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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





# Photointerrupter Product Data Sheet

LTH-301-19

Spec No.: DS-55-92-0005

Effective Date: 08/23/2002

Revision: A

**LITE-ON DCC**

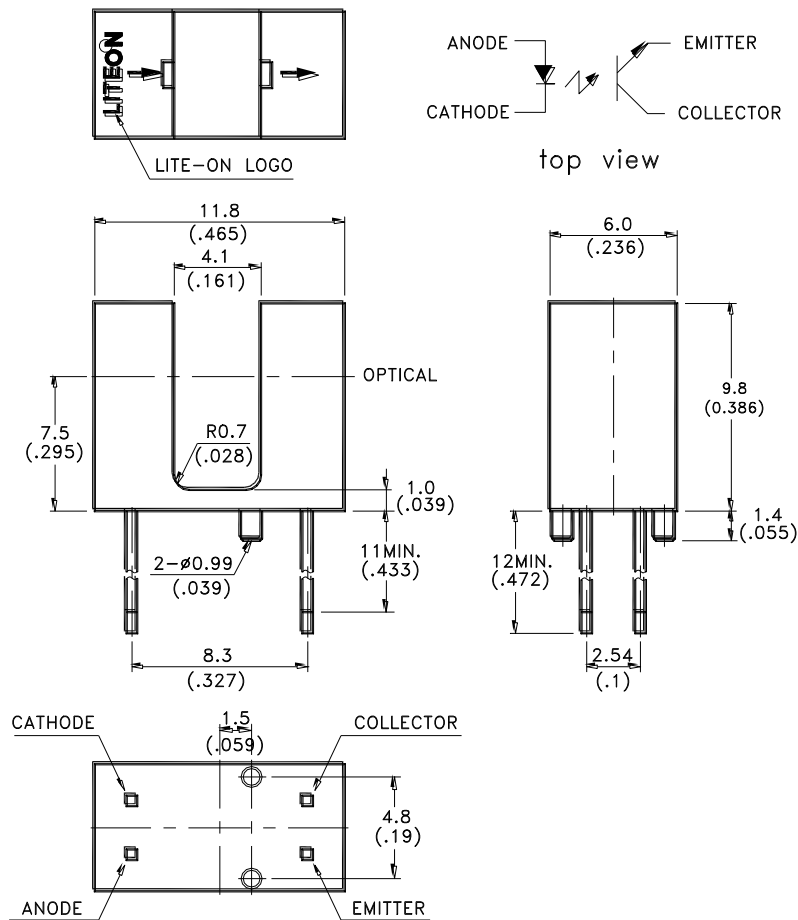
**RELEASE**

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  $\pm 0.25\text{mm}(.010\text{'})$  unless otherwise noted.



## ABSOLUTE MAXIMUM RATINGS AT T<sub>A</sub>=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	100	mW
IR Diode Peak Forward Current (Pulse Wide = 10 $\mu$ S, 300 pps)	1	A
Diode Power Dissipation	75	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 Body , Plastic Housing Exclude]	260°C for 5 Seconds	



## ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
<b>INPUT LED</b>						
Forward Voltage	V <sub>F</sub>		1.2	1.6	V	I <sub>F</sub> = 20mA
Reverse Current	I <sub>R</sub>			100	μA	V <sub>R</sub> =5V
<b>OUTPUT PHOTOTRANSISTOR</b>						
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	30			V	I <sub>C</sub> =1mA
Emitter-Collector Breakdown Voltage	V <sub>(BR)ECO</sub>	5			V	I <sub>E</sub> =100 μA
Collector-Emitter Dark Current	I <sub>CEO</sub>			100	nA	V <sub>CE</sub> =10V
<b>COUPLER</b>						
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>			0.4	V	I <sub>C</sub> =70 μA I <sub>F</sub> =1.4mA
On State Collector Current	I <sub>C(ON)</sub>	70			μA	V <sub>CE</sub> =3.3V I <sub>F</sub> =1.4 mA
				10	mA	V <sub>CE</sub> =5V I <sub>F</sub> =20mA
Response Time	Rise Time	t <sub>r</sub>	3	15	μS	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA R <sub>L</sub> =100Ω
	Fall Time	t <sub>f</sub>	4	20		

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.1 Power Dissipation vs. Ambient Temperature

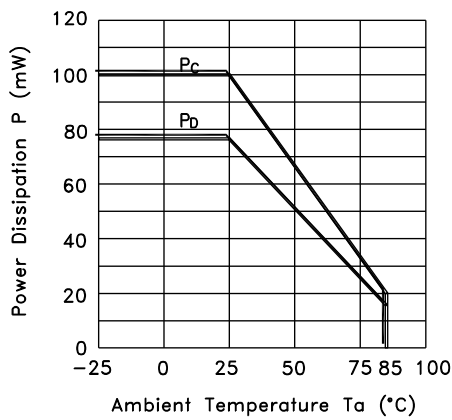


Fig.2 Forward Current vs. Forward Voltage

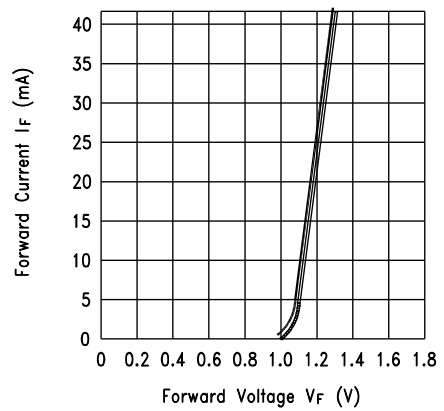


Fig.3 Collector Current vs. Collector-emitter Voltage

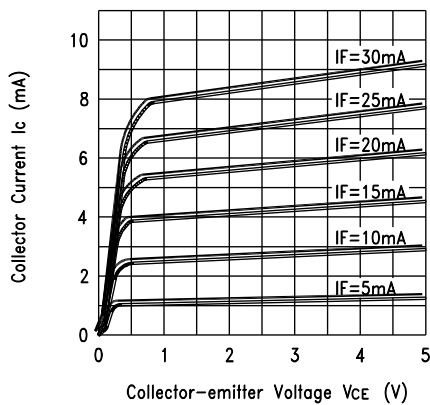
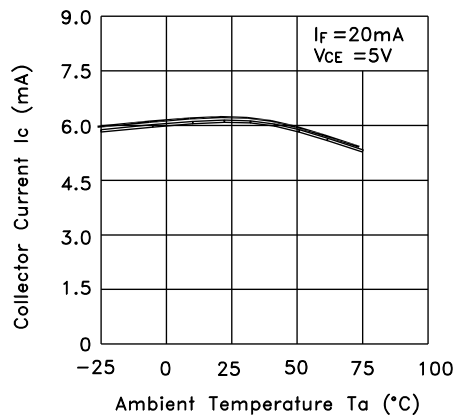


Fig.4 Collector Current vs. Ambient Temperature



## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

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

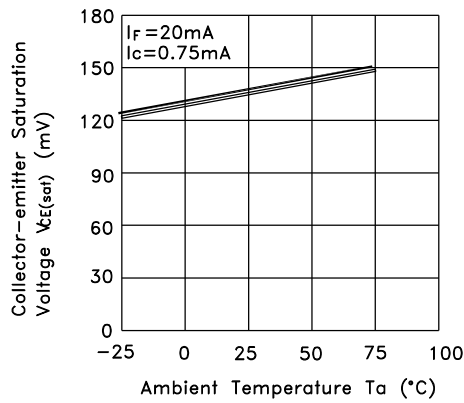
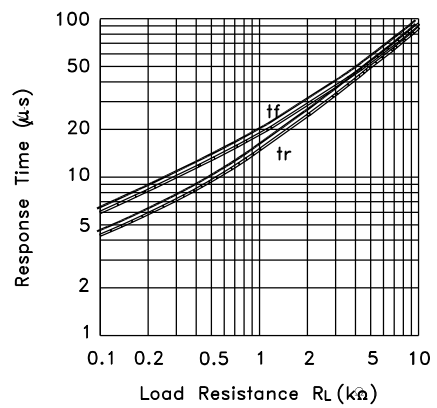


Fig.6 Response Time vs. Load Resistance



Test Circuit for Response Time

