

# PT100Mx0MP Series

## Compact, Surface Mount Type Phototransistor

### ■ Features

1. Compact and thin package
2. Surface mount type
3. 2-way mounting : top view/side view
4. Reflow soldering
5. Transparent resin : **PT100MC0MP**
6. Visible light cut-off resin : **PT100MF0MP**  
Pair use with **GL100MN0MP/GL100MN1MP** is recommended

### ■ Applications

1. Touch panels for ATM
2. Touch panels for Car navigation system
3. Touch panels for FA equipment

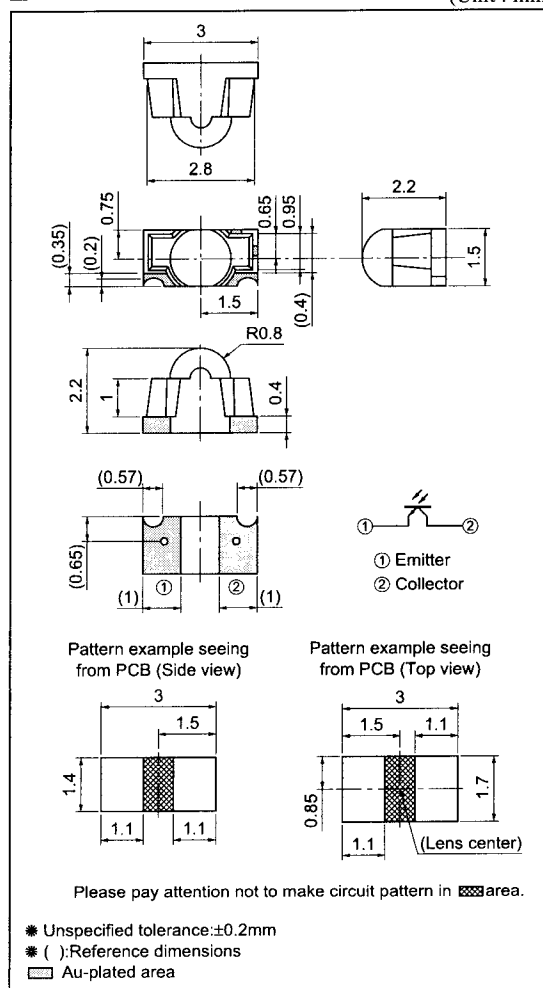
### ■ Absolute Maximum Ratings (T<sub>a</sub>=25°C)

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V <sub>CEO</sub>	35	V
Emitter-collector voltage	V <sub>ECO</sub>	6	V
Collector current	I <sub>C</sub>	20	mA
Collector power dissipation	P <sub>C</sub>	75	mW
Operating temperature	T <sub>opr</sub>	-30 to +85	°C
Storage temperature	T <sub>stg</sub>	-40 to +95	°C
*1 Soldering temperature	T <sub>sol</sub>	240	°C

\*1 Max. 10s

### ■ Outline Dimensions

(Unit : mm)



## ■ Electro-optical Characteristics

(T<sub>a</sub>=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector current	PT100MC0MP I <sub>C</sub>	* E <sub>c</sub> =1mW/cm <sup>2</sup> , V <sub>CE</sub> =5V	1.7	2.9	5.1	mA
	PT100MF0MP I <sub>C</sub>	* E <sub>c</sub> =1mW/cm <sup>2</sup> , V <sub>CE</sub> =5V	1.15	2	3.45	mA
Collector dark current	I <sub>CEO</sub>	E <sub>c</sub> =0, V <sub>CE</sub> =20V	—	1.0	100	nA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	* E <sub>c</sub> =10mW/cm <sup>2</sup> , I <sub>C</sub> =0.5mA	—	0.1	0.4	V
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	E <sub>c</sub> =0, I <sub>C</sub> =0.1mA	35	—	—	V
Emitter-collector breakdown voltage	BV <sub>ECO</sub>	E <sub>c</sub> =0, I <sub>E</sub> =0.01mA	6	—	—	V
Peak sensitivity wavelength	PT100MC0MP λ <sub>p</sub>	—	—	900	—	nm
	PT100MF0MP λ <sub>p</sub>	—	—	910	—	nm
Response time	Rise time t <sub>r</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =2mA, R <sub>L</sub> =100Ω	—	5.0	—	μs
	Fall time t <sub>f</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =2mA, R <sub>L</sub> =100Ω	—	6.0	—	μs
Half intensity angle	Δθ	—	—	±15	—	°

\* E<sub>c</sub>: Irradiance by CIE standard light source A (tungsten lamp)

Fig.1 Collector Power Dissipation vs. Ambient Temperature

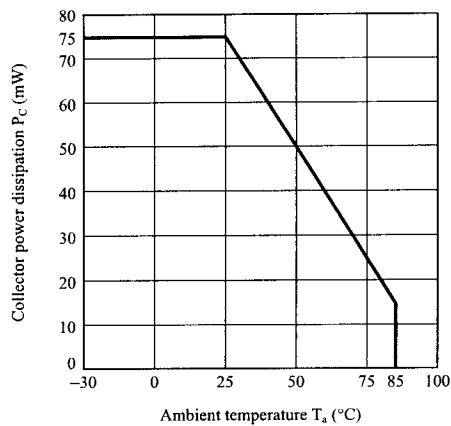


Fig.2 Collector Dark Current vs. Ambient Temperature

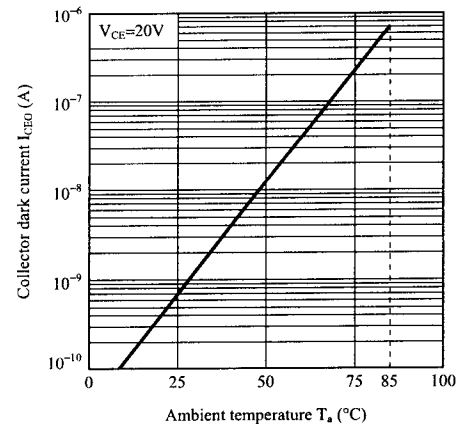


Fig.3 Relative Collector Current vs. Ambient Temperature

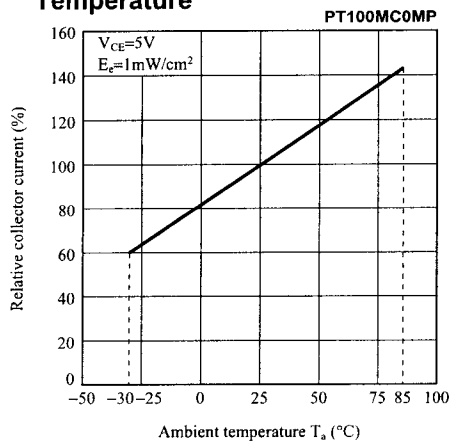


Fig.4 Relative Collector Current vs. Ambient Temperature

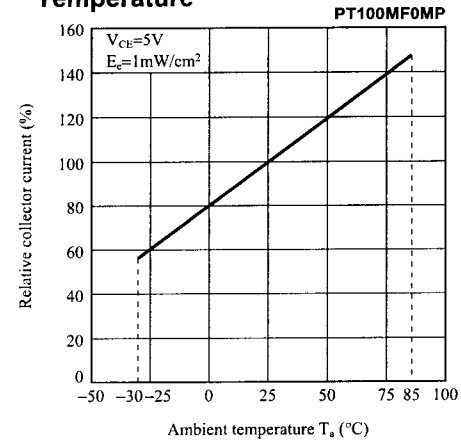


Fig.5 Collector Current vs. Irradiance

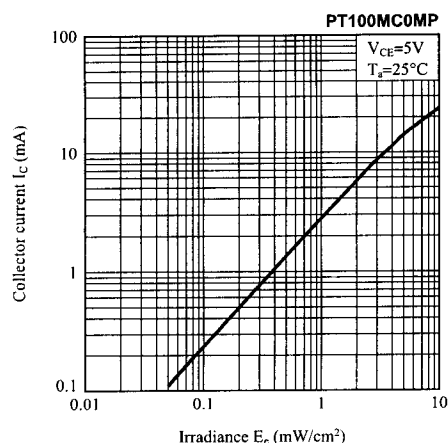


Fig.6 Collector Current vs. Irradiance

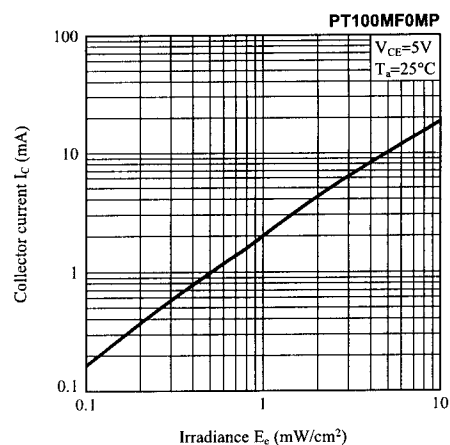


Fig.7 Collector Current vs. Collector-emitter Voltage

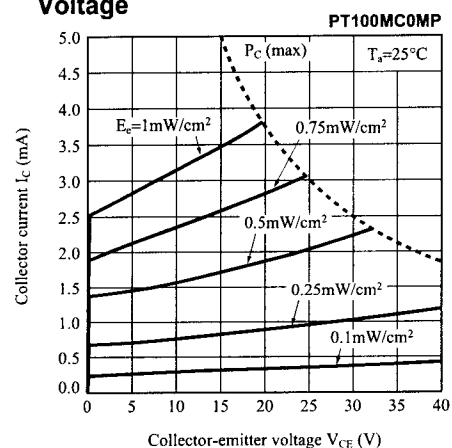


Fig.8 Collector Current vs. Collector-emitter Voltage

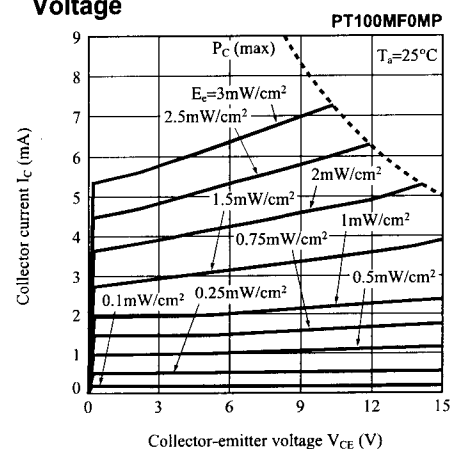


Fig.9 Relative Sensitivity vs. Wavelength (Typical Value)

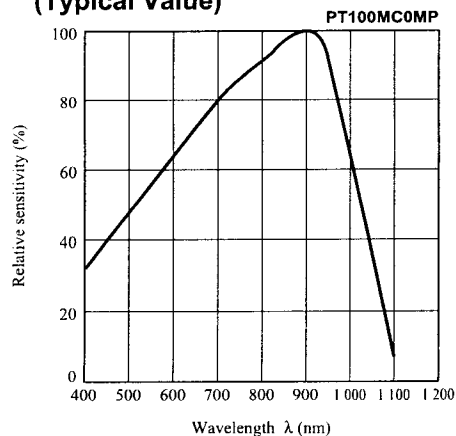


Fig.10 Relative Sensitivity vs. Wavelength

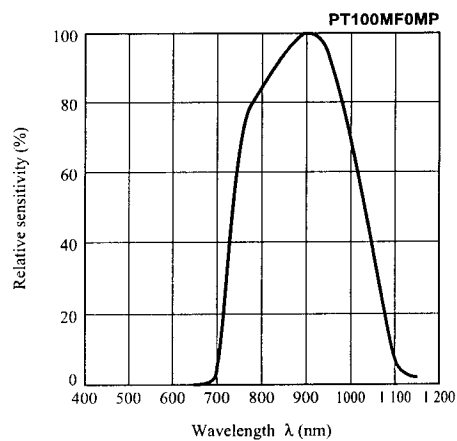


Fig.11 Radiation Diagram

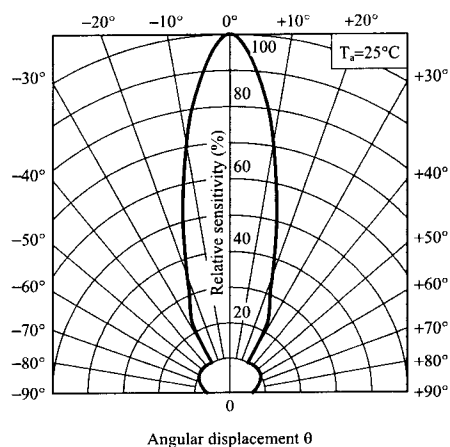


Fig.12 Collector-emitter Saturation Voltage vs. Irradiance

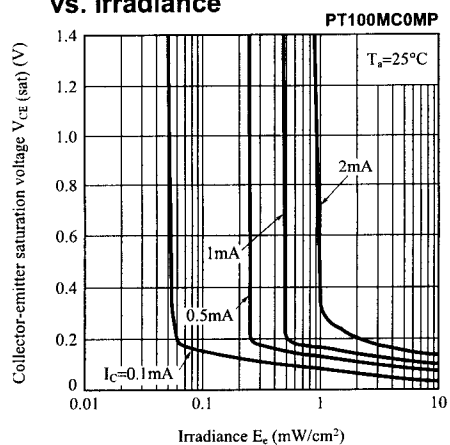


Fig.13 Collector-emitter Saturation Voltage vs. Irradiance

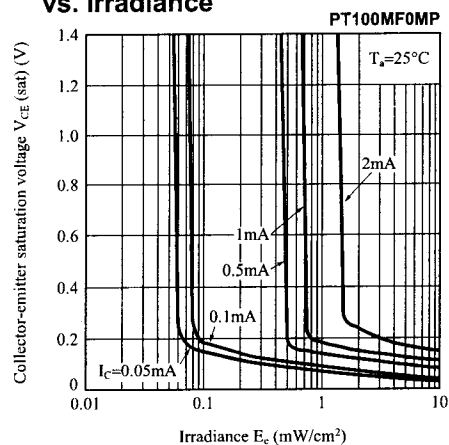


Fig.14 Relative Output vs. Distance To Detector

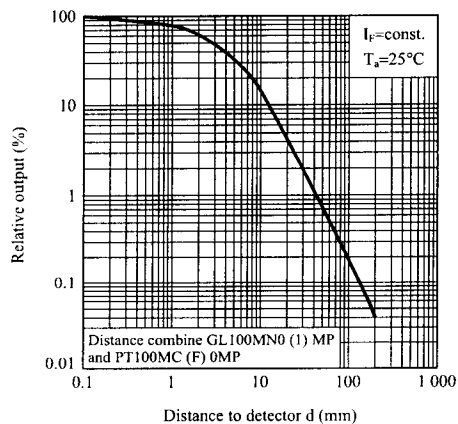
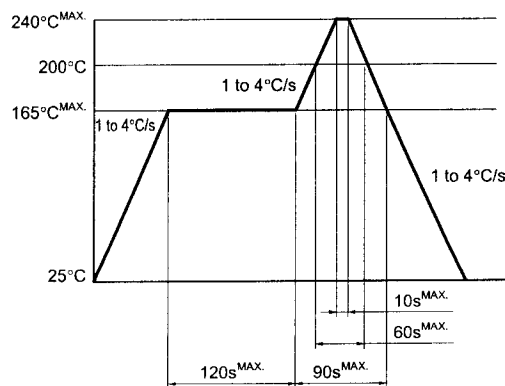


Fig.15 Reflow Soldering

Only one time soldering is recommended within the temperature profile shown below.

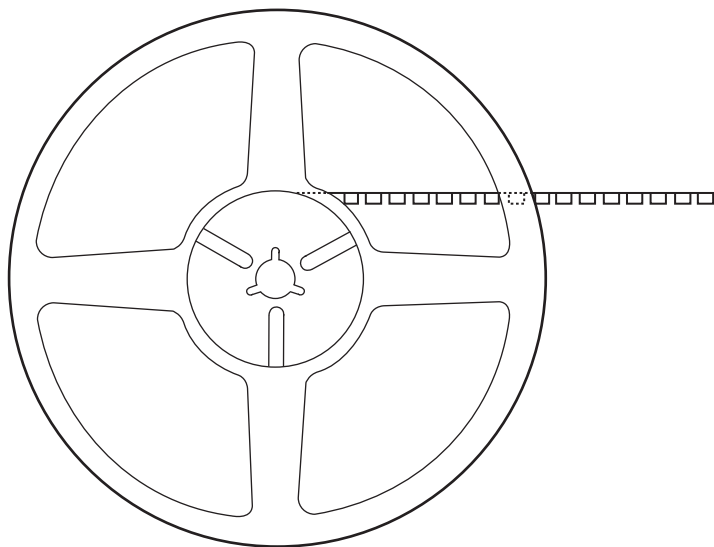


## NOTICE

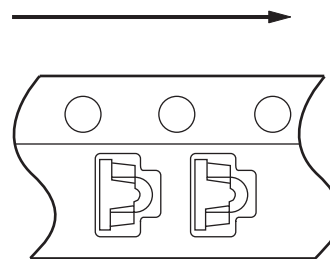
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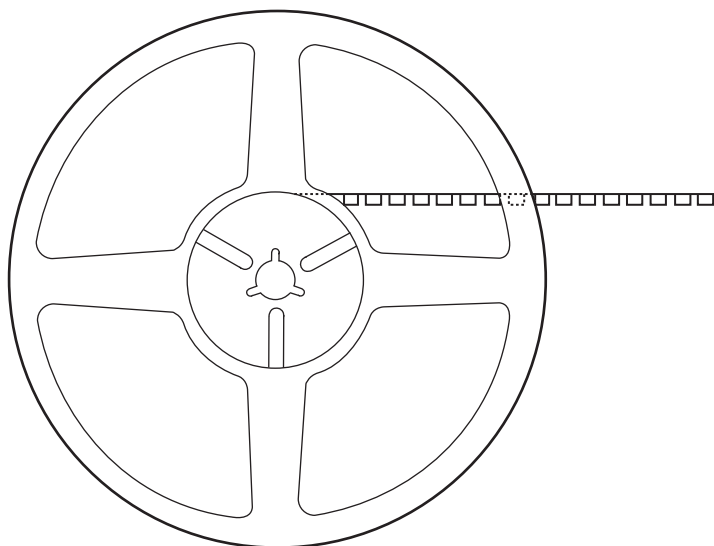
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PD100xxxxP } 2,000 Pieces per reel  
PT100xxxxP }



PULL-OUT DIRECTION



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PD100xxxxP1 } 1,500 Pieces per reel  
PT100xxxxP1 }



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