



IR Receiver Modules for Remote Control Systems

Description

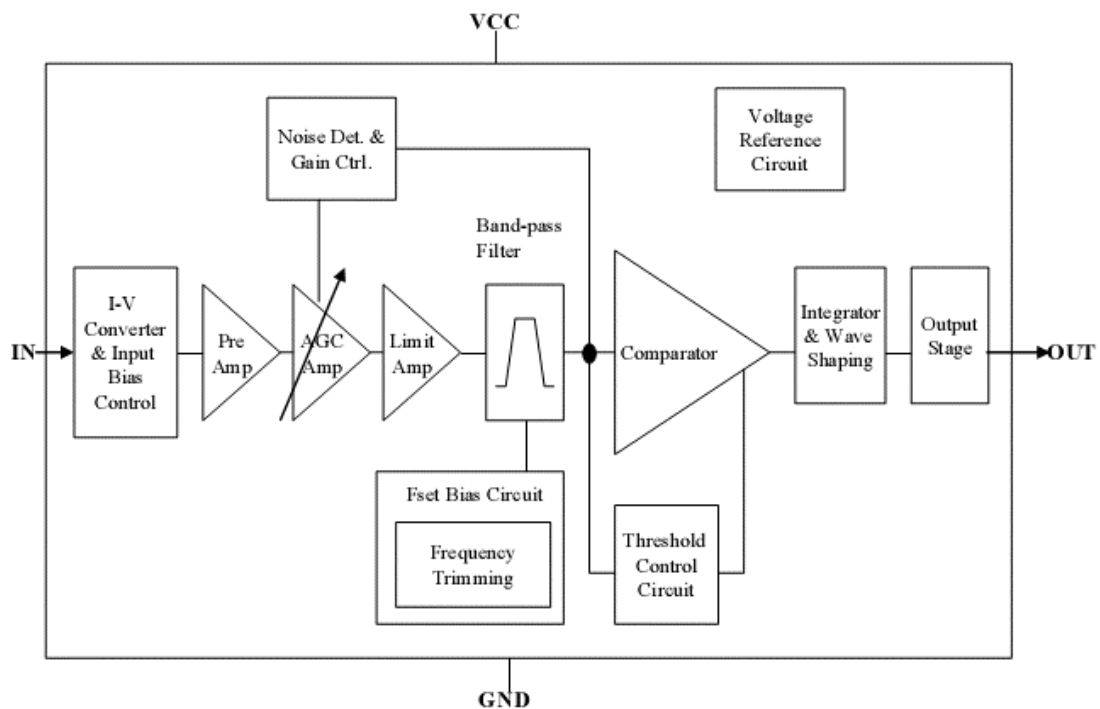
The FM-4038LN-5AC is remote control receiver modules. Pin diode and receiver IC are assembled on one module. Small-sized, light-weight, and low current consumption modules have been achieved by using resin mold. The demodulated output signal can directly be decoded by a microprocessor..



Features

- Supply Voltage Range: 2.7V to 5.5 V
- TTL and CMOS compatibility
- Photo detector and preamplifier in one package.
- Internal filter for PCM frequency
- Output active low
- Suitable for minimum burst length of 6 pulses
- Minimum data pause time < 1ms
- High data rate code 2.5Kbps
- Meet RoHS

Block Diagram



**Absolute Maximum Ratings**

(Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Supply Voltage	V _{cc}	6	V
Supply Current	I _{cc}	1.5	mA
Operating Temperature	T _{opr}	-20 ~ +80	°C
Storage Temperature	T _{stg}	-40 ~ +125	°C
Soldering Temperature	T _{sd}	260°C, Max 5 sec	°C

Electro-optical Characteristics

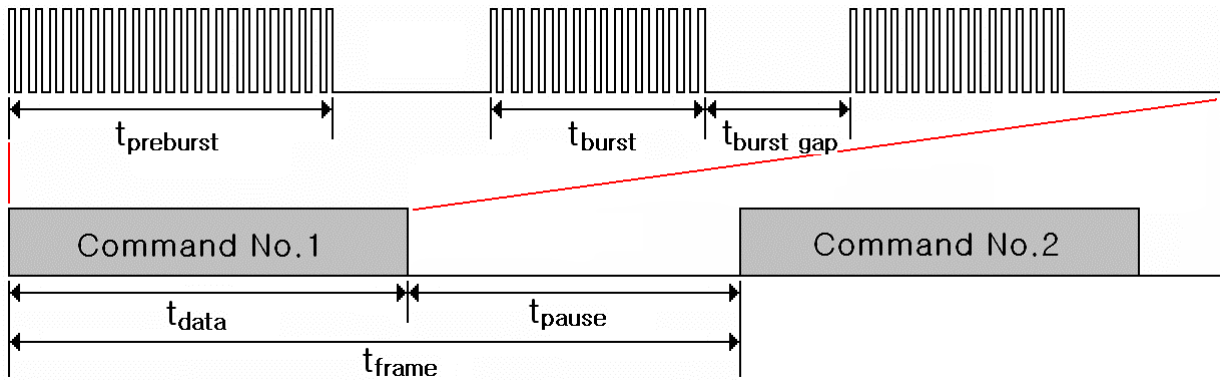
(Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Supply Current	ICC	-	1.0	1.5	mA	V _{cc} =5.0V
Output Voltage	V _{oh}	V _{cc} -0.5	-	-	V	
	V _{ol}	-	0.2	0.4	V	
Peak Wave Length	λ _p	-	950	-	nm	
Max. Voltage Gain	A _v	65	72	80	dB	f _{in} =37.9kHz V _{in} =30uVp-p
BPF Bandwidth	f _{BW}	4.0	6.0	8.0	kHz	-3dB Bandwidth V _{in} =30uVp-p
Arrival Distance	L	12	-	-	m	
Output Pulse width	T _{pwl}	400	600	800	us	f _{in} =37.9kHz V _{in} = 50mVpp
	T _{pwh}	400	600	800	us	



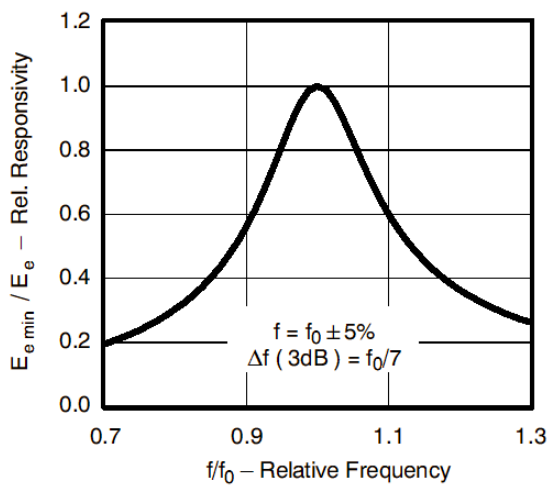
Electrical/Optical Characteristics

[Fig.1] Data Signal diagram

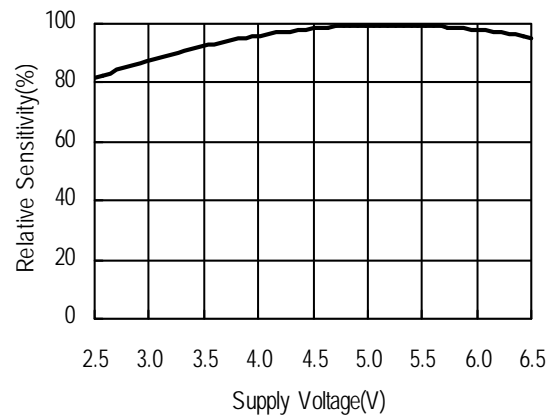


Minimum Burst Length t-Burst (number of pulses per burst)	6 pulses
Minimum Burst Gap time t-Burst_gap (number of pulses per burst) Between two burst	10 pulses
Minimum Data Pause Time	1ms

[Fig.2] Frequency Dependence of Responsivity



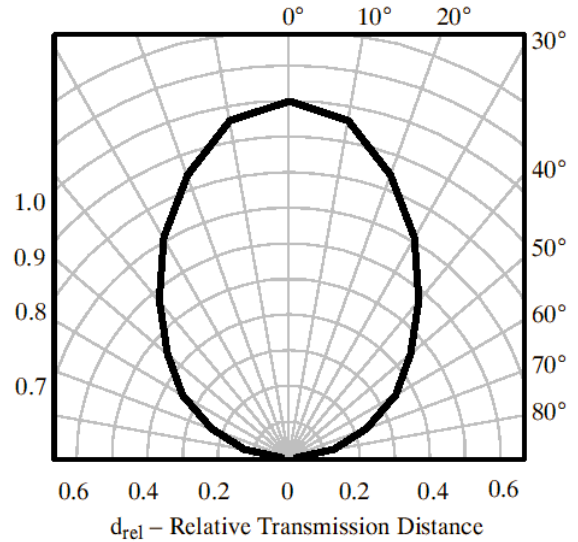
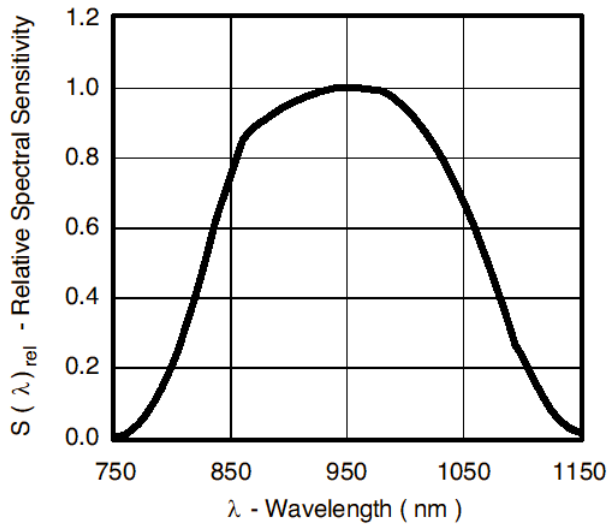
[Fig.3] Sensitivity vs. Supply Voltage



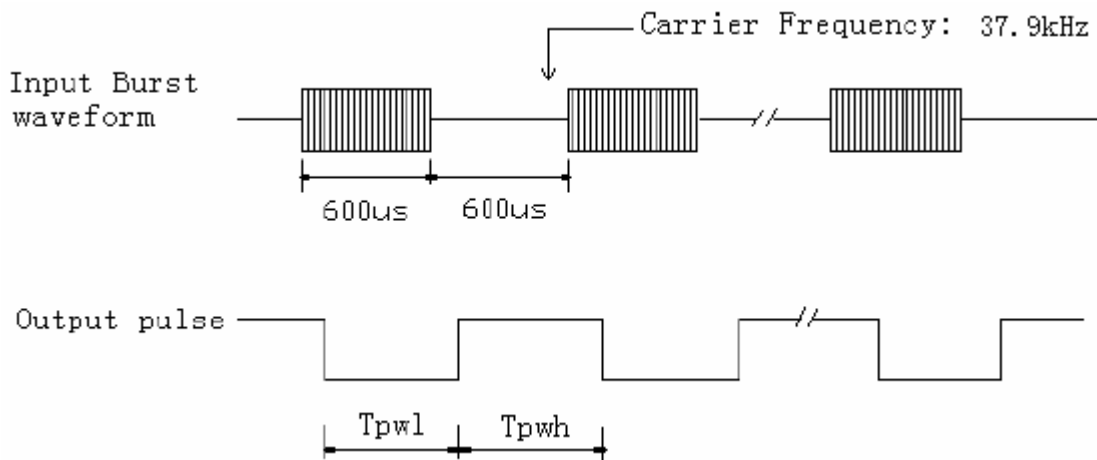


[Fig.4] Relative Spectral Sensitivity vs. Wavelength

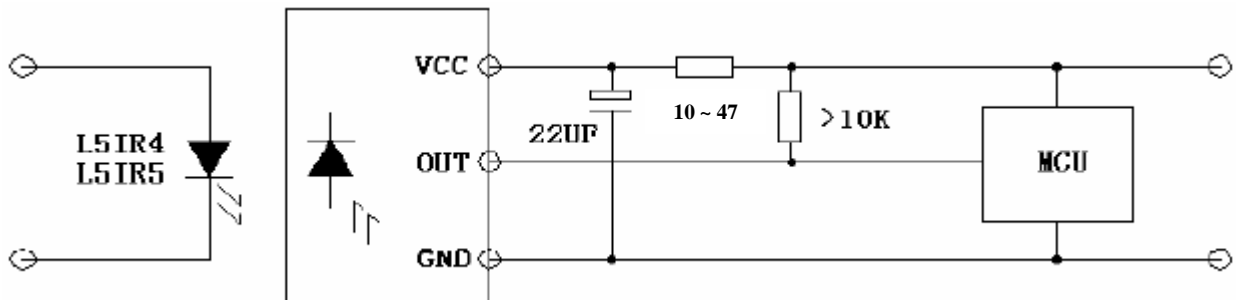
[Fig.5] Directivity



[Fig.6] Test Signal diagram (22 pulse)



[Fig.7] Transmitter





※ Package Dimension (Unit : mm)

