

SPECIFICATION

FOR APPROVAL

CUSTOMER	
DESCRIPTION	Photo Interrupter [Reflector Type]
MODEL NO.	MPI-R0905-A07
ISSUED DATA	19-APR-2026
DOCUMENT NO.	MJQC-MPIR0905-260419

[MJ-CHIP CO.,LIMITED.]

ISSUE DEPT.			
ISSUE	REVIEW	Q/A	APPR'L

[CUSTOMER APPROVAL]

ISSUE DEPT.					
ISSUE	REVIEW				

Photo Interrupter [Reflector Type]



■ Description

The MPI-R0905-A07 is a reflective-type optical sensor consisting of an infrared emitting diode (IR LED) and an NPN silicon phototransistor, integrated side-by-side on converging optical axes within a black thermoplastic housing.

Under normal operating conditions, the phototransistor detects infrared radiation emitted from the IR LED. When an object is present between the emitter and receiver, the reflected infrared signal is interrupted or reduced, resulting in a corresponding change in the phototransistor output.

For detailed characteristics of individual components, please refer to the specifications of the IR LED and phototransistor.

■ Features

- High reliability
- High radiant intensity
- Low forward voltage
- Fast response time
- High photosensitivity
- Peak wavelength: 940 nm
- Visible light cut-off wavelength: $\lambda_p = 940 \text{ nm}$
- Pb-free and RoHS compliant

■ Applications

- Printers
- Non-contact switching systems
- Smart electronic devices
- Industrial automation equipment
- Safety-related applications

■ Absolute Maximum Ratings [Ta = 25°C]

Parameter (Ta=25°C)		Symbol	Rating	Unit
Input Emitter	Power Dissipation *1	Pd	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current *2	I _{FP}	1	A
Output Detector	Power Dissipation *1	Pd	75	mW
	Collector-Emitter Voltage	V _{CEO}	30	V
	Emitter-Collector Voltage	V _{ECO}	5	V
	Collector Current	I _{C(ON)}	50	mA
Operating Temperature		T _{opr}	-25~+85	°C
Storage Temperature		T _{stg}	-40~+85	°C
Lead Soldering Temperature*3		T _{sol}	260	°C

*1 Measured at an ambient temperature of 25°C (free air)

*2 Pulse width ≤ 100 μs, duty cycle = 1%

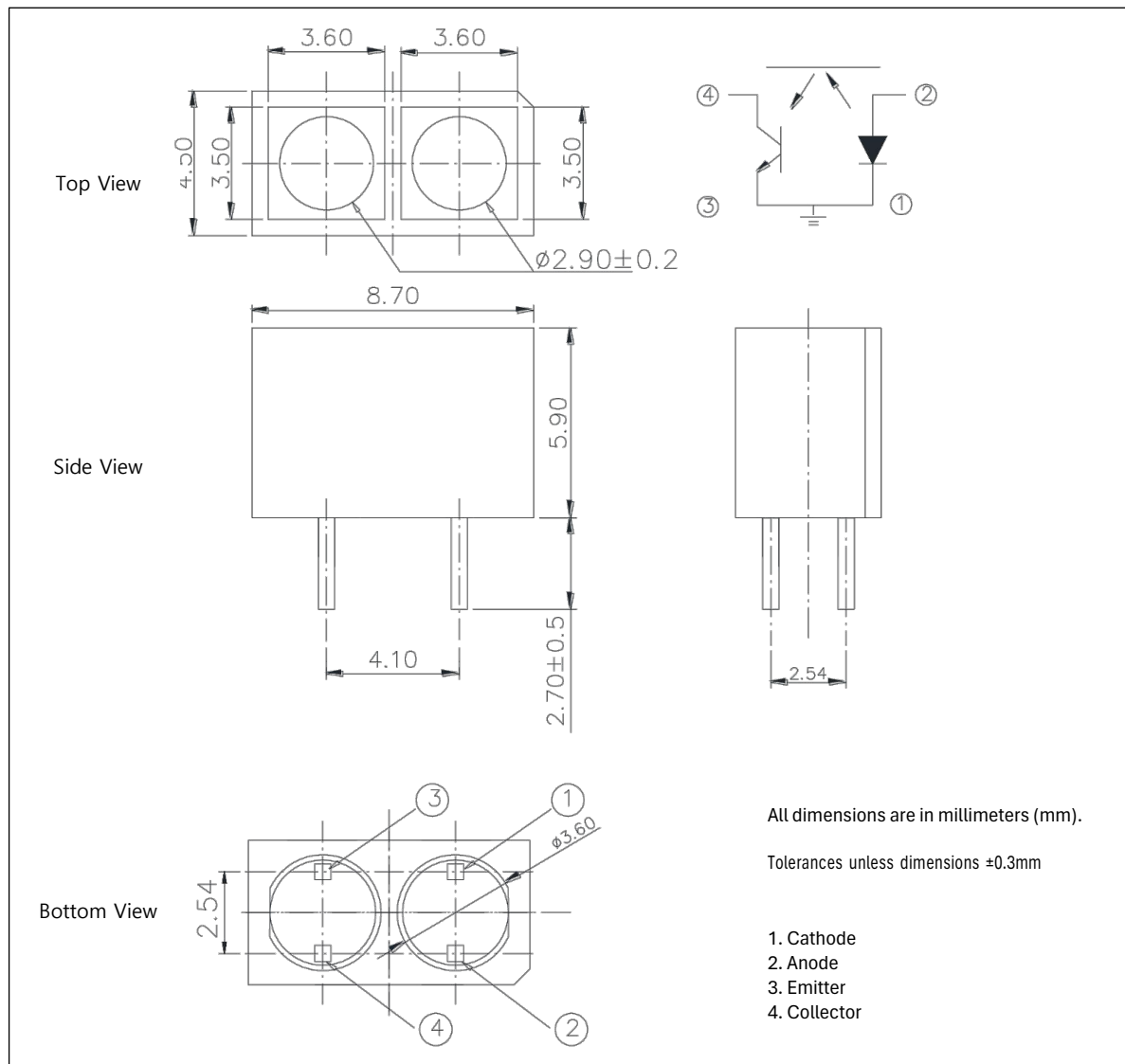
*3 Soldering condition: 2 mm from the package body for 5 seconds

Electro-optical Characteristics [Ta= 25°C]

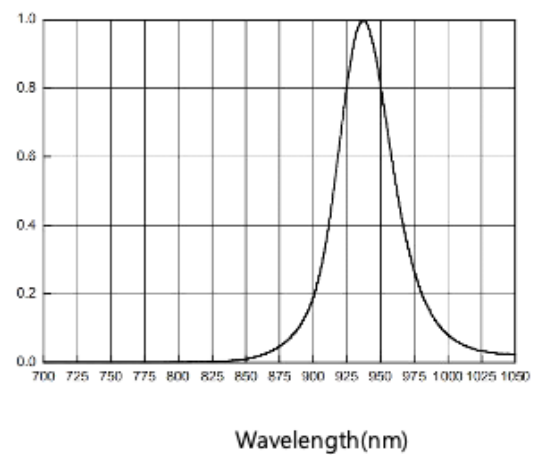
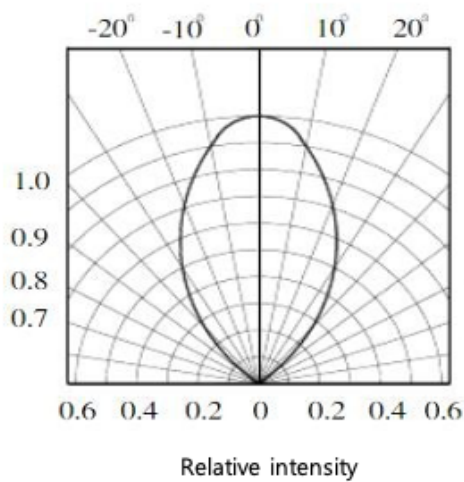
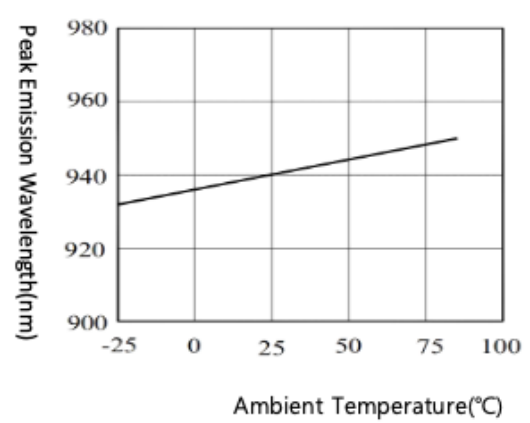
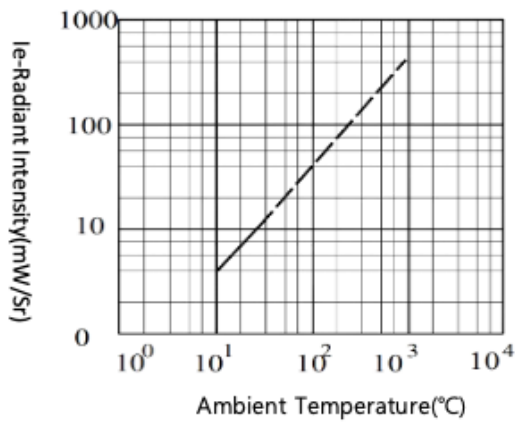
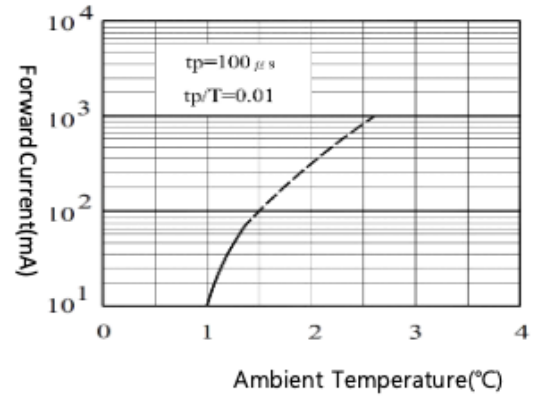
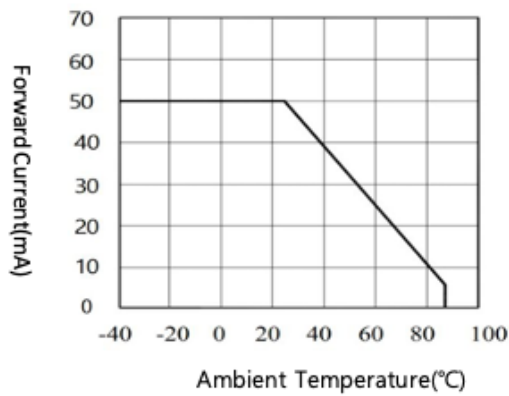
Parameter (Ta=25°C)	Symbol	Condition	Min.	Typ.	Max.	Units
Input	Forward Voltage	$I_F=20\text{mA}$	--	1.2	1.5	V
		$I_F=100\text{mA}^{*2}$	--	1.4	1.85	
		$I_F=1\text{A}^{*2}$	--	2.6	4	
	Peak Wavelength	$I_F=20\text{mA}$	--	940	--	nm
Output	Reverse Current	$V_R=5\text{V}$	--	--	10	μA
	Dark Current	$E_e=0\text{mW/cm}^2$ $V_{CE}=20\text{V}$	--	--	100	nA
	C-E Saturation Voltage	$V_{CE}(\text{SAT})$ $I_C=2\text{mA}$ $E_e=1\text{mW/cm}^2$	--	--	0.4	V
Transfer Characteristics	Rise Time	$V_{CE}=5\text{V}$	--	15	--	μs
		$I_C=1\text{mA}$	--	15	--	
	Fall Time	$R_L=1000\Omega$	--	15	--	--
	Collector Current	$V_{CE}=5\text{V}$ $I_F=20\text{mA}$	0.2	--	--	μA

*2 Pulse width $\leq 100 \mu\text{s}$; duty cycle = 1%

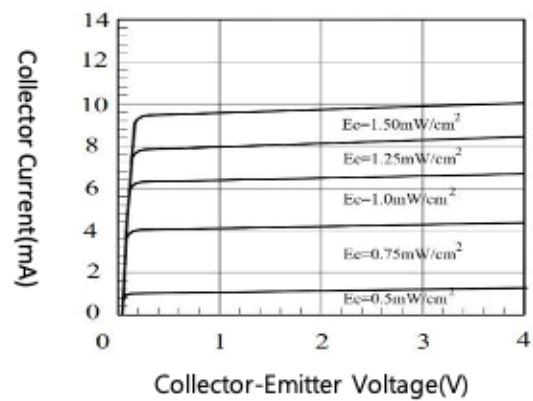
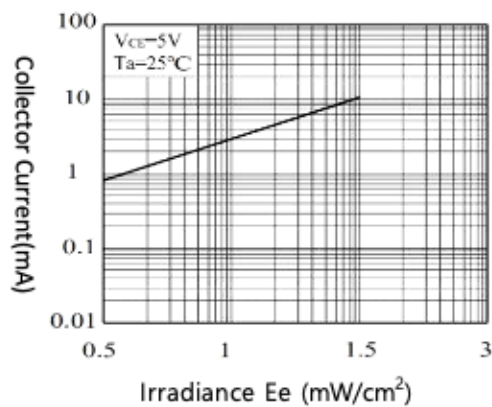
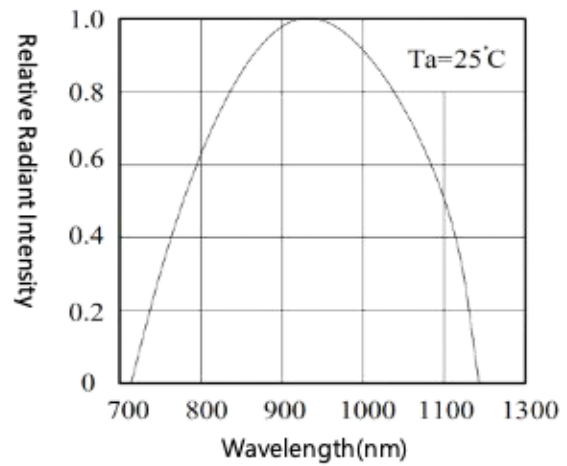
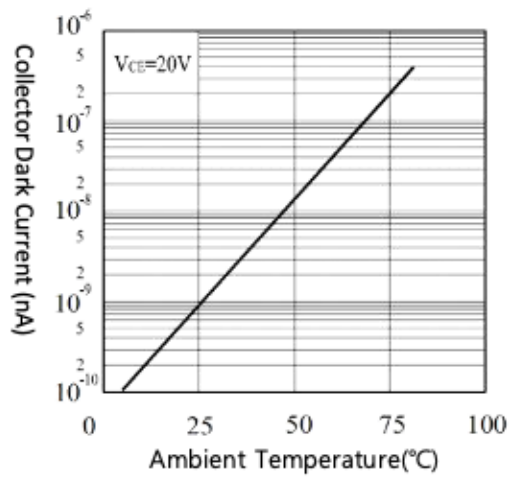
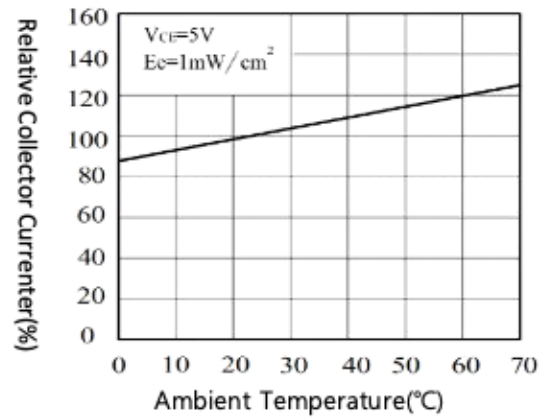
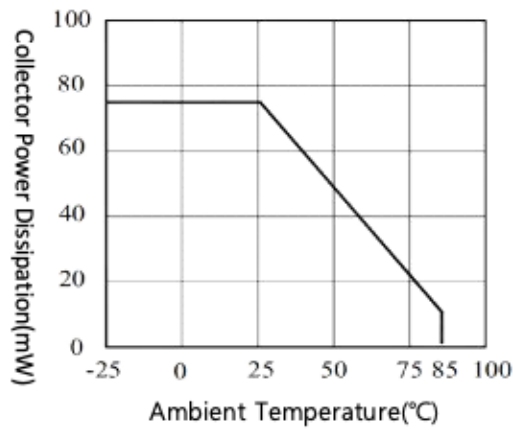
Dimension [mm]



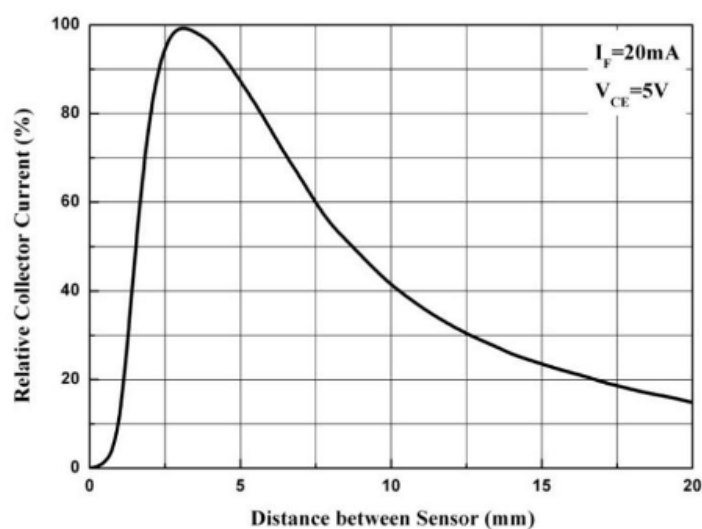
Typical Electro-Optical Characteristics Curves-IR Enitter



Typical Electro-Optical Characteristics Curves-PT Detector



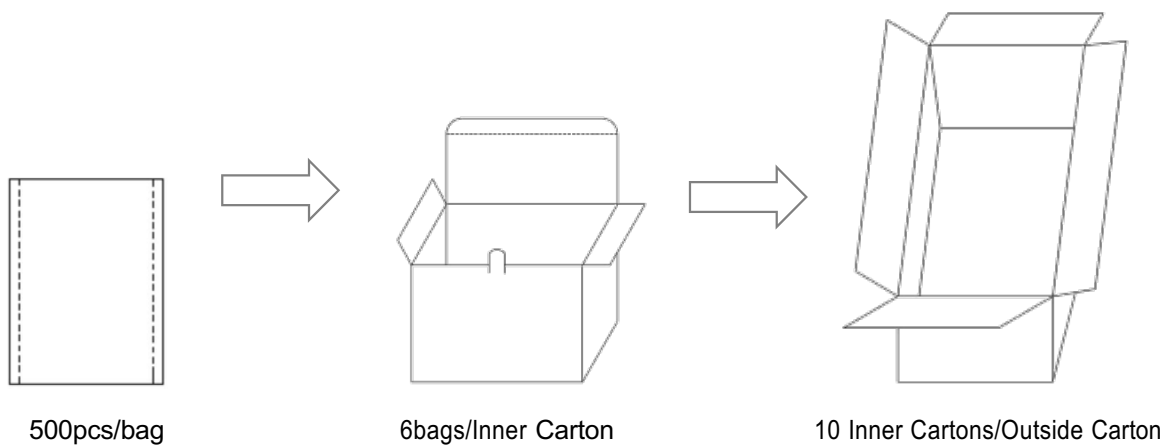
Typical Electro-Optical Characteristics Curves



Relative Collector Current vs Distance Between Sensor

Packing Specification

Anti-static bag → Inner carton → Outer carton



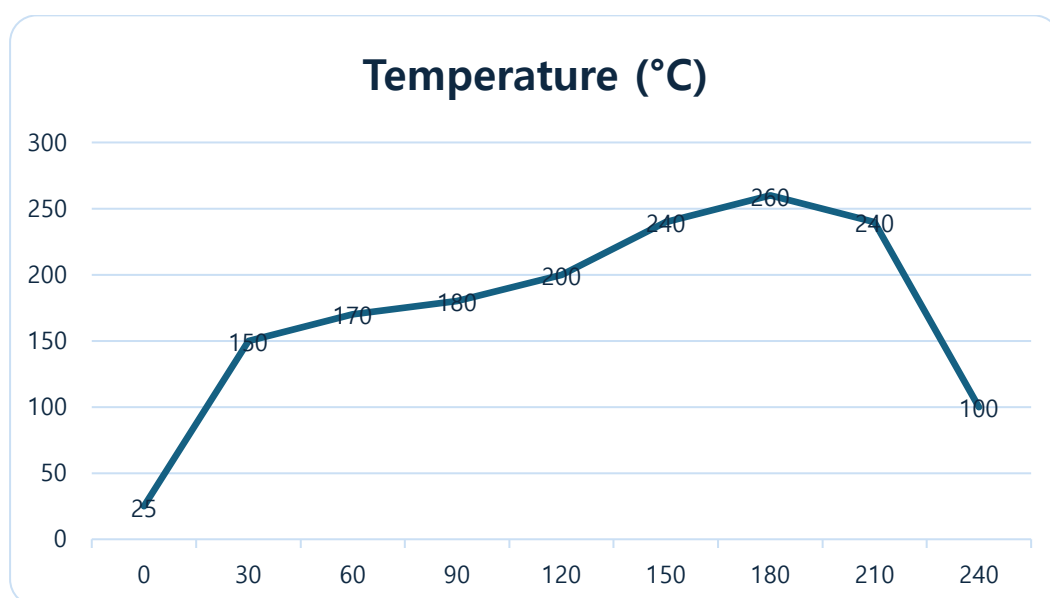
Item	Quantity
Anti-static bag	500 pcs / bag
Inner carton	6 bags / carton
Outer carton	10 inner cartons / carton

■ Notes

1. Specifications are subject to change without prior notice. The manufacturer reserves the right to make material changes.
2. When using this product, please observe the absolute maximum ratings and application instructions provided in this datasheet. The manufacturer assumes no responsibility for damage resulting from improper use or operation beyond specified limits.
3. This datasheet is the intellectual property of the manufacturer and may not be reproduced or distributed without prior written permission.

■ Soldering Conditions

Recommended Wave Soldering Profile



- Lead solder temperature profile to be followed
- Wave soldering should not be performed more than once
- Do not apply mechanical stress to the LED during soldering
- Avoid PCB warpage after soldering