



# Photointerrupter Product Data Sheet

LTH-1650-01

Spec No.: DS-55-95-0009

Effective Date: 01/06/2001

Revision: B

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

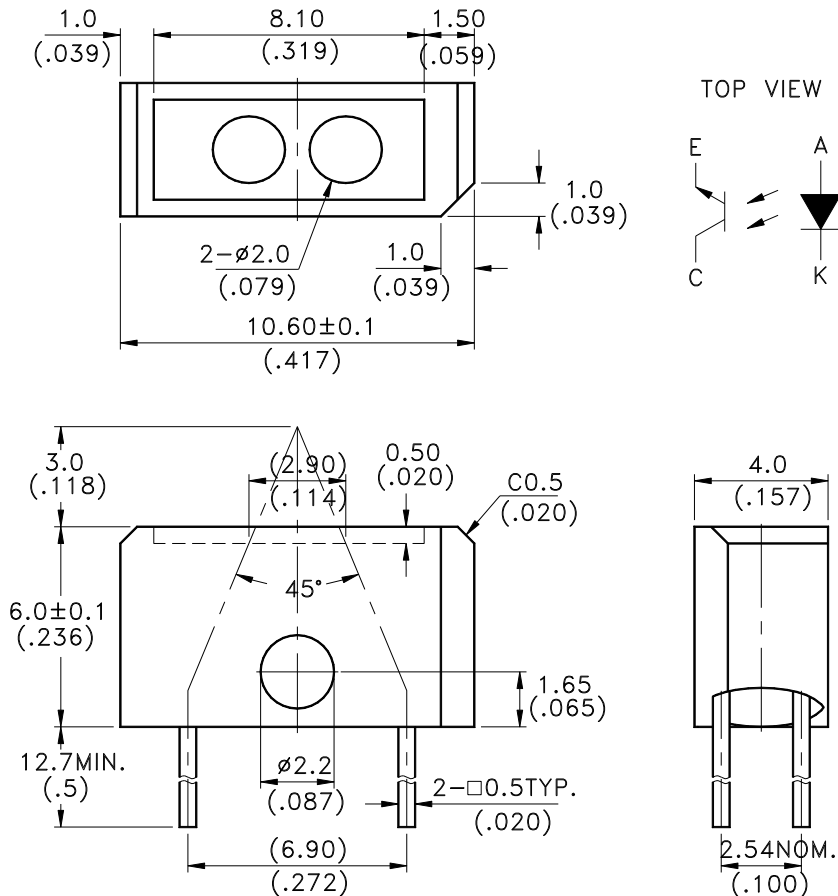
## FEATURES

- \* FOCAL DISTANCE: 3 mm.
- \* INFRARED RAY CUT-OFF TYPE.

## APPLICATION

- \* PRINTER
- \* FAX
- \* OPTOELECTRONIC SWITCHES

## PACKAGE DIMENSIONS



## NOTES:

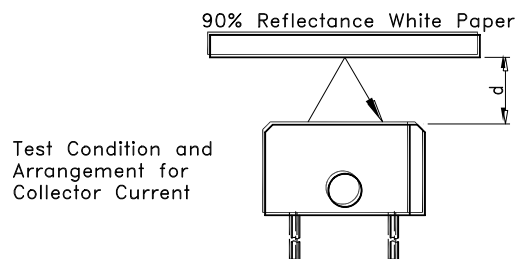
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.010") unless otherwise noted.

## ABSOLUTE MAXIMUM RATINGS AT TA=25°C

PARAMETER	SYMBOL	MAXIMUM RATING	UNIT
<b>INPUT LED</b>			
Power Dissipation	P <sub>D</sub>	75	mW
Peak Forward Current ( 300 pps , 10 $\mu$ S pulse )	I <sub>CP</sub>	1	A
Continuous Forward Current	I <sub>F</sub>	60	mA
Reverse Voltage	V <sub>R</sub>	5	V
<b>OUTPUT PHOTOTRANSISTOR</b>			
Power Dissipation	P <sub>C</sub>	100	mW
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Collector Voltage	V <sub>ECO</sub>	5	V
Collector Current	I <sub>C</sub>	20	mA
Operating Temperature Range	T <sub>opr</sub>	-25°C to + 85°C	
Storage Temperature Range	T <sub>stg</sub>	-40°C to + 100°C	
Lead Soldering Temperature [ 1.6mm (.063") Form Case ]	T <sub>S</sub>	260°C for 5 Seconds	

## ELECTRICAL OPTICAL CHARACTERISTICS AT $T_A=25^\circ\text{C}$

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION	
<b>INPUT LED</b>							
Forward Voltage	$V_F$		1.2	1.6	V	$I_F = 20\text{mA}$	
Reverse Current	$I_R$			100	$\mu\text{A}$	$V_R = 5\text{V}$	
<b>OUTPUT PHOTOTRANSISTOR</b>							
Collector-Emitter Dark Current	$I_{CEO}$			100	nA	$V_{CE} = 10\text{V}$	
<b>COUPLER</b>							
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$			0.4	V	$I_C = 0.05\text{mA}$ $I_F = 20\text{mA}$	
On State Collector Current	$I_{C(ON)}$	100		300	$\mu\text{A}$	$V_{CE} = 5\text{V}$ $I_F = 20\text{mA}$ $d = 3.0\text{mm}$	BIN A
		260		650		BIN B	
		400		1200		BIN C	
Response Time	Rise Time	$T_R$		3	$\mu\text{S}$	$V_{CE} = 5\text{V}$ , $I_C = 2\text{mA}$ $R_L = 100\ \Omega$	
	Fall Time	$T_F$		4			20



## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.1 Power Dissipation vs. Ambient Temperature

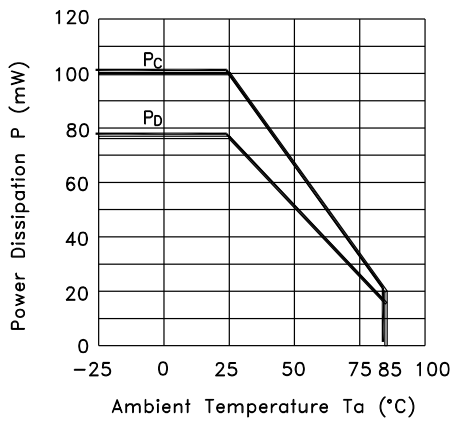


Fig.2 Forward Current vs. Forward Voltage

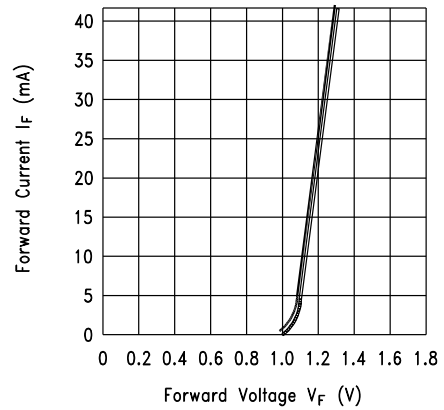


Fig.3 Collector Current vs. Collector-emitter Voltage

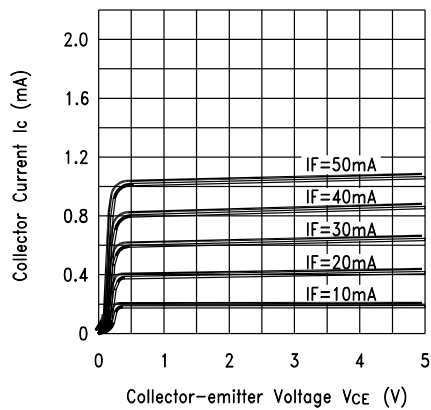
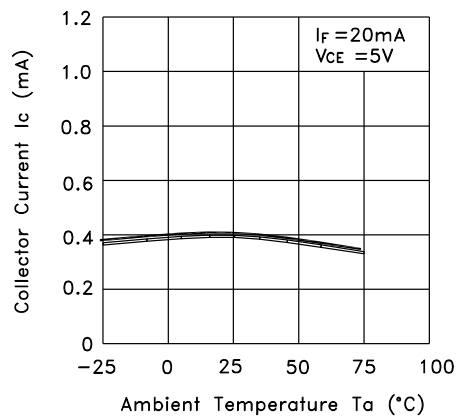


Fig.4 Collector Current vs. Ambient Temperature



## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

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

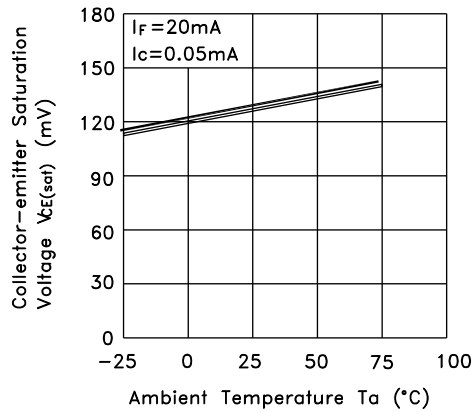


Fig.6 Relative Collector Current vs. Object Distance

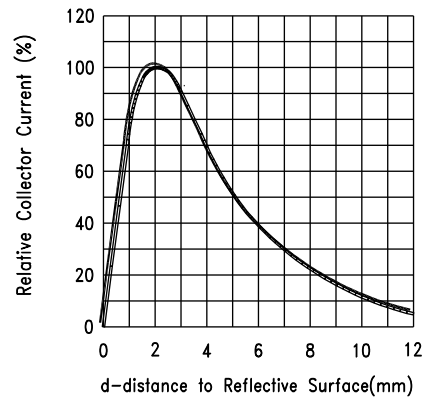
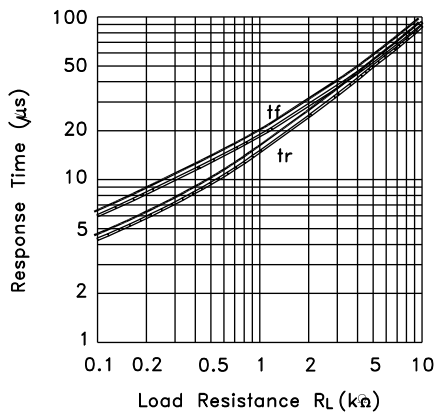


Fig.7 Response Time vs. Load Resistance



Test Circuit for Response Time

