

# PC353T

## Mini-flat Package Photocoupler with Base Terminal

### ■ Features

1. With base terminal
2. Applicable to infrared ray reflow  
(230°C, MAX. 30 seconds)
3. High isolation voltage  
( $V_{iso}$  : 3 750V<sub>rms</sub>)
4. Recognized by UL (No. E64380)
5. Mini-flat package

### ■ Applications

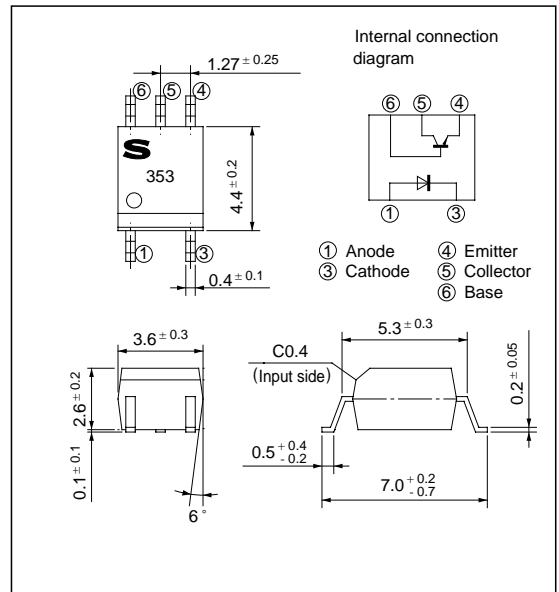
1. Hybrid substrates that require high density mounting
2. Programmable controllers

### ■ Package Specifications

Model No.	Taping specifications
PC353T	Taping reel diameter 178mm (750pcs.)

### ■ Outline Dimensions

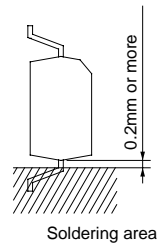
(Unit : mm)



### ■ 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
	Reverse voltage	$V_R$	6	V
	Power dissipation	$P$	70	mW
Output	Collector-emitter voltage	$V_{CEO}$	80	V
	Emitter-collector voltage	$V_{ECO}$	6	V
	Collector-base voltage	$V_{CBO}$	80	V
	Emitter-base voltage	$V_{EBO}$	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	$V_{iso}$	3.75	kV <sub>rms</sub>
	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  $\leq 100\mu s$ , Duty ratio : 0.001\*2 AC for 1 min., 40 to 60% RH,  $f = 60Hz$ 

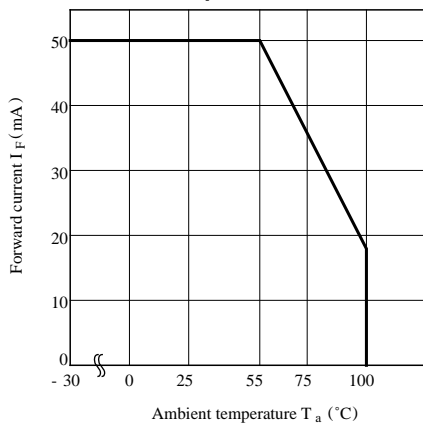
\*3 For 10 seconds

## Electro-optical Characteristics

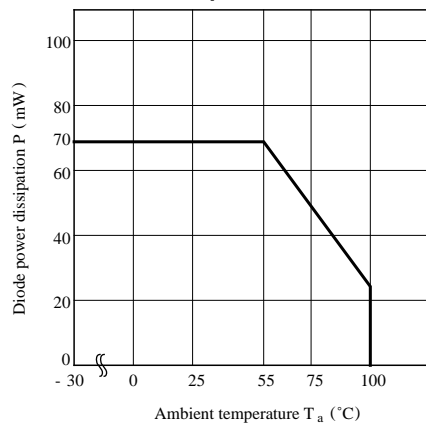
(T<sub>a</sub> = 25°C)

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	μA
	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> = 20V, I <sub>F</sub> = 0	-	-	100	nA
	Collector-emitter breakdown voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 0.1mA I <sub>F</sub> = 0	80	-	-	V
	Emitter-collector breakdown voltage	BV <sub>ECO</sub>	I <sub>E</sub> = 10μA I <sub>F</sub> = 0	6	-	-	V
	Collector-base breakdown voltage	BV <sub>CBO</sub>	I <sub>C</sub> = 0.1mA I <sub>F</sub> = 0	80	-	-	V
Transfer characteristics	Collector current	I <sub>C</sub>	I <sub>F</sub> = 5mA V <sub>CE</sub> = 5V	2.5	-	30	mA
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> = 20mA I <sub>C</sub> = 1mA	-	0.1	0.2	V
	Isolation resistance	R <sub>ISO</sub>	DC500V 40 to 60% RH	5 × 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 R <sub>L</sub> = 100Ω	-	4	18
Fall time		t <sub>f</sub>	-		3	18	μs

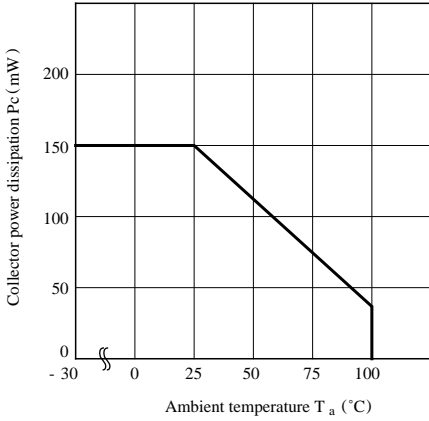
**Fig. 1 Forward Current vs. Ambient Temperature**



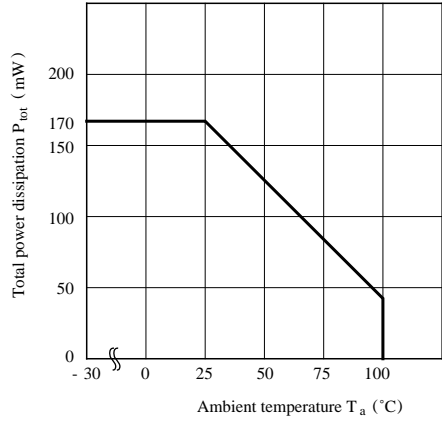
**Fig. 2 Diode Power Dissipation vs. Ambient Temperature**



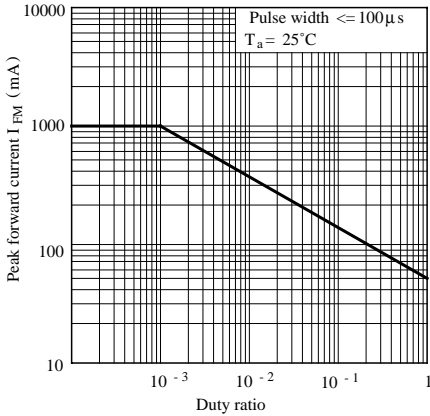
**Fig. 3 Collector Power Dissipation vs. Ambient Temperature**



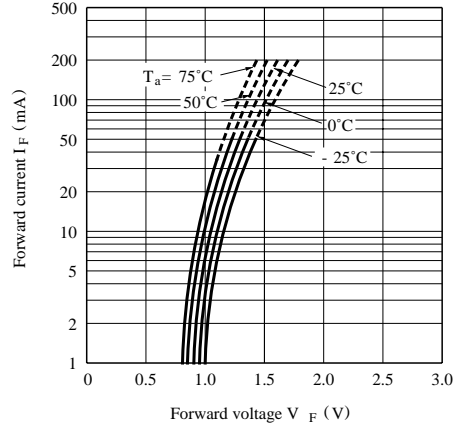
**Fig. 4 Total Power Dissipation vs. Ambient Temperature**



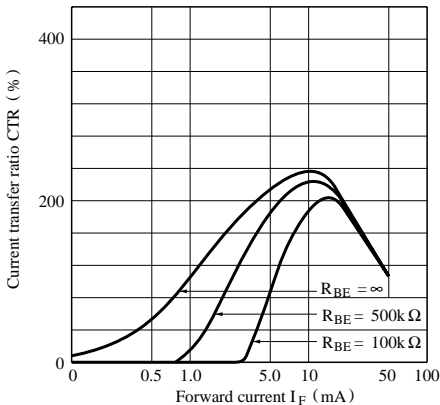
**Fig. 5 Peak Forward Current vs. Duty Ratio**



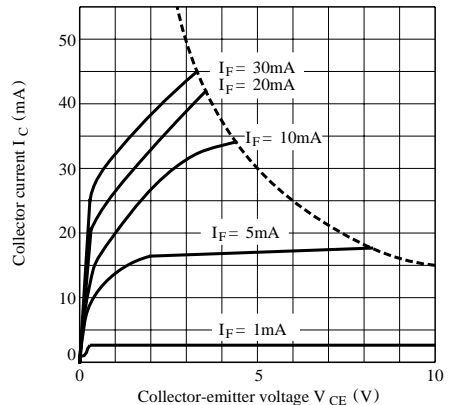
**Fig. 6 Forward Current vs. Forward Voltage**



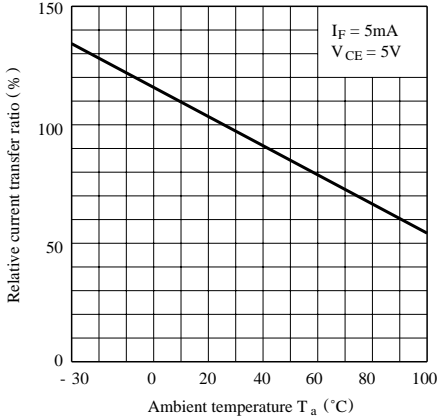
**Fig. 7 Current Transfer Ratio vs. Forward Current**



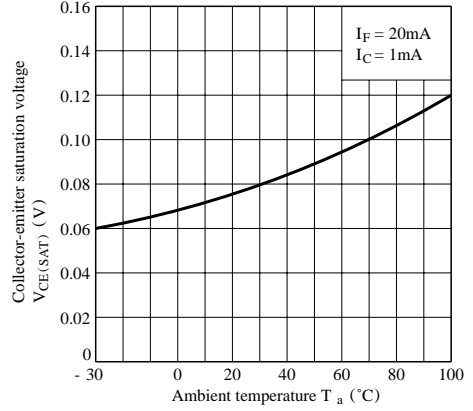
**Fig. 8 Collector Current vs. Collector-emitter Voltage**



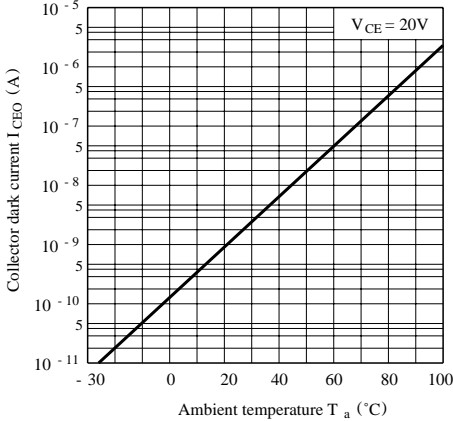
**Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature**



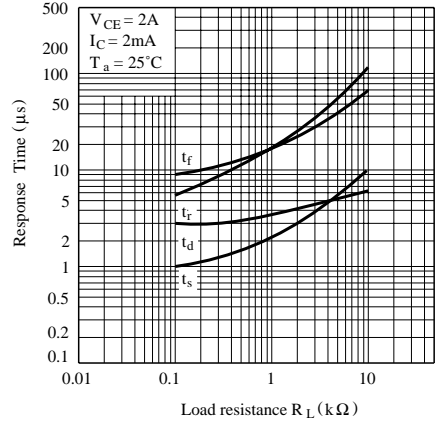
**Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature**



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



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



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

