



Photointerrupter Product Data Sheet

LTH-209-01

Spec No.: DS-55-92-0007

Effective Date: 06/15/2000

Revision: -

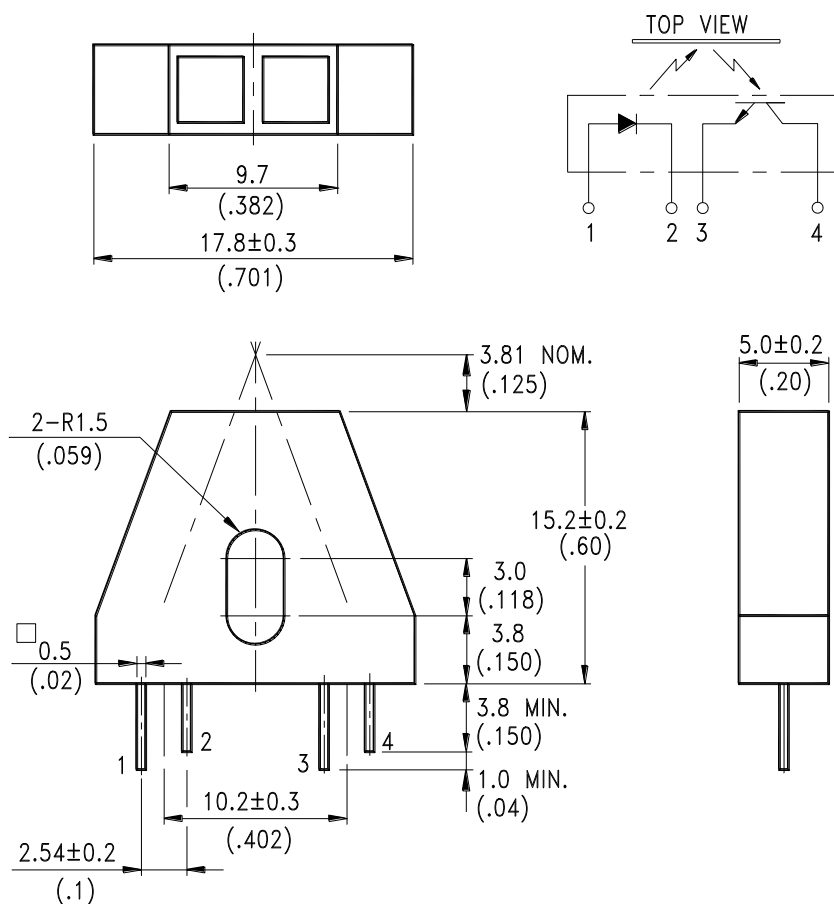
LITE-ON DCC

RELEASE

FEATURES

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

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted.
3. Specification are subject to change without notice.

ABSOLUTE MAXIMUM RATINGS AT T_A=25°C

PARAMETER	MAXIMUM RATING	UNIT
IR Diode Continuous Forward Current	50	mA
IR Diode Reverse Voltage	5	V
Transistor Collector Current	20	mA
Transistor Power Dissipation	100	mW (Note 1)
IR Diode Peak Power Current (Pulse Wide = 10 μ S, 300 pps)	3	A
Diode Power Dissipation	75	mW (Note 1)
Phototransistor Collector-Emitter Voltage	30	V
Phototransistor Emitter-Collector Voltage	5	V
Operating Temperature Range	-35°C to + 65°C	
Storage Temperature Range	-40°C to + 100°C	
Lead Soldering Temperature [1.6mm(.063") From Case]	260°C for 5 Seconds	

Note 1: Derate Linearly 1.33 mW /°C from 25°C

ELECTRICAL OPTICAL CHARACTERISTICS AT T_A=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
INPUT LED						
Forward Voltage	V _F		1.2	1.6	V	I _F = 20mA
Reverse Current	I _R			100	μA	V _R =5V
OUTPUT PHOTOTRANSISTOR						
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	30			V	I _C =1mA
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	5			V	I _E =0.1mA
Collector-Emitter Dark Current	I _{CEO}			100	nA	V _{CE} =10V
COUPLER						
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			0.4	V	I _C =0.08mA I _F =20mA
On State Collector Current (Note 1)	I _{c(ON)}	0.16			mA	V _{CE} =5V I _F =20mA

Note 1: Reflective surface is Eastman Kodak (or Equivalent) neutral white paper
with 90% diffused reflectance placed 3.81 mm (0.15 inch) from read head.

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.1 Power Dissipation vs. Ambient Temperature

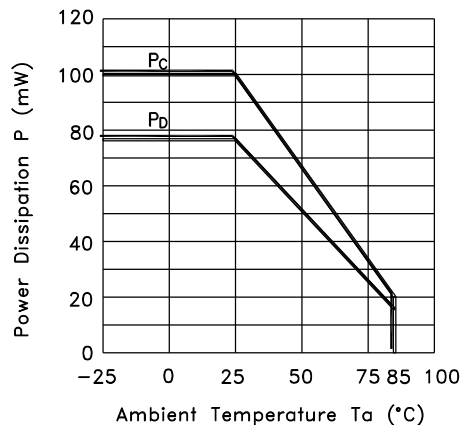


Fig.2 Forward Current vs. Forward Voltage

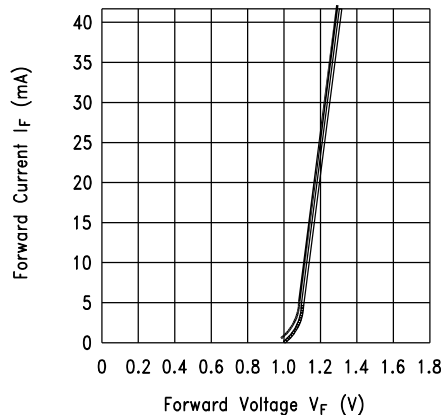


Fig.3 Collector Current vs. Collector-emitter Voltage

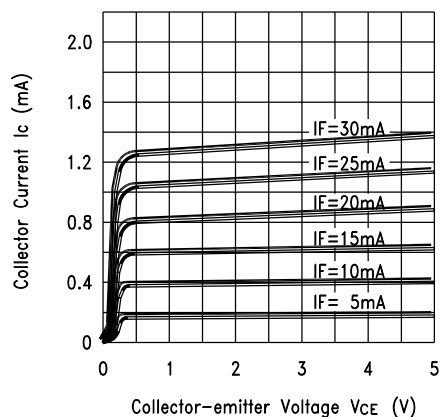
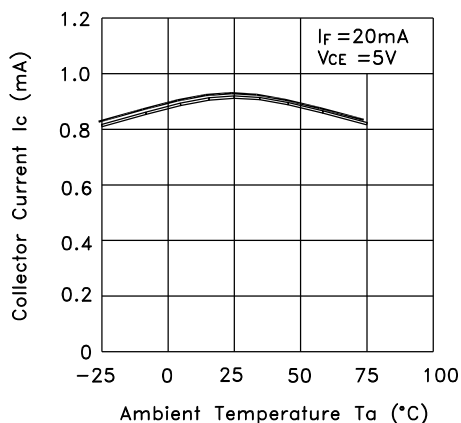


Fig.4 Collector Current vs. Ambient Temperature



TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.5 Collector-emitter Saturation vs. Voltage Ambient Temperature

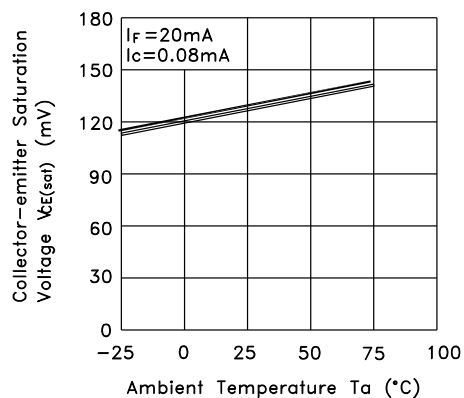


Fig.6 Relative Collector Current vs. Object Distance

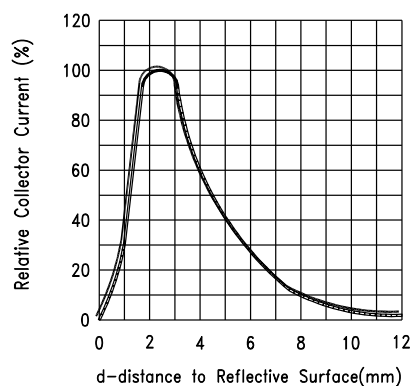
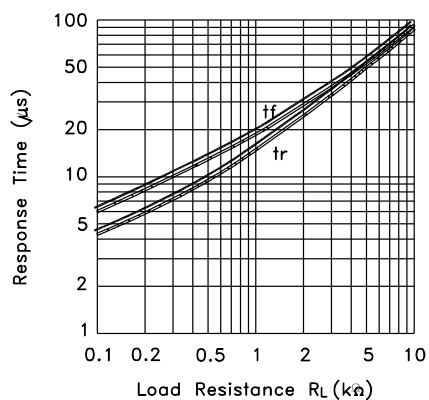


Fig.7 Response Time vs. Load Resistance



Test Circuit for Response Time

