



Photointerrupter Product Data Sheet

LTH-301-07

Spec No.: DS-55-92-0003

Effective Date: 06/29/2000

Revision: A

LITE-ON DCC

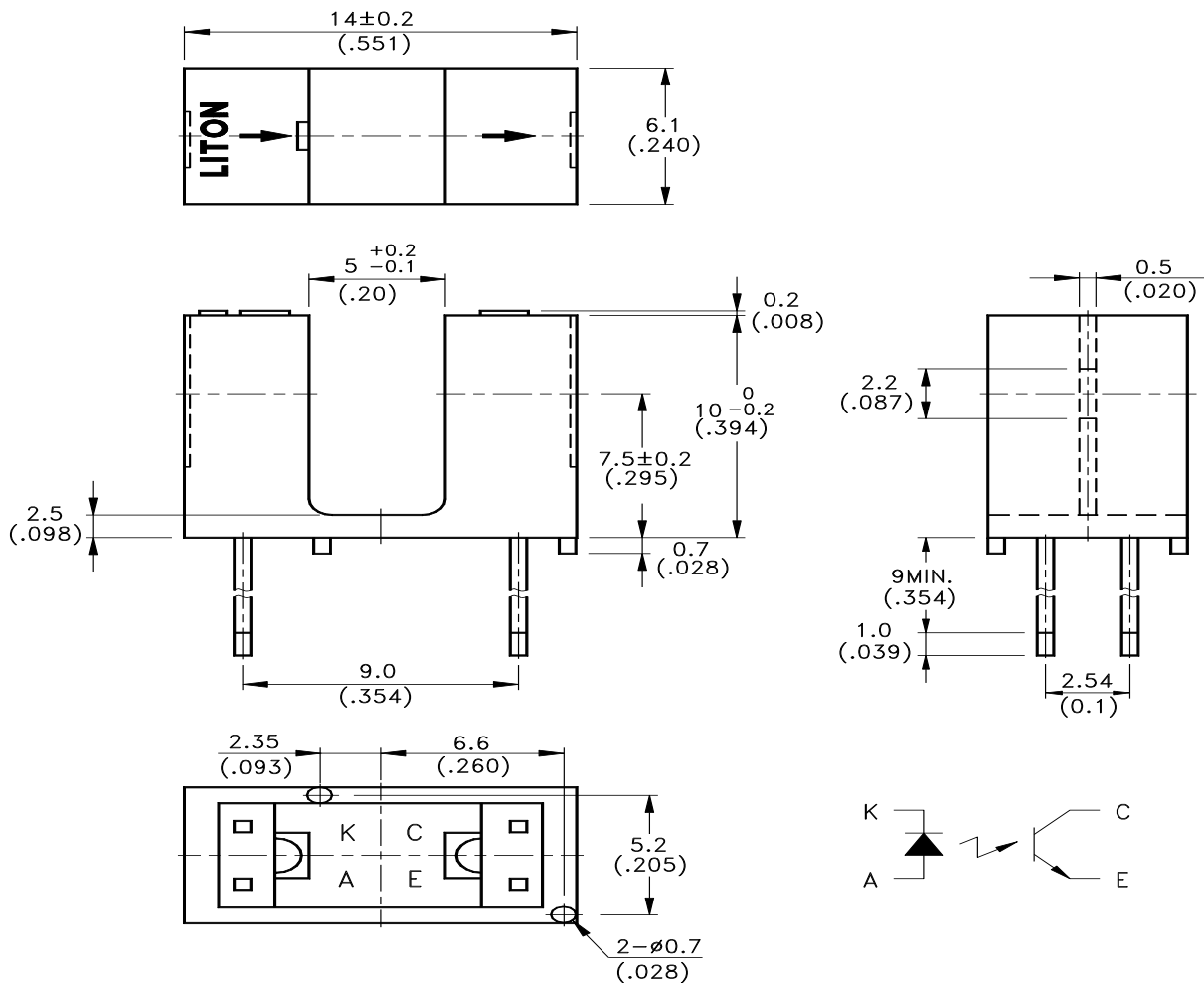
RELEASE

BNS-OD-FC001/A4

FEATURES

- * NON-CONTACT SWITCHING.
- * FOR DIRECT PC BOARD OR DUAL-IN-LINE SOCKET MOUNTING.
- * FAST SWITCHING SPEED.

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010") unless otherwise noted.

ABSOLUTE MAXIMUM RATINGS AT T_A=25°C

| PARAMETER | MAXIMUM RATING | UNIT |
|---|---------------------|------|
| IR Diode Continuous Forward Current | 60 | mA |
| IR Diode Reverse Voltage | 5 | V |
| Transistor Collector Current | 20 | mA |
| Transistor Power Dissipation | 75 | mW |
| IR Diode Peak Forward Current (Pulse Wide = 10 μ S, 300 pps) | 1 | A |
| Diode Power Dissipation | 100 | mW |
| Phototransistor Collector-Emitter Voltage | 30 | V |
| Phototransistor Emitter-Collector Voltage | 5 | V |
| Operating Temperature Range | -25°C to + 85°C | |
| Storage Temperature Range | -40°C to + 100°C | |
| Lead Soldering Temperature [1.6mm(.063") From Case] | 260°C for 5 Seconds | |

ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25°C

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|---|-----------|------|------|------|------|---------------------------|
| INPUT LED | | | | | | |
| Forward Voltage | VF | | 1.2 | 1.6 | V | IF = 20mA |
| Reverse Current | IR | | | 100 | μA | VR=5V |
| OUTPUT PHOTOTRANSISTOR | | | | | | |
| Collector-Emitter Breakdown Voltage | V(BR)CEO | 30 | | | V | IC=1mA |
| Emitter-Collector Breakdown Voltage | V(BR)ECO | 5 | | | V | IE=100 μA |
| Collector-Emitter Dark Current | ICEO | | | 100 | nA | VCE=10V |
| COUPLER | | | | | | |
| Collector-Emitter Saturation Voltage | VCE(SAT) | | | 0.4 | V | IC=0.25mA IF=20mA |
| On State Collector Current | Ic(ON) | 0.6 | | | mA | VCE=5V IF=20mA |
| Response Time | Rise Time | tr | 3 | 15 | μS | VCE=5V, Ic=2mA RL=100Ω |
| | Fall Time | tf | 4 | 20 | | |

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.1 Power Dissipation vs. Ambient Temperature

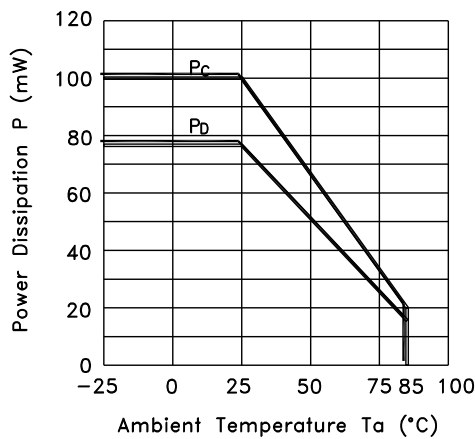


Fig.2 Forward Current vs. Forward Voltage

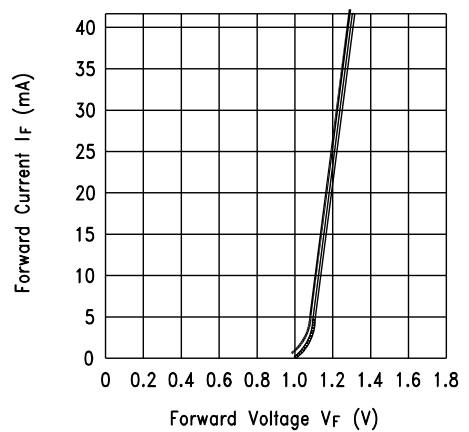


Fig.3 Collector Current vs. Forward Voltage

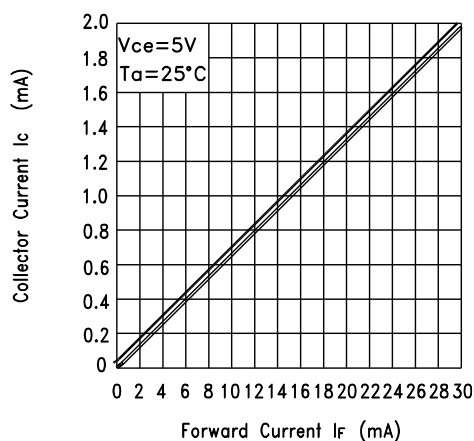
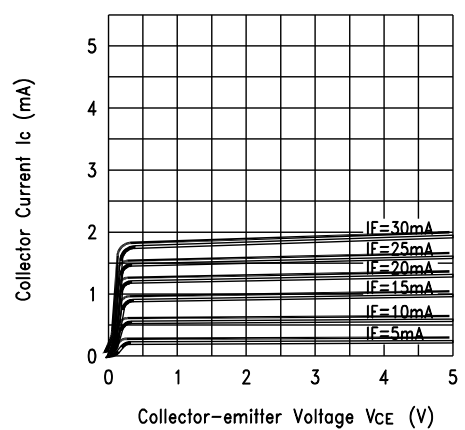


Fig.4 Collector Current vs. Collector-emitter Voltage



TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.5 Collector Current vs. Ambient Temperature

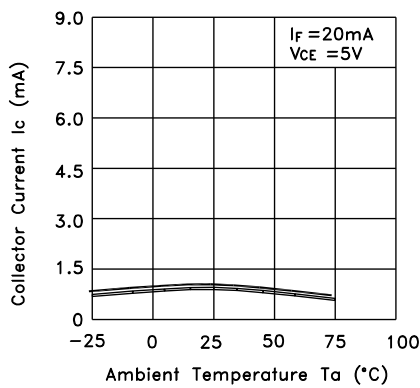


Fig.6 Collector-emitter Saturation Voltage vs. Ambient Temperature

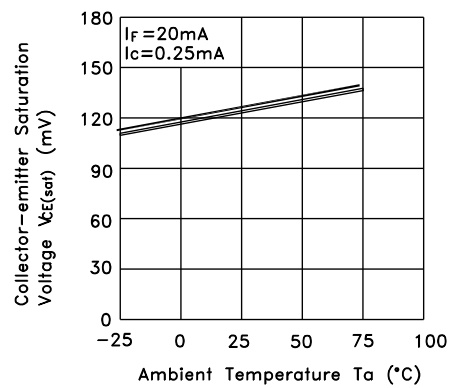
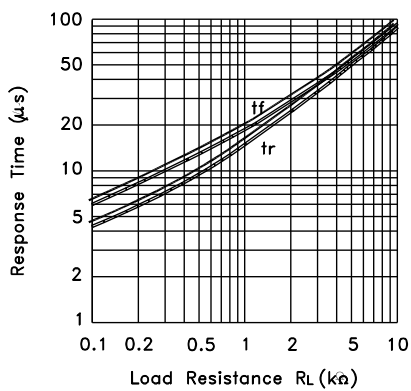
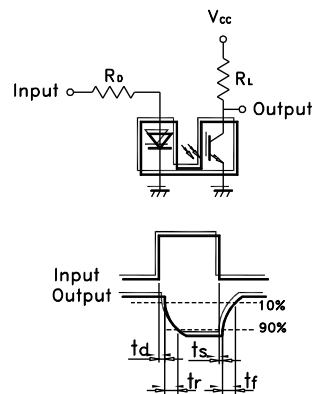


Fig.7 Response Time vs. Load Resistance



Test Circuit for Response Time







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