

PT100Mx0MP Series

■ 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_a=25°C)

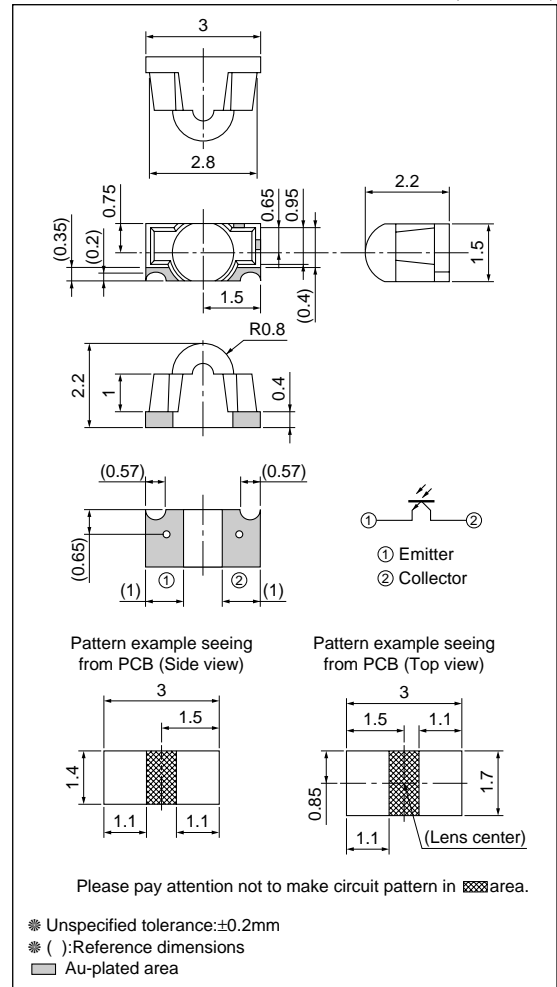
Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V _{CEO}	35	V
Emitter-collector voltage	V _{ECO}	6	V
Collector current	I _C	20	mA
Collector power dissipation	P _C	75	mW
Operating temperature	T _{opr}	-30 to +85	°C
Storage temperature	T _{stg}	-40 to +95	°C
*1 Soldering temperature	T _{sol}	240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

*1 Max. 10s

Compact, Surface Mount Type Phototransistor

■ Outline Dimensions

(Unit : mm)



■ Electro-optical Characteristics

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Collector current	PT100MC0MP	I_C	$E_e=1\text{mW}/\text{cm}^2, V_{CE}=5\text{V}$	1.7	2.9	5.1	mA
	PT100MF0MP	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	PT100MC0MP	λ_p	—	900	—	nm	
	PT100MF0MP	λ_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	—	μs
	Fall time	t_f	$V_{CE}=2\text{V}, I_C=2\text{mA}, R_L=100\Omega$	—	6.0	—	μs
Half intensity angle	$\Delta\theta$	—	—	± 15	—	$^{\circ}$	

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

Fig.1 Collector Power Dissipation vs. Ambient Temperature

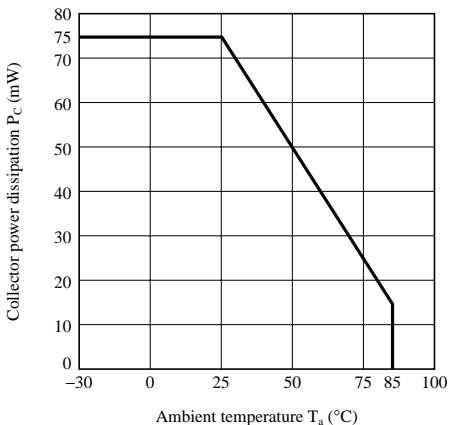


Fig.2 Collector Dark Current vs. Ambient Temperature

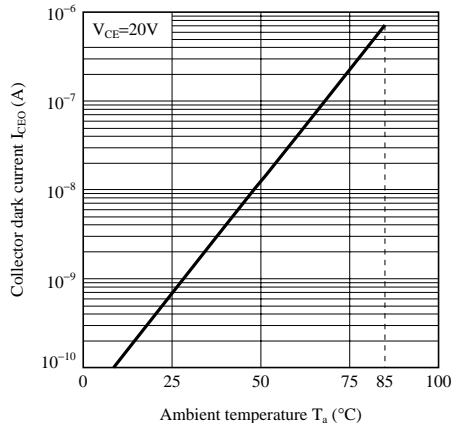


Fig.3 Relative Collector Current vs. Ambient Temperature

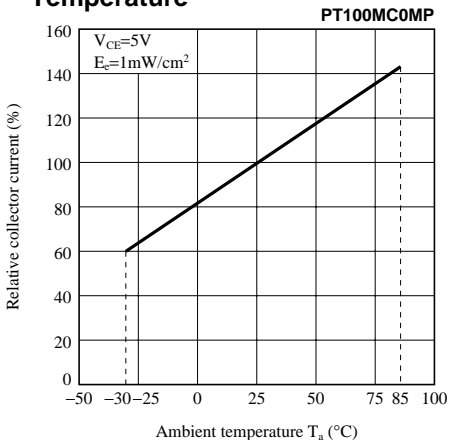


Fig.4 Relative Collector Current vs. Ambient Temperature

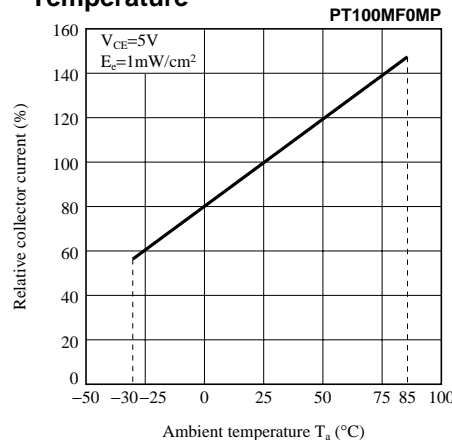


Fig.5 Collector Current vs. Irradiance

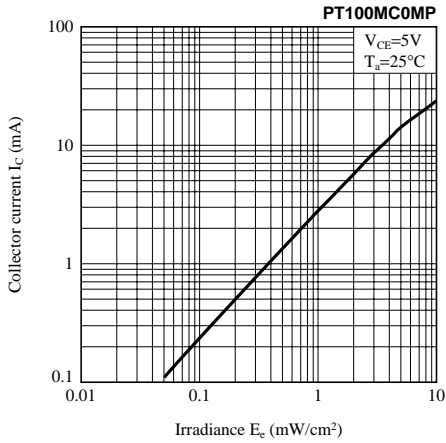


Fig.6 Collector Current vs. Irradiance

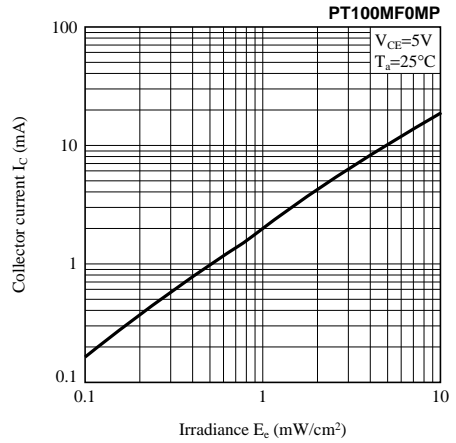


Fig.7 Collector Current vs. Collector-emitter Voltage

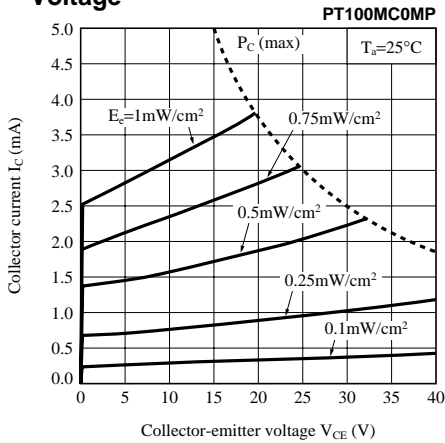


Fig.8 Collector Current vs. Collector-emitter Voltage

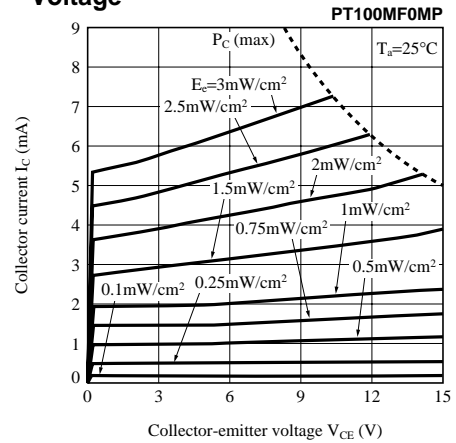


Fig.9 Relative Sensitivity vs. Wavelength (Typical Value)

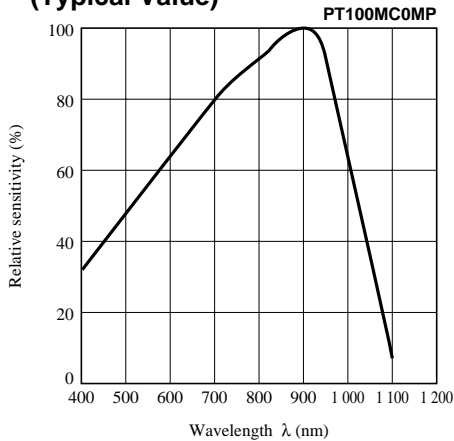


Fig.10 Relative Sensitivity vs. Wavelength

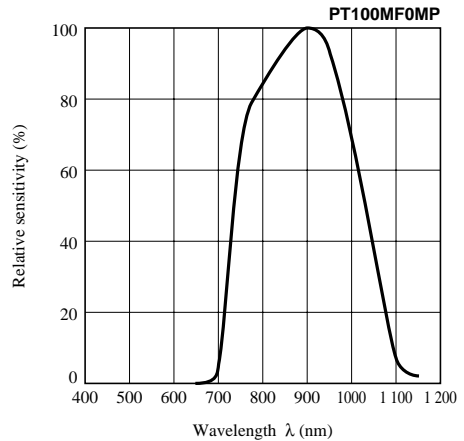


Fig.11 Radiation Diagram

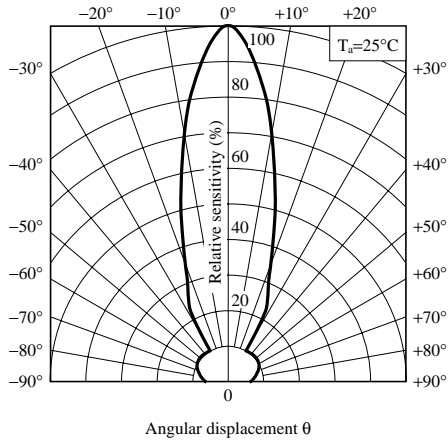


Fig.12 Collector-emitter Saturation Voltage vs. Irradiance

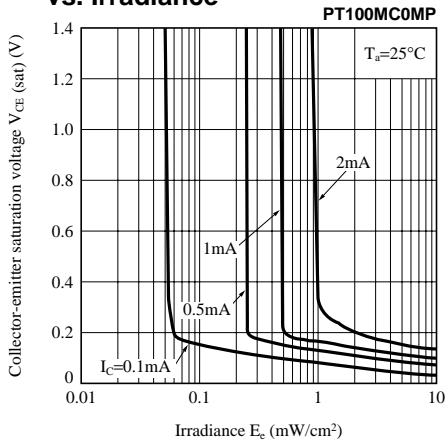


Fig.13 Collector-emitter Saturation Voltage vs. Irradiance

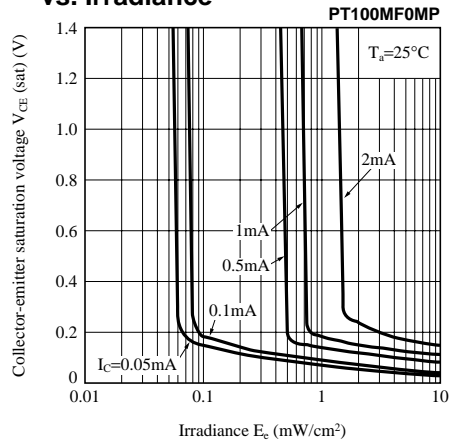


Fig.14 Relative Output vs. Distance To Detector

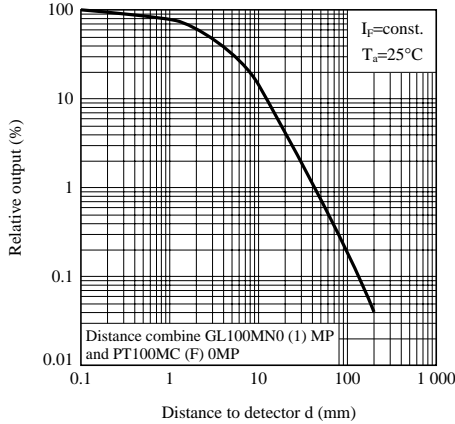
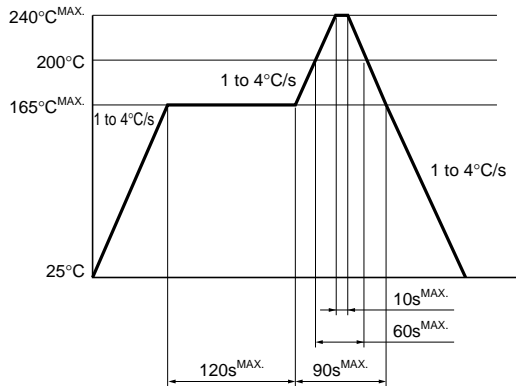


Fig.15 Reflow Soldering

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



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