

PC354NT

Mini-flat Package, AC Input Type Photocoupler

■ Features

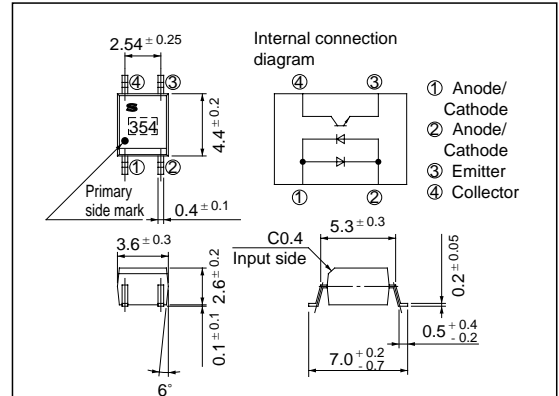
1. AC inputs
2. Opaque type, mini-flat package
PC354NT (1-channel)
3. Subminiature type
(The volume is smaller than that of our conventional DIP type by as far as 30 %.)
4. Isolation voltage between input and output
PC354NT ••• $V_{iso} : 3\ 750V_{rms}$

■ Applications

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

■ Outline Dimensions

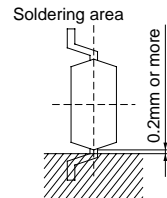
(Unit : mm)



Absolute Maximum Ratings

(Ta = 25°C)

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



*1 Pulse width ≤ 100 μs, Duty ratio : 0.001

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

*3 For 10 seconds

Classification of current transfer ratio (CTR)

Model No.	Rank mark	CTR (%)
PC354N1T	A	50 to 150
PC354NT	A or No mark	20 to 400

* Conditions : I_F = ± 1mA, V_{CE} = 5V, Ta = 25°C

Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V _F	I _F = ± 20mA	-	1.2	1.4	V
	Terminal capacitance	C _t	V = 0, f = 1kHz	-	30	250	pF
Output	Collector dark current	I _{CEO}	V _{CE} = 20V, I _F = 0	-	-	10 ⁻⁷	A
	Collector-emitter breakdown voltage	BV _{CEO}	I _C = 0.1mA, I _F = 0	35	-	-	V
	Emitter-collector breakdown voltage	BV _{ECO}	I _E = 10 μA, I _F = 0	6	-	-	V
Transfer-characteristics	Current transfer ratio	CTR	I _F = ± 1mA, V _{CE} = 5V	20	-	400	%
	Collector-emitter saturation voltage	V _{CE(sat)}	I _F = ± 20mA, I _C = 1mA	-	0.1	0.2	V
	Isolation resistance	R _{ISO}	DC500V, 40 to 60% RH	5 x 10 ¹⁰	10 ¹¹	-	Ω
	Floating capacitance	C _f	V = 0, f = 1MHz	-	0.6	1.0	pF
	Response time	Rise time	t _r	V _{CE} = 2V, I _C = 2mA	-	4	18
Fall time		t _f	R _L = 100Ω	-	3	18	μs

Fig. 1 Forward Current vs. Ambient Temperature

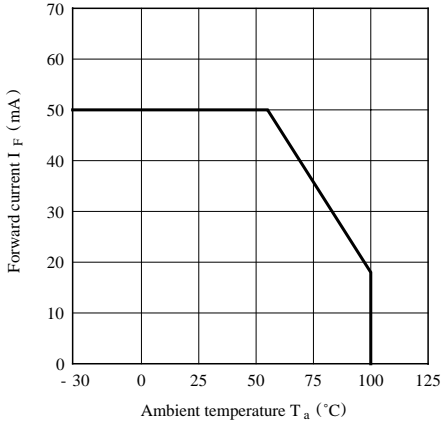


Fig. 2 Diode Power Dissipation vs. Ambient Temperature

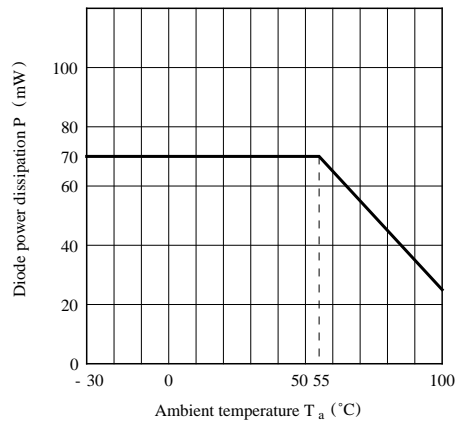


Fig. 3 Collector Power Dissipation vs. Ambient Temperature

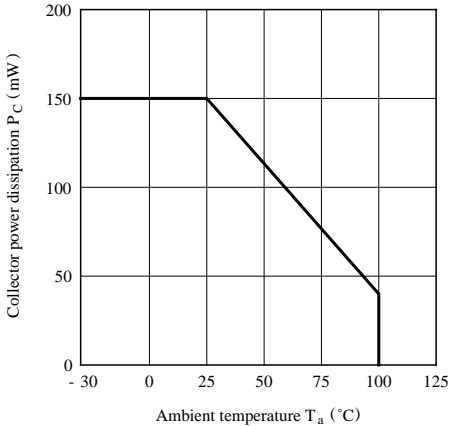


Fig. 4 Total Power Dissipation vs. Ambient Temperature

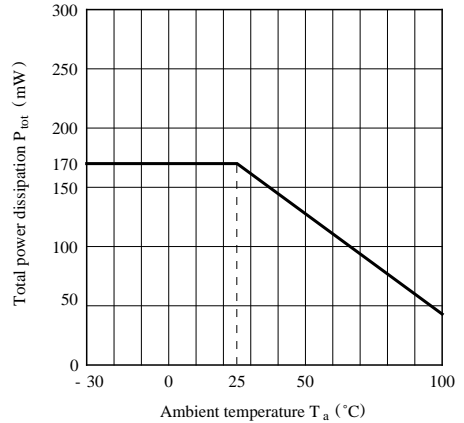


Fig. 5 Peak Forward Current vs. Duty Ratio

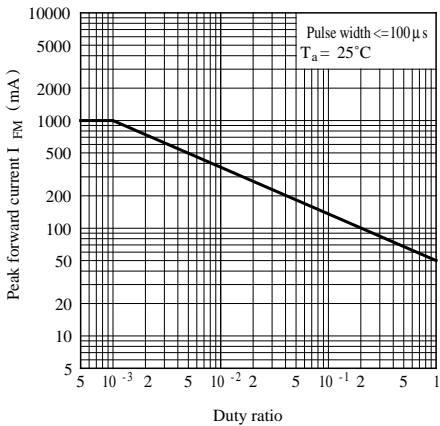


Fig. 6 Forward Current vs. Forward Voltage

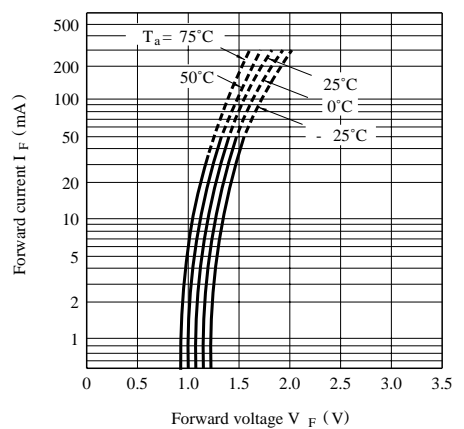


Fig. 7 Current Transfer Ratio vs. Forward Current

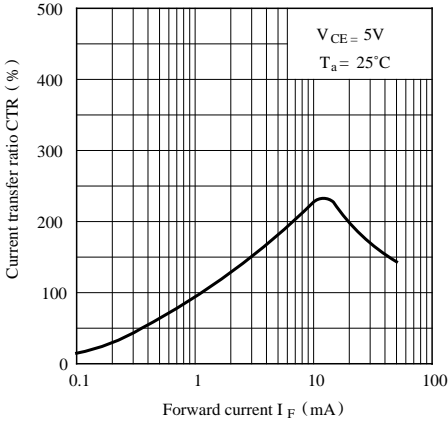


Fig. 8 Collector Current vs. Collector-emitter Voltage

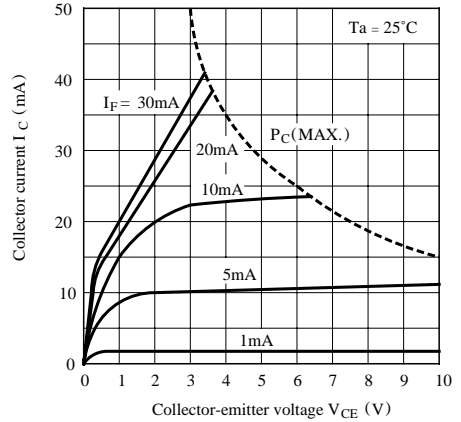


Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature

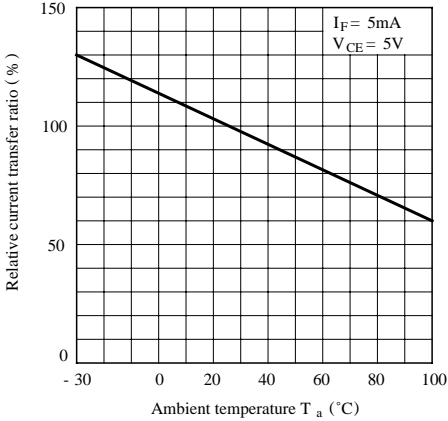


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature

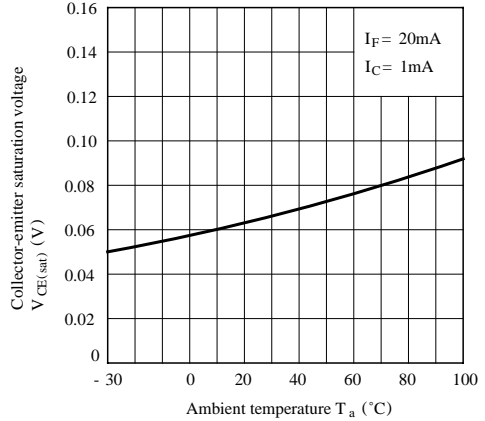


Fig.11 Collector Dark Current vs. Ambient Temperature

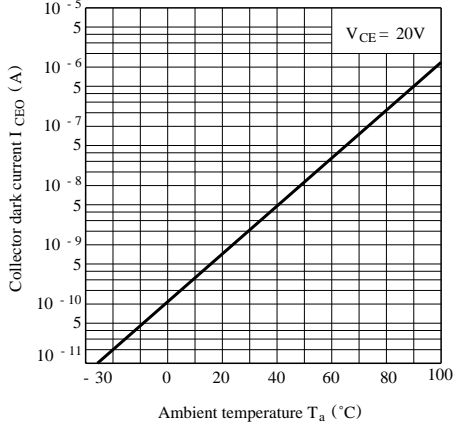
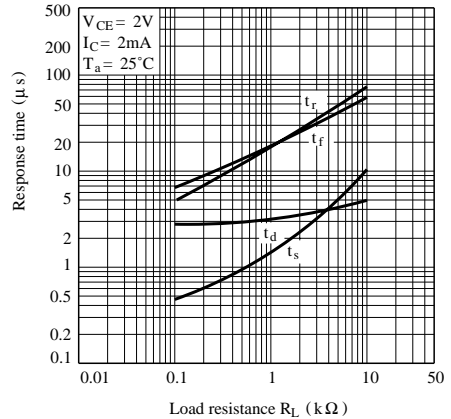


Fig.12 Response Time vs. Load Resistance



Test Circuit For Response Time

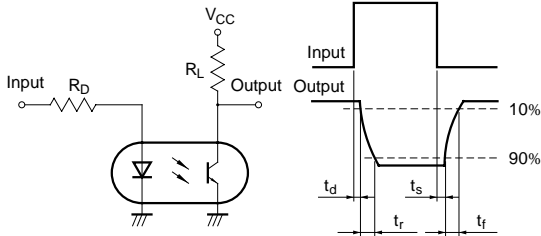
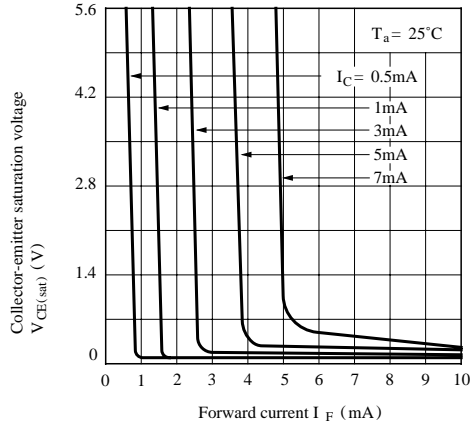
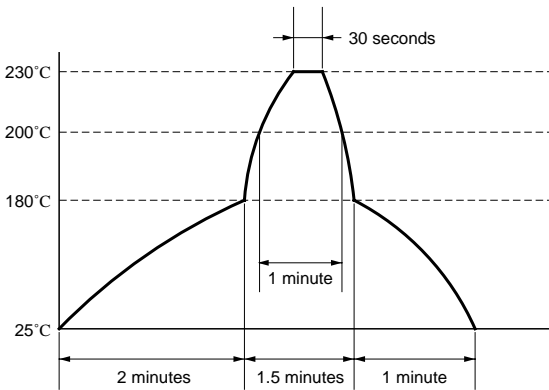


Fig.13 Collector-emitter Saturation Voltage vs. Forward Current



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”.