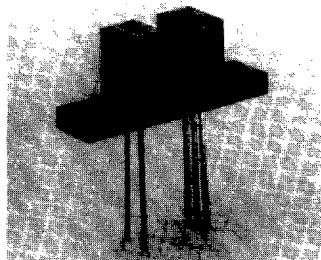


# Transmissive Optoswitch Slotted Switch — Schmitt Output

## VTL23G2A, 23G3A



### PRODUCT DESCRIPTION

This series of interrupter type transmissive optoswitches combines an infrared emitting diode (IRED) with a TTL compatible, Schmitt output, photo IC detector in an opaque plastic case with two mounting tabs. The case contains .04" (1.0 mm) wide molded-in detector and emitter apertures. Smaller width external aperture covers are then added to increase position sensing resolution. These devices are furnished with P.C. board mount leads.

### ABSOLUTE MAXIMUM RATINGS

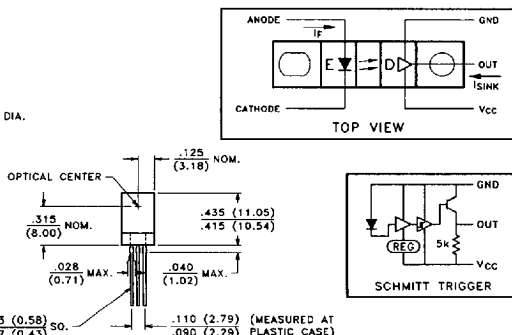
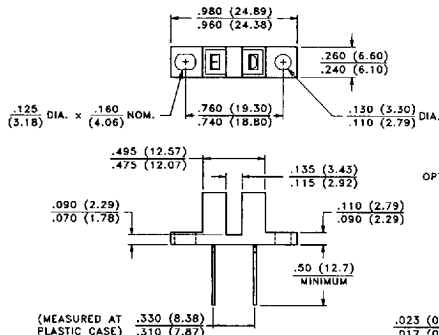
Storage Temperature: . . . . . -40°C to 85°C  
Operating Temperature: . . . . . -40°C to 70°C

Lead Soldering Temperature: . . . . . 260°C  
(1.6 mm from case, 5 seconds max.)

### GENERAL CHARACTERISTICS (@ 25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Input IRED	Output Detector
Reverse Voltage	$V_R$	$I_R = 100 \mu A$	2.0 V Min.	4 V Min., 15 V Max. 50 mA Max. 200 mW Max. 5 mA Max.
Continuous Forward Current	$I_F$	Derate 1.0 mA / °C above 30°C	40 mA Max.	
Forward Voltage Drop	$V_F$	$I_F = 20 \text{ mA}$	1.8 V Max.	
Supply Voltage	$V_{CC}$			
Output Sink Current	$I_{SINK}$	$I_C = 100 \mu A$		
Power Dissipation	$P_D$	Derate 5.0 mW / °C above 30°C		
Supply Current	$I_{CC}$	$V_{CC} = 5 \text{ V}$		

### PACKAGE DIMENSIONS inch (mm)



3030609 0001436 951

**ELECTRO - OPTICAL CHARACTERISTICS @ 25°C (See also curves, page 35)**

Parameter	Symbol	Test Conditions	Minimum	Typical	Maximum	Units
Supply Voltage Range	V <sub>CC</sub>		4.0	5.0	15	Volts
Supply Current	I <sub>CC</sub>	V <sub>CC</sub> = 5 V		3.2		mA
Forward Current for Output to be at High State <b>1</b>	I <sub>FLH</sub>	V <sub>CC</sub> = 5 V				
VTL23G2A				4	8	mA
VTL23G3A				8	12	mA
Low Level Output Voltage	V <sub>OL</sub>	I <sub>SINK</sub> = 15 mA		300	500	mV
Output Rise / Fall Time	t <sub>R</sub> / t <sub>F</sub>	V <sub>CC</sub> = 5 V, I <sub>F</sub> = 20 mA		200		ns
Detection Width <b>1 2</b>	d	V <sub>CC</sub> = 5 V, I <sub>F</sub> = 20 mA				
VTL23G2A				.017 (0.43)		inch (mm)
VTL23G3A				.008 (0.20)		inch (mm)

**Notes:**

- 1** VTL23G2A contains .020" (0.51 mm) wide external aperture covers over emitter and detector. VTL23G3A contains a .020" (0.51) wide external emitter aperture cover and a .010" (0.25 mm) wide external detector aperture cover.
- 2** The detection width is based on an isolated vane passing through the slot at a slow rate. The exact detection width in an application depends upon the rate of movement and the propagation delay which is a function of the LED forward current. The indicated detection width must be blocked or opened for typically 25  $\mu$ s to cause a state change. Interruption rates of 5 - 10 kilohertz can be readily achieved.
- 3.** The plastic case can be damaged by chlorinated hydrocarbons and ketones. Methanol or isopropanol alcohols are recommended as cleaning agents.