

## General Description

The ADT5200/01 is a Infrared light detector with digital output. It makes possible easy development of object detecting systems with high performance, high reliability and small equipment size.

This chip incorporates a photodiode, amplifier, Schmitt-trigger, voltage regulator.

**ADT5200** : Low level output at shielding

**ADT5201** : High level output at shielding

## Key Features

- Built-in schmitt-trigger circuit
- Open collector output
- High operating temperature

## Application

- Floppy disc drives
- Copiers
- VCRs, Cassette decks

## Absolute Maximum Ratings ( Ta=25 )

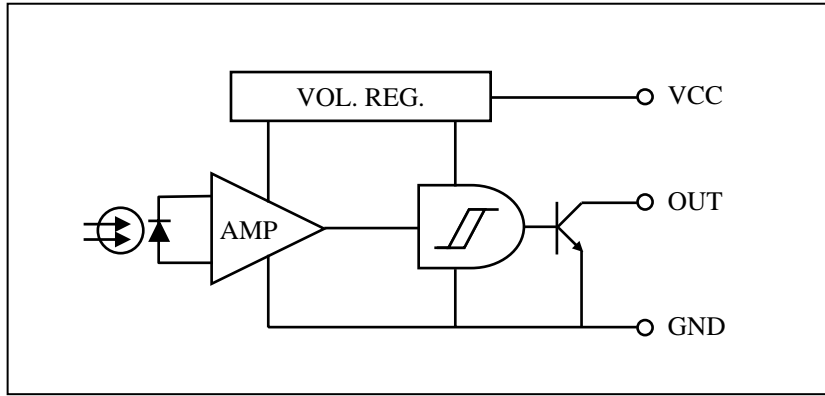
Parameter	Symbol	Ratings	Unit
Supply Voltage	Vcc	0 ~ 6	V
Operating Temperature	Topr	-25 ~ 75	
Storage Temperature	Tstg	-30 ~ 85	

\* Stress above those listed under Absolute Maximum Ratings may cause permanent damage of device.

This is stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for longer periods may affect device reliability.

During overload conditions (VIN>Vcc or VIN<GND), those voltage on Vcc pins with respect to ground must not exceed the values defined by the absolute maximum ratings.

## Functional Block Diagram



## Electrical Characteristics ( ADT5200, Ta=25 , Vcc=5.0V )

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Operating supply voltage	V <sub>CC</sub>	-	4.5	-	5.5	V
Supply current	I <sub>CC</sub>	E <sub>v</sub> =0 L <sub>x</sub>	3.5	4.5	6	mA
High level output voltage	V <sub>OH</sub>	E <sub>v</sub> =100 L <sub>x</sub> , R <sub>L</sub> *1=10K	4.8	-	-	V
Low level output voltage	V <sub>OL</sub>	E <sub>v</sub> =0 L <sub>x</sub> , I <sub>OL</sub> =16mA	-	-	0.4	V
Peak wavelength	λ		-	940	-	nm
L → H Propagation delay time	T <sub>PLH</sub>	E <sub>v</sub> =100 L <sub>x</sub> , R <sub>L</sub> =10K	-	2	3	μs
H → L Propagation delay time	T <sub>PHL</sub>	E <sub>v</sub> =0 L <sub>x</sub> , R <sub>L</sub> =10K	-	4	5	μs
Rise time	T <sub>R</sub>	E <sub>v</sub> =100 L <sub>x</sub> , R <sub>L</sub> =10K	-	300	600	ns
Fall time	T <sub>F</sub>	E <sub>v</sub> =0 L <sub>x</sub> , R <sub>L</sub> =10K	-	30	60	ns
Operation frequency	f	R <sub>L</sub> =10K	3			KHz

\*1. R<sub>L</sub> is linked VCC pad to OUT pad

## Electrical Performance

