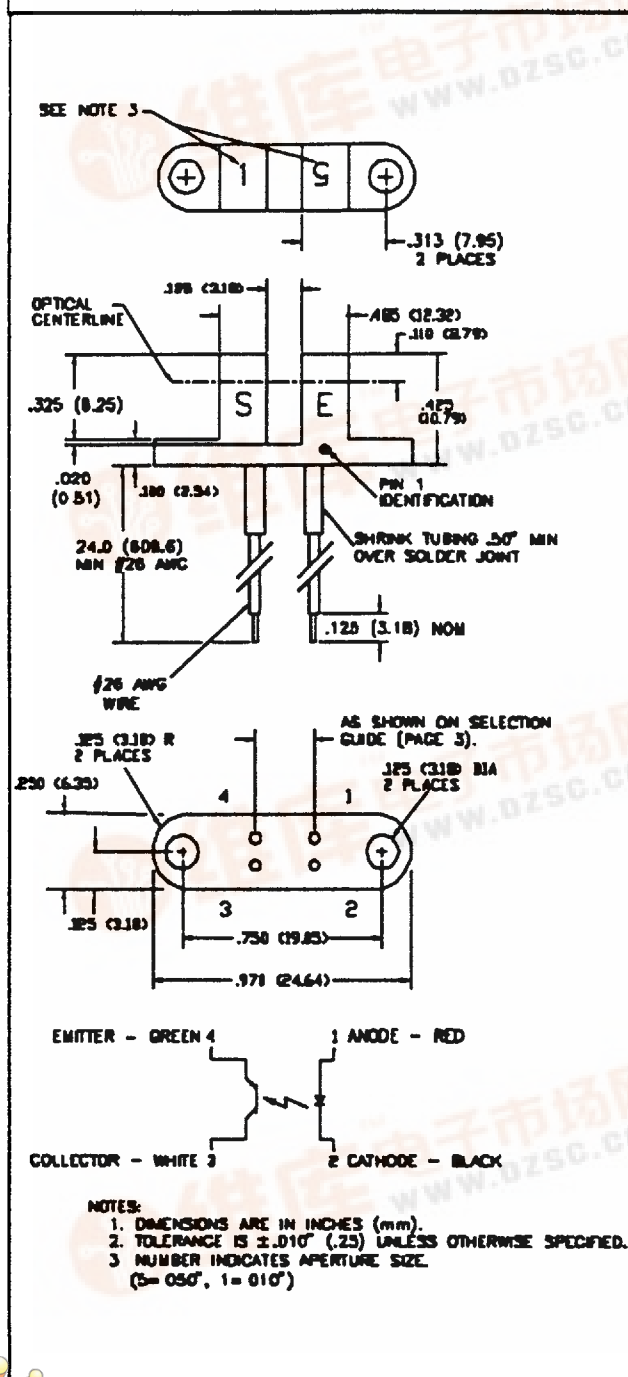




Slotted Optical Switch

QVB Series With Wires

PACKAGE DIMENSIONS



DESCRIPTION

The QVB series of switches with wires attached is designed to allow the user maximum flexibility in applications. Each switch consists of an infrared emitting diode facing an NPN phototransistor across a .125" (3.18 mm) gap. A unique housing design provides a smooth external surface to prevent dust and dirt buildup while molded internal apertures give precise positioning and also provide protection from ambient light interference.

FEATURES

- Fully enclosed design.
- 24 inch wire termination.
- .050" and .010" apertures available.
- Min/max guaranteed limits for $I_{C(ON)}$.

QVB Series With Wire



Quality Technologies Corporation
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Tel: (408) 720-1440

ABSOLUTE MAXIMUM RATINGS (TA = 25°C Unless Otherwise Specified)

Storage Temperature -40°C to +85°C
Operating Temperature -40°C to +85°C
Soldering:
 Lead Temperature (Iron) 240°C for 5 sec. (2,3,4)
 Lead Temperature (Flow) 260°C for 10 sec. (2,3)

INPUT DIODE

Continuous Forward Current50 mA
Reverse Voltage 5.0 Volts
Power Dissipation 100 mW⁽¹⁾

OUTPUT TRANSISTOR

Collector-Emitter Voltage 30 Volts
Emitter-Collector Voltage 5.0 Volts
Collector Current 40 mA
Power Dissipation 100 mW⁽¹⁾

ELECTRICAL CHARACTERISTICS (TA = 25°C Unless Otherwise Specified)

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
INPUT DIODE						
Forward Voltage	V _F	---		1.70	V	I _F = 20 mA
Reverse Leakage Current	I _R	---		10	μA	V _R = 2.0 V
OUTPUT TRANSISTOR						
Emitter-Collector Breakdown	BV _{ECO}	5		---	V	I _E = 100 μA
Collector-Emitter Breakdown	BV _{CEO}	30		---	V	I _C = 1.0 mA
Collector-Emitter Leakage	I _{CEO}	---		100	nA	V _{CE} = 10.0V
COUPLED						
On-State Collector Current	I _{C(ON)}	See selection guide page 3.			mA	I _F = 20 mA, V _{CE} = 5 V
Saturation Voltage	V _{CE(SAT)}	---		.4	V	I _F = 20 mA, I _C = 0.1 mA

Notes:

1. Derate power dissipation linearly 1.67 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or Isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron tip 1/16 inch (1.6 mm) from housing.



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QVB SERIES OPTICAL SWITCH SELECTION GUIDE

Part Number	Lead Egress	Apertures		I _C (ON)	
		LED	Sensor	Min	Max
QVB11423	.220"	0.050"	0.010"	0.20	0.80
QVB11424	.220"	0.050"	0.010"	0.50	2.00
QVB11433	.220"	0.050"	0.050"	0.50	2.00
QVB11434	.220"	0.050"	0.050"	1.00	4.00
QVB21413	.220"	0.010"	0.010"	0.10	0.40
QVB21414	.220"	0.010"	0.010"	0.20	0.80