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## Contact us

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

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

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





# **IR Emitter and Detector** **Product Data Sheet**

**LTR-3208E**

Spec No.: DS-50-92-0068

Effective Date: 05/03/2000

Revision: A

**LITE-ON DCC**

**RELEASE**

**BNS-OD-FC001/A4**

**LITE-ON Technology Corp. / Optoelectronics**

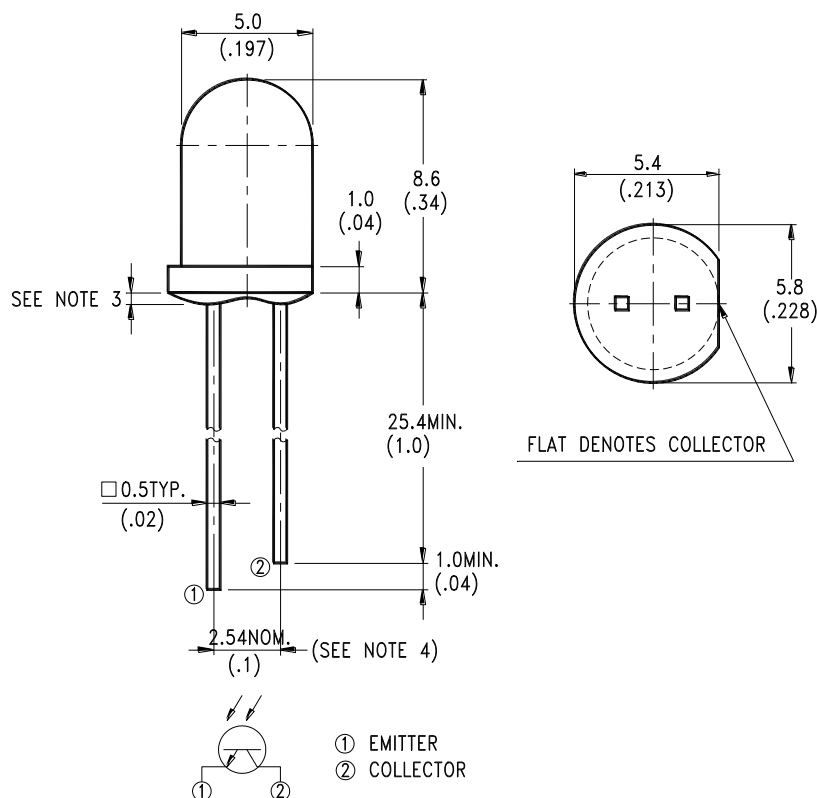
No.90,Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C.

Tel: 886-2-2222-6181 Fax: 886-2-2221-1948 / 886-2-2221-0660

<http://www.liteon.com/opto>

**FEATURES**

- \* WIDE RANGE OF COLLECTOR CURRENT
- \* THE LENS IS FOR HIGH SENSITIVITY
- \* LOW COST PLASTIC PACKAGE
- \* THE LTR-3208E IS A SPECIAL DARK PLASTIC PACKAGE THAT CUT THE VISIBLE LIGHT AND SUITABLE FOR THE DETECTORS OF INFRARED APPLICATIONS

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

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}(.010")$  unless otherwise noted.
3. Protruded resin under flange is 1.5mm(.059") max.
4. Lead spacing is measured where the leads emerge from the package.
5. 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<br>[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       | $I_C = 1mA$<br>$E_e = 0mW/cm^2$                        |         |
| Emitter-Collector Breakdown Voltage  | $V_{(BR)ECO}$ | 5    |      |      | V       | $I_E = 100 \mu A$<br>$E_e = 0mW/cm^2$                  |         |
| Collector Emitter Saturation Voltage | $V_{CE(SAT)}$ |      | 0.1  | 0.4  | V       | $I_C = 100 \mu A$<br>$E_e = 1mW/cm^2$                  |         |
| Rise Time                            | $T_r$         |      | 10   |      | $\mu s$ | $V_{CC} = 5V$<br>$I_C = 1mA$<br>$R_L = 1K\Omega$       |         |
| Fall Time                            | $T_f$         |      | 15   |      | $\mu s$ |  |         |
| Collector Dark Current               | $I_{CEO}$     |      |      | 100  | nA      | $V_{CE} = 10V$<br>$E_e = 0mW/cm^2$                     |         |
| On State Collector Current           | $I_{C(ON)}$   | 0.64 |      | 1.68 | mA      | $V_{CE} = 5V$<br>$E_e = 1mW/cm^2$<br>$\lambda = 940nm$ | BIN A   |
|                                      |               | 1.12 |      | 2.16 |         |  | BIN B   |
|                                      |               | 1.44 |      | 2.64 |         |  | BIN C   |
|                                      |               | 1.76 |      | 3.12 |         |  | BIN D   |
|                                      |               | 2.08 |      | 3.60 |         |  | BIN E   |
|                                      |               | 2.40 |      |      |         |  | BIN F   |

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

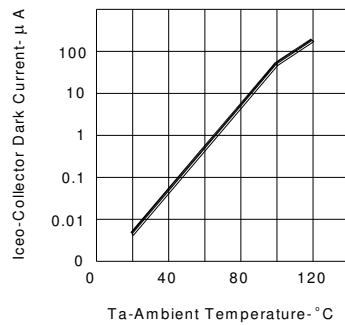


FIG.1 COLLECTOR DARK CURRENT VS AMBIENT TEMPERATURE

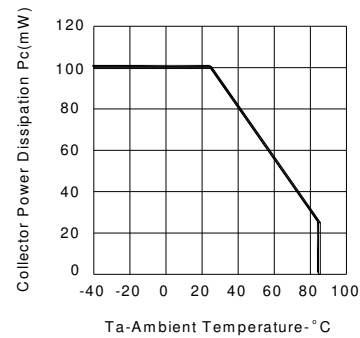


FIG.2 COLLECTOR POWER DISSIPATION VS AMBIENT TEMPERATURE

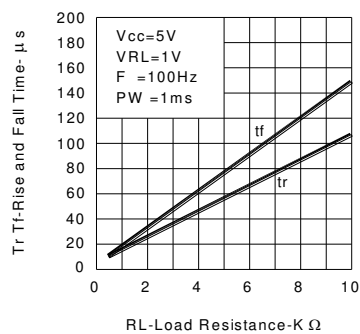


FIG.3 RISE AND FALL TIME VS LOAD RESISTANCE

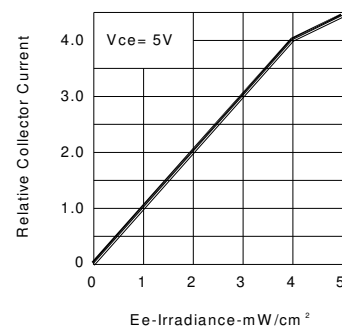


FIG.4 RELATIVE COLLECTOR CURRENT VS IRRADIANCE

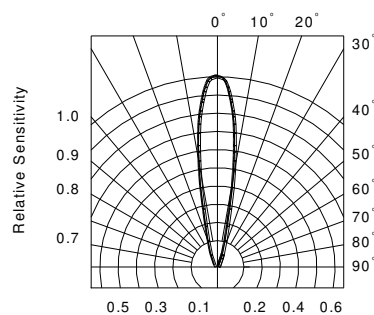


FIG.5 SENSITIVITY DIAGRAM