



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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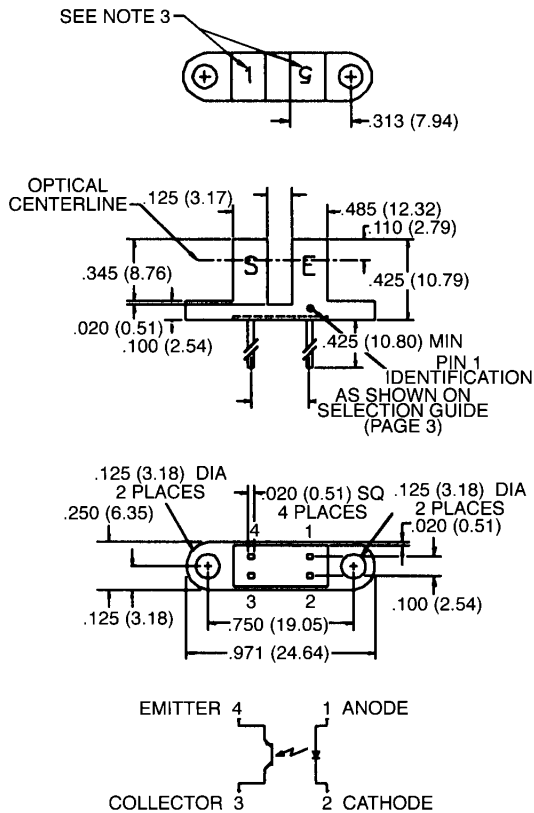
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PACKAGE DIMENSIONS



DESCRIPTION

The QVB series of switches 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

- Ambient light and dust protection.
- Lead spacing available at .220", .300", or .320".
- .050" and .010" apertures available.

ST2175

NOTES:

1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS $\pm .010$ (.25) UNLESS OTHERWISE SPECIFIED.
3. NUMBER INDICATES APERTURE SIZE. (5 = .050", 1 = .010")

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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 Current	50 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 ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
INPUT DIODE						
Forward voltage	V_F	—		1.70	V	$I_F = 20\text{ mA}$
Reverse Leakage Current	I_R	—		100	μA	$V_R = 2.0\text{ V}$
OUTPUT TRANSISTOR						
Emitter-Collector Breakdown	BV_{ECO}	5		—	V	$I_E = 100\ \mu\text{A}$, $E_e = 0$
Collector-Emitter Breakdown	BV_{CEO}	30		—	V	$I_C = 1.0\text{ mA}$, $E_e = 0$
Collector-Emitter Leakage	I_{CEO}	—		100	nA	$V_{CE} = 10.0\text{ V}$, $E_e = 0$
COUPLED						
On-State Collector Current	$I_{C(ON)}$	See selection guide page 3.			mA	$I_F = 20\text{ mA}$, $V_{CE} = 5\text{ V}$
Saturation Voltage	$V_{CE(SAT)}$	—		0.40	V	$I_F = 20\text{ mA}$, $I_C = 0.1\text{ mA}$

NOTES

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

QVBXXX OPTICAL SWITCH SELECTION GUIDE						
PART NUMBER	LEAD SPACING	APERTURES		I_(ON)		
		LED	SENSOR	MIN	MAX	
QVB11123	.220"	0.050"	0.010"	0.20	—	
QVB11124	.220"	0.050"	0.010"	0.50	—	
QVB11223	.300"	0.050"	0.010"	0.20	—	
QVB11224	.300"	0.050"	0.010"	0.50	—	
QVB11323	.320"	0.050"	0.010"	0.20	—	
QVB11324	.320"	0.050"	0.010"	0.50	—	
QVB11133	.220"	0.050"	0.050"	0.50	—	
QVB11134	.220"	0.050"	0.050"	1.00	—	
QVB11233	.300"	0.050"	0.050"	0.50	—	
QVB11234	.300"	0.050"	0.050"	1.00	—	
QVB11333	.320"	0.050"	0.050"	0.50	—	
QVB11334	.320"	0.050"	0.050"	1.00	—	
QVB21113	.220"	0.010"	0.010"	0.10	—	
QVB21114	.220"	0.010"	0.010"	0.20	—	
QVB21213	.300"	0.010"	0.010"	0.10	—	
QVB21214	.300"	0.010"	0.010"	0.20	—	
QVB21313	.320"	0.010"	0.010"	0.10	—	
QVB21314	.320"	0.010"	0.010"	0.20	—	



SLOTTED OPTICAL SWITCH

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