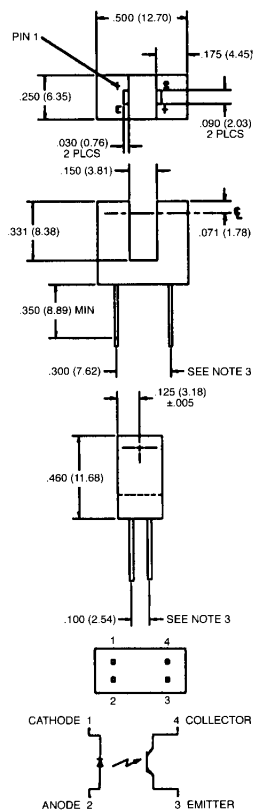


**PACKAGE DIMENSIONS**



**ST2176**

**DESCRIPTION**

The QVE11233 is designed to allow the user maximum flexibility in applications. Each switch consists of an infrared emitting diode facing an NPN phototransistor across a .150" (3.81 mm) gap.

**FEATURES**

- Lead spacing .300".
- Gap width of .150".
- Printed circuit board mounting.
- 2 mm aperture width.

**NOTES:**

1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS  $\pm .010$  (.25) UNLESS OTHERWISE SPECIFIED.
3. THIS DIMENSION IS CONTROLLED AT THE HOUSING SURFACE.

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

Storage Temperature .....	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Operating Temperature .....	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Soldering:	
Lead Temperature (Iron) .....	$240^\circ\text{C}$ for 5 sec. <sup>(2,3,4)</sup>
Lead Temperature (Flow) .....	$260^\circ\text{C}$ for 10 sec. <sup>(2,3)</sup>

**INPUT DIODE**

Continuous Forward Current .....	50 mA
Reverse Voltage .....	5.0 Volts
Power Dissipation .....	100 mW <sup>(1)</sup>

**OUTPUT TRANSISTOR**

Collector-Emitter Voltage .....	30.0 Volts
Emitter-Collector Voltage .....	5.0 Volts
Power Dissipation .....	100 mW <sup>(1)</sup>

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
<b>INPUT DIODE</b>						
Forward voltage	$V_F$	—		1.70	V	$I_F = 20\text{ mA}$
Reverse Leakage Current	$I_R$	—		100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
<b>OUTPUT TRANSISTOR</b>						
Emitter-Collector Breakdown	$BV_{ECO}$	5		—	V	$I_E = 100\text{ }\mu\text{A}$ , $E_e = 0$
Collector-Emitter Breakdown	$BV_{CEO}$	30		—	V	$I_C = 1.0\text{ mA}$ , $E_e = 0$
Collector-Emitter Leakage	$I_{CEO}$	—		100	nA	$V_{CE} = 10.0\text{ V}$ , $E_e = 0$
<b>COUPLED</b>						
On-State Collector Current	$I_{C(ON)}$	0.50		—	mA	$I_F = 20\text{ mA}$ , $V_{CE} = 5\text{ V}$
Saturation Voltage	$V_{CE(SAT)}$	—		0.40	V	$I_F = 20\text{ mA}$ , $I_C = 0.25\text{ mA}$

**NOTES**

1. Derate power dissipation linearly  $1.67\text{ mW}/^\circ\text{C}$  above  $25^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or Isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron tip  $1/16"$  (1.6 mm) from housing.



## SLOTTED OPTICAL SWITCH

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