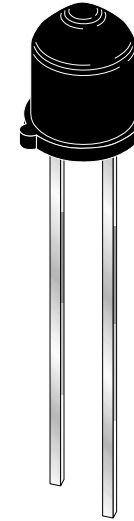
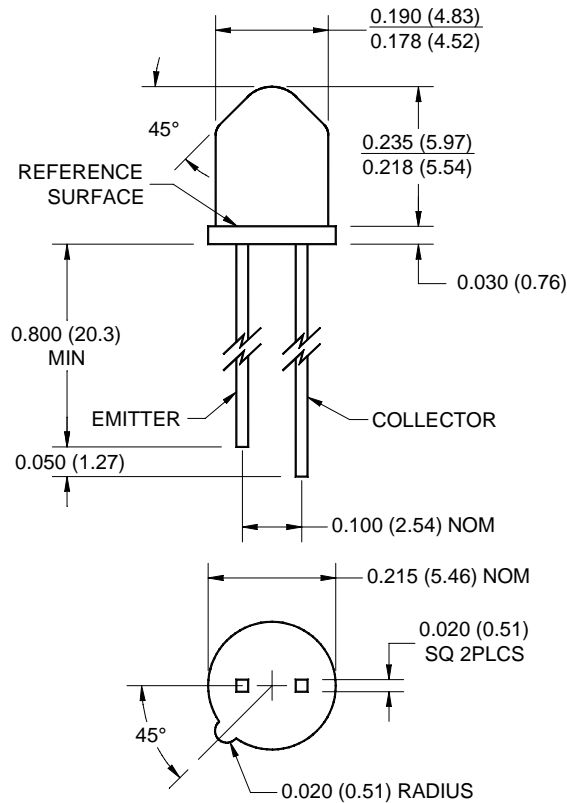




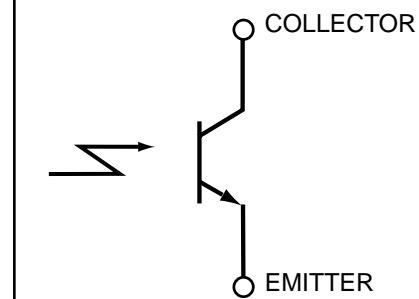
THE DATASHEET OF
QSD723



PACKAGE DIMENSIONS



SCHEMATIC



NOTES:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of $\pm .010$ (.25) on all non-nominal dimensions unless otherwise specified.

DESCRIPTION

The QSD722/723/724 is a silicon phototransistor encapsulated in an infrared transparent, black TO-18 package.

FEATURES

- NPN Silicon Phototransistor
- Package Type: Plastic TO-18
- Matched Emitter: QED523
- Narrow Reception Angle, 40°
- Daylight Filter
- Package material and color: black epoxy
- High Sensitivity

QSD722 QSD723 QSD724

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

| Parameter | Symbol | Rating | Unit |
|---|--------------------|----------------|------|
| Operating Temperature | T _{OPR} | -40 to +100 | °C |
| Storage Temperature | T _{STG} | -40 to +100 | °C |
| Soldering Temperature (Iron) ^(2,3,4) | T _{SOL-I} | 240 for 5 sec | °C |
| Soldering Temperature (Flow) ^(2,3) | T _{SOL-F} | 260 for 10 sec | °C |
| Collector-Emitter Voltage | V _{CE} | 30 | V |
| Emitter-Collector Voltage | V _{EC} | 5 | V |
| Power Dissipation ⁽¹⁾ | P _D | 100 | mW |

1. Derate power dissipation linearly 1.33 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6mm) minimum from housing.
5. λ = 880 nm, AlGaAs.

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A = 25°C)

| PARAMETER | TEST CONDITIONS | SYMBOL | MIN | TYP | MAX | UNITS |
|---|--|----------------------|-----|-----|------|-------|
| Peak Sensitivity Wavelength | | λ _{PS} | — | 880 | — | nm |
| Reception Angle | | θ | — | ±20 | — | Deg. |
| Collector-Emitter Dark Current | V _{CE} = 10 V, E _e = 0 | I _{CEO} | — | — | 100 | nA |
| Collector-Emitter Breakdown | I _C = 1 mA | BV _{CEO} | 30 | — | — | V |
| Emitter-Collector Breakdown | I _E = 100 μA | BV _{ECO} | 5 | — | — | V |
| On-State Collector Current ⁽⁵⁾ | | | | | | |
| QSD722 | | | 0.6 | — | 3.8 | mA |
| QSD723 | E _e = 0.5 mW/cm ² , V _{CE} = 5 V | I _{C(ON)} | 2.5 | — | 10.0 | |
| QSD724 | | | 3.5 | — | — | |
| Saturation Voltage ⁽⁵⁾ | E _e = 0.5 mW/cm ² , I _C = 0.6 mA | V _{CE(sat)} | — | 0.4 | — | V |
| Rise Time | V _{CC} = 5 V, R _L = 100 Ω, I _C = 0.2 mA | t _r | — | 8 | — | μs |
| Fall Time | | t _f | — | 8 | — | |

Figure 1. Light Current vs. Radiant Intensity

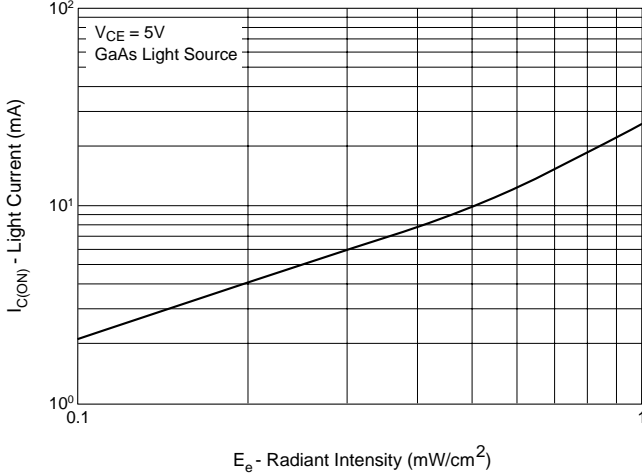


Figure 2. Angular Response Curve

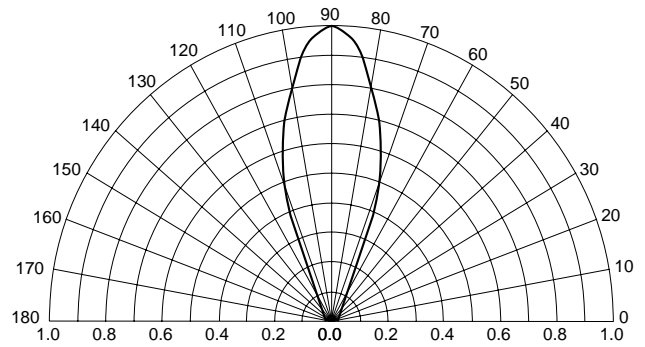


Figure 3. Dark Current vs. Collector - Emitter Voltage

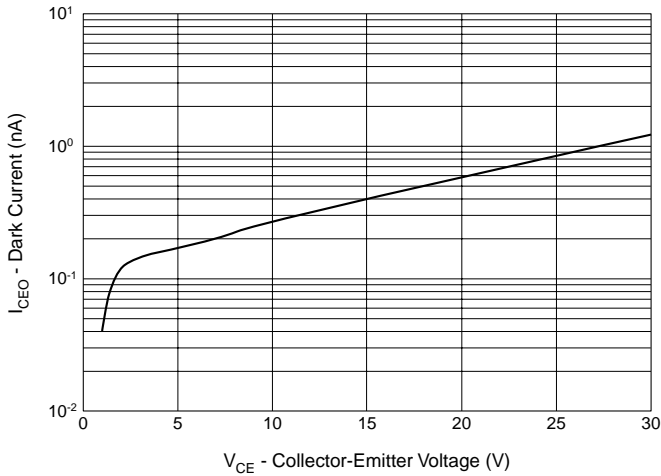


Figure 4. Light Current vs. Collector - Emitter Voltage

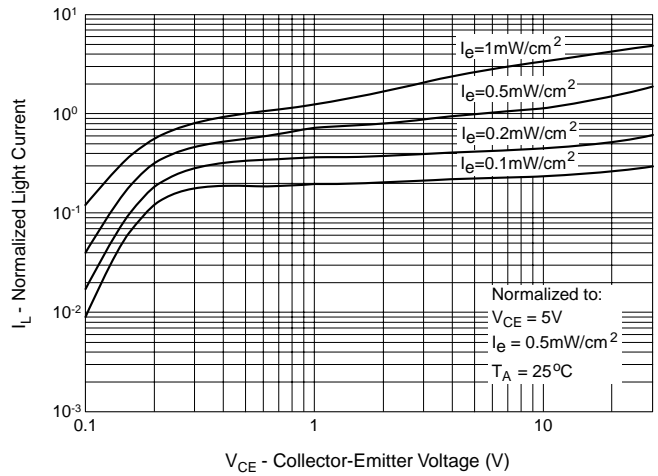
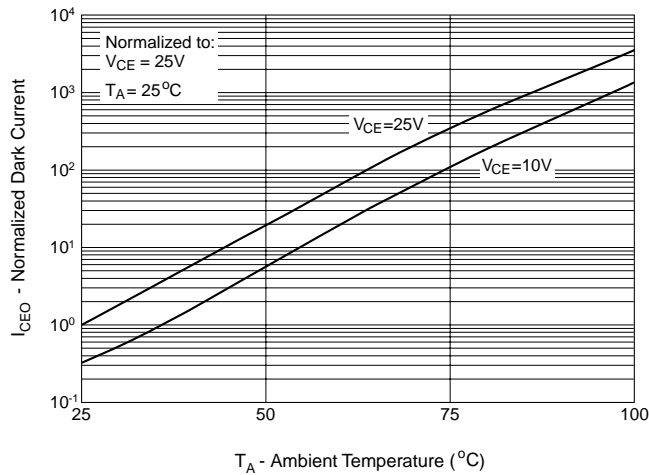


Figure 5. Dark Current vs. Ambient Temperature



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