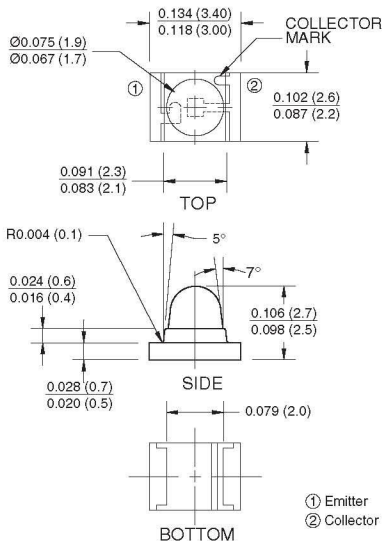




1.8mm DOME LENS INFRARED PHOTOTRANSISTOR

QTLP660CPDF

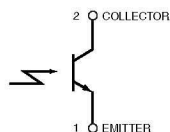
PACKAGE DIMENSIONS



NOTE:

1. Dimensions for all drawings are in inches (mm).

SCHEMATIC



DESCRIPTION

QTLP660CPDF is a high speed silicon NPN epitaxial planar phototransistor in a compact surface-mountable package.

FEATURES

- NPN Silicon Phototransistor
- 1.8mm Dome Lens Package
- Matched Emitters: QTLP660CIR
- Daylight Filter
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 1,000 units per reel
- High Photo Sensitivity
- Low Junction Capacitance



1.8mm DOME LENS INFRARED PHOTOTRANSISTOR

QTLP660CPDF

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	—	± 15	—	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	$E_e = 1\text{ mW/cm}^2$ $V_{CE} = 5\text{ V}$	$I_{C(ON)}$	1.5	1.8	—	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



1.8mm DOME LENS INFRARED PHOTOTRANSISTOR

QTLP660CPDF

TYPICAL PERFORMANCE CURVES

Fig. 1 Collector Power Dissipation vs.
Ambient Temperature

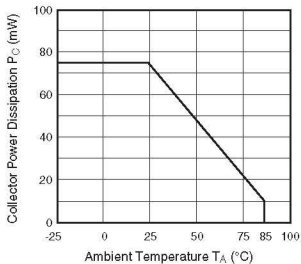


Fig. 2 Collector Dark Current vs.
Ambient Temperature

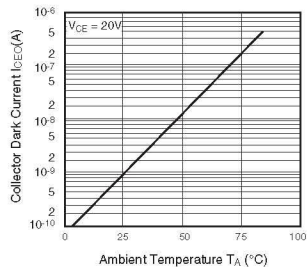


Fig. 3 Relative Collector Current vs.
Ambient Temperature

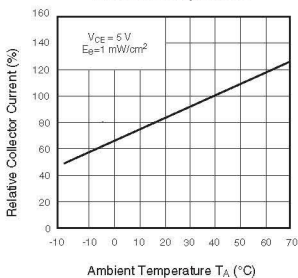


Fig. 4 Collector Current
vs. Irradiance

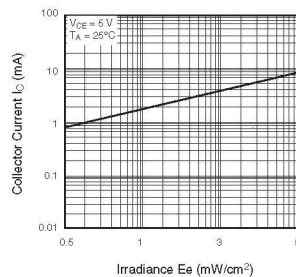
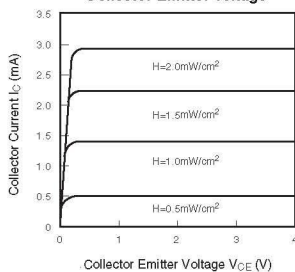


Fig. 5 Collector Current vs.
Collector Emitter Voltage

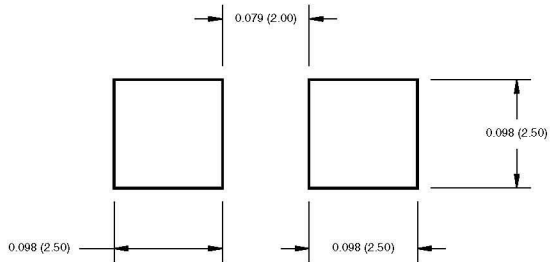




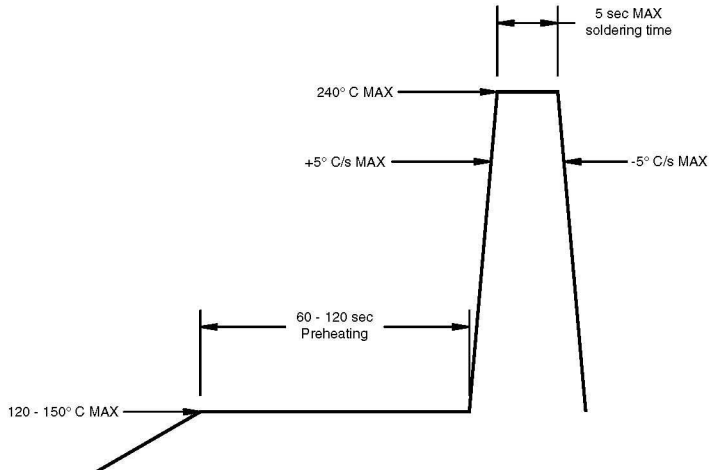
1.8mm DOME LENS INFRARED PHOTOTRANSISTOR

QTLP660CPDF

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE





1.8mm DOME LENS INFRARED PHOTOTRANSISTOR

QTLP660CPDF

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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.