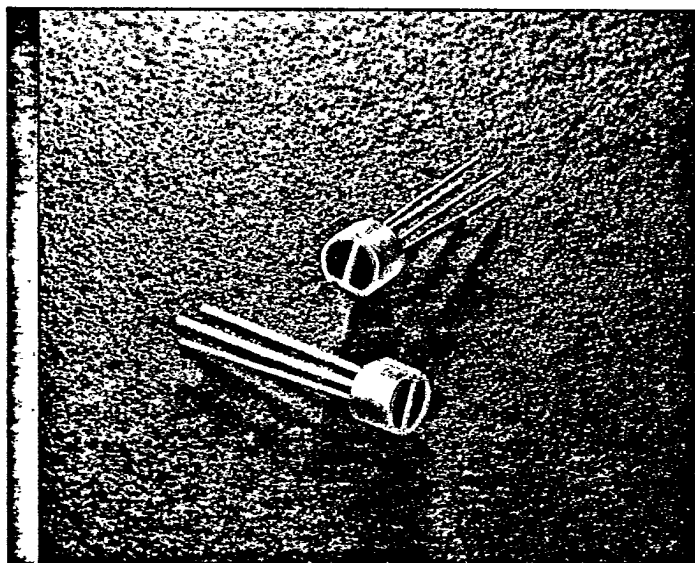




Reflective Transducer STRT 3020

Electrical and Optical Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Package

Operating Temperature, T_{opr}	-20° to $+90^\circ\text{C}$
Storage Temperature, T_{stg}	-30° to $+100^\circ\text{C}$
*Soldering Temperature, T_{sold}	260°C
Power Dissipation, P_d	100 mW
(Derate 1.35mW/ $^\circ\text{C}$ Above 25°C)	

LED

Forward Current, I_F	50 mA
Reverse Voltage, V_R	6 V
Power Dissipation, P_d	75 mW
(Derate 1.0mW/ $^\circ\text{C}$ Above 25°C)	

Sensor

Collector Current, I_C	20 mA
Collector-Emitter Voltage, V_{CE}	30 V
Emitter-Collector Voltage, V_{EC}	3 V
Power Dissipation, P_C	75 mW
(Derate 1.0mW/ $^\circ\text{C}$ Above 25°C)	

* $1/16"$ (.0625") away from case, 3-second duration

Electro-Optical Characteristics ($T_a = 25^\circ\text{C}$)

LED

Forward Voltage, V_F @ $I_F = 4$ mA	1.2 V Max.
Reverse Current, I_R @ $V_R = 6$ V.	10 μA Max.
Peak Wavelength	940 nm TYP

Sensor

Collector Breakdown Voltage, BV_{CE} @ $I_C = 100$ μA	30 V Min.
Emitter Breakdown Voltage, BV_{EC} @ $I_C = 100$ μA	3 V Min.
Dark Current, I_D	100 nA Max.
@ $V_{CE} = 10$ V, $I_F = 0$	

Coupled Characteristics

*Output Current, I_L @ $I_F = 4$ mA, $V_{ce} = 2$ V	See Chart Below
*Switching Speed @ $V_{CE} = 2$ V, $R_L = 1\text{K}\Omega$, $I_L = 100$ μA	
Rise Time t_r	30 μs TYP
Fall Time t_f	25 μsec TYP

STRT 3020 Output Current Ranges (μA)

-1	-2	3	-4	-5
13-30	25-47	38-85	70-138	112 Minimum

*See Figure 2.

Description

The STRT 3020 consists of an infrared LED and phototransistor mounted side by side on parallel axis. The phototransistor and LED are optically filtered to reduce visible light noise and protect the device from dust.

Features

- High Reliability, low cost ceramic housing
- Optical filter
- Unfocused for sensing diffused surfaces
- Miniature package configuration

Applications

- EOT/BOT sensing
- Liquid level detection
- Spot detection

STRT 3020 Typical Characteristics

