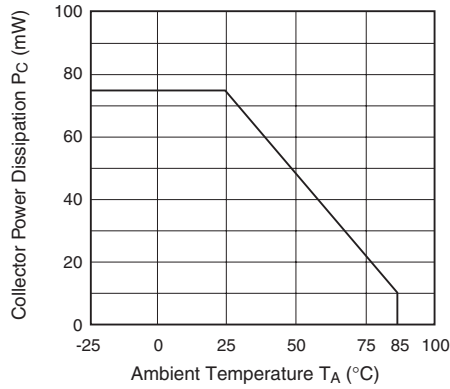


Fig. 2 Collector Dark Current vs. Ambient Temperature

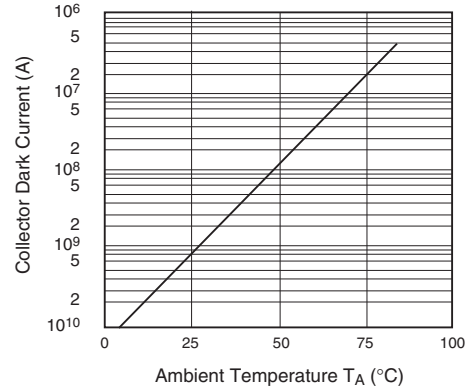


Fig. 3 Relative Collector Current vs. Ambient Temperature

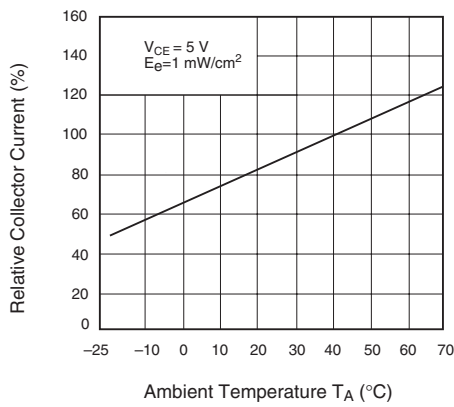


Fig. 4 Collector Current vs. Irradiance

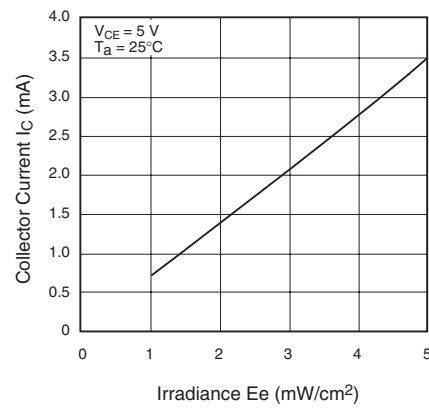


Fig. 5 Spectral Sensitivity

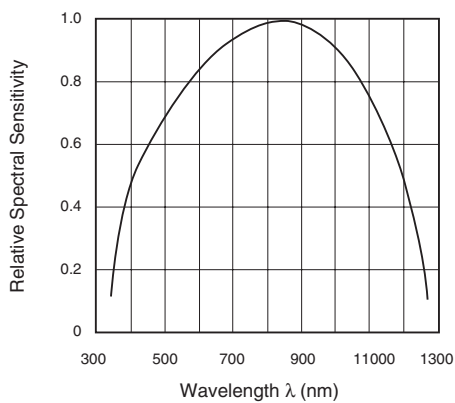
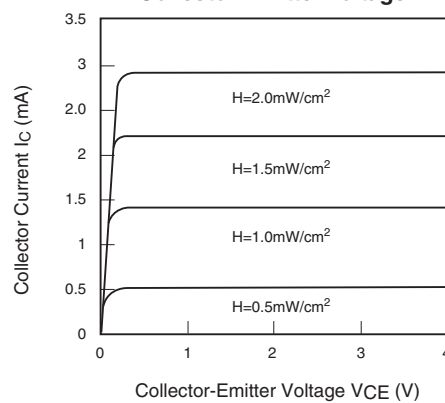


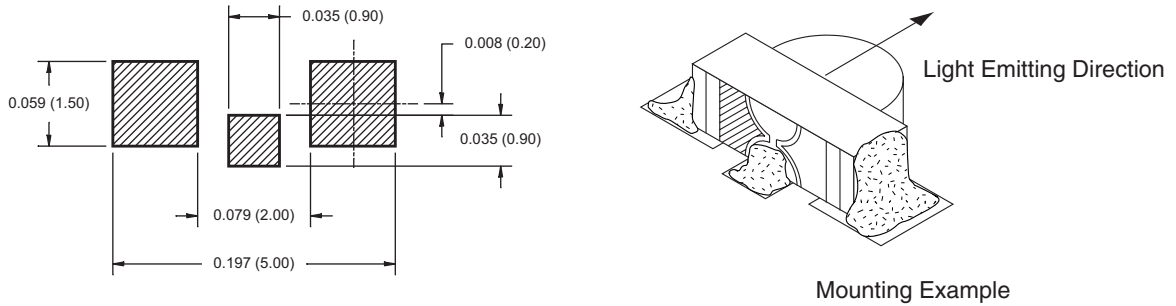
Fig. 6 Collector Current vs. Collector-Emitter Voltage



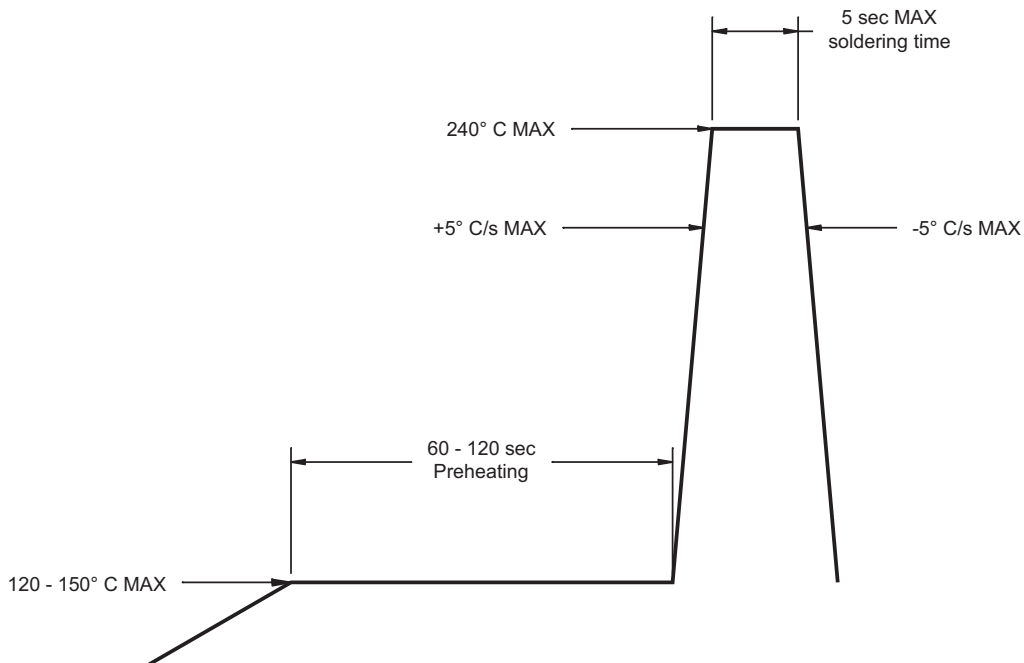
RIGHT ANGLE SURFACE MOUNT INFRARED PHOTOTRANSISTOR

QTL610CPD

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



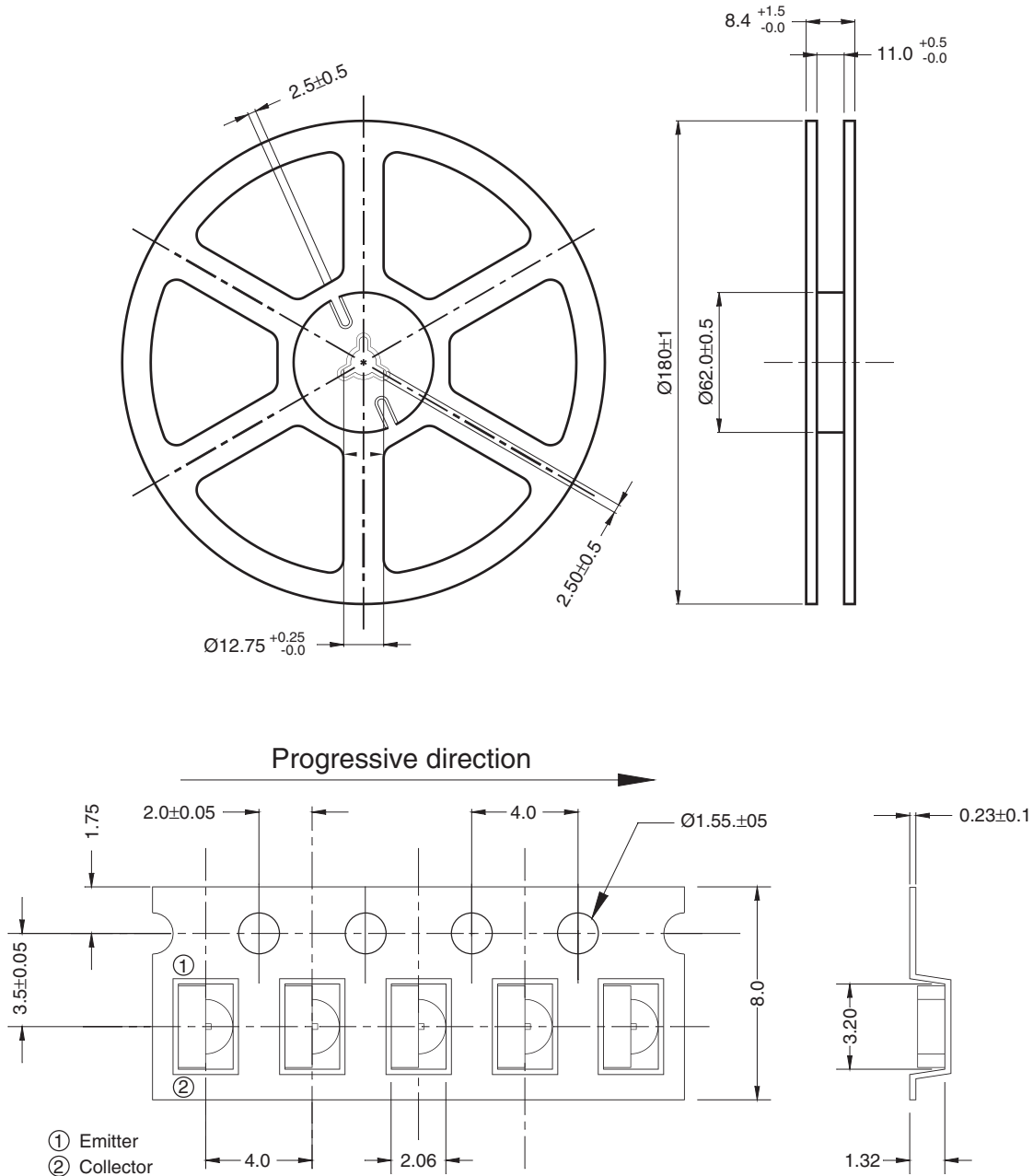
RECOMMENDED IR REFLOW SOLDERING PROFILE



RIGHT ANGLE SURFACE MOUNT INFRARED PHOTOTRANSISTOR

QTLP610CPD

TAPE AND REEL DIMENSIONS



Dimensional tolerance is ± 0.1 mm unless otherwise specified

Angle: ± 0.5

Unit: mm

RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CPD

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