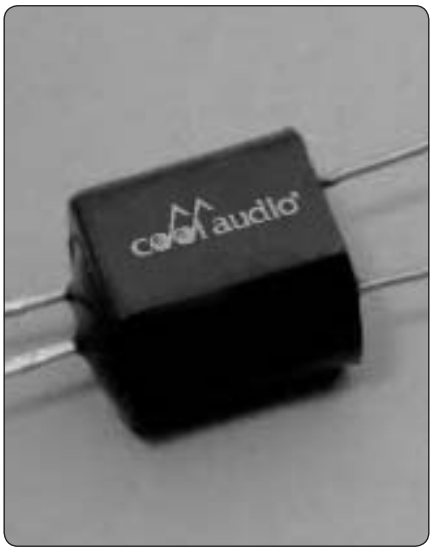
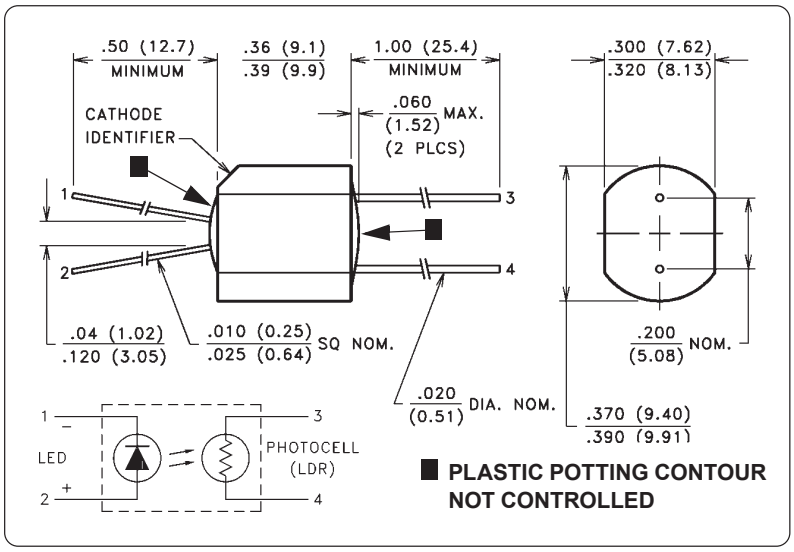
Low Cost Axial Opto Coupler

VTL5C3

1. Package Dimensions Inch (mm)





2. Description

VTL5C3 has a steep slope, good dynamic range, a very low temperature coefficient of resistance, and a small light history memory.

3. 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 Forward Voltage Drop @ 20 mA:	3.0 V

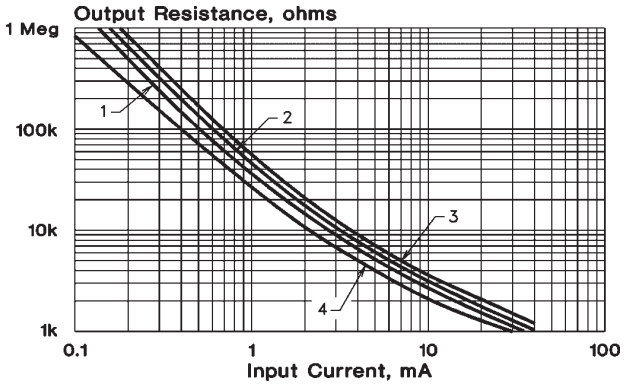
Min. Isolation Voltage @ 70% Rel. Humidity:	2.0 V (1.65 V Typ.)
LED Reverse Breakdown Voltage:	2500 VRMS
Output Cell Capacitance:	5.0 pF
Cell Voltage:	250 V (VTL5C3)
Input - Output Coupling Capacitance:	0.5 pF

4. Electro-Optical Charcteristics @ 25°C

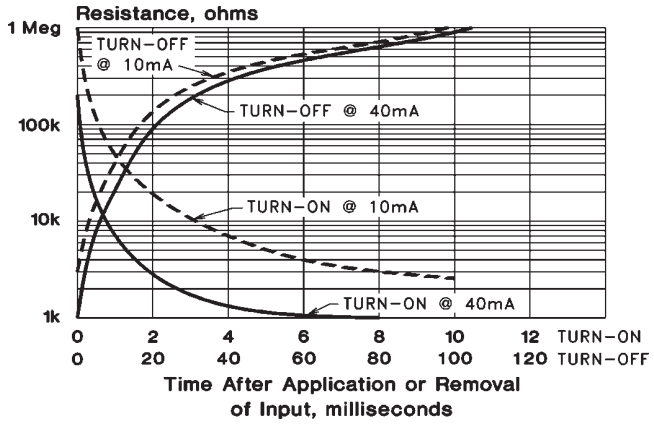
Part Number	Material Type	ON Resistance [2]		OFF [3] Resistance @ 10 sec. (Min.)	Slope (Typ.) $\frac{R@\ 0.5\ mA}{R\ @\ 5\ mA}$	Dynamic Range (Typ.) $\frac{R_{DARK}}{R\ @\ 20\ mA}$	Response Time [4]	
		Input current	Dark Adapted (Typ.)				Turn-on to 63% Final R_{ON} (Typ.)	Turn-off (Decay) to 100 kΩ (Max.)
VTL5C3	3	1 mA 10 mA 40 mA	10 kΩ 1 kΩ 500 Ω	10 MΩ	20	75 db	2.5 ms	35 ms

5. Typical Performance Curves

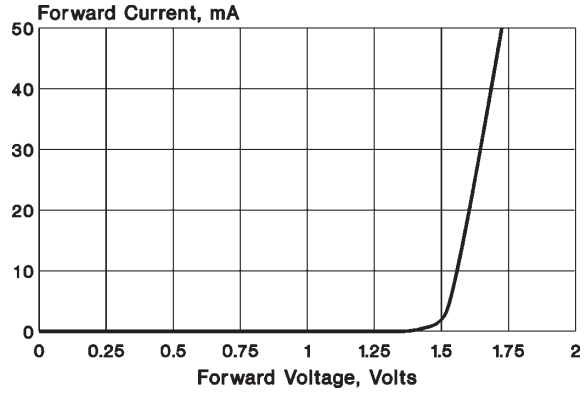
Output Resistance vs. Input Current
VTL5C3



Response Time
VTL5C3



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.