



INFRARED DETECTOR MODULE

TSOP98200



Industry-First Wide-Band IR Detector for Code Learning and IR Extender Applications in Single Package

FEATURES

- Covers the entire Remote Control bandwidth of 30 kHz to 455 kHz
- Features a photodiode combined with a wide-band amplifier in a single device, replacing up to 12 discrete components in a typical application
- Mounted within a 3-pin epoxy-encapsulated module with an integrated semi-cylindrical lens
- AC coupled to prevent sensor activation by DC light sources such as sunlight or tungsten bulbs
- Internal metal shielding to guard against EMI
- Extended code learning range up to 1 meter - other solutions typically have a range limited to several centimeters.
- Specified for operation with supply voltages from 2.7 to 5.5 V
- Small package simplifies the design and layout of compact IR extender and code learning systems
- TTL- and CMOS-compatible output

APPLICATIONS

- For any code learning and IR extender remote control application

Datasheet is available on our web site at www.vishay.com for TSOP98200 - <http://www.vishay.com/doc?84795>

DESCRIPTION

The TSOP98200 is a miniaturized detector module for receiving the modulated signal of infrared remote control systems. A PIN diode and preamplifier are assembled on a lead frame, the epoxy package is designed as an IR filter. The modulated output signal, Carrier Out, can be used for code learning applications.

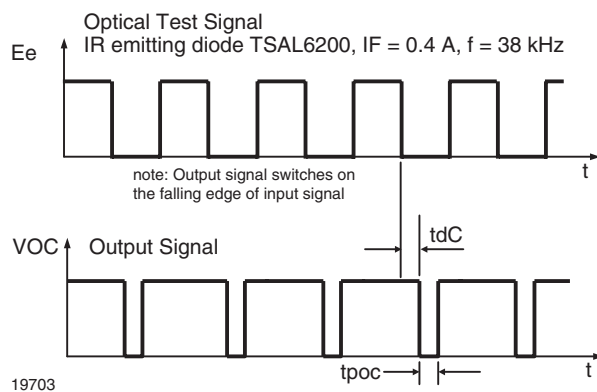
Electrical and Optical Characteristics Carrier Out

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified
 $V_s = 3\text{ V}$

Parameter	Test Condition	Symbol	Min	Typ.	Max	Unit
Supply Current (Pin 3)	$E_v = 0$	I_{SD}		0.6	0.8	mA
Supply Voltage		V_S	2.7		5.5	V
Output Voltage Low (Pin 1)	$I_{OSL} = 0.5\text{ mA}$, test signal see fig.1	V_{OSL}			250	mV
Maximum Irradiance	test signal see fig.1 (20 - 60* kHz)	$E_{e\ max}$	300	500		W/m^2
Directivity	Angle of half transmission distance	$\Phi_{1/2}$		± 45		deg
Transmission Distance	$E_v = 0$, test signal see fig. 1, IR diode TSAL6200, $I_F = 400\text{ mA}$	d		1		m
Threshold Irradiance	$V_S = 3\text{ V}$ (20 - 60* kHz)	$E_{e\ min}$		0.3	0.5	W/m^2
Carrier Out rise time	$V_S = 3\text{ V}$, $C_L = 10\text{ pF}$	T_R		100		ns
Carrier Out fall time	$V_S = 3\text{ V}$, $C_L = 10\text{ pF}$	T_F		10		ns
Output pulse width	$T_{PI} = 10\text{ }\mu\text{s}$, $C_L = 10\text{ pF}$	T_{PO}	0.6	1.1	1.6	μs

* These irradiance values are guaranteed to 60 kHz. The TSOP98200 will continue to function up to frequencies higher than 600 kHz, however the irradiance at frequencies above 60 kHz is dependent on the carrier frequency and the pulse pattern received.

Typical $E_{emin} = 2\text{ W/m}^2$ at 455 kHz.

Figure 1. Typical Characteristics

Figure 2. Block Diagram
