

# PC355NT

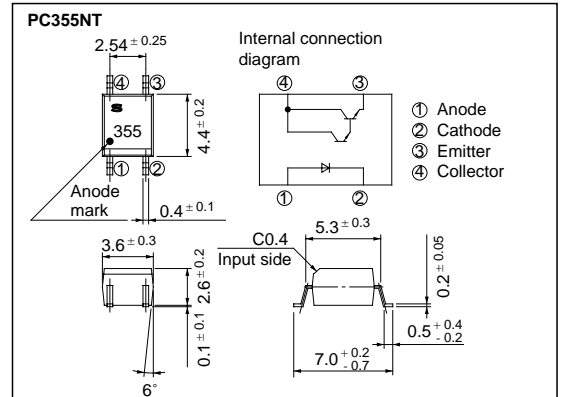
## Mini-Flat Package, High Sensitivity Photocoupler

### ■ Features

1. High current transfer ratio  
(CTR : MIN. 600% at  $I_F = 1\text{mA}$ ,  $V_{CE} = 2\text{V}$ )
2. Opaque type, mini-flat package  
**PC355NT** (1-channel)
3. Subminiature type  
(The volume is smaller than that of our conventional DIP type by as far as 30%)
4. Isolation voltage between input and output  
**PC355NT**•••Viso : 3 750V<sub>rms</sub>
5. Recognized by UL (NO. E64380)

### ■ Outline Dimensions

(Unit : mm)



### ■ Package Specifications

Model No.	Taping specifications
<b>PC355NT</b>	Taping reel diameter 178mm (750pcs.)

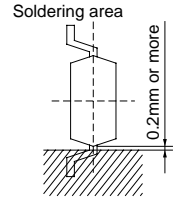
### ■ Applications

1. Hybrid substrates that require high density mounting.
2. Programmable controllers

## Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I <sub>F</sub>	50	mA
	*1 Peak forward current	I <sub>FM</sub>	1	A
	Reverse voltage	V <sub>R</sub>	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V <sub>CEO</sub>	35	V
	Emitter-collector voltage	V <sub>ECO</sub>	6	V
	Collector current	I <sub>C</sub>	80	mA
	Collector power dissipation	P <sub>C</sub>	150	mW
Total power dissipation		P <sub>tot</sub>	170	mW
*2 Isolation voltage		V <sub>iso</sub>	3 750	V <sub>rms</sub>
Operating temperature		T <sub>opr</sub>	- 30 to + 100	°C
Storage temperature		T <sub>stg</sub>	- 40 to + 125	°C
*3 Soldering temperature		T <sub>sol</sub>	260	°C



\*1 Pulse width &lt;= 100 μs, Duty ratio : 0.001

\*2 40 to 60% RH, AC for 1 minute

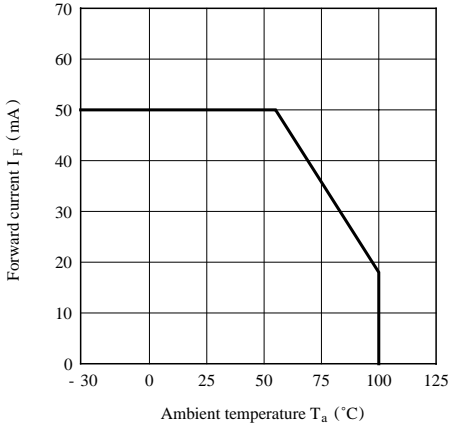
\*3 For 10 seconds

## Electro-optical Characteristics

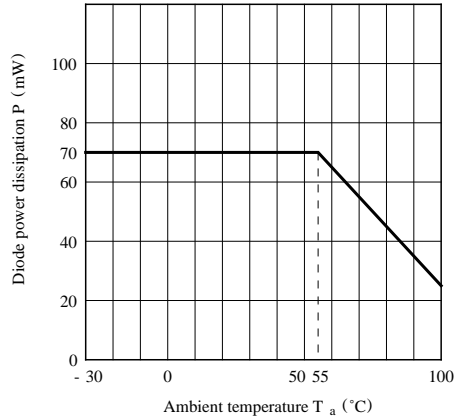
(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 20mA	-	1.2	1.4	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> = 4V	-	-	10	μ A
	Terminal capacitance	C <sub>t</sub>	V = 0, f = 1kHz	-	30	250	pF
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> = 10V, I <sub>F</sub> = 0	-	-	10 <sup>-6</sup>	A
	Collector-emitter breakdown voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 0.1mA, I <sub>F</sub> = 0	35	-	-	V
	Emitter-collector breakdown voltage	BV <sub>ECO</sub>	I <sub>E</sub> = 10 μA, I <sub>F</sub> = 0	6	-	-	V
Transfer-characteristics	Current transfer ratio	CTR	I <sub>F</sub> = 1mA, V <sub>CE</sub> = 2V	600	1 600	7 500	%
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> = 20mA, I <sub>C</sub> = 1mA	-	0.8	1.0	V
	Isolation resistance	R <sub>ISO</sub>	DC500V, 40 to 60% RH	5 x 10 <sup>10</sup>	10 <sup>11</sup>	-	Ω
	Floating capacitance	C <sub>f</sub>	V = 0, f = 1MHz	-	0.6	1.0	pF
	Response time	Rise time	t <sub>r</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 2mA	-	60	300
Fall time		t <sub>f</sub>	R <sub>L</sub> = 100Ω	-	53	250	μ s

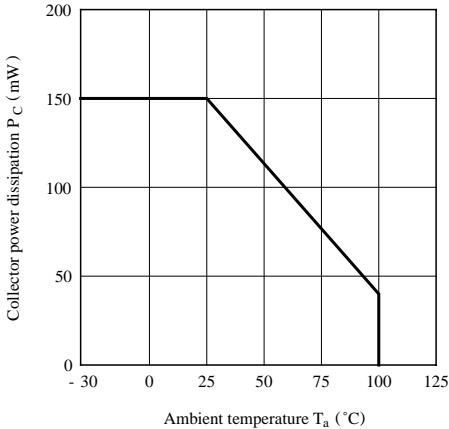
**Fig. 1 Forward Current vs. Ambient Temperature**



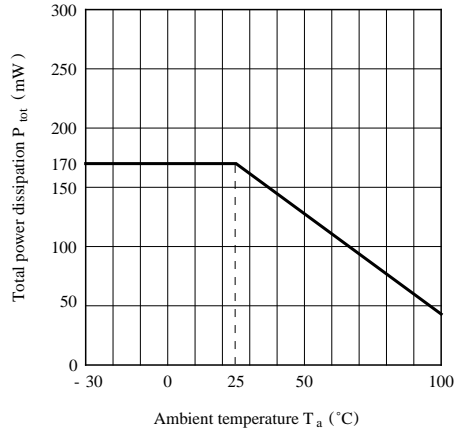
**Fig. 2 Diode Power Dissipation vs. Ambient Temperature**



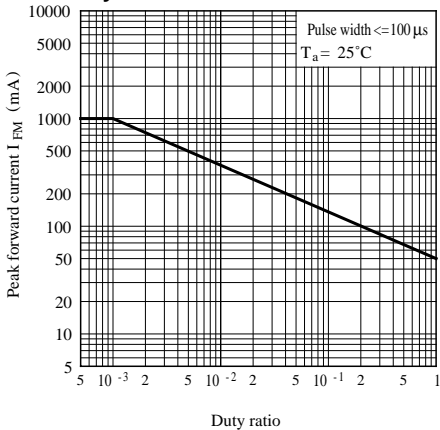
**Fig. 3 Collector Power Dissipation vs. Ambient Temperature**



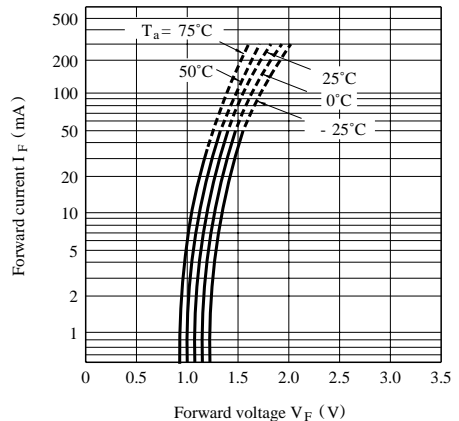
**Fig. 4 Total Power Dissipation vs. Ambient Temperature**



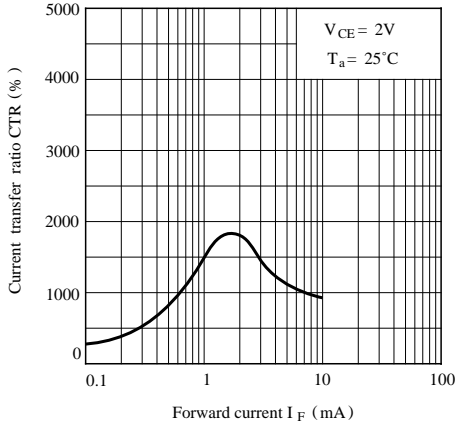
**Fig. 5 Peak Forward Current vs. Duty Ratio**



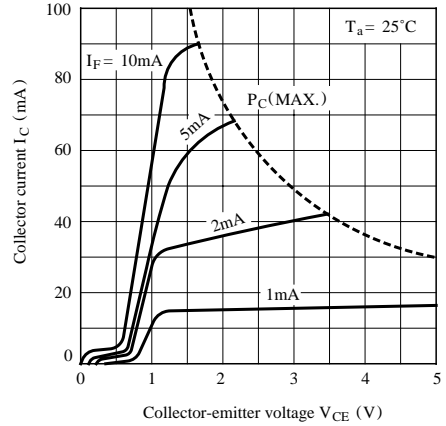
**Fig. 6 Forward Current vs. Forward Voltage**



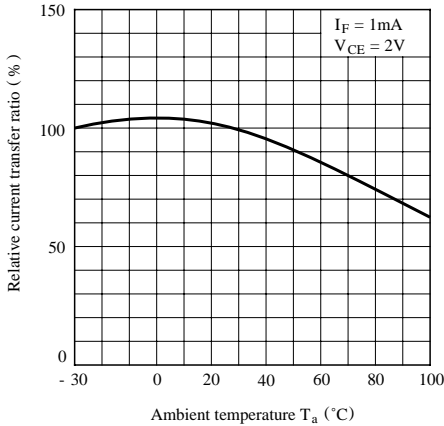
**Fig. 7 Current Transfer Ratio vs. Forward Current**



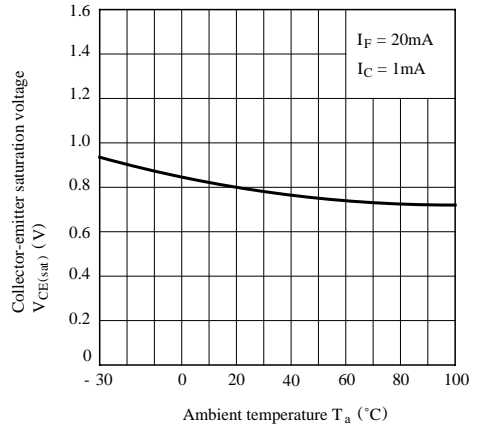
**Fig. 8 Collector Current vs. Collector-emitter Voltage**



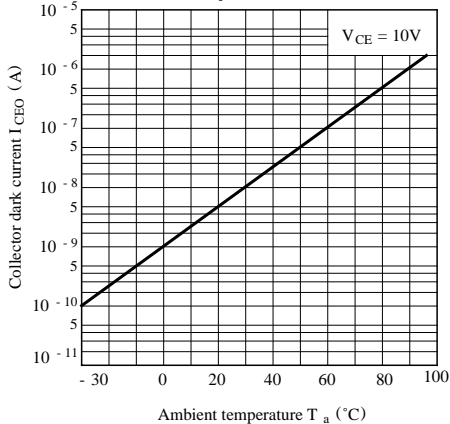
**Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature**



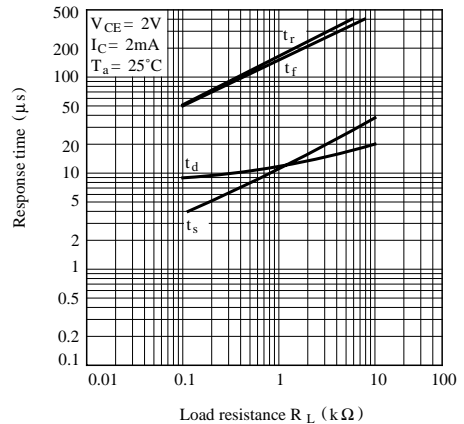
**Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature**



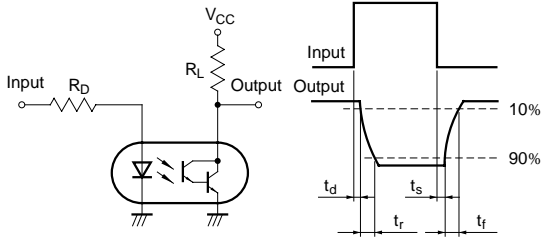
**Fig.11 Collector Dark Current vs. Ambient Temperature**



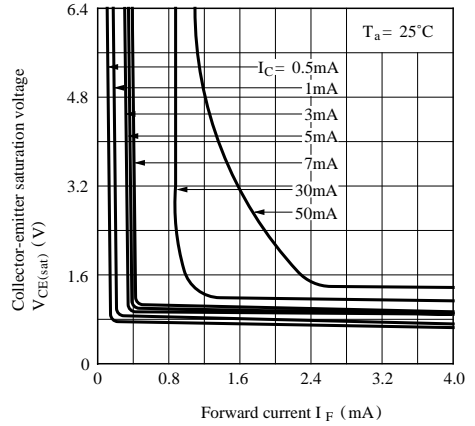
**Fig.12 Responce Time vs. Load Resistance**



**Test Circuit For Response Time**

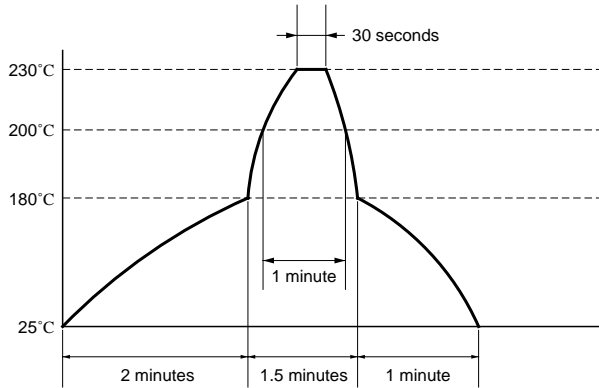


**Fig.13 Collector-emitter Saturation Voltage vs. Forward Current**



**Temperature Profile of Soldering Reflow**

(1) One time soldering reflow is recommended within the condition of temperature and time profile shown below.



(2) When using another soldering method such as infrared ray lamp, the temperature may rise partially in the mold of the device.

Keep the temperature on the package of the device within the condition of above (1).

● Please refer to the chapter “Precautions for Use.”