

## ISO - LOGIC INVERTER SCHMITT TRIGGER SIDE DETECTOR

### DESCRIPTION

The IS657C is an optically integrated circuit detector with schmitt trigger inverter output. It is mounted in a clear plastic lateral side looking package which enables these devices to display superior mechanical resolutions, coupled characteristics and reliability in a low cost housing.

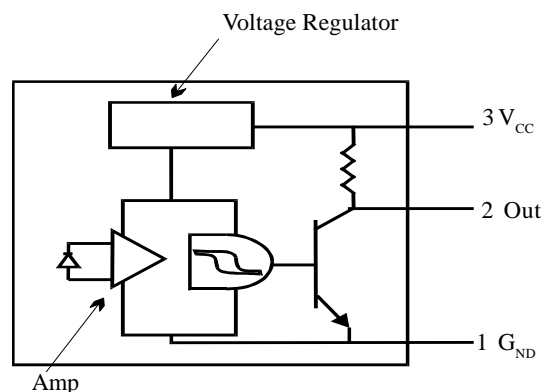
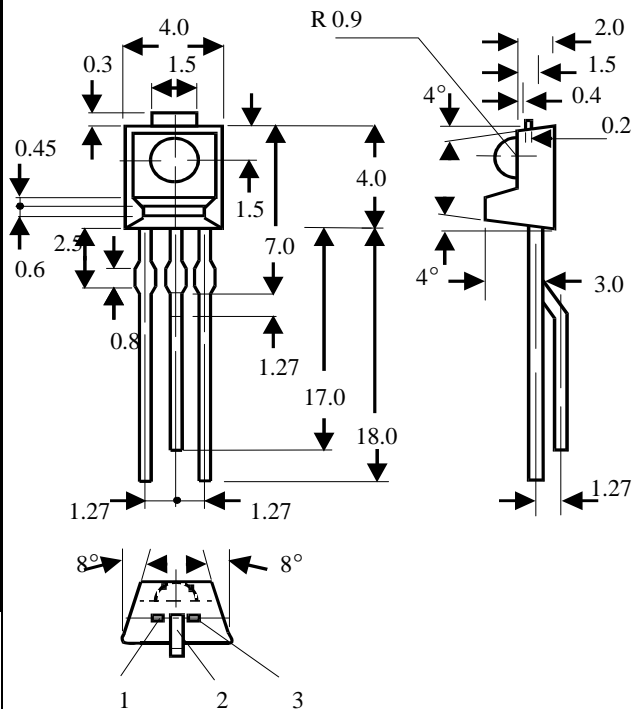
### FEATURES

- Built-in Schmitt trigger circuit
- Low level output at incident light
- Pull up resistor between  $V_{CC}$  and output
- Lateral Side Looking Plastic Package
- High Sensitivity ( $E_v = 35 \text{ lx}$  at  $25^\circ\text{C}$ )
- LSTTL and TTL Compatible output
- Supply voltage  $V_{CC}$  - 0.5 to +17 volts

### APPLICATIONS

- Floppy disk drives
- Copiers, Printers, Facsimilies
- VCR's, Cassette tape recorders
- Automatic vending machines

Dimensions in mm



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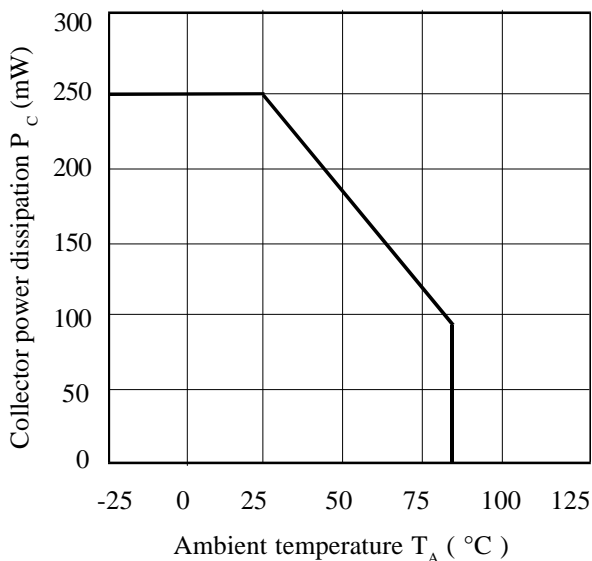
**ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)**

|  |                 |
|--|-----------------|
| Storage Temperature                            | -40°C to +100°C |
| Operating Temperature                          | -25°C to +85°C  |
| Lead Soldering Temperature<br>(5 secs maximum) | 260°C           |
| Power Dissipation                              | 250 mW          |
| Output Current                                 | 50mA            |
| Allowed Range $V_{31}$                         | 0 to 17V        |

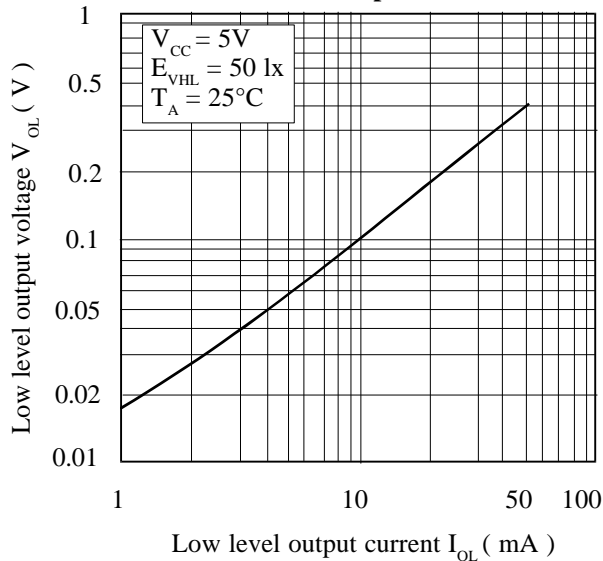
**ELECTRICAL CHARACTERISTICS (  $T_A = 0^\circ\text{C}$  to  $70^\circ\text{C}$ ,  $V_{CC} = 5\text{V}$  Unless otherwise noted )**

| PARAMETER                          |                           | MIN      | TYP  | MAX      | UNITS         | TEST CONDITIONS  |
|------------------------------------|---------------------------|----------|------|----------|---------------|--|
| High Level Output Voltage          | $V_{OH}$                  | 3.5      |      |          | V             | $E_V = 50 \text{ lx}$  |
| Low Level Output Voltage           | $V_{OL}$                  |          |      | 0.4      | V             | $I_{OL} = 16\text{mA}$ , $E_V = 0 \text{ lx}$  |
| Supply Current                     | $I_{CCL}$<br>$I_{CCH}$    |          |      | 4.5<br>3 | mA<br>mA      | $E_V = 50 \text{ lx}$<br>$E_V = 0$   |
| High to Low Threshold Illumination | $E_{VHL}$                 |          | 15   | 35       | lx            | $T_A = 25^\circ\text{C}$ , $R_L = 280\Omega$   |
| Low to High Threshold Illumination | $E_{VLH}$                 | 1.5<br>1 | 10   | 50       | lx<br>lx      | $R_L = 280\Omega$<br>$T_A = 25^\circ\text{C}$ , $R_L = 280\Omega$<br>$R_L = 280\Omega$ |
| Hysteresis                         | $\frac{E_{VLH}}{E_{VHL}}$ | 0.50     | 0.65 | 0.90     |               | $T_A = 25^\circ\text{C}$ , $R_L = 280\Omega$   |
| High to Low Propagation Time       | $t_{PHL}$                 |          | 3    | 9        | $\mu\text{s}$ | $T_A = 25^\circ\text{C}$ , $E_V = 50 \text{ lx}$                                       |
| Low to High Propagation Time       | $t_{PLH}$                 |          | 5    | 15       | $\mu\text{s}$ | $R_L = 280\Omega$  |
| Rise Time                          | tr                        |          | 0.1  | 0.5      | $\mu\text{s}$ |  |
| Fall Time                          | tf                        |          | 0.05 | 0.5      | $\mu\text{s}$ |  |

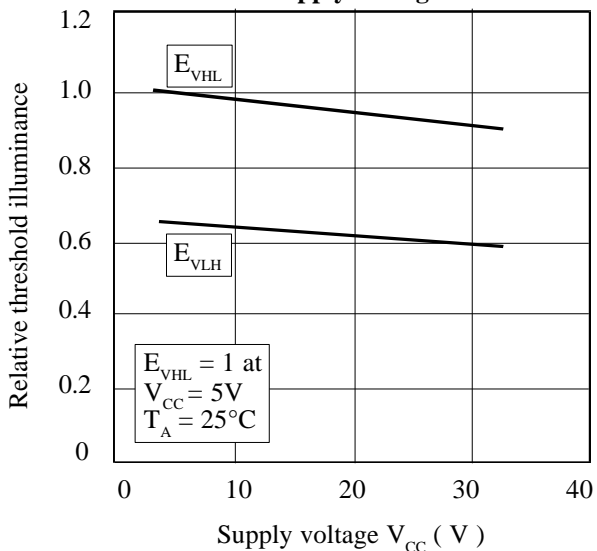
**Collector Power Dissipation vs. Ambient Temperature**



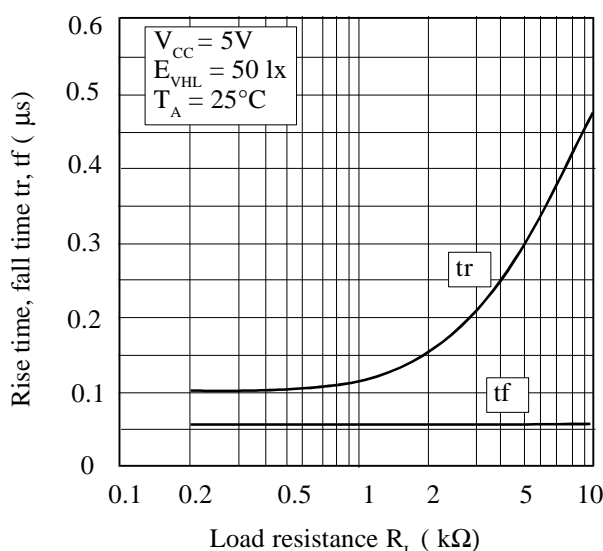
**Low Level Output Voltage vs. Low Level Output Current**



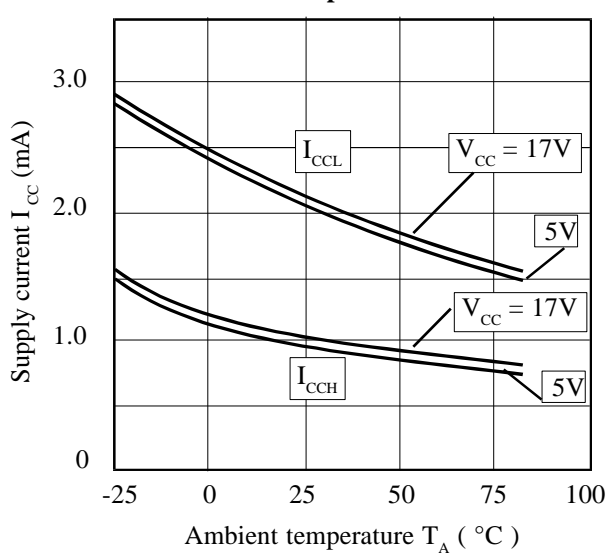
**Relative Threshold Illuminance vs. Supply Voltage**



**Rise Time, Fall Time vs. Load Resistance**



**Supply Current vs. Ambient Temperature**



**Low Level Output Voltage vs. Ambient Temperature**

