

Features

- Photo detector and preamplifier in one package
- Internal filter for PCM frequency
- Improved shielding against electrical field disturbance
- TTL and CMOS compatibility
- Output active low
- Low power consumption
- High immunity against ambient light
- Continuous data transmission possible (800 bit/s)
- Suitable burst length ≥ 10 cycles/burst
- Meet RoHs & CTi

Applications

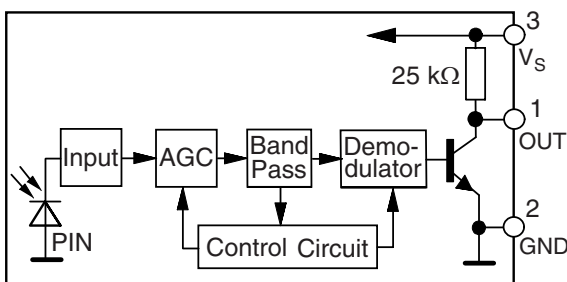
It can be used for Electric Fan, Air Conditioners, LCD, Light, Satellite Receivers and all other equipment requiring remote control.

Electrical & Optical Characteristics

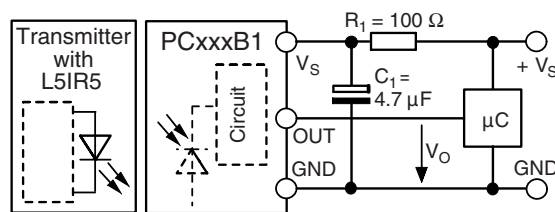
[Ta=25°C, Vcc=5.0V]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc		4.5	5.0	5.5	V
Current Consumption	Icc	Input Signal=0	0.7	1.2	1.5	mA
Peak Wavelength	λ_p		—	940	—	nm
Half Angle	$\Delta\theta$			$\pm 45^\circ$		deg
B.P.F Center Frequency	fo		—	37.9	—	kHz
Arrival Distance	L	250Lux	0°	12	18	m
			$\pm 30^\circ$	9	15	m
H Level Output Voltage	V _{OH}	30cm over the ray axis	4.5	5.0	—	V
L Level Output Voltage	V _{OL}		—	0.2	0.4	V
H Level Output Pulse Width	T _{WH}	Burst Wave=60μs Period=1.2ms	500	600	700	μs
L Level Output Pulse Width	T _{WL}		500	600	700	μs
Output Form	Active Low Output					

Block Diagram



Application Circuit

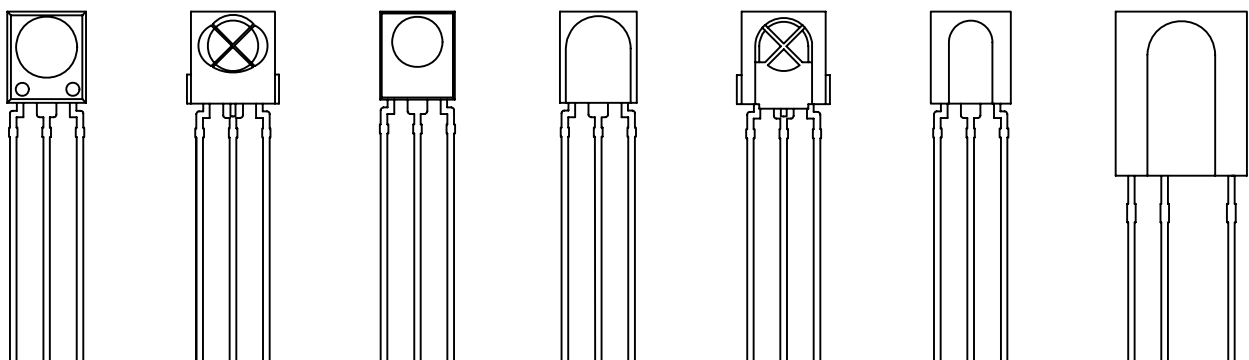


R₁ and C₁ recommended to suppress power supply disturbances.

The output voltage should not be hold continuously at a voltage below V_O = 5.0 V by the external circuit.

Exterior

<PC0038 Series> <PC101K Series> <PC101Series> <PC120 Series> <PC838Series> <TL1738 Series> <TL0038A Series>



Features

- Very low supply current
- Photo detector and preamplifier in one package
- Internal filter for PCM frequency
- Improved shielding against EMI
- Supply voltage: 2.7 V to 5.5 V
- Improved immunity against ambient light
- Insensitive to supply voltage ripple and noise
- TTL and CMOS compatibility
- Meet RoHs and CTi

Applications

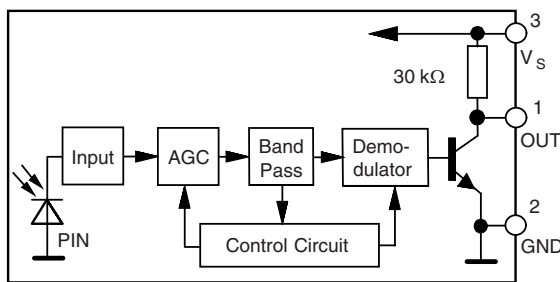
- AV instruments(Audio,TV,VCR,DVD player,LCD)
- Home appliances(Air-conditioner,Fan,Light)
- Toys(Robot,Plane,Car)
- Remote control for wireless devices

Electrical & Optical Characteristics

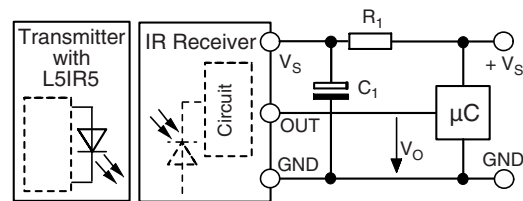
[Ta=25°C, Vcc=5.0V]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Supply Voltage	Vcc		2.7	3.0	5.5	V	
Current Consumption	Icc	Input Signal=0	0.7	1.2	1.5	mA	
Peak Wavelength	λ_p		—	940	—	nm	
Half Angle	$\Delta\theta$			$\pm 45^\circ$		deg	
B.P.F Center Frequency	fo		—	37.9	—	kHz	
Arrival Distance	L	250Lux	Vcc=3V	10	16	—	m
			Vcc=2.7V	9	14	—	m
H Level Output Voltage	V _{OH}	30cm over the ray axis	4.5	5.0	—	V	
L Level Output Voltage	V _{OL}		—	0.2	0.4	V	
H Level Output Pulse Width	T _{WH}	Bust Wave=60μs Period=1.2ms	500	600	700	μS	
L Level Output Pulse Width	T _{WL}		500	600	700	μS	
Output Form	Active Low Output						

Block Diagram



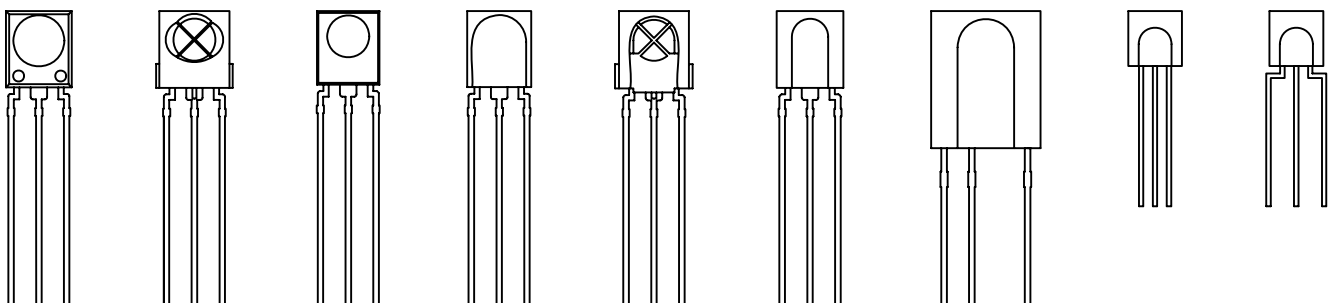
Application Circuit



R₁ and C₁ are recommended for protection against EOS. Components should be in the range of 33 Ω < R₁ < 1 kΩ, C₁ > 0.1 μF.

Exterior

<PC0038 Series> <PC101K Series> <PC101Series> <PC120 Series> <PC838Series> <TL1738 Series> <TL0038A Series> <PC103 Series> <PC105 Series>



■ Features

- Miniature size
- Built-in exclusive IC
- CMOS Design
- Wide half angle & long reception distance
- Good noise-proof capability
- Carrier frequency 37.9kHz
- High protection ability to EMI
- Top view and Mesh
- Case Holder
- Wide voltage operating: 2.7V ~ 5.5V
- Meet RoHs and CTI

■ Applications

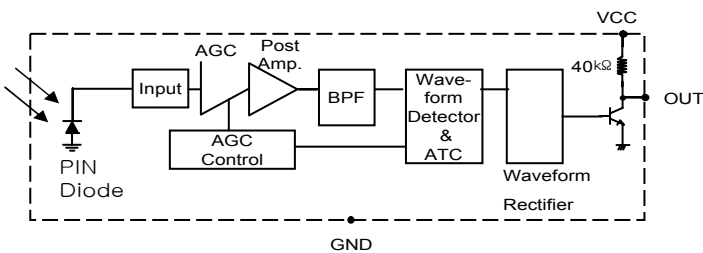
- AV instruments(Audio,TV,VCR,DVD player,LCD)
- Remote control for wireless devices
- Toys(Robot,Plane,Car)

■ Electrical & Optical Characteristics

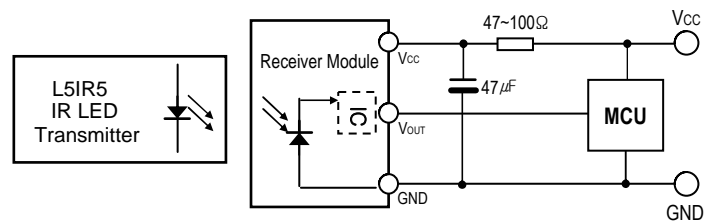
[Ta=25°C, Vcc=5.0V]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Supply Voltage	Vcc		2.7	3.0	5.5	V	
Current Consumption	Icc	Input Signal=0	0.4	0.7	1.2	mA	
Peak Wavelength	λ_p		—	940	—	nm	
Half Angle	$\Delta\theta$			$\pm 45^\circ$		deg	
B.P.F Center Frequency	fo		—	37.9	—	kHz	
Arrival Distance	L	250Lux	Vcc=3.0V	9	15		m
			Vcc=5.0V	12	18		m
H Level Output Voltage	V _{OH}	30cm over the ray axis	2.7	3.0	—	V	
L Level Output Voltage	V _{OL}		—	0.2	0.4	V	
H Level Output Pulse Width	T _{WH}	Bust Wave=60μs Period=1.2ms	500	600	730	μS	
L Level Output Pulse Width	T _{WL}		500	600	730	μS	
Output Form	Active Low Output						

■ Block Diagram

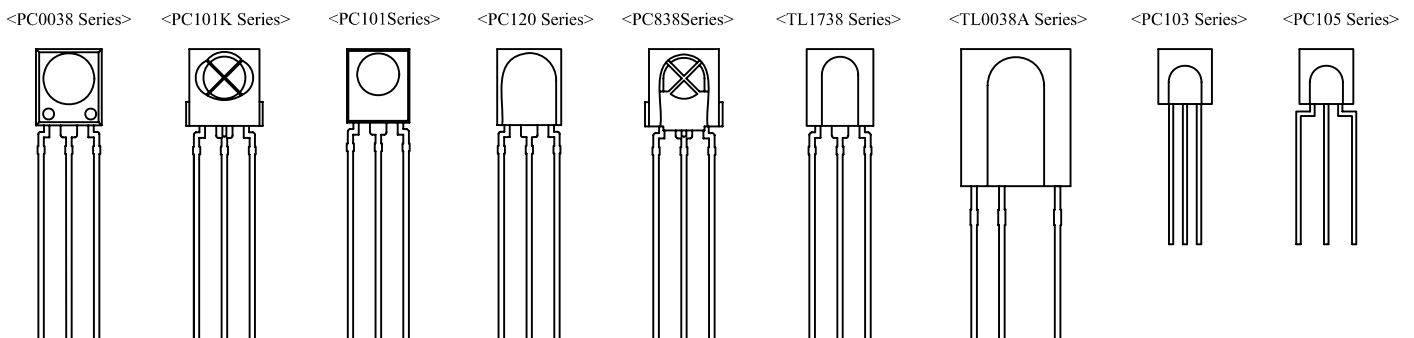


■ Application Circuit



R-C filter recommended to suppress power supply disturbances.
R-C filter should be connected closely between Vcc pin and GND pin.

■ Exterior



Features

- Miniature size
- Built-in exclusive IC
- CMOS Design
- Wide half angle & long reception distance
- Good noise-proof capability
- Carrier frequency (36.0,37.9,40.0,56.7)kHz
- High protection ability to EMI
- Top view and Mesh
- Case Holder
- Wide voltage operating: 2.7V ~ 5.5V
- Meet RoHs and CTI

Applications

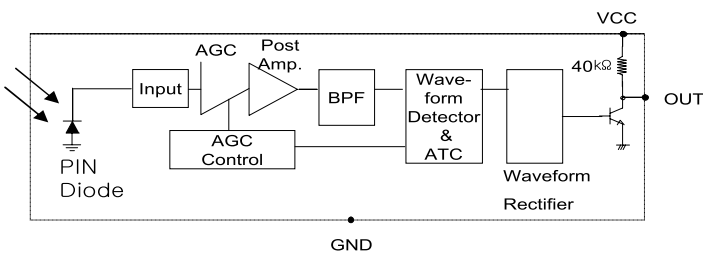
- AV instruments(Audio,TV,VCR,DVD player,LCD)
- Remote control for wireless devices
- Toys(Robot,Plane,Car)

Electrical & Optical Characteristics

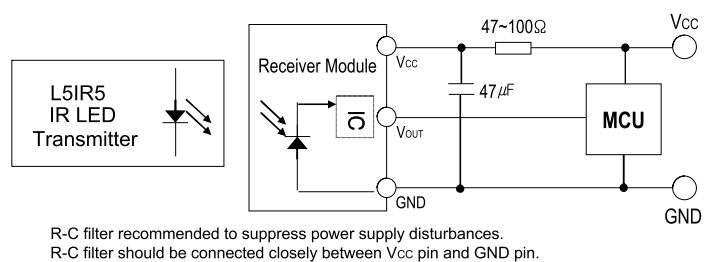
[Ta=25°C, Vcc=5.0V]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Supply Voltage	Vcc		2.7	3.0	5.5	V	
Current Consumption	Icc	Input Signal=0	—	0.9	1.5	mA	
Peak Wavelength	p		—	940	—	nm	
Half Angle				±45°		deg	
B.P.F Center Frequency	fo		—	37.9	—	kHz	
Arrival Distance	L	250Lux	Vcc=3.0V	9	15		m
			Vcc=5.0V	12	18		m
H Level Output Voltage	V _{OH}	30cm over the ray axis	2.7	3.0	—	V	
L Level Output Voltage	V _{OL}		—	0.15	0.3	V	
H Level Output Pulse Width	T _{WH}	Bust Wave=60 s Period=1.2ms	500	600	800	S	
L Level Output Pulse Width	T _{WL}		500	600	800	S	
Output Form		Active Low Output					

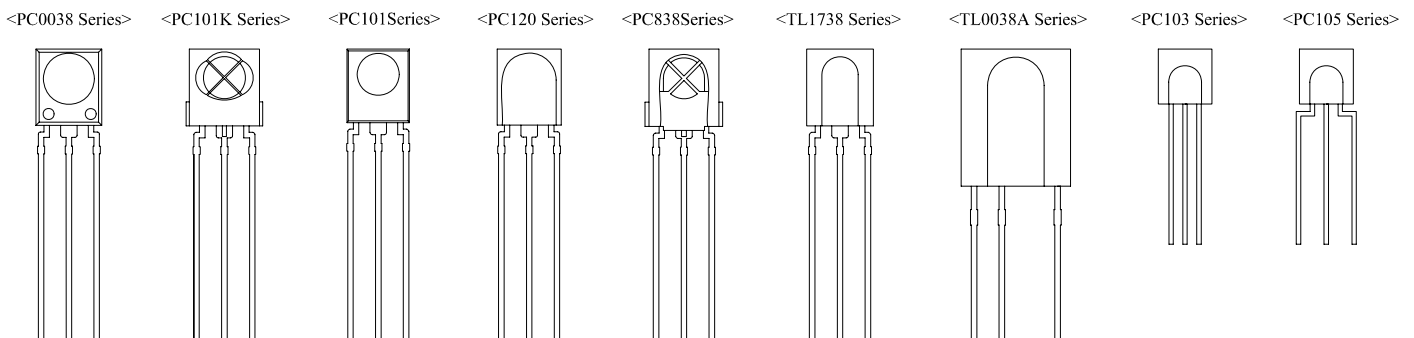
Block Diagram



Application Circuit



Exterior



■ Features

- Miniature size
- Built-in exclusive IC
- CMOS Design
- Wide half angle & long reception distance
- Good Vcc noise and light noise
- Carrier frequency 37.9kHz
- High protection ability to EMI
- Low current consumption(Typ 370uA@3V,Typ 430uA@5V)
- Output active low
- Internal filter for a high frequency lighting fluorescent lamp
- Wide voltage operating: 2.7V ~ 5.5V(Min 2.1V operating)
- Meet RoHs and CTi

■ Applications

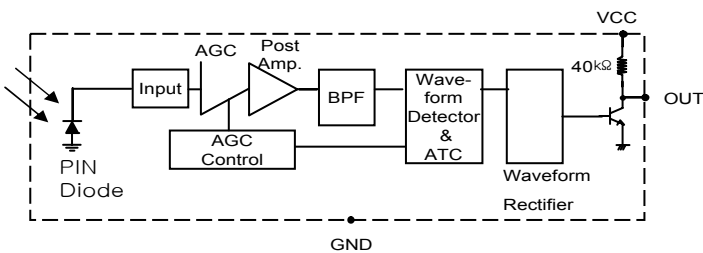
- AV instruments(Audio,TV,VCR,DVD player,LCD)
- Home appliances(Air-conditioner,Fan,Light)
- Toys(Robot,Plane,Car)
- Remote control for wireless devices

■ Electrical & Optical Characteristics

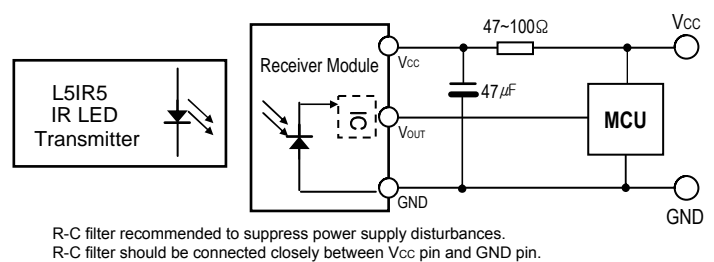
[Ta=25°C, Vcc=5.0V]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc		2.7	3.0	5.5	V
Current Consumption	Icc	Input Signal=0	250	370	500	μA
Peak Wavelength	λp		—	940	—	nm
Half Angle	Δθ			±45°		deg
B.P.F Center Frequency	fo		—	37.9	—	kHz
Arrival Distance	L	250Lux	Vcc=3.0V	9	15	m
			Vcc=5.0V	12	18	m
H Level Output Voltage	V _{OH}	30cm over the ray axis	2.7	3.0	—	V
L Level Output Voltage	V _{OL}		—	0.2	0.4	V
H Level Output Pulse Width	T _{WH}	Bust Wave=60μs	500	600	730	μS
L Level Output Pulse Width	T _{WL}	Period=1.2ms	500	600	730	μS
Output Form	Active Low Output					

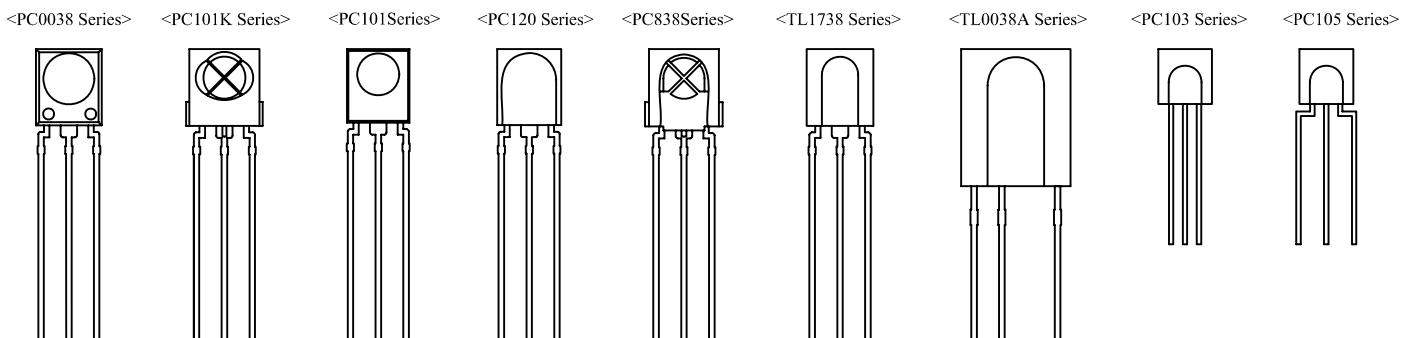
■ Block Diagram



■ Application Circuit



■ Exterior



■ Features

- Miniature size, Built-in exclusive IC
- CMOS Design
- Output active low
- Wide half angle & long reception distance
- Good Vcc noise and light noise
- Carrier frequency 37.9kHz
- High protection ability to EMI
- Low current consumption (Typ 370uA@3V, Typ 430uA@5V)
- Suitable for minimum burst length of 12 pulses per burst
- **Continuous (<1ms pause time) and sony 20bit codes are acceptable.**
- Wide voltage operating: 2.7V ~ 5.5V (Min 2.1V operating)
- Meet RoHs and CTi

■ Applications

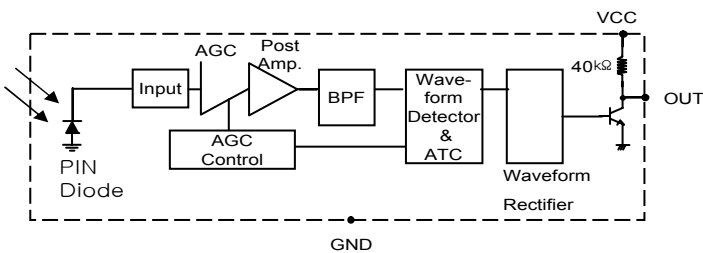
- AV instruments (Audio, TV, VCR, DVD player, LCD)
- Home appliances (Air-conditioner, Fan, Light)
- Toys (Robot, Plane, Car)
- Remote control for wireless devices

■ Electrical & Optical Characteristics

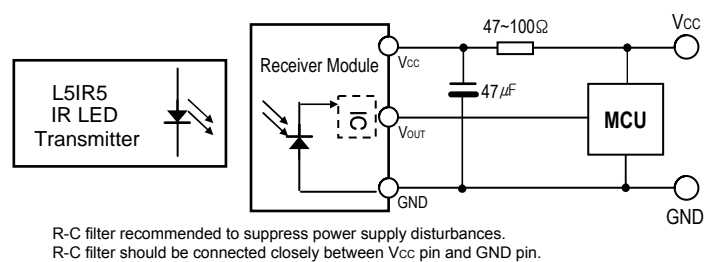
[Ta=25°C, Vcc=5.0V]

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc		2.7	3.0	5.5	V
Current Consumption	Icc	Input Signal=0	250	370	500	μA
Peak Wavelength	λp		—	940	—	nm
Half Angle	Δθ			±45°		deg
B.P.F Center Frequency	fo		—	37.9	—	kHz
Arrival Distance	L	250Lux	Vcc=3.0V	9	15	m
			Vcc=5.0V	12	18	m
H Level Output Voltage	V _{OH}	30cm over the ray axis	2.7	3.0	—	V
L Level Output Voltage	V _{OL}		—	0.2	0.4	V
H Level Output Pulse Width	T _{WH}	Burst Wave=60μs	500	600	730	μS
L Level Output Pulse Width	T _{WL}	Period=1.2ms	500	600	730	μS
Output Form	Active Low Output					

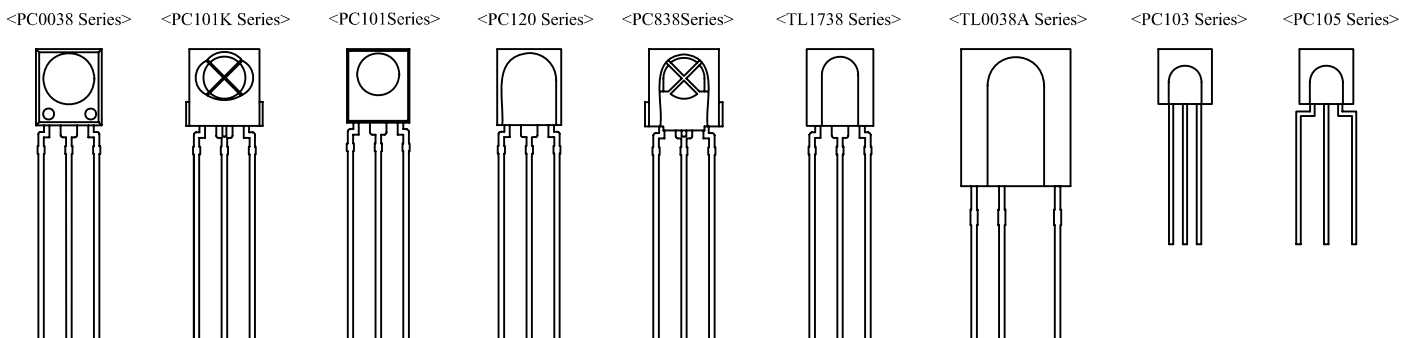
■ Block Diagram



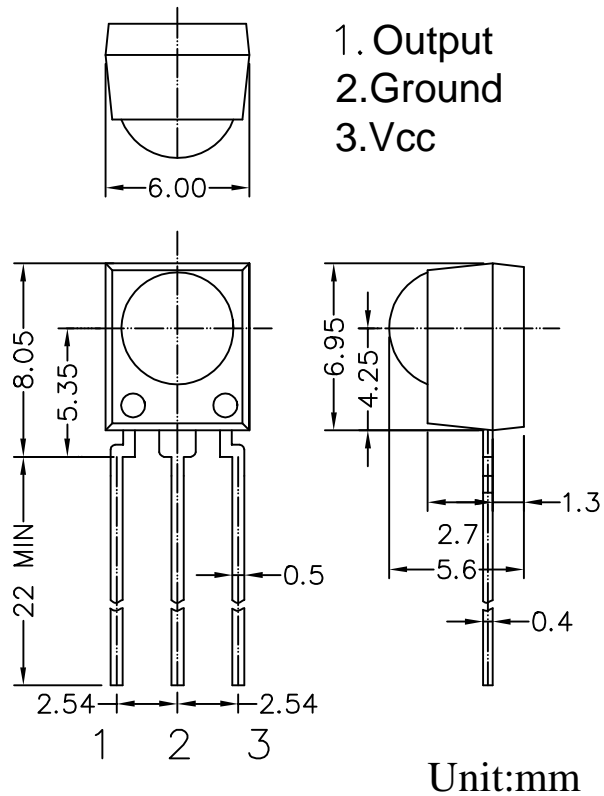
■ Application Circuit



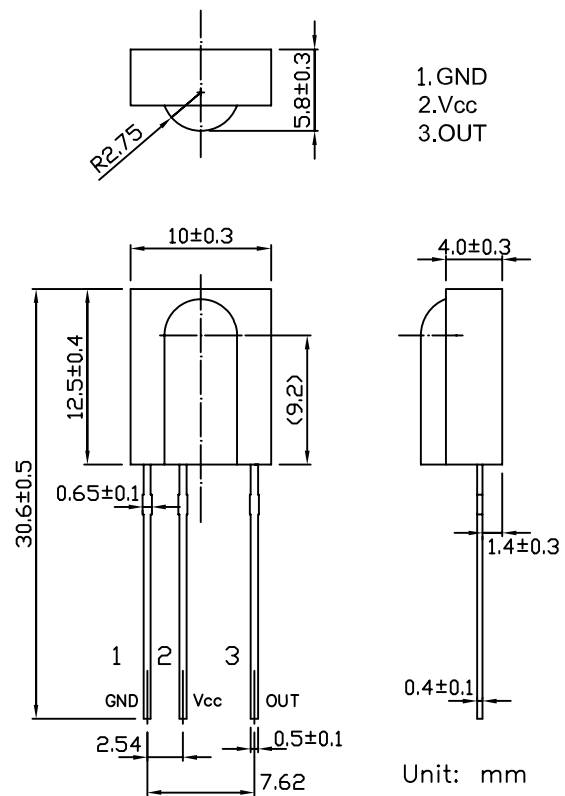
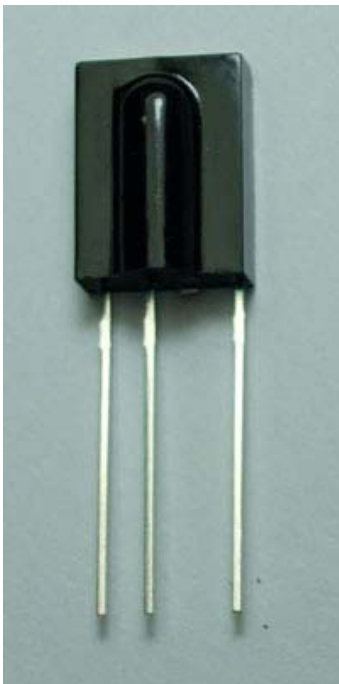
■ Exterior



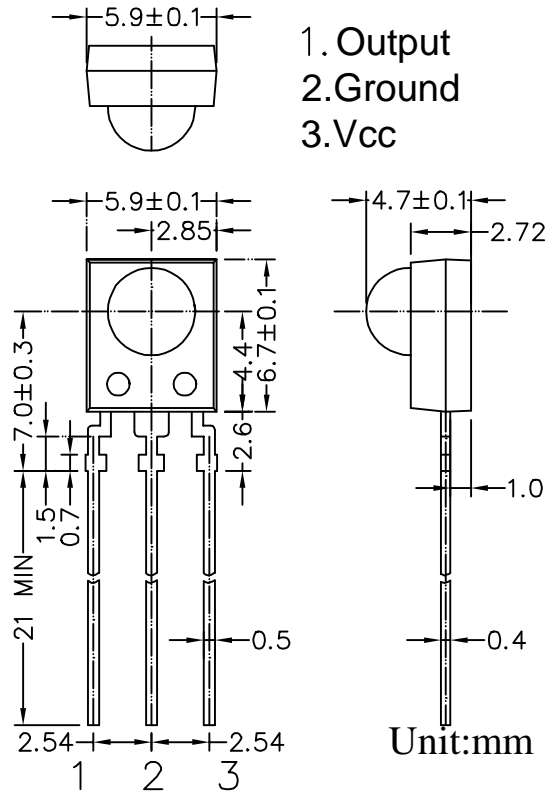
PC0038□ Series



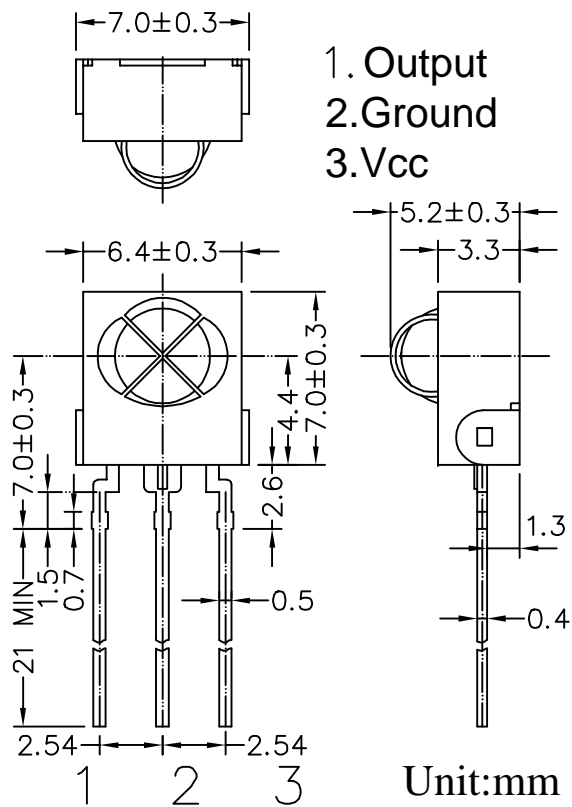
TL0038A□ Series



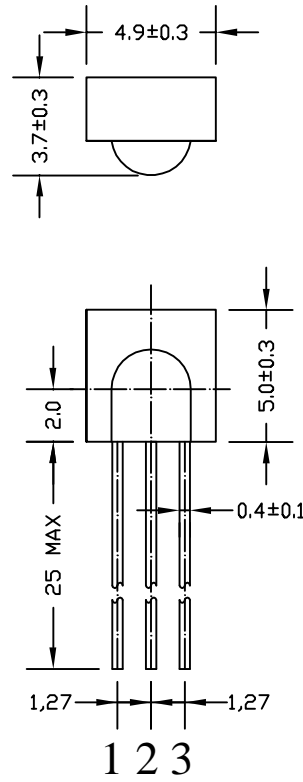
PC101□ Series



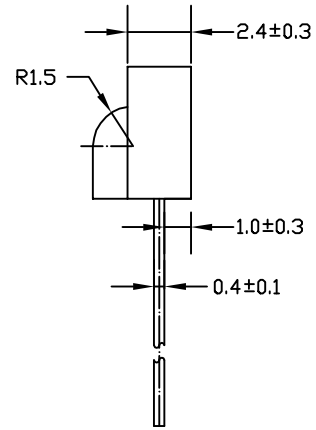
PC101□K Series



PC103□ Series

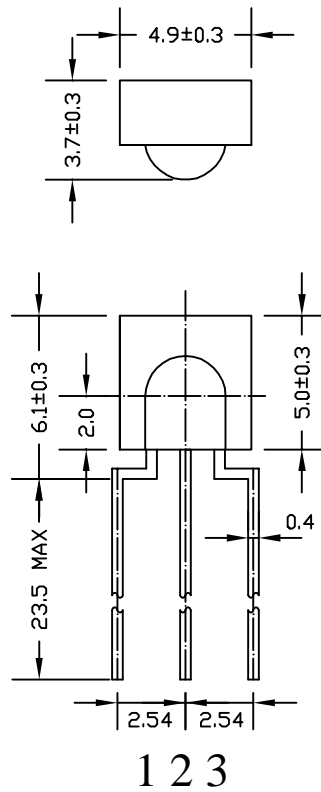


- 1.Output
- 2.Ground
- 3.Vcc

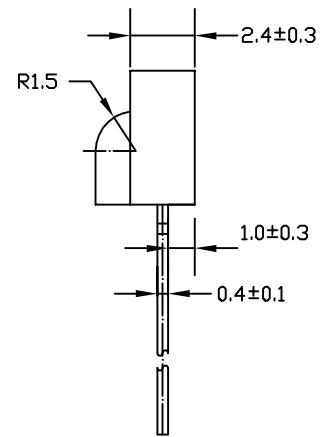


Unit:mm

PC105□ Series

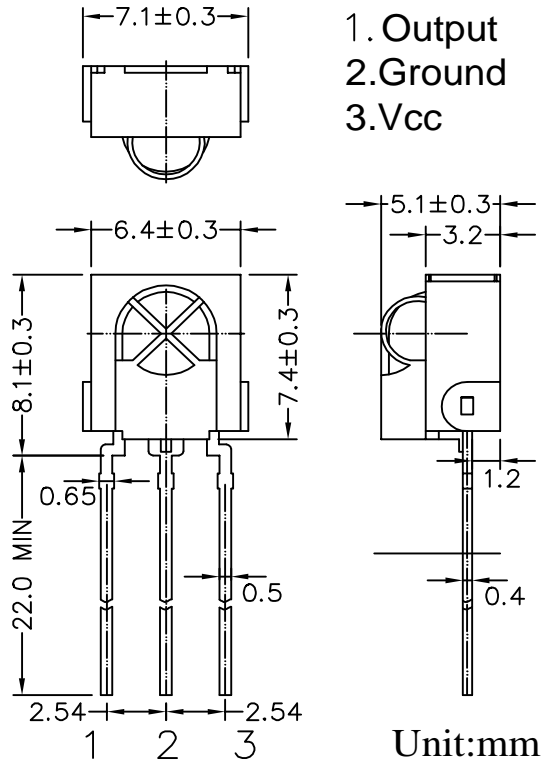


- 1.Output
- 2.Ground
- 3.Vcc

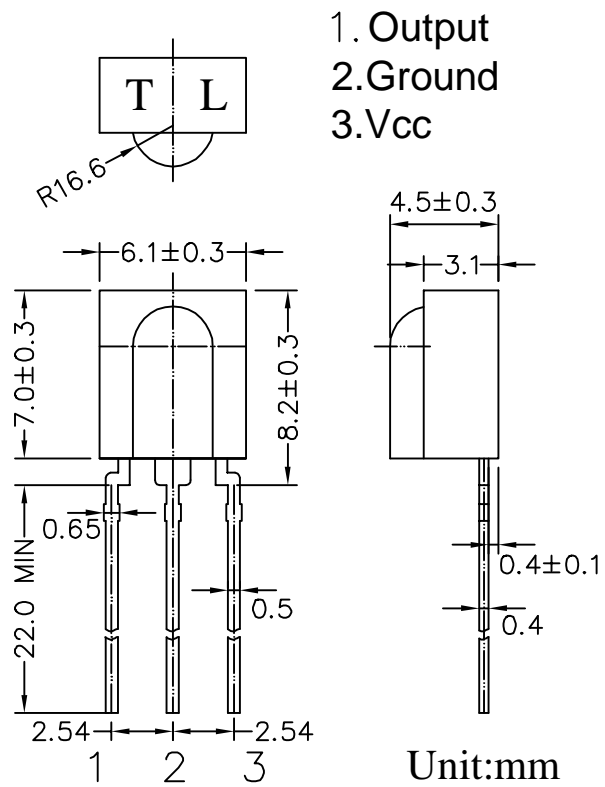
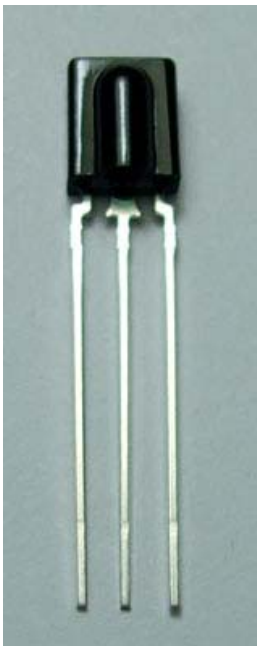


Unit:mm

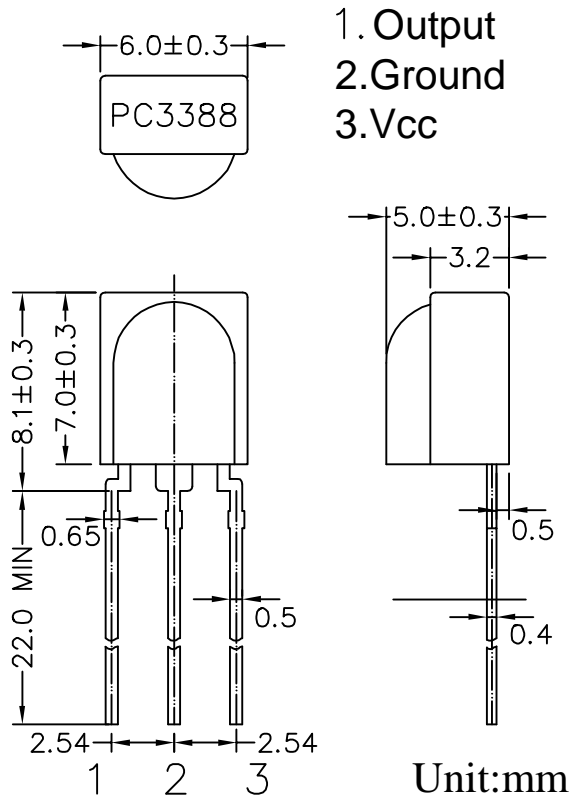
PC838 □ Series



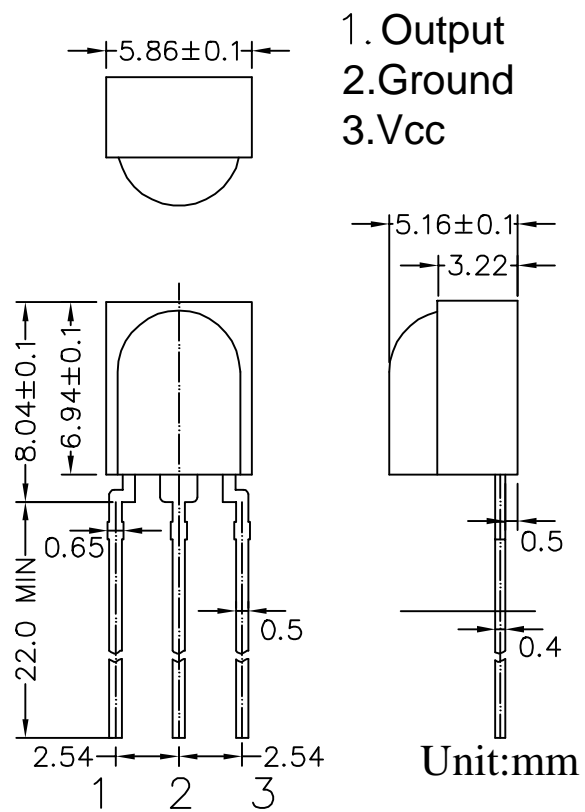
TL1738 □ Series



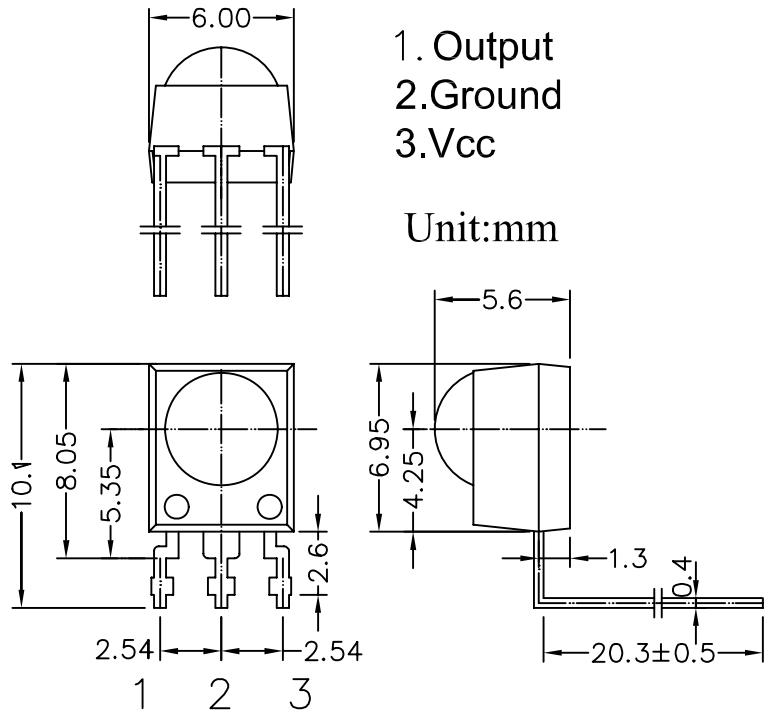
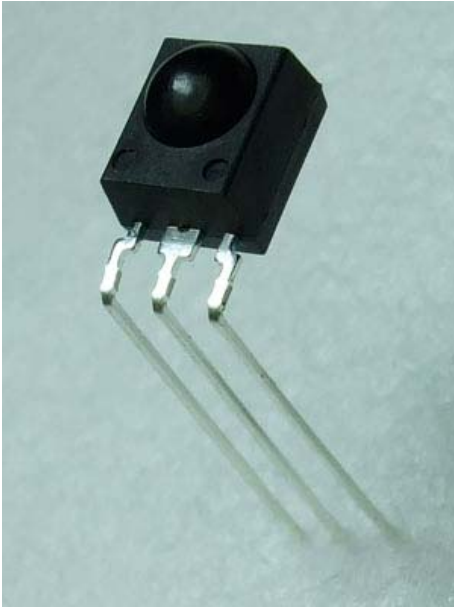
PC3388 □ Series



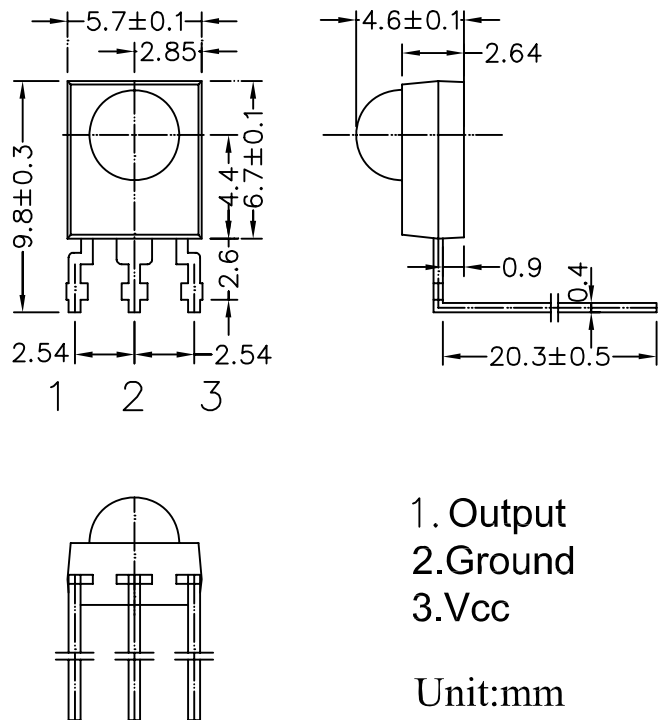
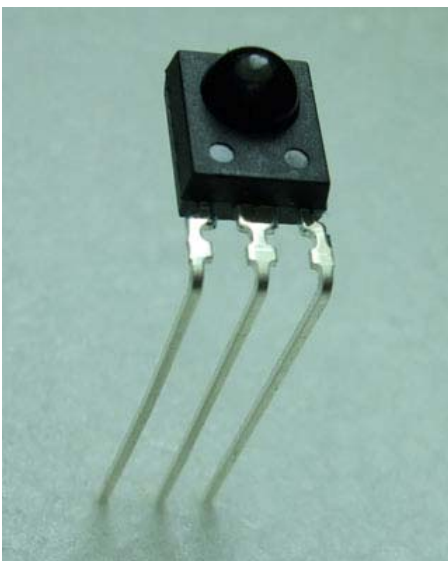
PC120 □ & IRMXX □
Series



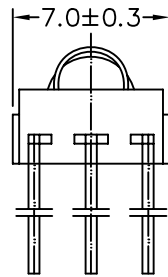
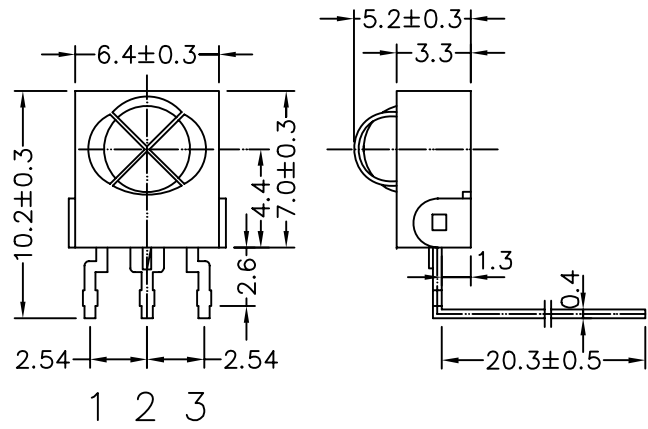
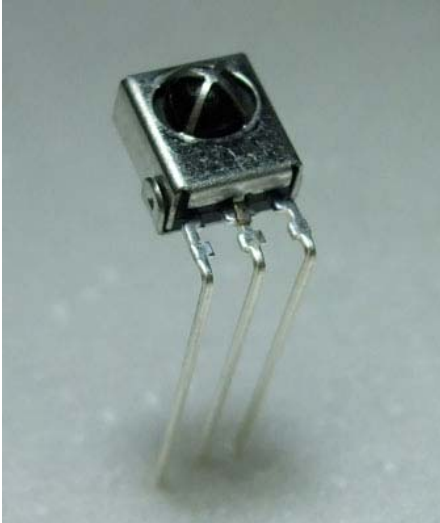
PC0038□L Series



PC101□L Series



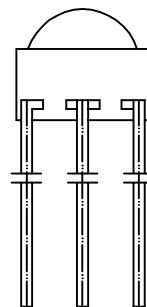
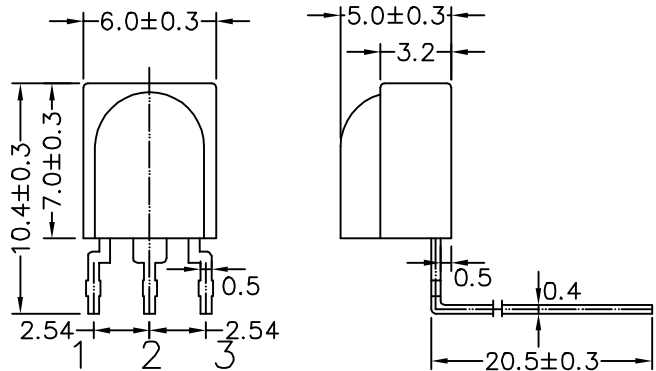
PC101□KL Series



- 1. Output
- 2. Ground
- 3. Vcc

Unit:mm

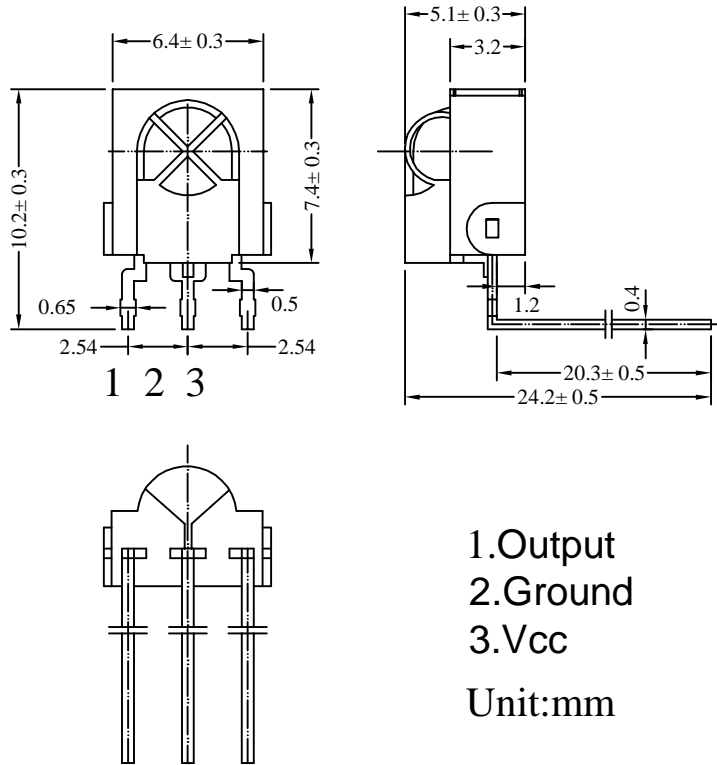
PC3388□L Series



- 1. Output
- 2. Ground
- 3. Vcc

Unit:mm

PC838□L Series



TL1738□L Series

