

# Opic Detector

**OPIC DETECTOR FOR IR DATA COMMUNICATION (CONFORM TO IRDA1.0)**

### GENERAL DESCRIPTION

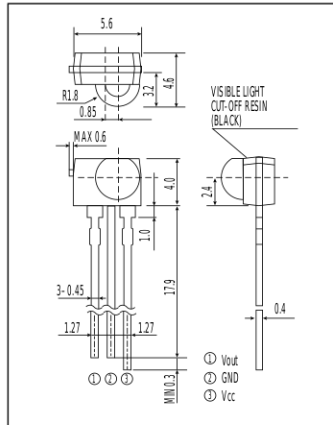
Sharp's IS1U20 is an OPIC detector that conforms to IrDA 1.0 standards for IR data communications.

Its OPIC structure permits a reduction in the total IR system parts count.

### FEATURES

- OPIC detector conforms to IrDA 1.0 (Data rate: 2.4~115.2 kbps)
- Down-sizing by OPIC type
- Conforms to 5V/3V power supply (Operating supply voltage 2.7~5.5V)
- Visible light cut-off type
- Recommended for use with the GL1F20 emitter.

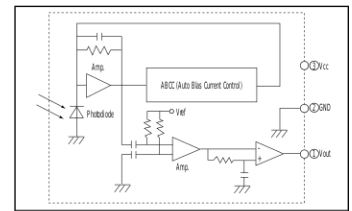
### OUTLINE DIMENSIONS (Unit:mm)



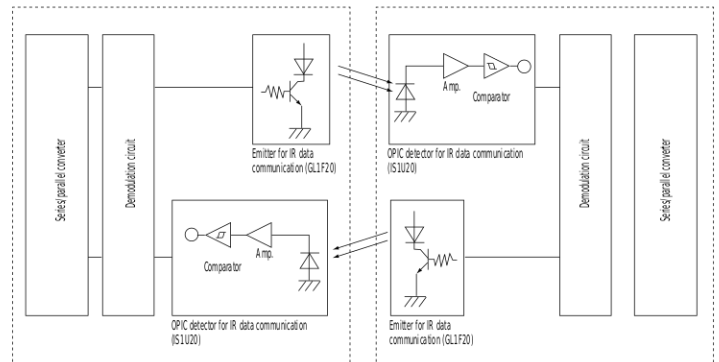
### APPLICATIONS:

- Personal Computer
- Personal Digital Assistant
- Printer
- Word Processor

### BLOCK DIAGRAM

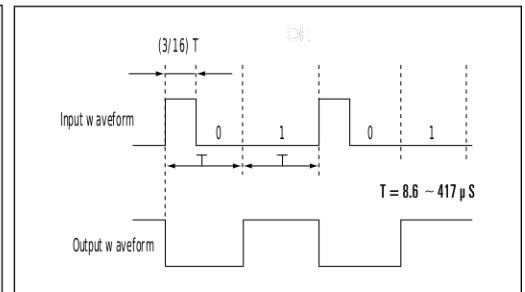


### EXAMPLE OF IR DATA COMMUNICATION SYSTEM BY GL1F20/IS1U20



### IRDA1.0

|                         |                  |
|-------------------------|------------------|
| Data rate               | 2.4 k~115.2 kbps |
| Modulation type         | SIR              |
| Receiving distance      | 1m               |
| Transmitting wavelength | 850-900 nm       |
| Receiving waveform      | Right drawing    |
| Output waveform         | Right drawing    |



### ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C)

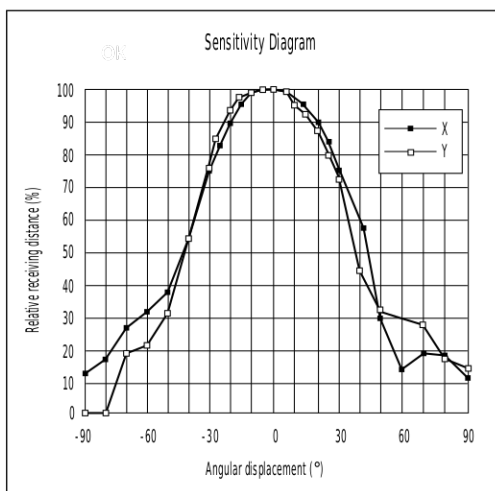
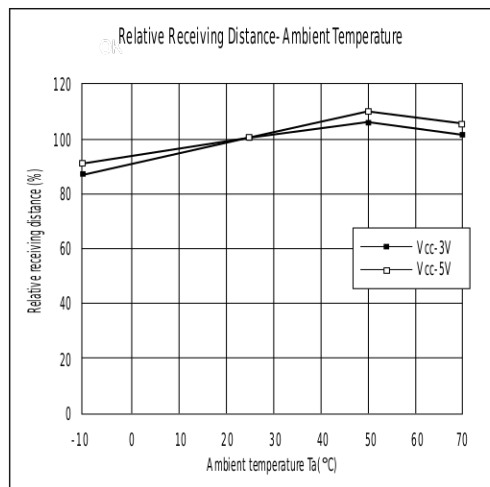
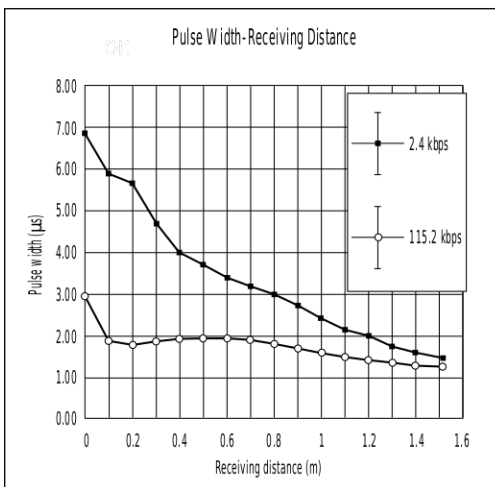
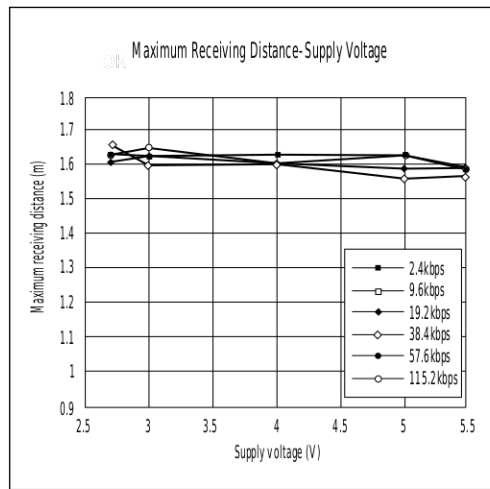
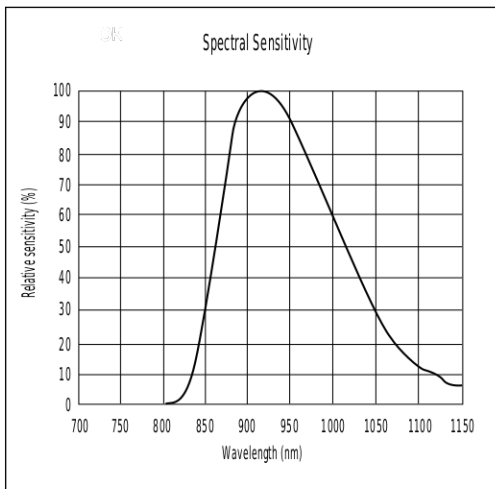
| Parameter                  | Symbol | Characteristics          | Condition                                |
|----------------------------|--------|--------------------------|------------------------------------------|
| Operating supply voltage   | Vcc    | 2.7~5.5V                 | —                                        |
| Consumption current        | Icc    | TYP 0.7 mA<br>TYP 1.0 mA | Vcc=3V<br>Vcc=5V                         |
| High level output voltage  | VOH    | MIN 2.5V<br>MIN 4.5V     | Vcc=3V<br>Vcc=5V                         |
| Low level output voltage   | VOL    | MAX 0.4V<br>MAX 0.4V     | Vcc=5V, IOL=400 μA<br>Vcc=3V, IOL=400 μA |
| Output pulse width         | T1     | 0.80~8.0 μs              | Transmitting pulse width 1.63 μs         |
| Maximum receiving distance | L      | MIN 1.0 m                | at transmitting intensity 40 mW/sr       |
| Data rate                  | —      | 2.4~115.2 kbps           | —                                        |
| Operating temperature      | Topr   | -10~+70°C                | —                                        |

### PRECAUTION

In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's device, show in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device.

Specifications are subject to change without notice.

All devices should be handled according to the precautions for use in specifications and data book.



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