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OPTO TECHNOLOGY INC

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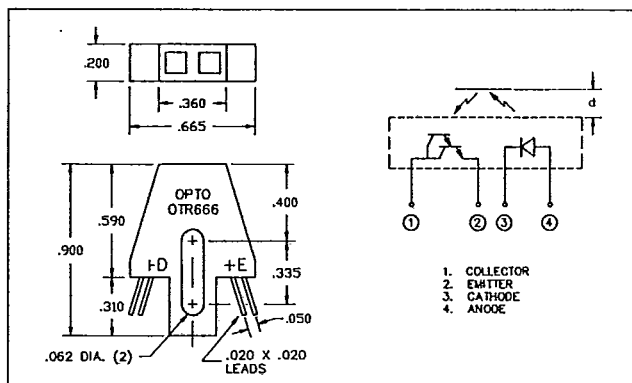
T-41-73

OPTO TECHNOLOGY**REFLECTIVE SWITCH****TYPE OTR 667****Features**

- Photodarlington
- Low cost plastic housing
- Lensed for ambient light filtration and dust protection.

**Description**

The OTR 667 reflective sensor combines a gallium arsenide infrared emitting diode and a silicon photodarlington in a molded plastic housing. An IR transmitting filter is mounted over the sensor and emitter to reduce ambient light and to seal the device from dust. These switches are useful as motion detectors, paper sensors or beginning and end of tape indicators.

**Absolute Maximum Ratings⁽⁴⁾**

Storage Temperature Range	-40°C to +85°C
Operating Temperature Range	-40°C to +85°C
Lead Soldering Temperature (1/16 inch [1.6 mm] from case for 5 sec. with soldering iron)	240°C ⁽¹⁾

Input Diode

Reverse Voltage	4 V
Continuous Forward Current	40 mA
Peak Forward Current (1 μs pulse width, 300 pps)	1 A
Power Dissipation	60 mW ⁽²⁾

Output Photodarlington

Collector-Emitter Voltage	20 V
Emitter-Collector Voltage	4 V
Power Dissipation	50 mW

Notes:

- (1) RMA flux recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Derate 1.0 mW/°C above 25°C ambient.
- (3) Derate .85 mW/°C above 25°C ambient.
- (4) T_A = 25°C unless otherwise specified.
- (5) Reflecting surface is an Eastman Kodak neutral white test card having a 90% diffused reflectance.
- (6) No reflecting surface.

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Electrical Characteristics: (25°C)

INFRARED EMITTING DIODE	SYMBOL	MIN.	TYP.	MAX.	UNITS
Forward Voltage $I_F = 20 \text{ mA}$	V_F			1.5	V
Reverse Current $V_R = 4 \text{ V}$	I_R			10	μA
Wavelength at Peak Emission $I_F = 20 \text{ mA}$	λ_P		940		nM

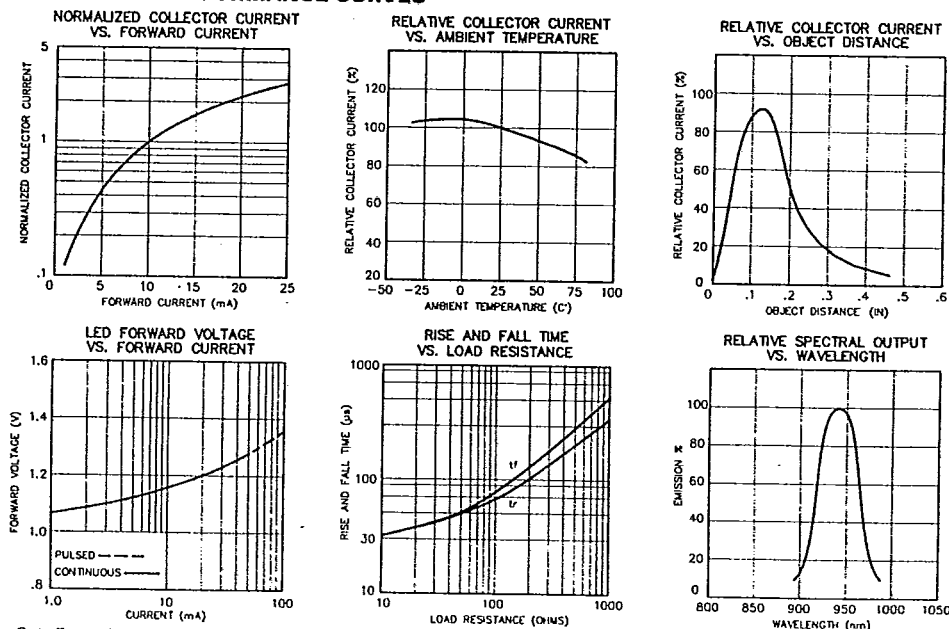
PHOTODARLINGTON	SYMBOL	MIN.	TYP.	MAX.	UNITS
Collector-Emitter Breakdown Voltage $I_C = 1 \text{ mA}$	$V_{(BR)CEO}$	20			V
Emitter-Collector Breakdown Voltage $I_E = 100 \mu\text{A}$	$V_{(BR)ECO}$	4			V
Collector Dark Current $V_{CE} = 10 \text{ V}$	I_{CEO}			1	μA

Coupled Electrical Characteristics: (25°C)

	SYMBOL	MIN.	TYP.	MAX.	UNITS
Light Current* $I_F = 20 \text{ mA}$, $V_{CE} = 5 \text{ V}^{(5)}$ $d = .15$	$I_{C(ON)}$	1			mA
No Light Current $I_F = 20 \text{ mA}$, $V_{CE} = 5 \text{ V}^{(6)}$	$I_{C(OFF)}$			1	μA
Saturation Voltage $I_F = 20 \text{ mA}$, $I_C = 1 \text{ mA}$	$V_{CE(SAT)}$			1.0V	V
Rise Time $V_{CC} = 5 \text{ V}$, $I_F = 20 \text{ mA}$, $R_L = 100 \Omega$	t_{on}		65		μS
Fall Time $V_{CC} = 5 \text{ V}$, $I_F = 20 \text{ mA}$, $R_L = 100 \Omega$	t_{off}		75		μS

*Special screenings available upon request.

TYPICAL PERFORMANCE CURVES



Opto Technology reserves the right to make changes at any time to improve product design and reliability.