

**OPTO TECHNOLOGY**

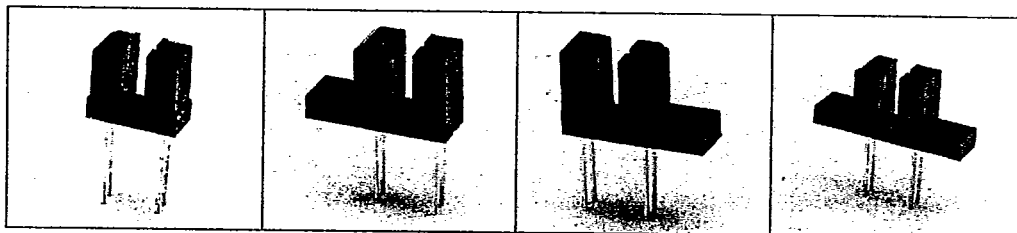
T-41-73

OPTICAL SWITCH**TYPE OTS 800/820 SERIES****Features**

- .125 wide gap
- Choice of mounting configurations
- Visible or infrared emitter
- Phototransistor or photodarlington output

Description

Opto Technology's OTS 800/820 series is intended to provide custom design capability in a standard part. Options for this series include phototransistor or photodarlington output, visible or infrared emitter, transmissive polysulfone or slotted polycarbonate window, different aperture sizes for led and sensor, and different mounting configurations. All housings have a .125 wide slot between the emitter and detector. Special screening for these devices is also available. Consult the factory.

**Absolute Maximum Ratings⁽⁴⁾**

INFRARED EMITTER 940nm			
Power Dissipation ⁽¹⁾	P_E	100	MW
Forward Current (Continuous)	I_F	50	mA
Reverse Voltage	V_R	6	V

VISIBLE EMITTER 660nm			
Power Dissipation ⁽²⁾	P_E	100	MW
Forward Current (Continuous)	I_F	40	mA
Reverse Voltage	V_R	5	V

PHOTOTRANSISTOR			
Power Dissipation ⁽³⁾	P_D	150	MW
Collector Emitter Voltage	V_{CEO}	30	V
Emitter Collector Voltage	V_{ECO}	6	V

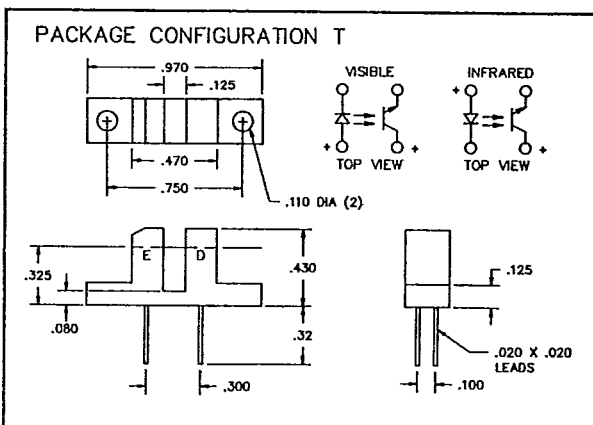
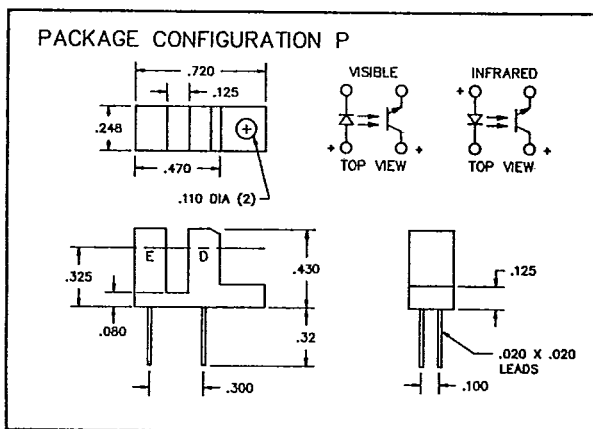
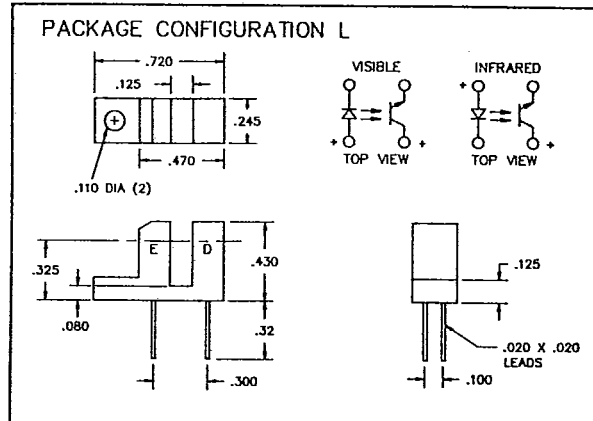
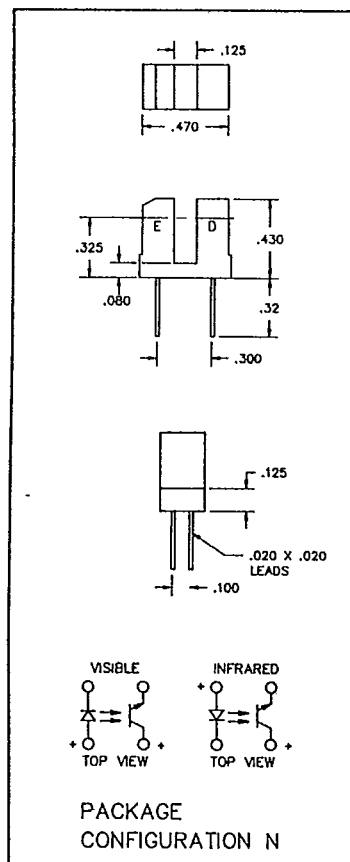
PHOTODARLINGTON			
Power Dissipation ⁽³⁾	P_D	150	MW
Collector Emitter Voltage	V_{CEO}	30	mA
Emitter Collector Voltage	V_{ECO}	7	V

Total Device

Storage Temperature Range Tstg - 55°C to + 100°C
Operating Temperature Range Tj - 40°C to + 85°C
Lead Soldering Temperature (5 sec. max.) 260°C⁽⁵⁾

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Notes:

- (1) Derate 1.33 mW/°C above 25°C ambient.
- (2) Derate 1.50 mW/°C above 25°C ambient.
- (3) Derate 2.0 mW/°C above 25°C ambient.
- (4) $T_a = 25^\circ\text{C}$ unless otherwise noted.
- (5) RMA flux is recommended. Duration can be extended to 10 sec. max. when wave soldering.
- (6) Methanol or isopropyl alcohols are recommended as cleaning agents.

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



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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			1.7	V
Reverse Current $V_R = 5 \text{ V}$	I_R			100	nA
Wavelength at Peak Emission $I_F = 20 \text{ mA}$			940		nM

VISIBLE EMITTING DIODE	SYMBOL	MIN.	TYP.	MAX.	UNITS
Forward Voltage $I_F = 20 \text{ mA}$	V_F		1.8	2.2	V
Reverse Current $V_R = 5 \text{ V}$	I_R			1.0	μA
Wavelength at Peak Emission $I_F = 20 \text{ mA}$			660		nM

PHOTOTRANSISTOR	SYMBOL	MIN.	TYP.	MAX.	UNITS
Collector-Emitter Breakdown Voltage $I_C = 1 \text{ mA}$		30			V
Emitter-Collector Breakdown Voltage $I_E = 100 \mu\text{A}$		6			V
Collector Dark Current $V_{CE} = 25 \text{ V}$	I_{CEO}			100	nA

PHOTODARLINGTON	SYMBOL	MIN.	TYP.	MAX.	UNITS
Collector-Emitter Breakdown Voltage $I_C = 1 \text{ mA}$		30			V
Emitter-Collector Breakdown Voltage $I_E = 100 \mu\text{A}$		7			V
Collector Dark Current $V_{CE} = 25 \text{ V}$	I_{CEO}			100	nA

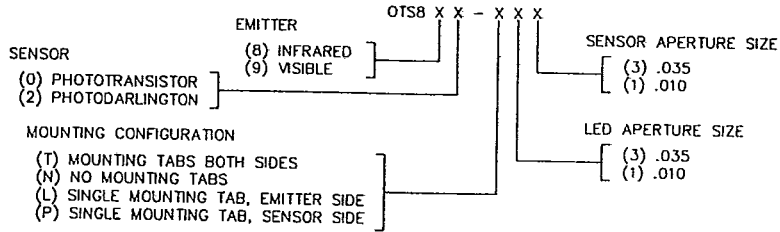
Coupled Electrical Characteristics: (25°C)

		SYMBOL	MIN.	TYP.	MAX.	UNITS
Light Current $I_F = 20 \text{ mA}$	OTS808/809		.8			mA
	OTS828/829	$I_{C(ON)}$	6			mA
Saturation Voltage $I_F = 20 \text{ mA}, I_C = .1 \text{ mA}$	OTS808/809				.4	V
	OTS828/829	$V_{CE(SAT)}$			1.0	V
Rise Time $V_{CC} = 5 \text{ V}, R_1 = 1 \text{ K}$	OTS808/ 809	t_{on}		5		μS
Fall Time $I_F = 20 \text{ mA}$		t_{off}		30		μS
Rise Time $V_{CC} = 5 \text{ V}, R_1 = 1 \text{ K}$	OTS828/ 829	t_{on}		45		μS
Fall Time $I_F = 20 \text{ mA}$		t_{off}		250		μS

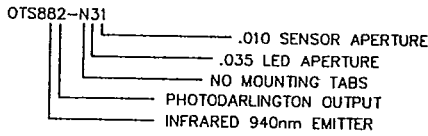
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ORDERING INFORMATION

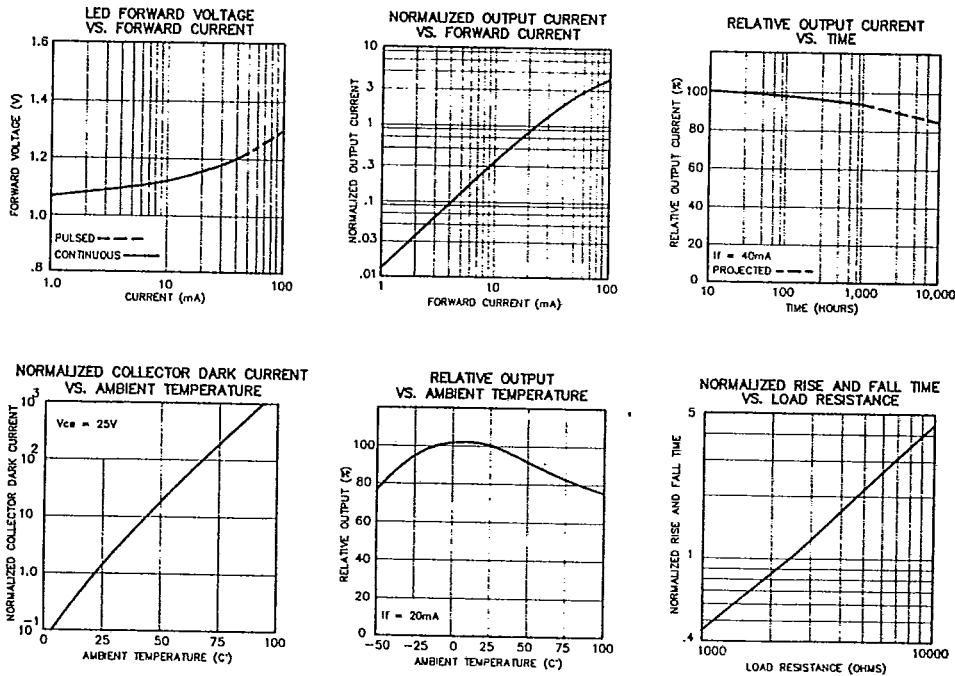


ORDERING EXAMPLE



OPTICAL SWITCHES

TYPICAL PERFORMANCE CURVES



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