

Miniature Infrared Remote Control Receiver



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1. Application

This Specification is applied to inspection and approval of the IR Receiver Module for Infrared Remote Control Application.

2. Description

The ROM-Series are miniaturized receiver for infrared remote control system. The Pin Photodiode and preamplifier are assembled on lead frame. The epoxy package is designed as IR filter. The module has excellent performance even in disturbed ambient light application and provides protection against uncontrolled output pulses.

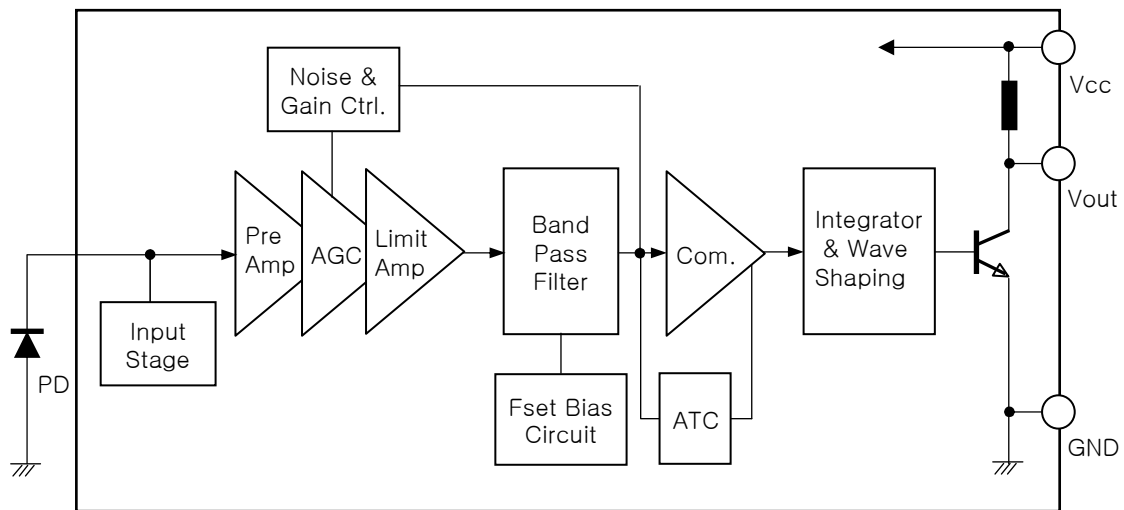
3. Features

- 1) Transfer Mold Package.
- 2) Wide Operating Supply voltage 2.7V ~ 5.5V
- 3) Supply Current : 3.0V(0.4mA), 5.0V(0.42mA)
- 4) Band pass filter center frequency : 30 ~ 60Khz
- 5) Epoxy IR filter characteristic : 940nm
- 6) Maximum interference safety against optical and electrical disturbance.
- 7) Internal filter for a high frequency lighting fluorescent lamp.
- 8) Internal Pull-Up output.
- 9) Operation with short burst possible.
- 10) Lead(Pb)-free component.

4. Absolute Maximum Ratings

- 1) Supply Voltage : 6.0V
- 2) Supply Current : 2.0mA
- 3) Operating Temperature : -20°C ~ +85°C
- 4) Storage Temperature : -30°C ~ +90°C

5. Functional Block Diagram



6. Electro-Optical Characteristics

1) Absolute Maximum Ratings

(at 25°C Unless otherwise note)

Parameter	Symbol	Ratings	Unit
Supply Voltage	V _{cc}	6.0	V
Output Current	I _{out}	2.0	mA
Operating Temperature	T _{opr}	-20 ~ +85	°C
Storage Temperature	T _{stg}	-30 ~ +90	°C
Soldering Temperature (*1)	T _{sol}	260, t<10sec	°C

(*1) For 10sec (at mounting on PCB with thickness of 1.6mm)

2) Recommended Operating Conditions

Parameter	Symbol	Ratings	Unit
Operating Voltage	V _{cc}	2.7 ~ 5.5	V
Input Frequency	f _{in}	30 ~ 60	kHz

3) Electro-Optical Characteristics

 (T_a=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Supply Voltage	V _{cc}		2.7	-	5.5	V
Supply Current	I _{cc}	N/Signal (3.0V)	0.3	0.4	0.5	mA
		N/Signal (5.0V)	0.35	0.42	0.6	mA
Peak Wavelength (*1)	λ _p		-	940	-	nm
B.P.F Center Frequency	f _o		36	-	60	kHz
High Level Output Voltage (*1)	V _{OH}		V _{cc} -0.5	-	-	V
Low Level Output Voltage (*1)	V _{OL}		-	0.2	0.4	V
Low Level Output Pulse Width (*1)	t _{wL}	Burst Wave =600μs Period = 1.2ms	400	-	800	μs
High Level Output Pulse Width (*1)	t _{wH}		400	-	800	μs
Internal Pull_up Resistance	R _{out}			94		kΩ
Arrival Distance (*1)	D	±0°	-	13	-	m
		±30°	-	11	-	m
Output Form	Active Low Output					

*1. Distance between emitter and detector specifies maximum distance that output wave form satisfies the standard (fig.2, fig3) under the conditions below against the standard transmitter. ON/OFF pulse width is to be satisfied within 0.3m~ arrival distance length.

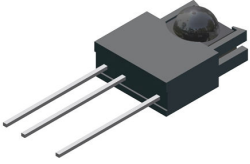
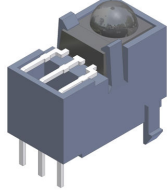
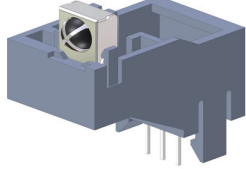
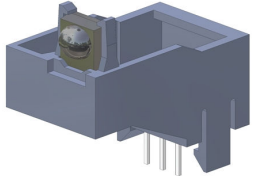


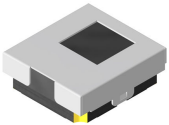
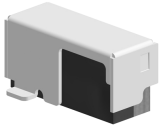
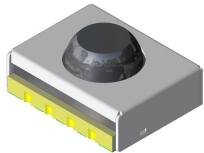
4) Carrier Frequency

Type	Carrier Frequency
ROM-○○32○○	32.7 kHz
ROM-○○36○○	36.0 kHz
ROM-○○38○○	37.9 kHz
ROM-○○40○○	40.0 kHz
ROM-○○56○○	56.7 kHz

◆ Standard Package (Normal, Guide) for IR Receiver Modules.

<p>ROM - V...LM</p> 	<p>ROM - V...TM2</p> 	<p>ROM - V...TC1</p> 	<p>ROM - V...TC2</p> 
<p>ROM - V...THC1</p> 	<p>ROM - V...THC2</p> 	<p>ROM - V...SY</p> 	<p>ROM - V...SP</p> 
<p>ROM - D...SV10</p> 	<p>ROM - D...SV11</p> 	<p>ROM - D...LU</p> 	<p>ROM - D...SV2</p> 
<p>ROM - D...SV5</p> 	<p>ROM - T... MS</p> 	<p>ROM - T...TM2</p> 	<p>ROM - T...TBE</p> 

◆ Standard Package (Guide, SMD) for IR Receiver Modules.

<p>ROM - T...MV4</p> 	<p>ROM - T...THC</p> 	<p>ROM - D...LG1</p> 	<p>ROM - T...LG1</p> 
<p>ROM - S...L</p> 	<p>ROM - M...L</p> 	<p>ROM - D...SHM</p> 	<p>ROM - D...SSM</p> 
<p>ROM - C...L</p> 	<p>ROM - C...VL</p> 	<p>ROM - M...R</p> 	<p>ROM - M...VR</p> 