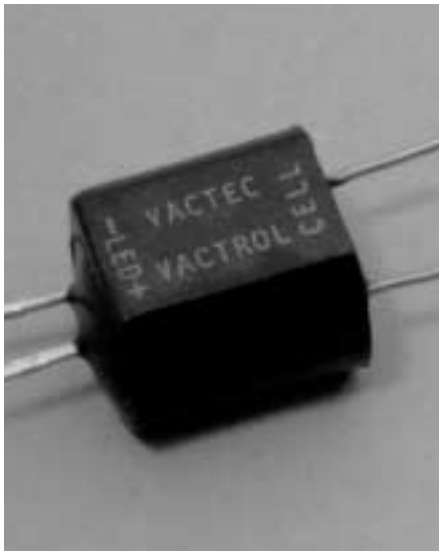
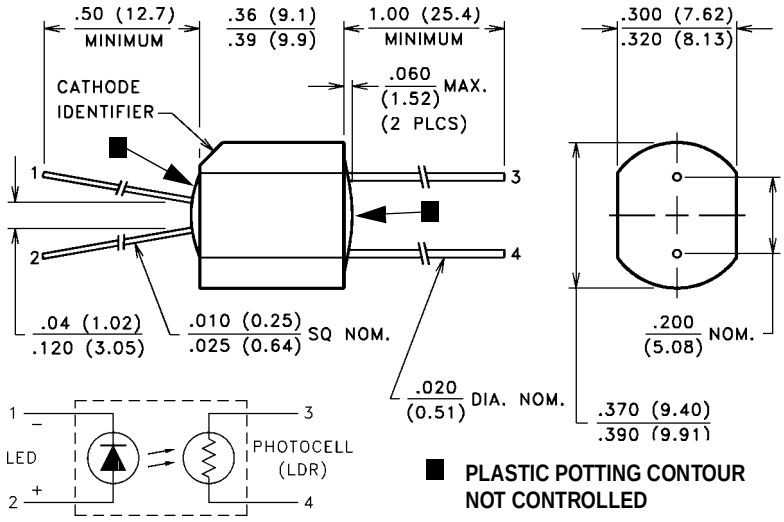
Low Cost Axial Vactrols

VTL5C9, 5C10



PACKAGE DIMENSIONS INCH (MM)



DESCRIPTION

VTL5C9 has a 112 db dynamic range, fast response time, high dark resistance, but with a more shallow slope and lower "on" resistance at low (1 mA) drive currents than the VTL5C1. VTL510 offers a low "on" resistance at low drive currents, a fast response time, and has a smaller temperature coefficient than the VTL5C9.

ABSOLUTE MAXIMUM RATINGS @ 25°C

Maximum Temperatures
Storage and Operating: –40°C to 75°C
Cell Power: 175 mW
Derate above 30°C: 3.9 mW/°C
LED Current: 40 mA [1]
Derate above 30°C: 0.9 mA/°C

LED Reverse Breakdown Voltage: 3.0 V

LED Forward Voltage Drop @ 20 mA: 2.8V (2.2V Typ.)

Min. Isolation Voltage @ 70% Rel. Humidity: 2500 VRMS

Output Cell Capacitance: 5.0 pF

Cell Voltage: 100V (VTL5C9), 50V (VTL5C10)

Input - Output Coupling Capacitance: 0.5 pF

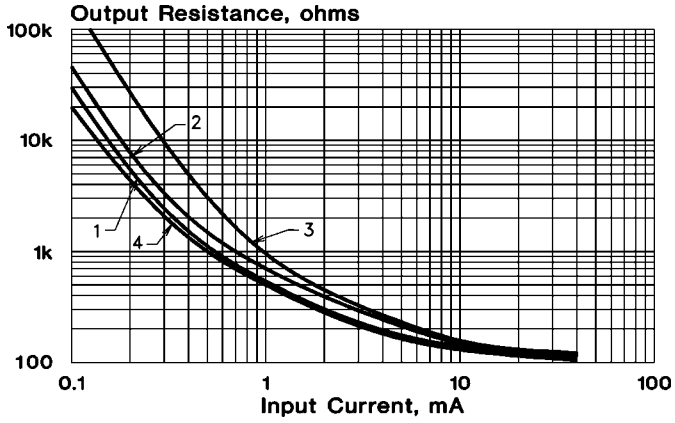
ELECTRO-OPTICAL CHARCTERISTICS @ 25°C

Part Number	Material Type	ON Resistance [2]		OFF [3] Resistance @ 10 sec. (Min.)	Slope (Typ.) $\frac{\text{@ 0.5 mA}}{\text{R@ 5 mA}}$	Dynamic Range (Typ.) $\frac{R_{DARK}}{\text{R@ 20 mA}}$	Response Time [4]	
		Input current	Dark Adapted (Typ.)				Turn-on to 63% Final R_{ON} (Typ.)	Turn-off (Decay) to 100 kΩ (Max.)
VTL5C9	1	2 mA	630 Ω	50 MΩ	7.3	112 db	4.0 ms	50 ms
VTL5C10	4	2 mA	400 Ω	400 KΩ	3.8	75 db	1.0 ms	1.5 sec

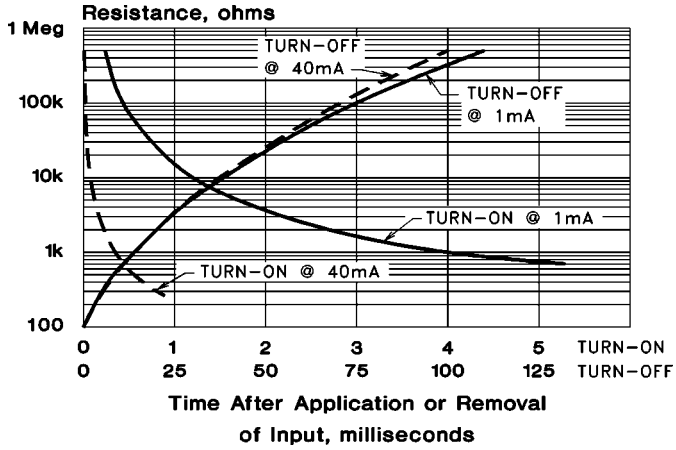
Refer to Specification Notes, page 41.

Typical Performance Curves

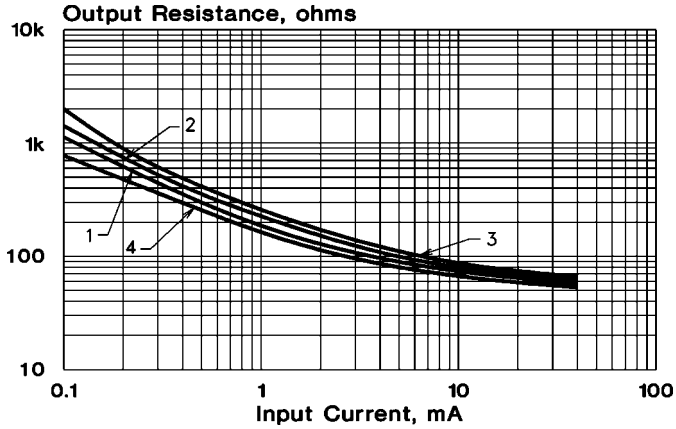
Output Resistance vs. Input Current
VTL5C9



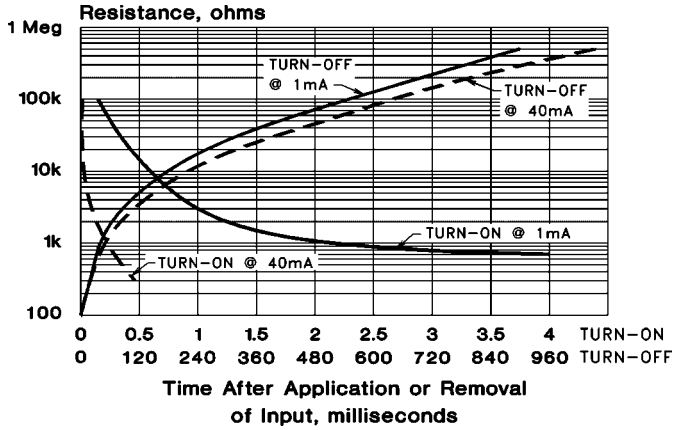
Response Time
VTL5C9



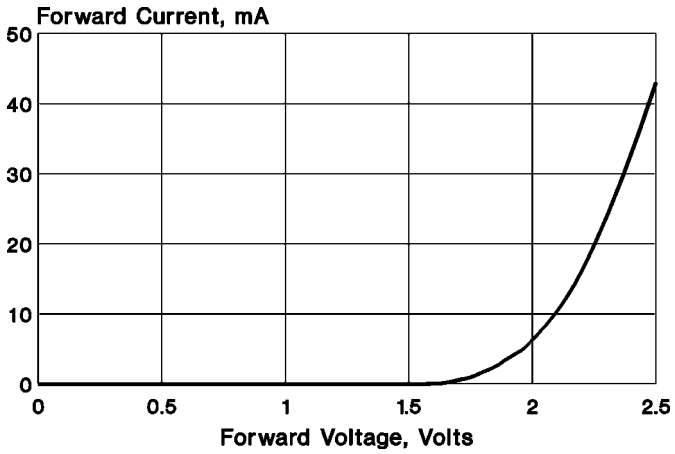
Output Resistance vs. Input Current
VTL5C10



Response Time
VTL5C10



Input Characteristics



Notes:

1. At 1.0 mA and below, units may have substantially higher resistance than shown in the typical curves. Consult factory if closely controlled characteristics are required at low input currents.
2. Output resistance vs input current transfer curves are given for the following light adapt conditions:

   (1) 25°C — 24 hours @ no input
   (2) 25°C — 24 hours @ 40 mA input
   (3) +50°C — 24 hours @ 40 mA input
   (4) –20°C — 24 hours @ 40 mA input
3. Response time characteristics are based upon test following adapt condition (2) above.