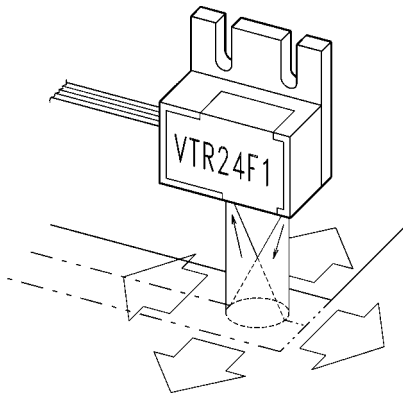


# Long Range Retro-reflective Sensor

# VTR24F1H



## 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*

## RoHS Compliant

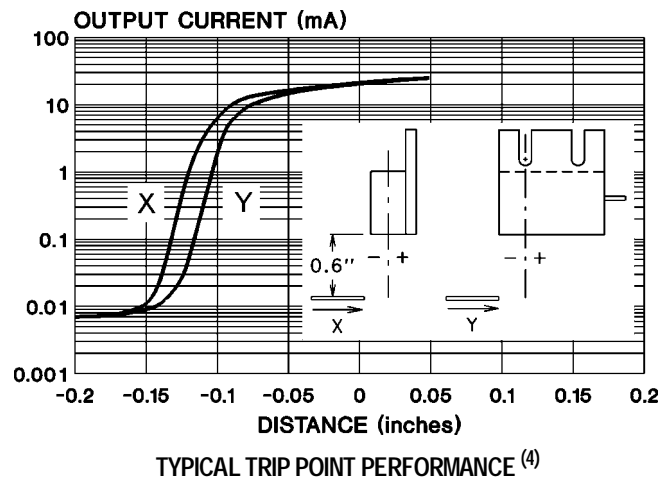


## SPECIFICATIONS @ 25°C

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	$\mu\text{A}$
Crosstalk $I_F = 20 \text{ mA}^{(3)}$	$I_{CX}$		5	30	$\mu\text{A}$
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",  $V_{CE} = 5V$ .
2. 100 fc fluorescent light incident upon target surface.
3. No target surface.
4. Referenced to optical centerline of sensor,  $V_{CE} = 5V$ ,  $I_F = 20 \text{ mA}$ .
5. Distance to 90% reflectance paper = 2.0",  $V_{CE} = 5V$ .

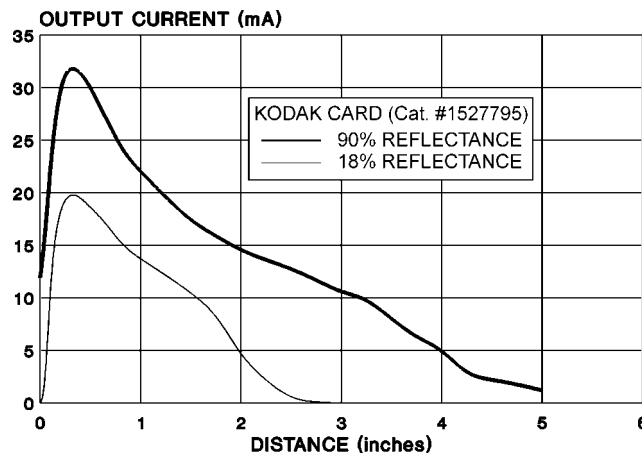


# ABSOLUTE MAXIMUM RATINGS @ 25°C UNLESS NOTED

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)

