One Mold Receiver Module

PIC-318LM

Description

The photo IC is a complete IR receiver for data communication developed and optimized for use in carrier frequency modulated transmission applications. Its function can be described using the block diagram (see figure 1). The input stage meets two main functions. First, it provides a suitable bias voltage for the PIN diode. Secondly, the pulsed photo-current signals are transformed into a voltage by a special circuit which is optimized for low noise applications. After amplification by a controlled gain amplifier (CGA), the signals have to pass a tuned integrated narrrow bandpass filter.The demodulator is used to convert the input butst signal into a digital envelope output pulse and to evaluate the signal information quality,I.e. unwanted pulses will be suppressed at the output pin. All this is done by means of an integrated dynamic feedback circuit which varies the gain as a function of the present environ mental condition (ambient light, modulated lamps etc.). Other special features are used to adapt to the current application to secure best transmission quality.

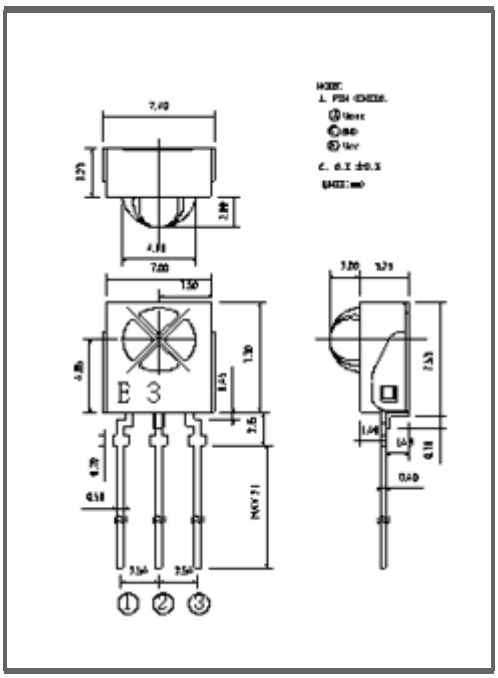
Features

- No external components except PIN diode
- Supply-voltage range: 4.5V to 5.5V
- Automatic sensitivity adaptation (AGC)
- Automatic strong signal adaptation (ATC)
- Enhanced immunity against ambient light disturbances
- Available for carrier frequencies between 30 kHz to 76 kHz ; adjusted by Zener diode fusing
- TTL and CMOS compatible
- Suitable min. burst length >6 or 10 pulses/burst

Application

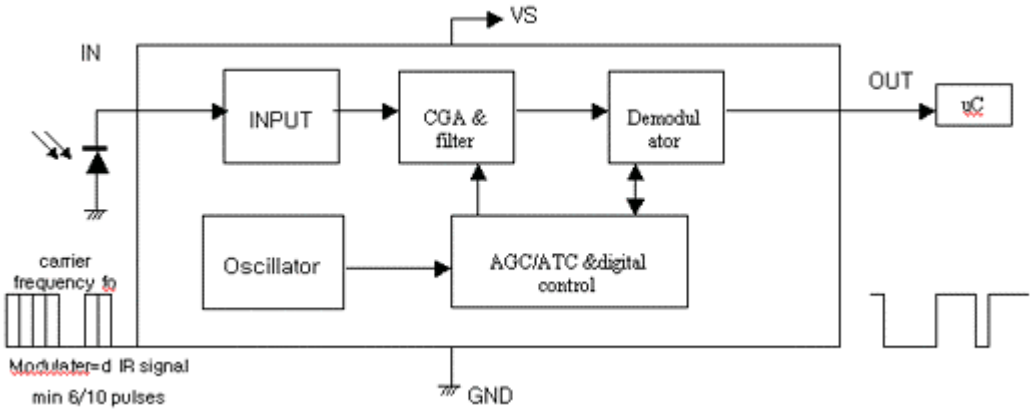
- Audio video applications
- Home appliances
- Remote control equipment

■ Outline Dimensions



Block Diagram

Figure 1.



■ **Absolute Maximum Ratings** (at 25℃ Unless otherwise note)

Parameter	Symbol	Ratings	Units
Supply Voltage	Vs	-0.3 to 5.5	V
Supply Current	Is	3	mA
Input voltage	Vin	-0.3 to Vs	V
Input DC current at Vs= 5V	Iin	0.6	mA
Output voltage	Vo	-0.3 to 5.5	V
Storage temperature	Tamb	-40 to +125	℃
Operating temperature	Tstg	-25 to +85	℃
Power dissipation at Tamb=25。c	Ptot	30	mW

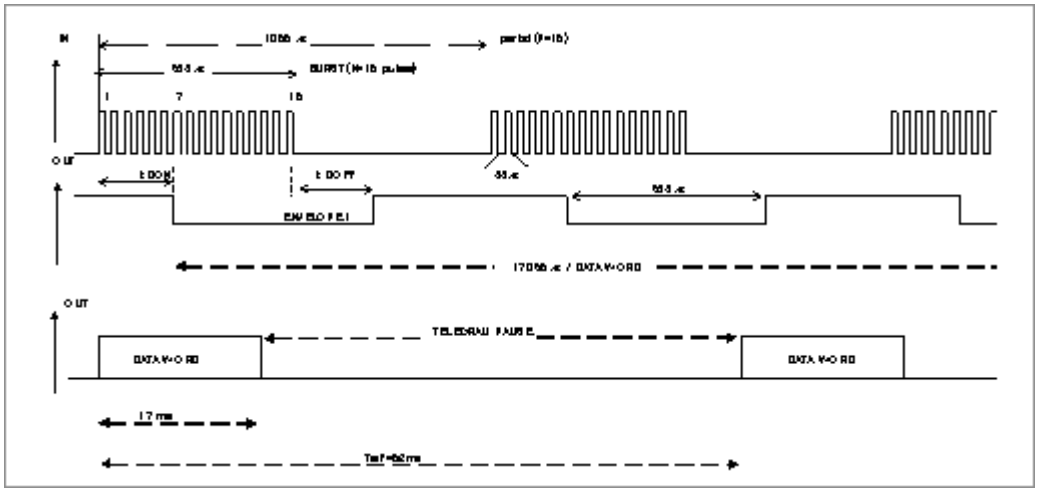
■ **Electrical Characteristics**

Tamb=-25 to 85。c,VS=4.5 to 5.5 V unless otherwise specified

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
internal pull-up resistor		Rpu		30~40		□
Output voltage low	IOL=2mA	VOL	-		250	□
Output voltage high		VOH	Vs-0.25		Vs	v
MaxDC output current	R2=2.4 kΩ	Vodc	V		**2**	□
Output currrent clamping	R2=0	IocL		7.5		□
Input						
Max. input DC current	Vin =0	Vin			600	□
AC input current at 100 Hz		**I100**			I	□
Delection threshold current signal square peak	38 kHz	**IEemin**		500	**1500**	pA
Maxinum detection threshoul current	Signal is square pp	**IEemax**		100		□

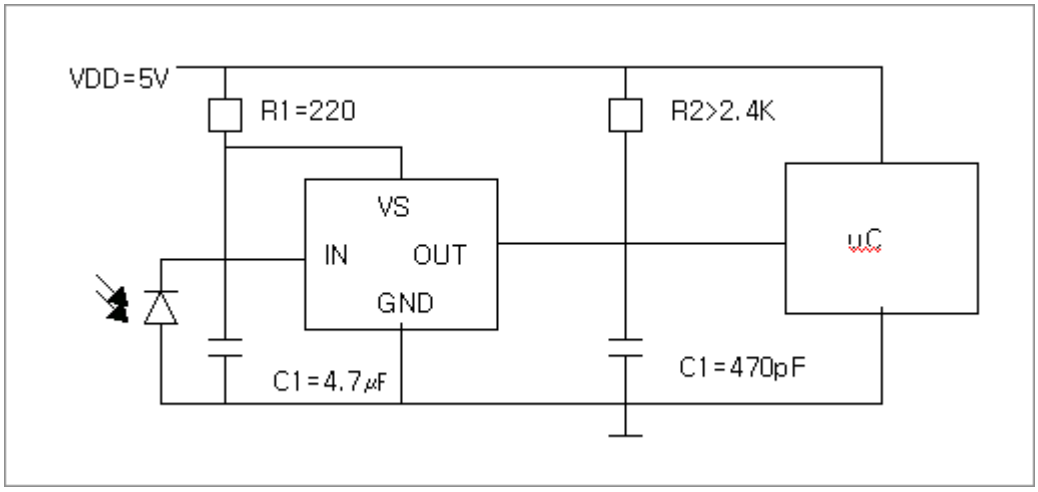
Maxinum detection threshoul current	Signal is square pp	**IEemax**		100		□
Controlled Amplifier & Filter						
Frequency zaner	Ry zaner zanning	f	-	**38**	-	KHz
Center frequency zapping accuracy	T=25℃	fo	fo-1.5%	fo	fo+1.5%	KHz
Center frequency of bandpass		fo	fo-3%	fo	fo+3%	KHz

■ USTRATION OF USED TERMS

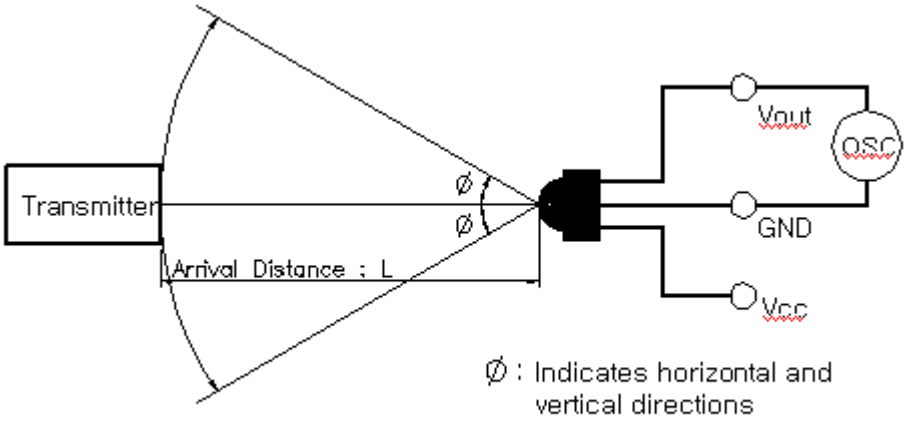


Example:f=30kHz,burst with 16 pulses,16 periods

- Application circuit



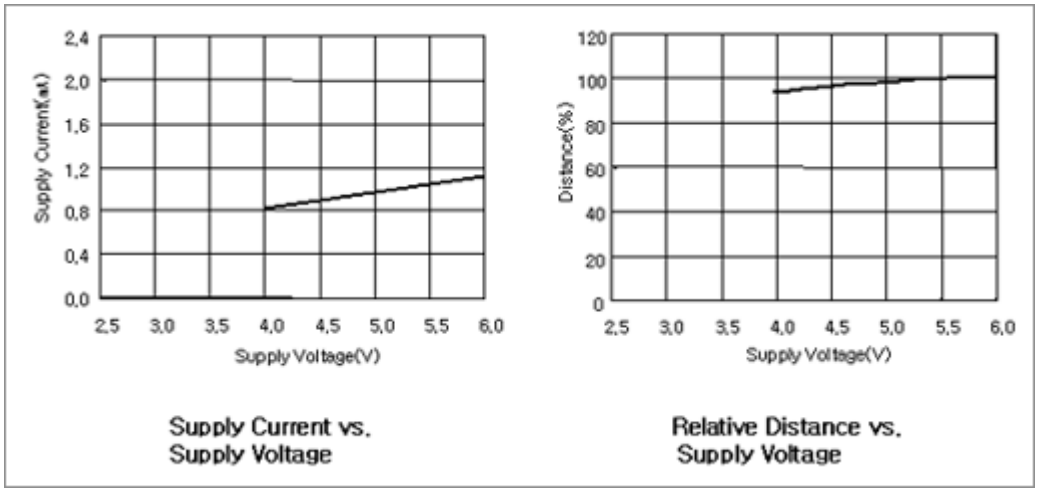
- Test condition of arrival distance

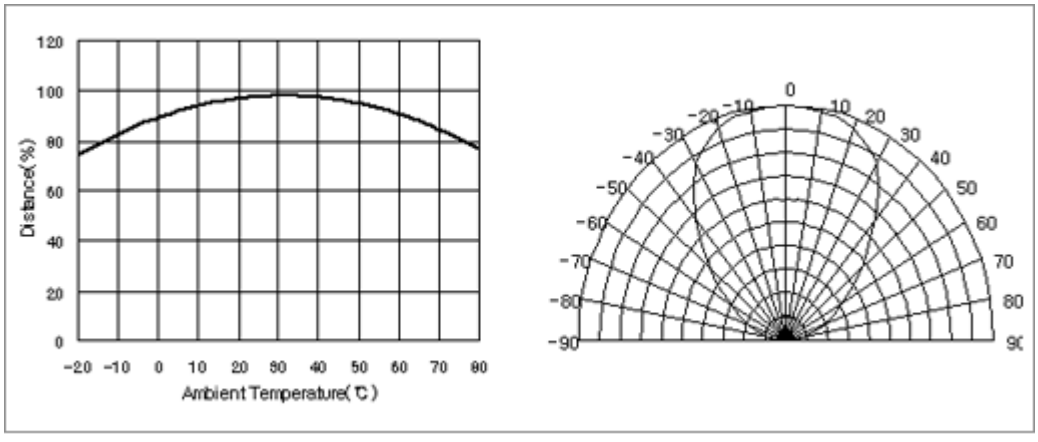


[Measurement condition for arrival distance]

□ Ambient light source : Detecting surface illumination shall be irradiate 200±50Lux under ordinary white fluorescence lamp without high frequency lighting

■ **Typical Characteristics** (Tamb = 25℃)





NOTE:
1. PIN CONTIG.
   ① Vout
   ② GND
   ③ Vcc
2. G.T ±0.3
(UNIT:mm)