

L14G1 L14G2 L14G3

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

| Parameter | Symbol | Rating | Unit |
|--|--------------------|----------------|------|
| Operating Temperature | T _{OPR} | -65 to +125 | °C |
| Storage Temperature | T _{STG} | -65 to +150 | °C |
| Soldering Temperature (Iron) ^(3,4,5 and 6) | T _{SOL-I} | 240 for 5 sec | °C |
| Soldering Temperature (Flow) ^(3,4 and 6) | T _{SOL-F} | 260 for 10 sec | °C |
| Collector to Emitter Breakdown Voltage | V _{CEO} | 45 | V |
| Collector to Base Breakdown Voltage | V _{CBO} | 45 | V |
| Emitter to Base Breakdown Voltage | V _{EBO} | 5 | V |
| Power Dissipation (T _A = 25°C) ⁽¹⁾ | P _D | 300 | mW |
| Power Dissipation (T _C = 25°C) ⁽²⁾ | P _D | 600 | mW |

NOTE:

- Derate power dissipation linearly 3.00 mW/°C above 25°C ambient.
- Derate power dissipation linearly 6.00 mW/°C above 25°C case.
- RMA flux is recommended.
- Methanol or isopropyl alcohols are recommended as cleaning agents.
- Soldering iron tip 1/16" (1.6mm) minimum from housing.
- As long as leads are not under any stress or spring tension.
- Light source is a GaAs LED emitting light at a peak wavelength of 940 nm.
- Figure 1 and figure 2 use light source of tungsten lamp at 2870°K color temperature. A GaAs source of 3.0 mW/cm² is approximately equivalent to a tungsten source, at 2870°K, of 10 mW/cm².

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A = 25°C) (All measurements made under pulse conditions)

| PARAMETER | TEST CONDITIONS | SYMBOL | MIN | TYP | MAX | UNITS |
|------------------------------------|--|----------------------|-----|-----|------|---------|
| Collector-Emitter Breakdown | I _C = 10 mA, E _e = 0 | BV _{CEO} | 45 | | — | V |
| Emitter-Base Breakdown | I _E = 100 μA, E _e = 0 | BV _{EBO} | 5.0 | | — | V |
| Collector-Base Breakdown | I _C = 100 μA, E _e = 0 | BV _{CBO} | 45 | | — | V |
| Collector-Emitter Leakage | V _{CE} = 10 V, E _e = 0 | I _{CEO} | — | | 100 | nA |
| Reception Angle at 1/2 Sensitivity | | θ | | ±10 | | Degrees |
| On-State Collector Current L14G1 | E _e = 0.5 mW/cm ² , V _{CE} = 5 V ^(7,8) | I _{C(ON)} | 1.0 | | — | mA |
| On-State Collector Current L14G2 | E _e = 0.5 mW/cm ² , V _{CE} = 5 V ^(7,8) | I _{C(ON)} | 0.5 | | — | mA |
| On-State Collector Current L14G3 | E _e = 0.5 mW/cm ² , V _{CE} = 5 V ^(7,8) | I _{C(ON)} | 2.0 | | — | mA |
| Turn-On Time | I _C = 2 mA, V _{CC} = 10 V, R _L = 100 Ω | t _{on} | | 8 | | μs |
| Turn-Off Time | I _C = 2 mA, V _{CC} = 10 V, R _L = 100 Ω | t _{off} | | 7 | | μs |
| Saturation Voltage | I _C = 1.0 mA, E _e = 3.0 mW/cm ^{2(7,8)} | V _{CE(SAT)} | — | | 0.40 | V |

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Figure 1. Light Current vs. Collector to Emitter Voltage

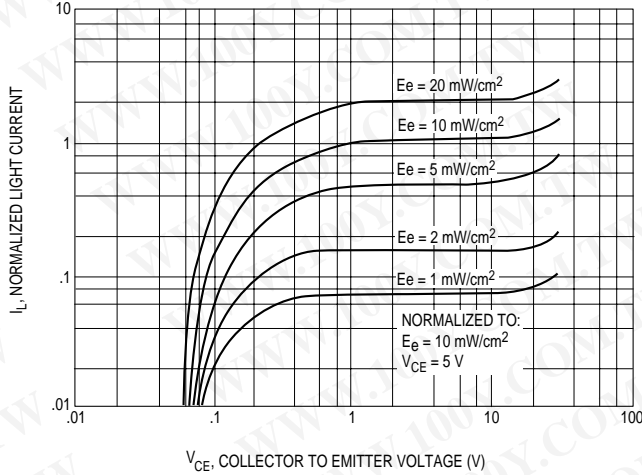


Figure 2. Light Current vs. Temperature

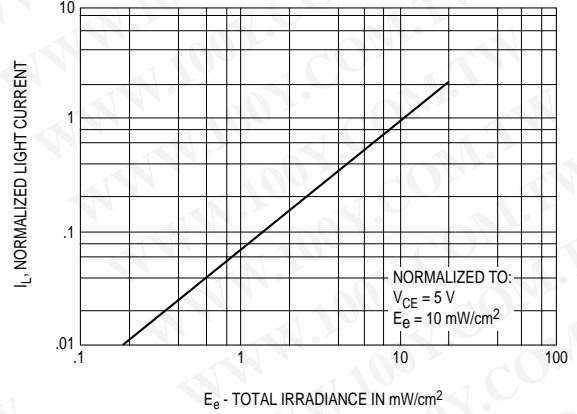


Figure 3. Normalized Light Current vs. Temperature

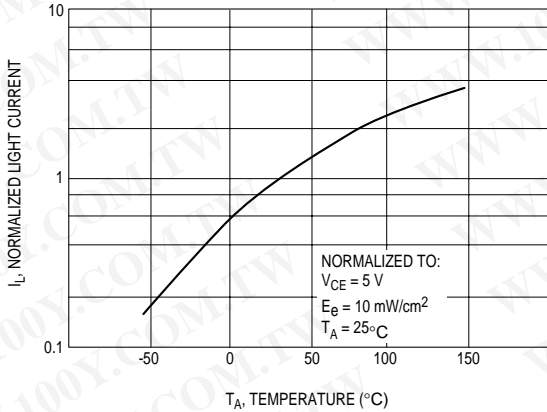


Figure 4. Switching Times vs. Output Current

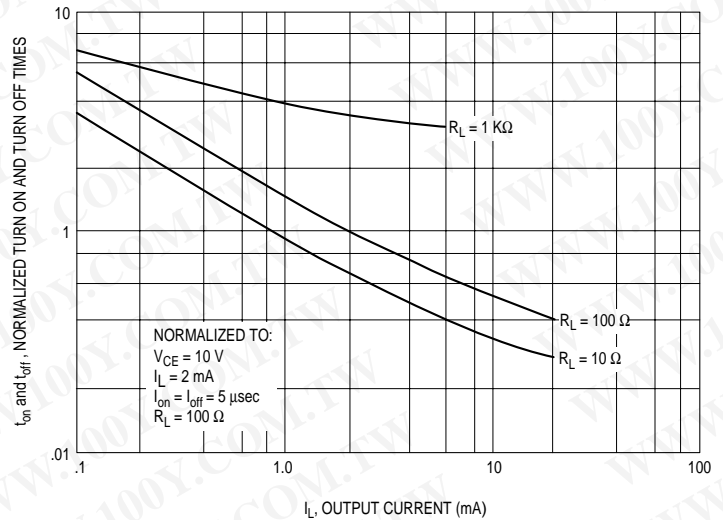


Figure 5. Dark Current and Temperature

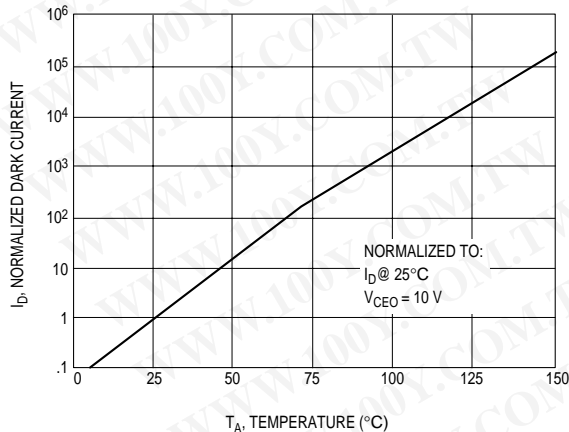
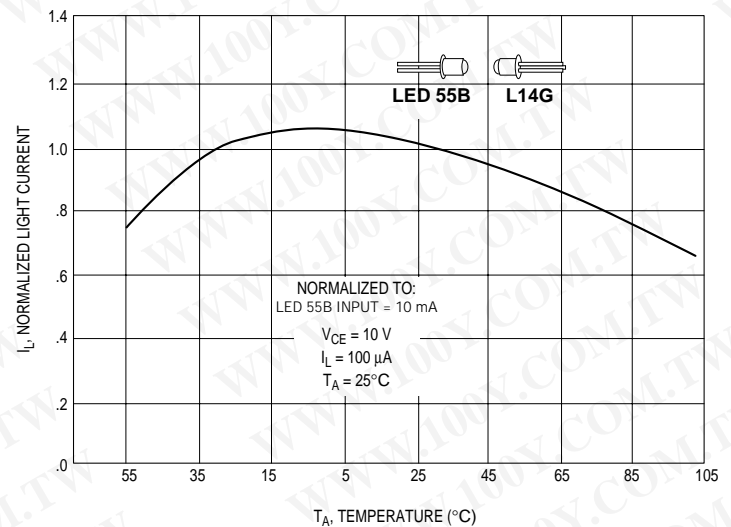


Figure 6. Normalized Light Current vs. Temperature Both Emitter (LED 55B) and Detector (L14G) at Same Temperature



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