

# 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

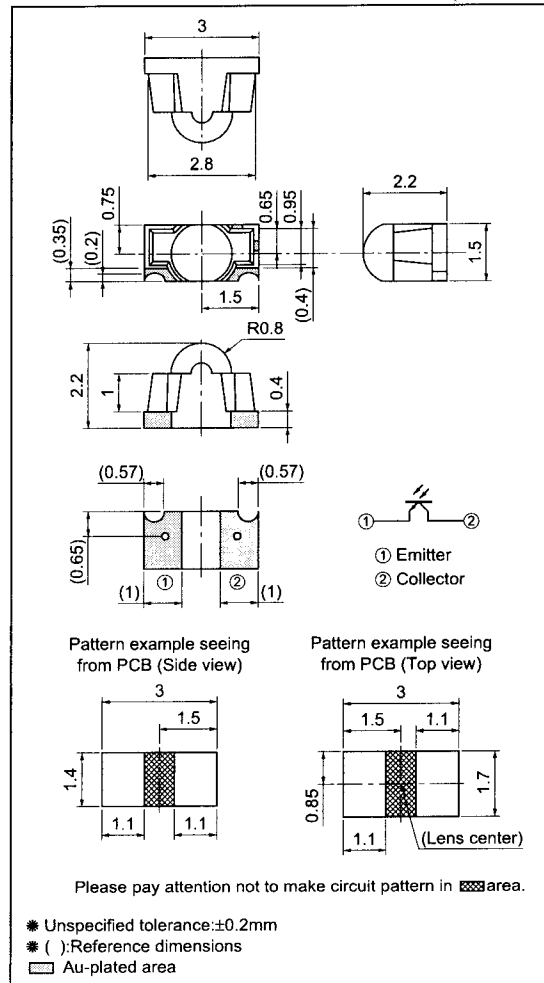
### ■ Absolute Maximum Ratings (T<sub>a</sub>=25°C)

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

( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Collector current	PT100MCOMP	$I_C$	$E_e=1\text{mW}/\text{cm}^2, V_{CE}=5\text{V}$	1.7	2.9	5.1	mA
	PT100MFOMP	$I_C$	$E_e=1\text{mW}/\text{cm}^2, V_{CE}=5\text{V}$	1.15	2	3.45	mA
Collector dark current	$I_{CEO}$	$E_e=0, V_{CE}=20\text{V}$	—	1.0	100	nA	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$E_e=10\text{mW}/\text{cm}^2, I_C=0.5\text{mA}$	—	0.1	0.4	V	
Collector-emitter breakdown voltage	$BV_{CEO}$	$E_e=0, I_C=0.1\text{mA}$	35	—	—	V	
Emitter-collector breakdown voltage	$BV_{ECO}$	$E_e=0, I_E=0.01\text{mA}$	6	—	—	V	
Peak sensitivity wavelength	PT100MCOMP	$\lambda_p$	—	900	—	nm	
	PT100MFOMP	$\lambda_p$	—	910	—	nm	
Response time	Rise time	$t_r$	$V_{CE}=2\text{V}, I_C=2\text{mA}, R_L=100\Omega$	—	5.0	—	$\mu\text{s}$
	Fall time	$t_f$	$V_{CE}=2\text{V}, I_C=2\text{mA}, R_L=100\Omega$	—	6.0	—	$\mu\text{s}$
Half intensity angle	$\Delta\theta$	—	—	$\pm 15$	—	$^{\circ}$	

\*  $E_e$ : Irradiance by CIE standard light source A (tungsten lamp)

Fig.1 Collector Power Dissipation vs. Ambient Temperature

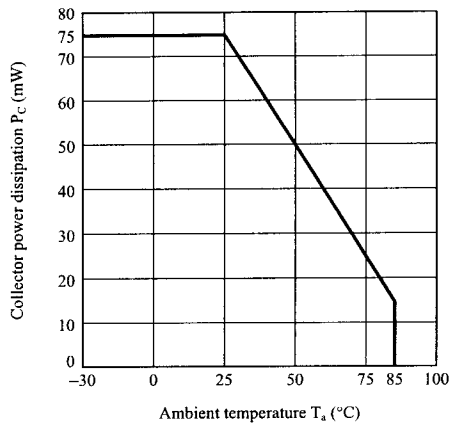


Fig.2 Collector Dark Current vs. Ambient Temperature

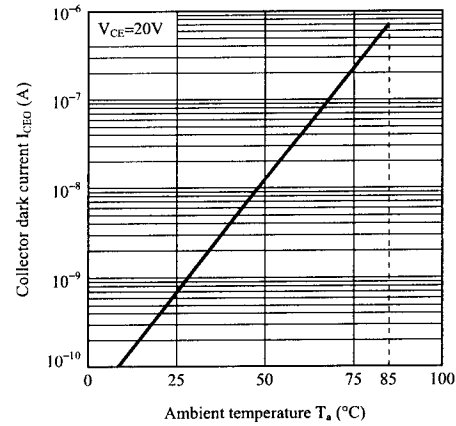


Fig.3 Relative Collector Current vs. Ambient Temperature

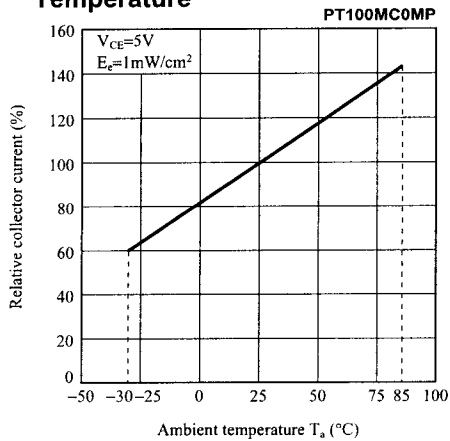
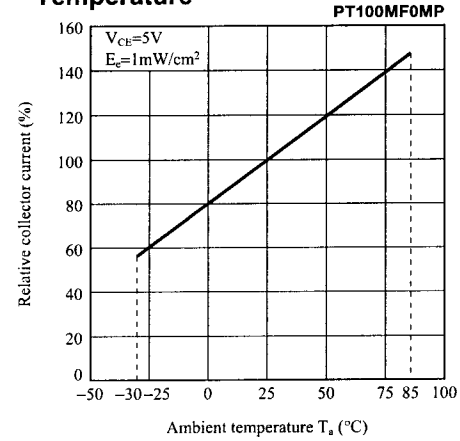
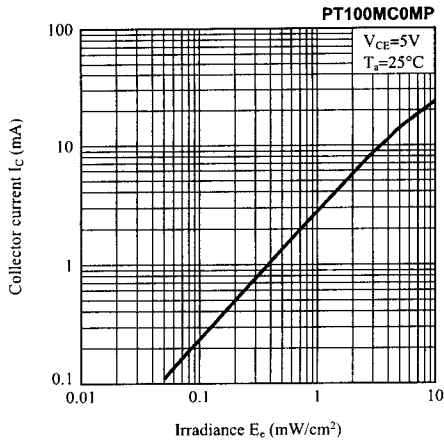


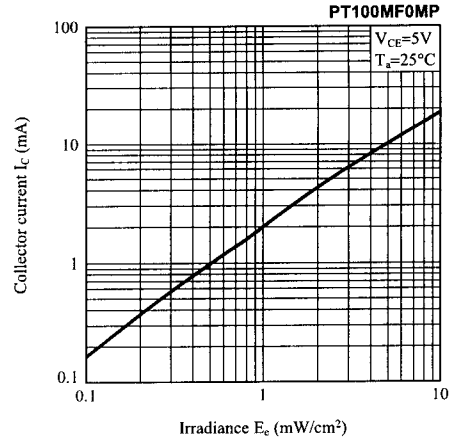
Fig.4 Relative Collector Current vs. Ambient Temperature



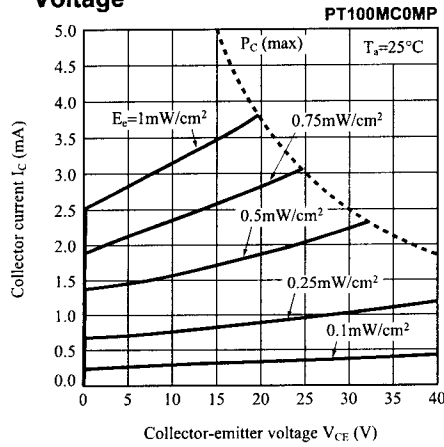
**Fig.5 Collector Current vs. Irradiance**



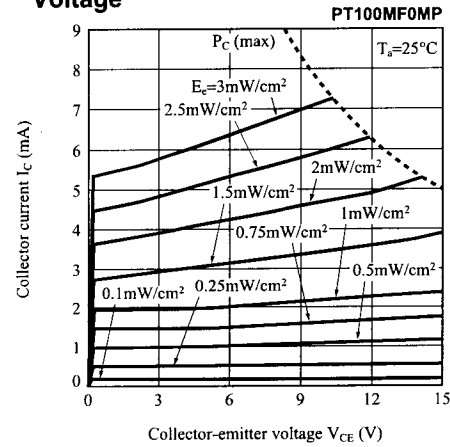
**Fig.6 Collector Current vs. Irradiance**



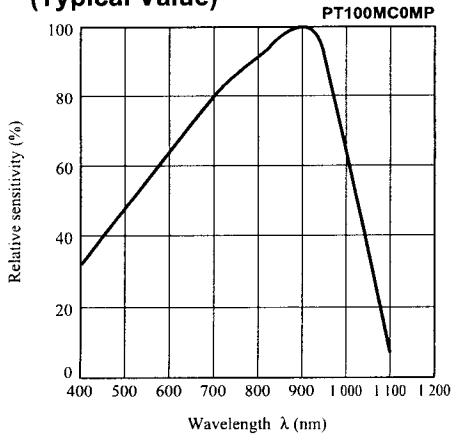
**Fig.7 Collector Current vs. Collector-emitter Voltage**



**Fig.8 Collector Current vs. Collector-emitter Voltage**



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



**Fig.10 Relative Sensitivity vs. Wavelength**

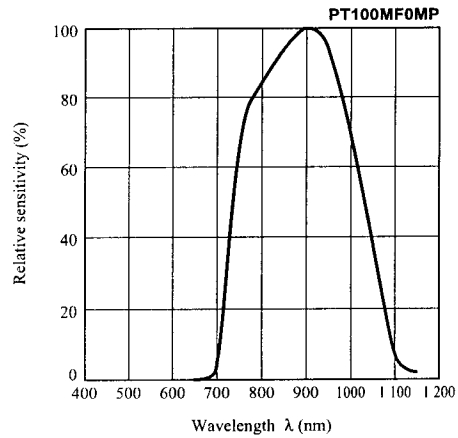


Fig.11 Radiation Diagram

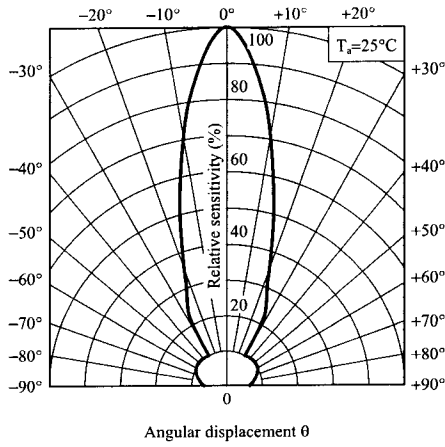


Fig.12 Collector-emitter Saturation Voltage vs. Irradiance

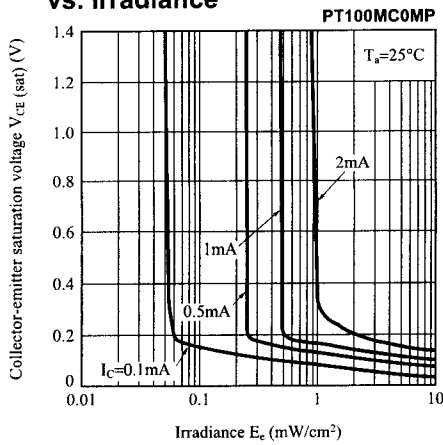


Fig.13 Collector-emitter Saturation Voltage vs. Irradiance

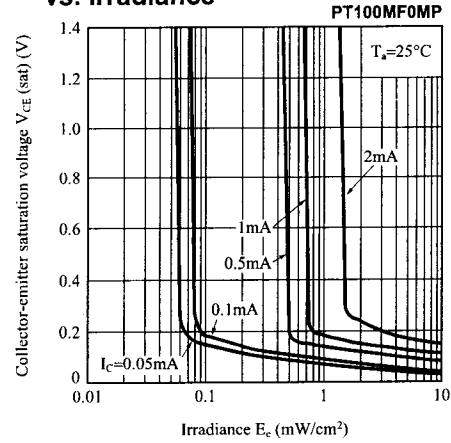


Fig.14 Relative Output vs. Distance To Detector

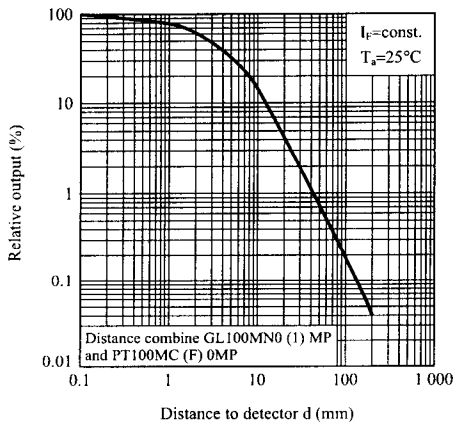
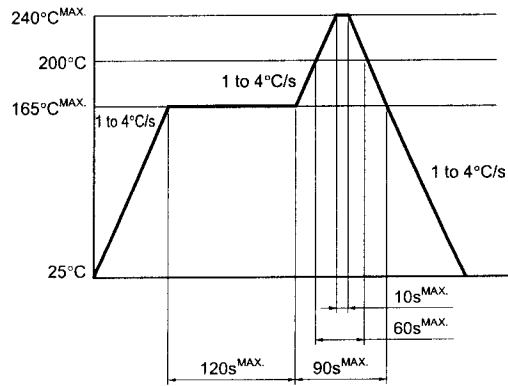


Fig.15 Reflow Soldering

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

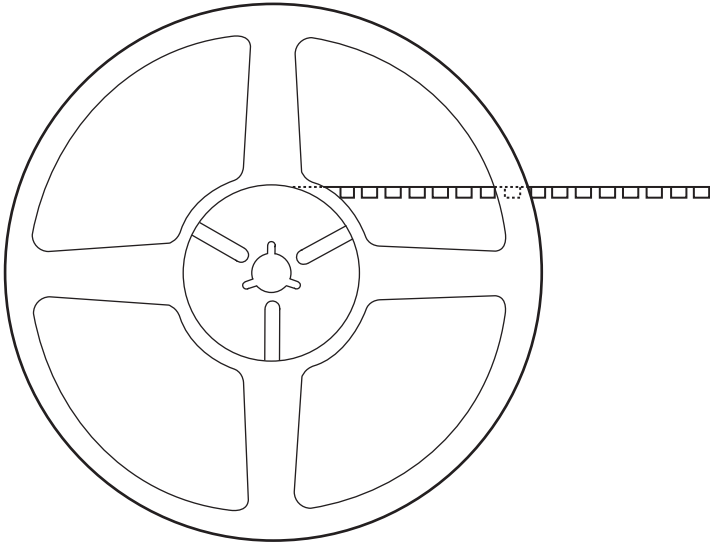


## NOTICE

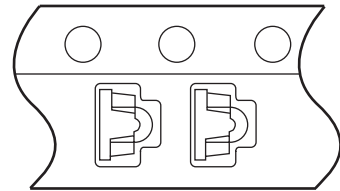
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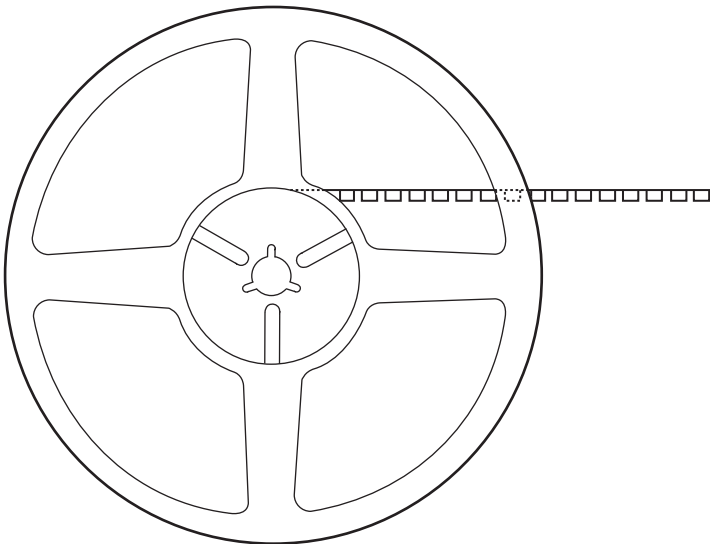
GL100xxxxP }  
PD100xxxxP } 2,000 Pieces per reel  
PT100xxxxP }



PULL-OUT DIRECTION



GL100xxxxP1 }  
PD100xxxxP1 } 1,500 Pieces per reel  
PT100xxxxP1 }



PULL-OUT DIRECTION

