



# IR Emitter and Detector Product Data Sheet

LTR-301

Spec No.: DS-50-93-0013

Effective Date: 02/19/2004

Revision: D

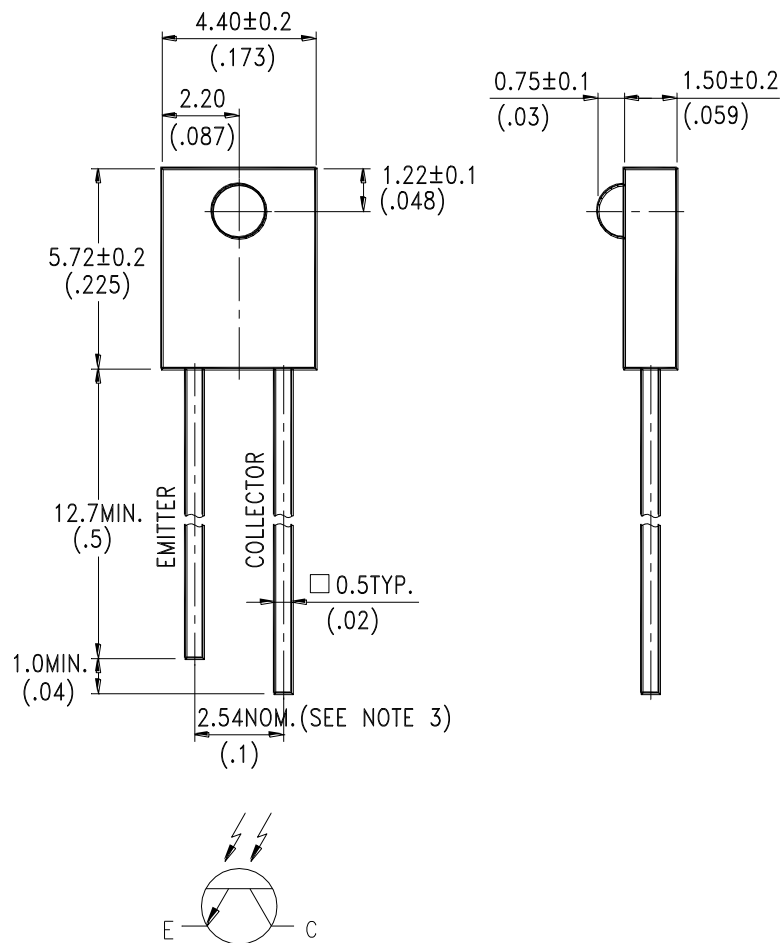
**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

**FEATURES**

- \* WIDE RANGE OF COLLECTOR CURRENT
- \* LENSED FOR HIGH SENSITIVITY
- \* LOW COST PLASTIC SIDE LOOKING PACKAGE
- \* CLEAR TRANSPARENT COLOR PACKAGE

**PACKAGE DIMENSIONS****NOTES:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$  mm (.010") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

## ABSOLUTE MAXIMUM RATINGS AT TA=25°C

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation	100	mW
Collector-Emitter Voltage	30	V
Emitter-Collector Voltage	5	V
Operating Temperature Range	-40°C to + 85°C	
Storage Temperature Range	-55°C to + 100°C	
Lead Soldering Temperature [1.6mm(.063") From Body]	260°C for 5 Seconds	

## ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION	BIN NO.
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30			V	$I_C = 1mA$ $E_e = 0mW/cm^2$	
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5			V	$I_E = 100 \mu A$ $E_e = 0mW/cm^2$	
Collector Emitter Saturation Voltage	$V_{CE(SAT)}$			0.4	V	$I_C = 0.1mA$ $E_e = 1mW/cm^2$	
Rise Time	$T_r$		10		$\mu s$	$V_{CC} = 5V$ $I_C = 1mA$ $R_L = 1K\Omega$	
Fall Time	$T_f$		15		$\mu s$		
Collector Dark Current	$I_{CEO}$			100	nA	$V_{CE} = 10V$ $E_e = 0mW/cm^2$	
On State Collector Current	$I_{C(ON)}$	0.20		0.60	mA	$V_{CE} = 5V$ $E_e = 1mW/cm^2$ $\lambda = 940nm$	BIN A
		0.40		1.08			BIN B
		0.72		1.56			BIN C
		1.04		1.80			BIN D
		1.20		2.40			BIN E
		1.60		3.00			BIN F
		2.00		3.84			BIN G
		2.56					BIN H

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

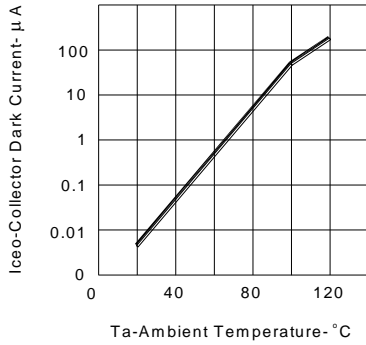


FIG.1 COLLECTOR DARK CURRENT VS AMBIENT TEMPERATURE

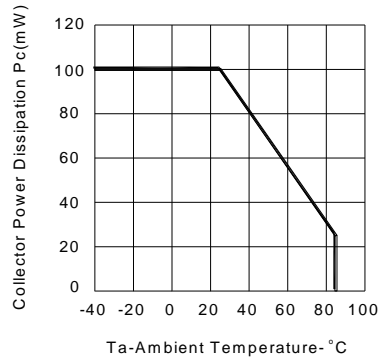


FIG.2 COLLECTOR POWER DISSIPATION VS AMBIENT TEMPERATURE

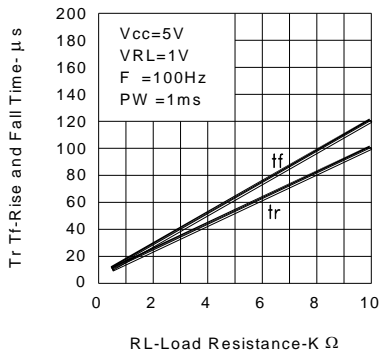


FIG.3 RISE AND FALL TIME VS LOAD RESISTANCE

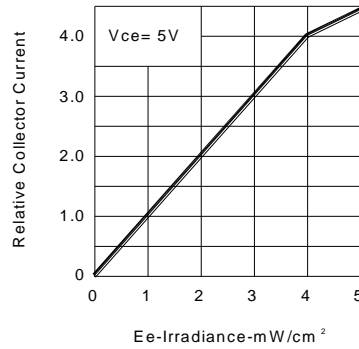


FIG.4 RELATIVE COLLECTOR CURRENT VS IRRADIANCE

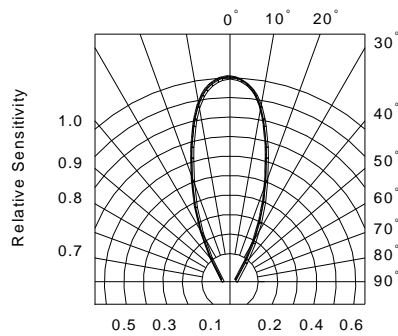


FIG.5 SENSITIVITY DIAGRAM