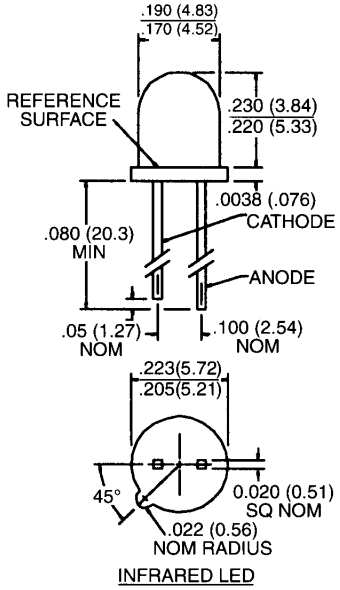
FAIRCHILD
SEMICONDUCTOR™

PLASTIC TO-46/TO-18 PAIR

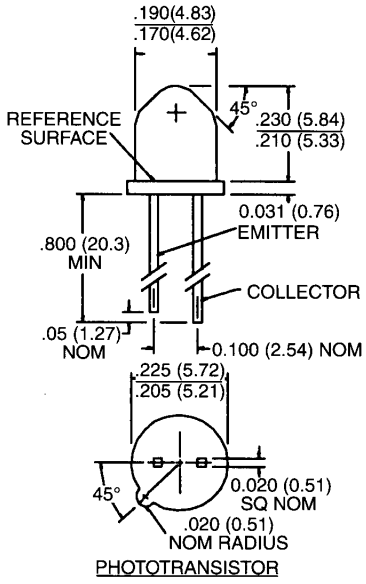
QPD5223

PACKAGE DIMENSIONS



INFRARED LED

ST2170



PHOTOTRANSISTOR

ST2170

NOTES:
1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS ±.010 (.25) UNLESS OTHERWISE SPECIFIED.

DESCRIPTION

The QPD5223 consists of an 880 nm AlGaAs LED and a silicon phototransistor mounted in plastic TO-46 (LED) and TO-18 (sensor) packages.

FEATURE

- Steel lead frames for improved reliability in solder mounting.
- Good optical-to-mechanical alignment.
- Narrow emission/reception angle.
- Black plastic body allows easy recognition of sensor.

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ABSOLUTE MAXIMUM RATINGS (T_A = 25°C Unless Otherwise Specified)

Storage Temperature ..... −40°C to + 100°C
Operating Temperature ..... −40°C to + 100°C
Soldering:
Lead Temperature (Iron) ..... 240°C for 5 sec. (2,3,5)
Lead Temperature (Flow) ..... 260°C for 10 sec. (2,5)

INPUT DIODE
Continuous Forward Current ..... 50 mA
Reverse Voltage ..... 5.0 Volts
Power Dissipation ..... 200 mW(1)

OUTPUT TRANSISTOR
Collector-Emitter Voltage ..... 30 Volts
Emitter-Collector Voltage ..... 5.0 Volts
Power Dissipation ..... 100 mW(1)

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless Otherwise Specified)
(All measurements made under pulse conditions.)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
INPUT DIODE						
Forward Voltage	V_F	—		1.70	V	I_F = 20 mA
Reverse Leakage Current	I_R	—		100	μA	V_R = 5.0 V
OUTPUT TRANSISTOR						
Collector-Emitter Breakdown	BV_{CEO}	30		—	V	I_F = 1.0 mA, Ee = 0
Collector-Emitter Leakage	I_{CEO}	—		100	nA	V_{CE} = 10.0 V, Ee = 0
COUPLED						
On-State Collector Current						
QPD5223	$I_{C(ON)}$	7.5		—	mA	I_F = 20mA, V_{CC} = 5.0V, D = .250"(4)

NOTES

1. *Derate power dissipation linearly 2.67 mW/°C above 25°C for LED and 1.33 mW/°C for the sensor.*
2. *RMA flux is recommended.*
3. *Soldering iron tip 1/16" (1.6mm) minimum from case.*
4. *D is the distance from lens tip to lens tip.*
5. *As long as leads are not under any stress or spring tension.*

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