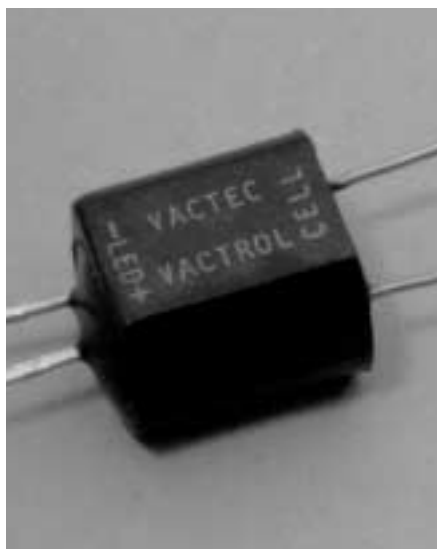
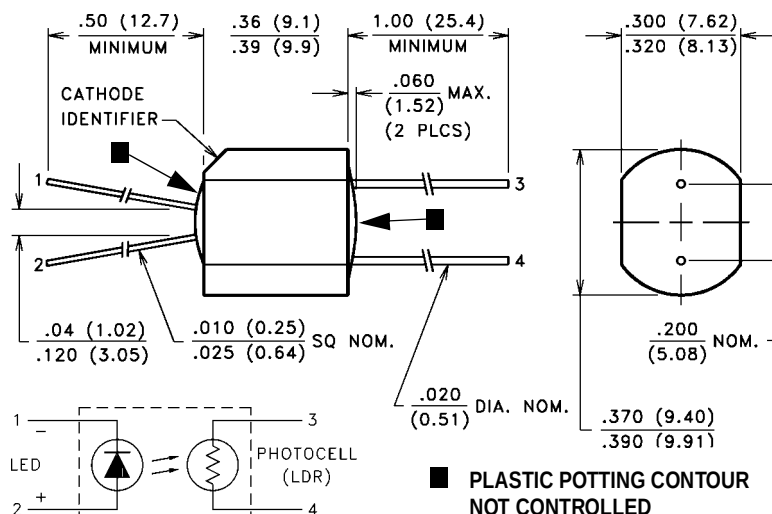




## PACKAGE DIMENSIONS INCH (MM)



## DESCRIPTION

VTL5C6 has a large dynamic range, high dark resistance, a low temperature coefficient of resistance, and a small light history memory. VTL5C7 is a shallow sloped device with good dynamic range, average temperature coefficient of resistance, speed of response, and light history memory.

## ABSOLUTE MAXIMUM RATINGS @ 25°C

|                                |                |                                             |                                |
|--------------------------------|----------------|---------------------------------------------|--------------------------------|
| Maximum Temperatures           |                | LED Forward Voltage Drop @ 20 mA:           | 2.0V (1.65V Typ.)              |
| Storage and Operating:         | -40°C to 75°C  | Min. Isolation Voltage @ 70% Rel. Humidity: | 2500 VRMS                      |
| Cell Power:                    | 175 mW         | Output Cell Capacitance:                    | 5.0 pF                         |
| Derate above 30°C:             | 3.9 mW/°C      | Cell Voltage:                               | 250V (VTL5C6),<br>50V (VTL5C7) |
| LED Current:                   | 40 mA <b>1</b> | Input - Output Coupling Capacitance:        | 0.5 pF                         |
| Derate above 30°C:             | 0.9 mA/°C      |                                             |                                |
| LED Reverse Breakdown Voltage: | 3.0 V          |                                             |                                |

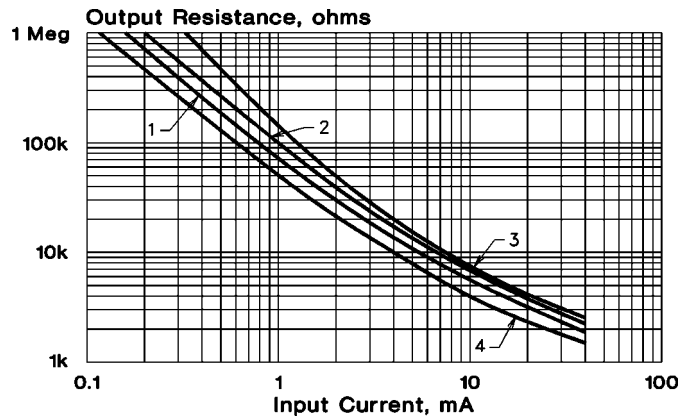
## ELECTRO-OPTICAL CHARACTERISTICS @ 25°C

| Part Number | Material Type | ON Resistance <b>2</b> |                           | OFF <b>3</b><br>Resistance<br>@ 10 sec. (Min.) | Slope<br>(Typ.)<br><br>@ 0.5 mA<br>R @ 5 mA | Dynamic Range<br>(Typ.)<br><br>R <sub>D</sub> <sub>DARK</sub><br>R @ 20 mA | Response Time <b>4</b>                            |                               |        |
|-------------|---------------|------------------------|---------------------------|------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------|-------------------------------|--------|
|             |               | Input<br>current       | Dark<br>Adapted<br>(Typ.) |                                                |                                             |                                                                            | Turn-on to<br>63% Final R <sub>ON</sub><br>(Typ.) | Turn-off (Decay)<br>to (Max.) |        |
|             |               |                        |                           |                                                |                                             |                                                                            |                                                   | 1 MΩ                          | 100 kΩ |
| VTL5C6      | 0             | 1 mA<br>10 mA<br>40 mA | 75 kΩ<br>10 kΩ<br>2 kΩ    | 100 MΩ                                         | 16.7                                        | 88 db                                                                      | 3.5 ms                                            | 50 ms                         |        |
| VTL5C7      | 7             | 0.4 mA<br>2 mA         | 5 kΩ<br>1.1 kΩ            | 1 MΩ                                           | 5.7                                         | 75 db                                                                      | 6.0 ms                                            |                               | 1 sec  |

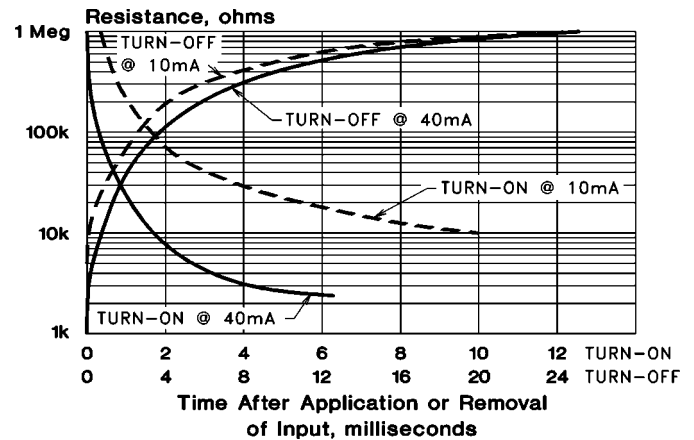
Refer to Specification Notes, page 41.

# Typical Performance Curves

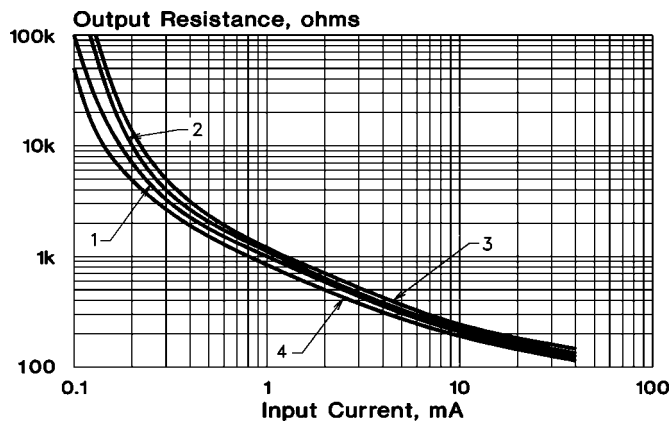
Output Resistance vs. Input Current  
VTL5C6



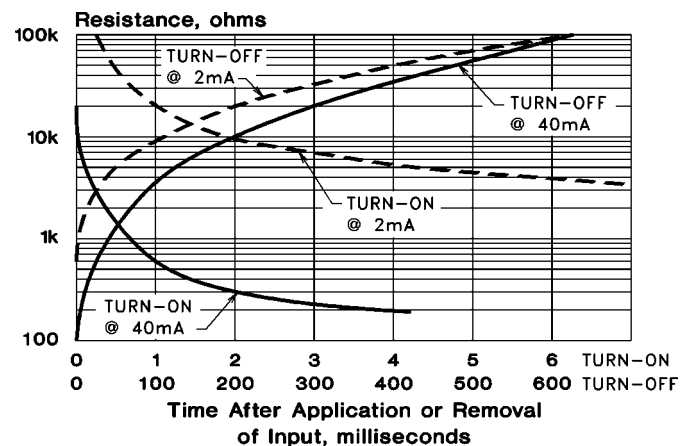
Response Time  
VTL5C6



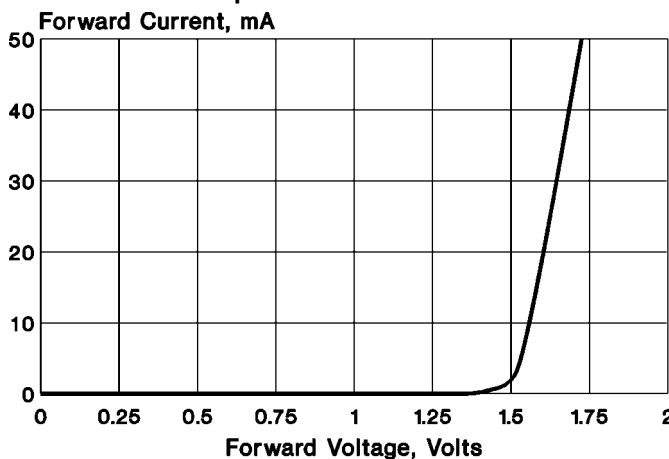
Output Resistance vs. Input Current  
VTL5C7



Response Time  
VTL5C7



Input Characteristics



## Notes:

- 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.
- Output resistance vs input current transfer curves are given for the following light adapt conditions:
  - 25°C — 24 hours @ no input
  - 25°C — 24 hours @ 40 mA input
  - +50°C — 24 hours @ 40 mA input
  - 20°C — 24 hours @ 40 mA input
- Response time characteristics are based upon test following adapt condition (2) above.