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# **QT-Brightek Photo Transistor Series**

**5mm lamp LED**

**Part No.: QSD8T120B**

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## Introduction

**Feature:**

- Black Color lens
- High photo sensitivity
- Daylight filter
- Photo transistor
- Bulk pack

**Description:**

This 5mm photo transistor is ideal for applications that require high sensitivity.

**Application:**

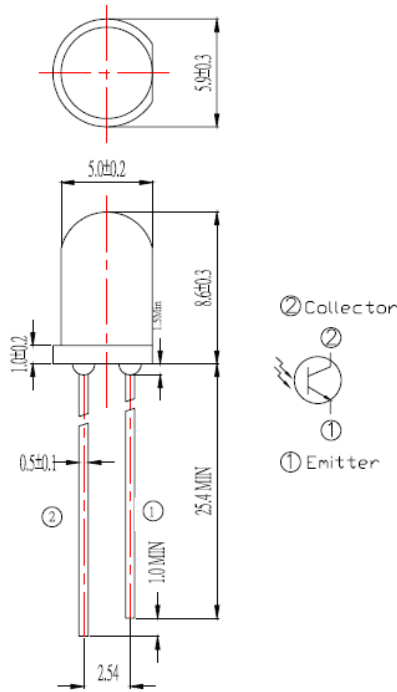
- Photo copy machines
- Camera
- Printer

**Certification & Compliance:**

- TS16949
- ISO9001
- RoHS Compliant



**Dimension:**



Units: mm / tolerance = +/-0.25mm

**Electrical / Optical Characteristic (T=25 °C)**

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Peak Sensitivity wavelength	$\lambda_P$	-		880		nm
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 1\text{mA}$ ,	30	-	-	V
Emitter-Collector Breakdown Voltage	$BV_{ECO}$	$I_E = 100\ \mu\text{A}$ ,	5	-	-	V
On state collector current	$I_{C(ON)}$	$E_e = 0.5\text{mW}/\text{cm}^2$ , $V_{CE} = 5\text{V}$	4.5	-	15	mA
Collector Emitter dark current	$I_{CEO}$	$E_e = 0$ $V_{CE} = 10\text{V}$	-	-	100	nA
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$E_e = 0.5\text{mW}/\text{cm}^2$ , $I_C = 0.5\ \text{mA}$	-	-	0.4	V
Rise time	$t_r$	$V_{CE} = 5\text{V}$ $R_L = 100\ \Omega$ $I_C = 0.2\text{mA}$	-	7	-	us
Fall time	$t_f$					
Viewing Angle	$2\theta$	-	-	30	-	deg

**Absolute Maximum Rating**

Type	$P_d$ (mW) (at or below 25 °C)	$V_{CEO}$ (V)	$V_{ECO}$ (V)	$I_C$ (mA)	$T_{OP}$ (°C)	$T_{ST}$ (°C)	$T_{solder}$ (°C)*
Photo Transistor	100	30	5	20	-40 to + 100	-40 to +100	260

\* wave solder for no more than 5 sec @ 260 °C

### Characteristic Curves

AlGaAs

Figure 3. Dark Current vs. Collector - Emitter Voltage

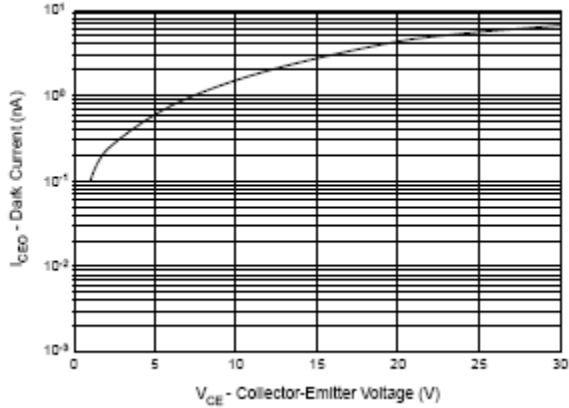


Fig.4 Collector Current vs. Irradiance

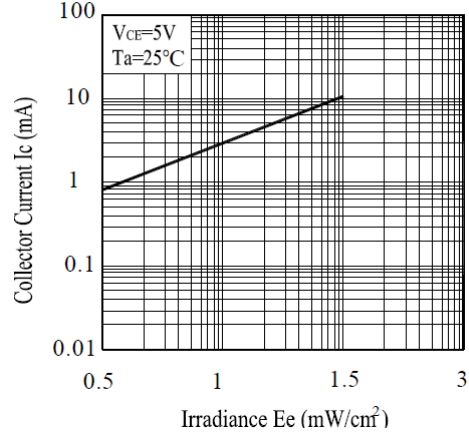


Fig.5 Collector Dark Current vs. Ambient Temperature

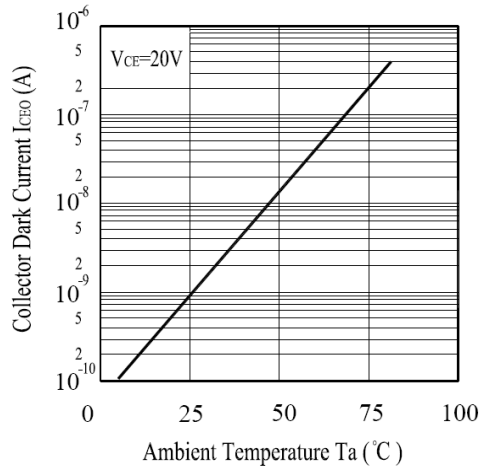
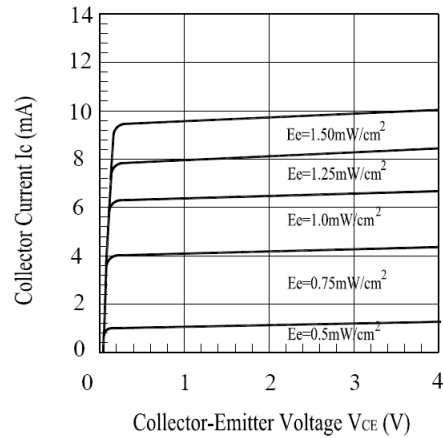


Fig.6 Collector Current vs. Collector-Emitter Voltage





**Packing****Bulk pack 500pcs****Labeling****Part No:** \_\_\_\_\_**Customer Lot No:** \_\_\_\_\_**Item:** \_\_\_\_\_**Q'ty:** \_\_\_\_\_

PT Ic(ON)

**Date:** \_\_\_\_\_

ROHS

PASS

**Ordering Information**

Part #	Orderable Part #	Spec Range	Quantity per bag
QSD8T120B	QSD8T120B	Ic(on) = 4.5 mA min.	500 units

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## Revision History

Description:	Revision #	Revision Date
New Release of QSD8T120B	V1.0	06/25/2011
Update format	V1.1	06/03/2013
Update spec	V2.0	09/22/2014

## Disclaimer

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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.

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