



QLPT02DXJB
(PHOTO Transistor)



Product Outline:

QLPD02DXJ is a 3mm Phototransistor LED. This device pairs well with our 3mm IR 940nm emitter (QLIR01BYGM)

Features:

- With Black resign
- 25° Viewing angle ($\pm 10^\circ$)
- RoHS compliant
- Custom Bin available upon special request

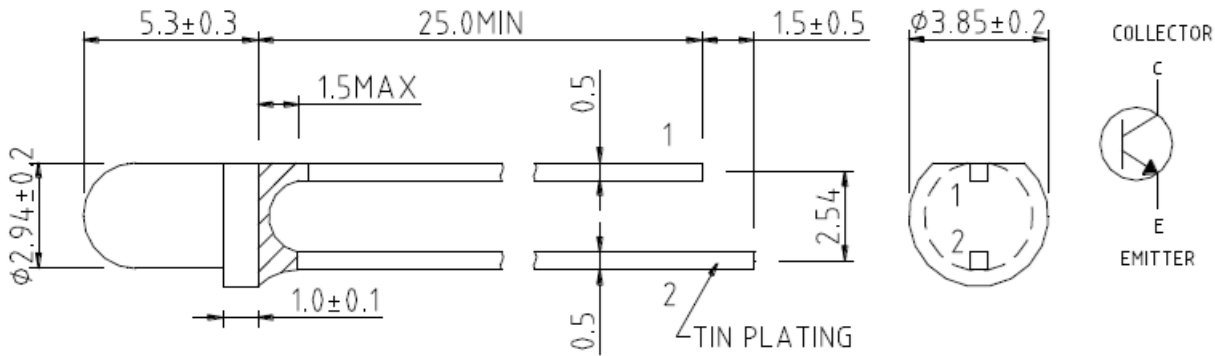
Application:

- Access Control & Security
- Home & Building Automation
- Appliances & Tools
- Paper counting

Compliance and Certification:



**■ Mechanical Property:
(Dimension)**



SING: 1. Collector
2. Emitter
Tolerance is ±0.25mm unless otherwise specified

■ ELEMENT APPEARANCE

Model No.	Material	Lighting Color	Resin Color
QLPT02DXJB	Silicon	Non-Visible	Black

■ ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

Characteristic	Symbol	Rating	Unit
Operating temperature	Topr	-40 to +85	°C
Storage temperature	Tstg	-40 to +100	°C
Power dissipation	Pd	100	mW



■ ELECTRO-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector-Emitter breakdown voltage	BV _{ceo}	I _c = 100μA	30		100	V
Emitter-Collector breakdown voltage	BV _{eco}	I _e = 100μA	6.5			V
Collector dark current	I _{ceo}	V _{ce} = 20V			100	nA
Light Current	I _L	V _{ce} = 10V E _e =0.5mW/cm ² λ _p = 940nm	8		27	mA
Collector-Emitter saturation Voltage	V _{ce(sat)}	I _c = 2mA I _B = 100 μA			0.2	V
Wavelength of the max. sensitivity	λ _p			900		nm
Turn-on/Turn-off Time	T _r /t _f	VR=3V · RL=50Ω IP=850nm		15/15		μS
Current gain	H _{FE}	V _{ce} = 5V I _c = 2mA	1600			
Viewing angle	2θ 1/2	IF=100mA		25		Deg

*Radiant Intensity Measurement allowance is ±15%

** Forward voltage Measurement allowance is ±0.05V

*** Peak emission wavelength Measurement allowance is ±1nm

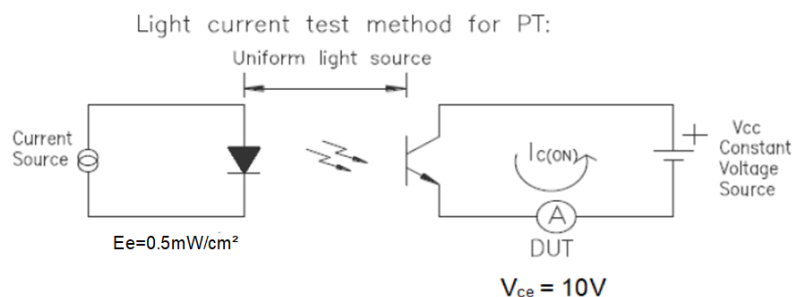
■ Light Current Bin

Light Current (I _L)	V _{ce} = 10V E _e =0.5mW/cm ² λ _p = 940nm	Bin 2	8	12	mA
		Bin 3	12	18	mA
		Bin 4	18	27	mA



■ Test method for Light current (I_L)

Condition: $V_{ce} = 10V$
 $E_e = 0.5mW/cm^2$



■ Reliability test:

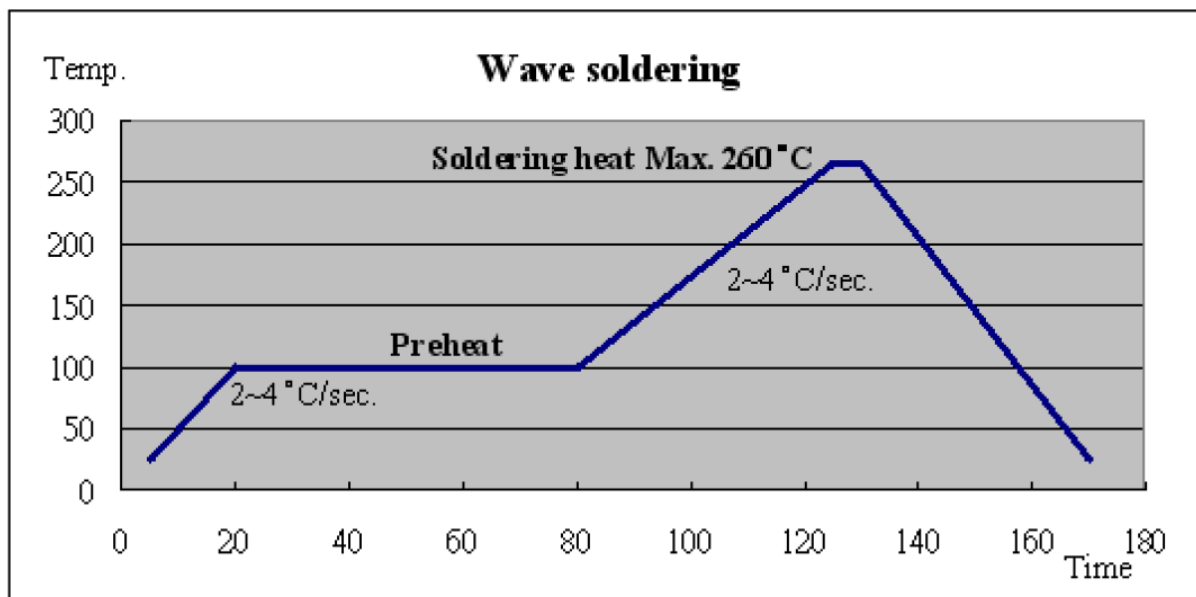
No	Item	Condition	Time/Cycle	Criteria	Ac / Re	Sample size
1	Soldering Heat Test	260°C	5 sec	Open / Short	0 / 1	60 pcs
2	Thermal Shock	0 (5min) °C ~100 (5min) °C	20 cycle	Open / Short	0 / 1	60 pcs
3	High Temp. Storage	100°C	1000 Hrs	Open / Short	0 / 1	60 pcs
4	Low Temp. Storage	-40°C	1000 Hrs	Open / Short	0 / 1	60 pcs
5	Temperature Cycle Test	-40 ~85 °C	100 Cycles , 200Hrs	Open / Short	0 / 1	60 pcs
6	High Temp. High Humidity Test	60 , 90% RH °C	1000 Hrs	Open / Short	0 / 1	60 pcs
7	DC Operation Life Test	IF=100mA	1000 Hrs	Power decay	$\leq 30\%$	60 pcs



■ Solder Profile:




-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):

Shape	Lead Frame Type / Holder Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX. 3.Distance : 3 mm MIN (from solder joint to case)
DIP soldering	1.Preheat temp : 100 °C MAX , 60 sec MAX. 2.Bath temp : 260 °C MAX. 3.Bath time : 5 sec MAX. 4.Distance : 3 mm MIN (From solder joint to case).
Reflow soldering	NO
Shape	SMD Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX.
DIP soldering	1.Preheat temp. : 120-150 °C , 60-120 sec. 2.Bath temp. : 260 °C MAX. 3.Bath time : 5 sec
Reflow soldering	1.Preheat temp. : 150-180 °C , 120 sec MAX. 2.Peak temp. : 260 °C MAX. 3.Peak time : 10 sec MAX.



■ Taping & Packing: Per Bag

Labeling

QueLighting		
 Quantity: XXXX		
 Quelighting P/N: XXXXXX		
 Lot number: XXXXX		
Iv Bin: XX	Color Bin: XX	Vf Bin: XX
		Date Code: XXXX

Ordering Information:

Part #	Multiple Quantities	Quantity per bag
QLPT02DXJB		1000pcs



Revision History:

Revision Date:	Changes:	Version #:
10-20-2022	Initial release	1.0

