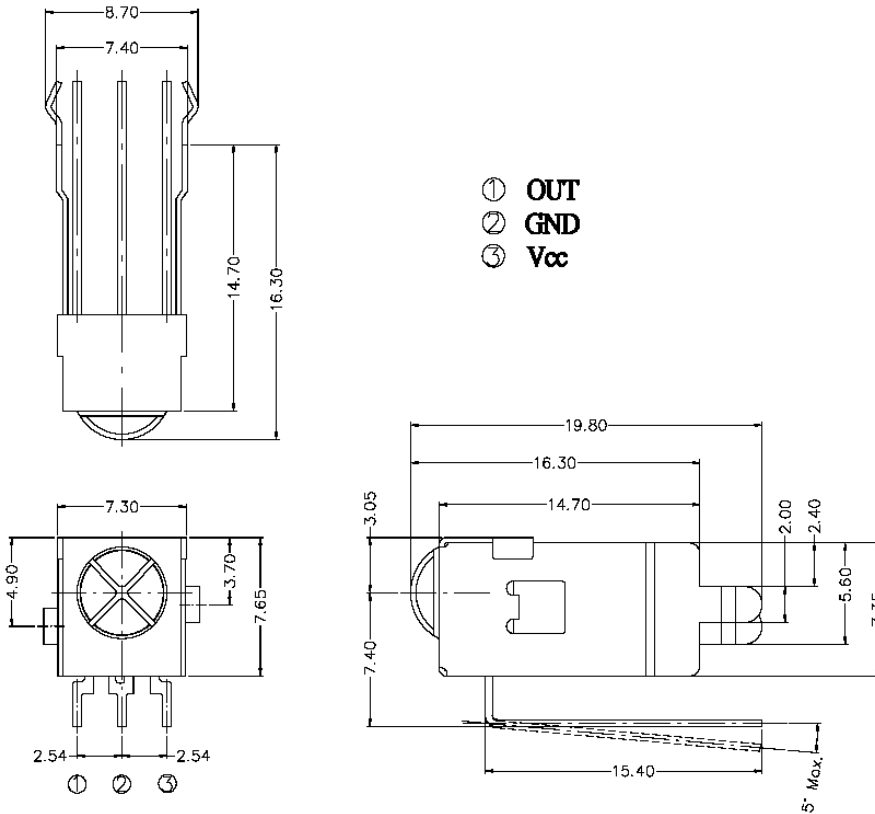


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RoHS Compliant
Aug 2004



Electronic Optical Characteristics ($T_a = 25^\circ\text{C}$, and $V_{cc} = 3\text{ V}$)

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Consumption Current	I_{CC}	—	1.2	—	mA	No signal input
B.P.F. Center Frequency	F_o	—	38	—	KHz	
Peak Wavelength	λ_p	—	940	—	nm	
Reception Distance	L_0	8	—	—	m	At the ray axis *1
	L_{45}	5	—	—		
Half Angle (Horizontal)	θ_h	—	45	—	deg	
Half Angle (Vertical)	θ_v	—	45	—	deg	
High Level Pulse Width	T_H	400	—	800	μs	At the ray axis *2
Low Level Pulse Width	T_L	400	—	800	μs	
High Level Output Voltage	V_H	4.5	—	—	V	
Low Level Output Voltage	V_L	—	0.2	0.5	V	

*1: The ray receiving surface at a vertex and relation to the ray axis in the range of $\theta = 0^\circ$ and $\theta = 45^\circ$.

*2: A range from 30 cm to the arrival distance. Average value of 50 pulses.

* Specifications subject to change without notice. Dimensions are in mm ± 0.3 unless stated otherwise.

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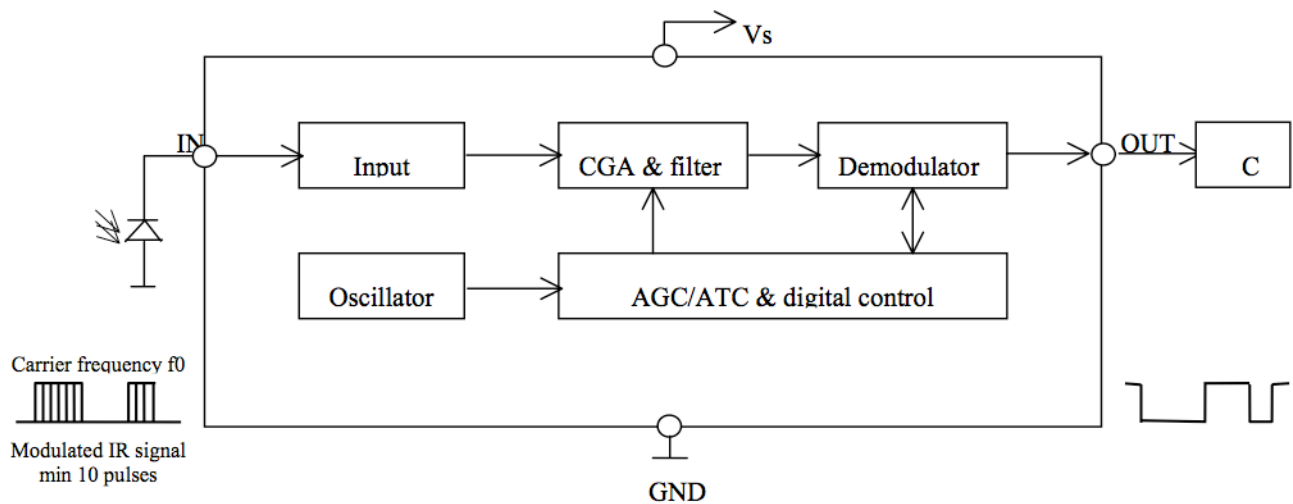


Absolute Maximum Ratings at $T_a = 25\text{ }^\circ\text{C}$

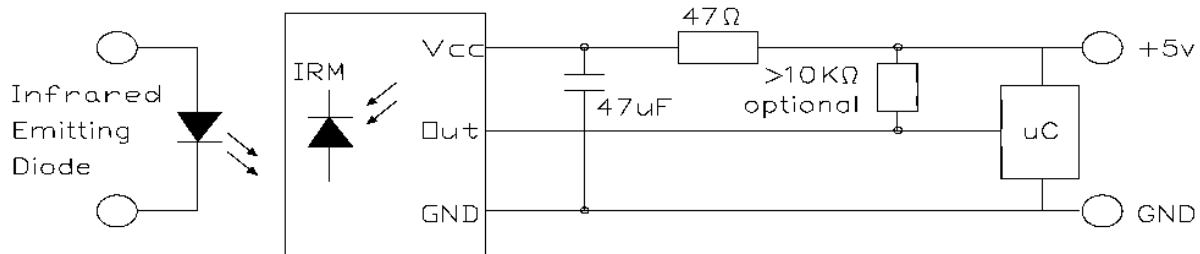
Parameter	Symbol	Rating	Units
Supply Voltage	V_{CC}	0 ~ 6	V
Operating Temperature	T_{opr}	-25 ~ +80	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +85	$^\circ\text{C}$
Soldering Temperature ^a	T_{sol}	260	$^\circ\text{C}$

a. 4 mm from mold body less than 10 seconds

Block Diagram:



Application Circuit:



RC Filter should be connected closely between V_{CC} pin and GND pin.

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Test Method:

The specified electro-optical characteristics are satisfied under the following conditions at the controlled distance.

1. Lighting conditions
 - a. Measurement location should be free of bright sunlight.
 - b. Ambient illumination should be from ordinary white fluorescent lamps (not high frequency lamps) and must be less than 10 Lux at the module surface. ($E_e \leq 10$ Lux)

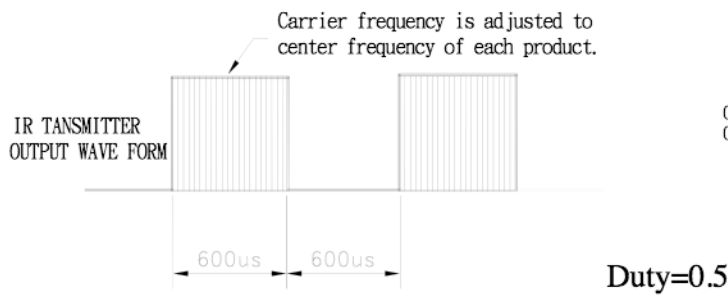
2. Standard transmitter

A transmitter whose output is adjusted to $V_0 = 400$ mV p-p and with output waveform shown in Fig.-1. The standard transmitter is specified according to the measurement method shown in Fig.-2.

3. Measuring system

The measuring system is shown in Fig.-3.

Fig.-1 Transmitter Wave Form



D.U.T output Pulse

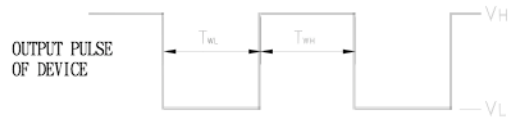


Fig.-2 Measuring Method

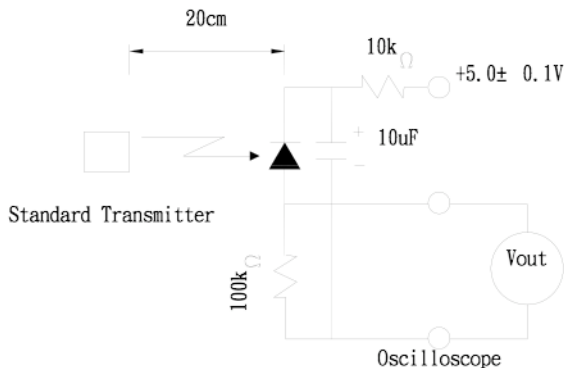
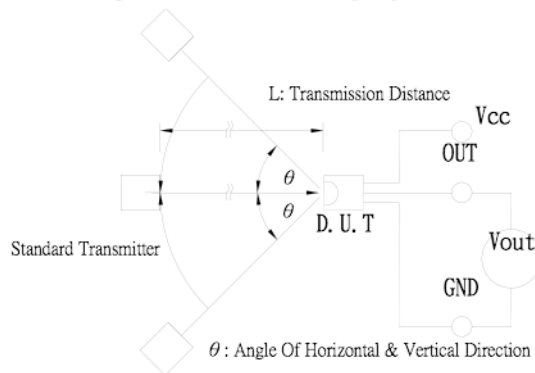


Fig.-3 Measuring System



* Specifications subject to change without notice. Dimensions are in mm ± 0.3 unless stated otherwise.

Typical Electro-Optical Characteristics Curves

Fig. 4. Relative Spectral Sensitivity vs. Wavelength

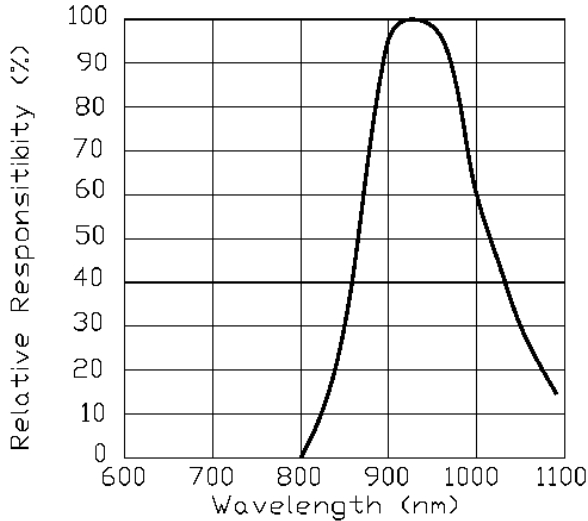


Fig. 5. Relative Transmission Distance vs. Direction

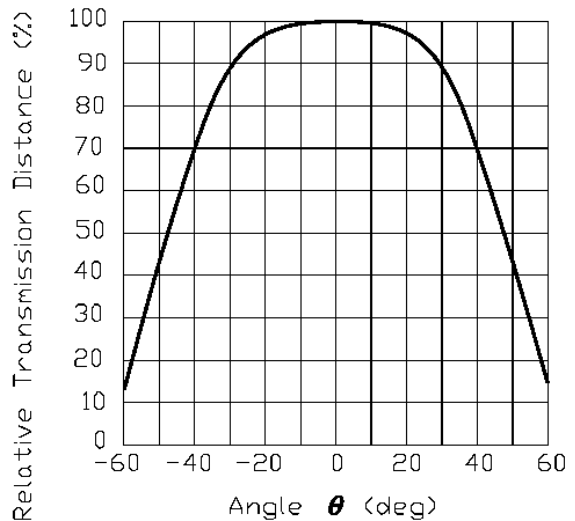


Fig. 6. Output Pulse Length vs. Arrival Distance

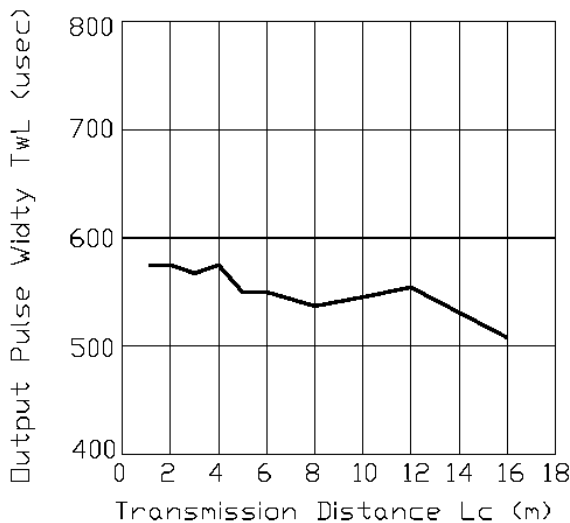
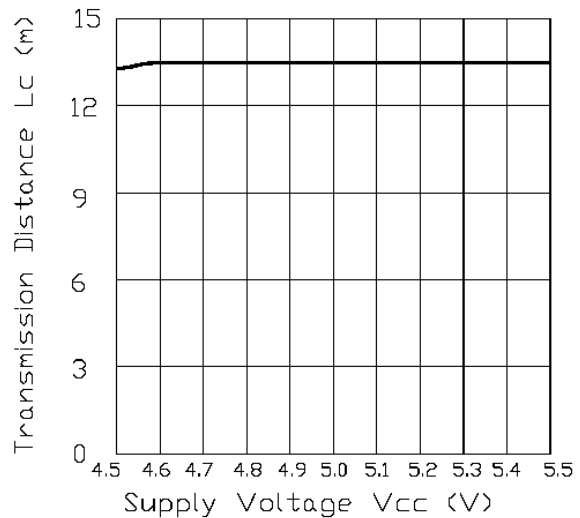


Fig. 7. Arrival Distance vs. Supply Voltage



* Specifications subject to change without notice. Dimensions are in mm ±0.3 unless stated otherwise.