

Long Range Retro-reflective Sensor

VTR24F1

PRODUCT DESCRIPTION

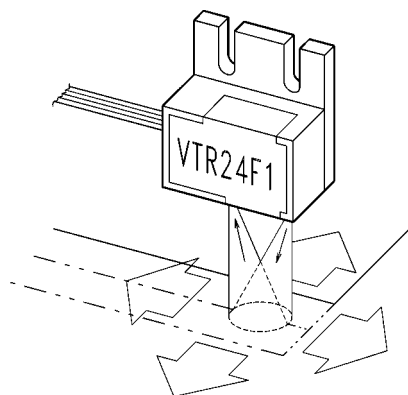
This retro-reflective sensor combines an infrared emitting diode and a unique photodarlington output to provide high sensitivity while rejecting ambient light. It has a very long sensing range (up to 4 inches) compared to ordinary retros.

The output of this sensor is activated when a reflective surface is brought into its field of view.

The sensor housing is molded polycarbonate with a slotted flange for easy mounting.

FEATURES

- *Low Cost*
- *Small Package Size*
- *Long Sensing Range (up to 4 inches)*
- *Detects Low/Diffuse Reflectance Surfaces*

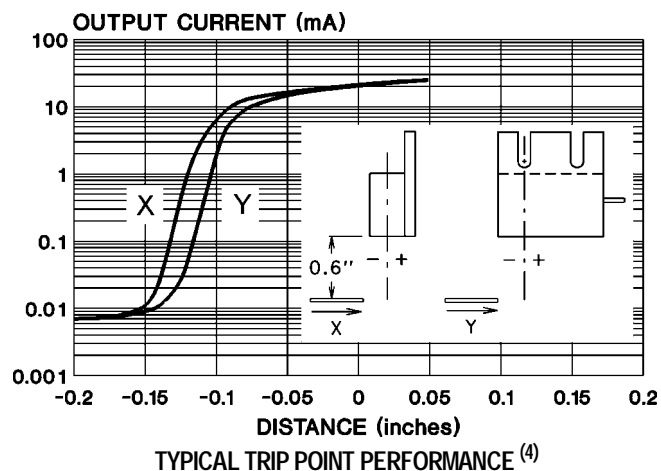


SPECIFICATIONS @ 25°C

Parameter	Symbol	Min.	Typ.	Max.	Units
Output Current $I_F = 20 \text{ mA}^{(5)}$	I_P	6	15		mA
Ambient Sensitivity $I_F = 0 \text{ mA}^{(1)(2)}$	I_A		30	100	μA
Crosstalk $I_F = 20 \text{ mA}^{(3)}$	I_{CX}		5	30	μA
Output Saturation Voltage $I_F = 20 \text{ mA}^{(1)} \quad I_P = 10 \text{ mA}$	V_{SAT}		0.9	1.2	V

NOTES

1. Distance to 90% reflectance paper = 0.6", $V_{CE} = 5\text{V}$.
2. 100 fc fluorescent light incident upon target surface.
3. No target surface.
4. Referenced to optical centerline of sensor, $V_{CE} = 5\text{V}$, $I_F = 20 \text{ mA}$.
5. Distance to 90% reflectance paper = 2.0", $V_{CE} = 5\text{V}$.

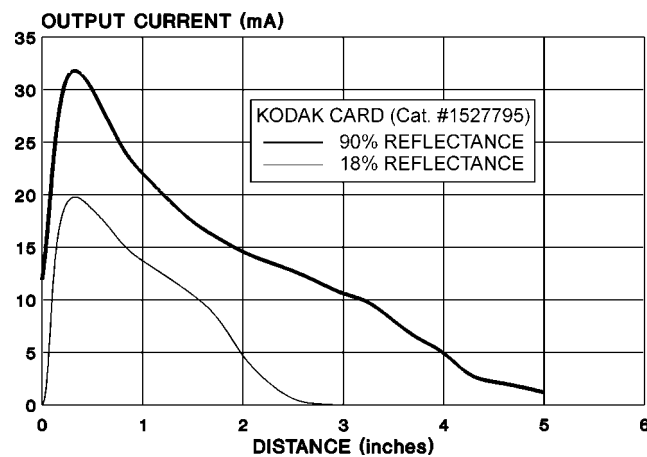


ABSOLUTE MAXIMUM RATINGS @ 25°C UNLESS NOTED

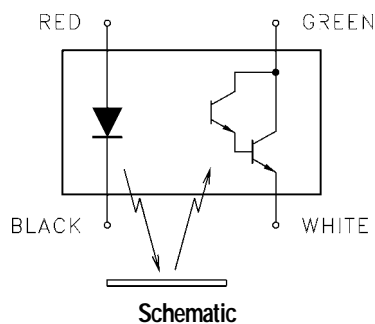
Parameter	Symbol	Rating	Units
Temperature Range			
Operating	T_A	-40 to +85	°C
Storage	T_S	-40 to +85	°C
Continuous Emitter Current	I_F	40	mA
Output Power Dissipation (derate 1.36 mW/°C above 30°C)			
IR Emitter	$P_{D \text{ EMITTER}}$	75	mW
IR Detector	$P_{D \text{ DETECTOR}}$	75	mW
Emitter Reverse Voltage	V_R	2.0	V
Detector Voltage	V_{CE}	30	V

TYPICAL PERFORMANCE CURVES @ 25°C

Output Current vs. Sensing Distance



PACKAGE DIMENSIONS inches (mm)



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