

REFLECTIVE SWITCH

TYPE OTR 600/OTR 610

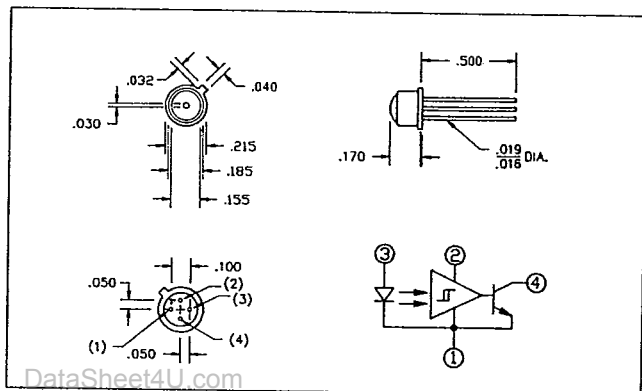
Features

- TO-18 reflective sensor
- .030 diameter aperture
- Photo IC sensor



Description

Opto Technology's OTR 600/610 reflective sensors combine a GaAs infrared emitting diode and a photo IC sensor mounted side by side on a TO-18 header. The LED directs infrared light through a formed epoxy lens to the target. The reflected light is received by a .030 diameter fiber optic rod at the lens center and transmitted to the sensor. The sensor consists of a photodiode with low level amplifier, Schmitt trigger, voltage regulator and open collector output. The OTR 600 open collector output switches "OFF" when the device sees reflected light and the OTR 610 output switches "ON" when light is reflected. Typical applications include mark sense reading and paper sensing.



Absolute Maximum Ratings⁽³⁾

Storage Temperature Range	-40°C to +100°C
Operating Temperature Range	-25°C to +85°C
Lead Soldering Temperature (1/16 inch [1.6 mm] from case for 5 sec. with soldering iron)	260°C ¹

Input Diode

Reverse Voltage	5V
Continuous Forward Current	50mA
Peak Forward Current (1μs pulse width, 300 pps)	1A
Power Dissipation	100mW ⁽²⁾

Photo IC Sensor

Supply Voltage	15V
Output Voltage	15V
Output Current Sink	25mA

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when wave soldering.
- (2) Derate 1.6mW/°C above 25°C ambient.
- (3) T_A = 25°C unless otherwise specified.
- (4) Reflecting surface is Eastman Kodak neutral white test card having a 90% diffused reflectance.
- (5) No reflecting surface.

Electrical Characteristics: (25°C)

INFRARED EMITTING DIODE	SYMBOL	MIN.	TYP.	MAX.	UNITS
Forward Voltage $I_F = 50 \text{ mA}$	V_F		1.5	1.7	V
Reverse Current $V_R = 5 \text{ V}$	I_R			10	μA
Wavelength at Peak Emission $I_F = 20 \text{ mA}$	λ_P		880		nM

PHOTO I.C.	SYMBOL	MIN.	TYP.	MAX.	UNITS
Supply Voltage	V_{CC}	4.0	5.0	15.0	V
Supply Current	I_{CC}	—	4.0	10.0	mA
Collector-Emitter Saturation Voltage ($I_C = 15 \text{ mA}$)	$V_{CE(SAT)}$	—	.3	.5	V
	—	—	.5	.8	V
Low Level Output Current	I_C	—		25	mA
Hysteresis	—	—	12	—	%

Coupled Electrical Characteristics: @ $T_A = (25^\circ\text{C})$

	SYMBOL	MIN.	TYP.	MAX.	UNITS
LED Forward Current (turn on) $d = .03 \text{ (4)}$	I_F		—	7	mA
Output Off Current, $V_O = 15 \text{ V (5)}$	$I_{C(OFF)}$			1.0	μA
Rise Time	t_{on}	—	200	500	ns
Fall Time	t_{off}	—	200	500	ns
Propagation Delay ($I_F = 20 \text{ mA}$)	t_p		20		μs

TYPICAL PERFORMANCE CURVES

