

# PC852 Series PC853/PC853H

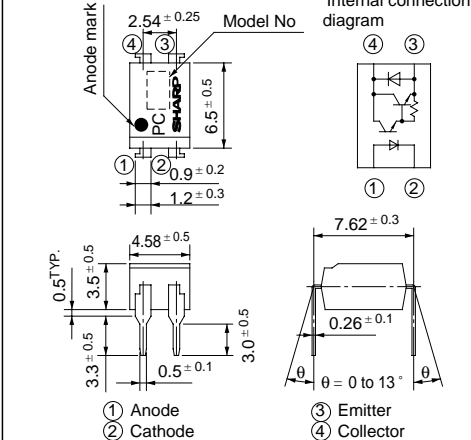
\* Lead forming type (I type) and taping reel type (P type) are also available. (PC852I/PC852P/PC853I/PC853P)

## ■ Features

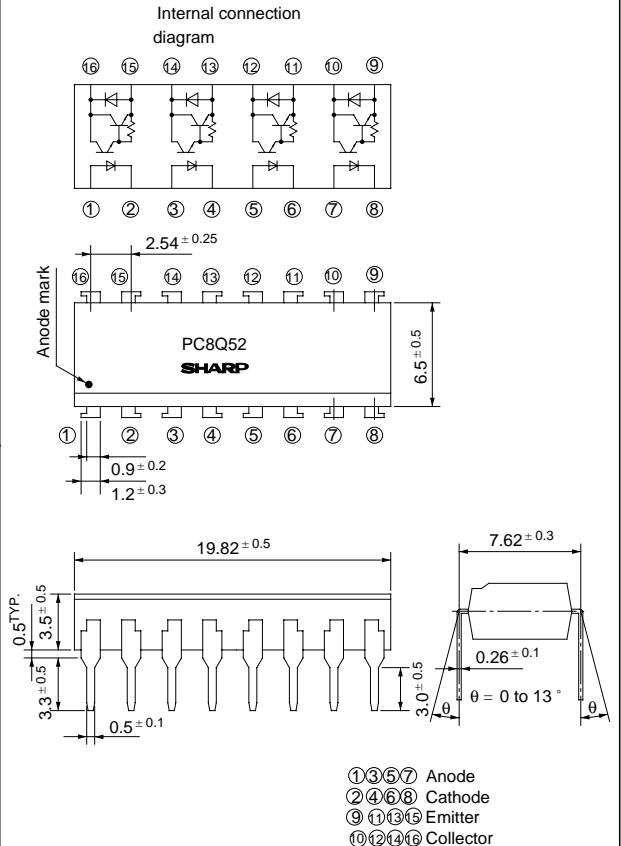
1. High collector-emitter voltage  
**PC852 Series, PC853** ( $V_{CEO}$ : 300V)  
**PC853H** ( $V_{CEO}$ : 350V)
2. High current transfer ratio  
(CTR: MIN. 1 000% at  $I_F = 1\text{mA}$ ,  $V_{CE} = 2\text{V}$ )
3. High isolation voltage between input and output ( $V_{iso}$ : 5 000V<sub>rms</sub>)
4. Compact dual-in-line package  
**PC852, PC853, PC853H** (1-channel type)

## ■ Outline Dimensions

### PC852/PC853/PC853H



### PC8Q52



(Note)

The diode of output side is not a protection diode of reverse voltage.

(Unit : mm)

■ Absolute Maximum Ratings

(Ta= 25°C)

Parameter		Symbol	Rating			Unit
			PC852 Series	PC853	PC853H	
Input	Forward current	I <sub>F</sub>	50	50		mA
	<sup>*1</sup> Peak forward current	I <sub>FM</sub>	1	1		A
	Reverse voltage	V <sub>R</sub>	6	6		V
	Power dissipation	P	70	70		mW
Output	Collector-emitter voltage	V <sub>CEO</sub>	300	300	350	V
	Emitter-collector voltage	V <sub>ECO</sub>	0.1	0.1		V
	Collector current	I <sub>C</sub>	150	150		mA
	Collector power dissipation	P <sub>C</sub>	150	300		mW
Total power dissipation		P <sub>tot</sub>	200	320		mW
<sup>*2</sup> Isolation voltage		V <sub>iso</sub>	5 000	5 000		V <sub>rms</sub>
Operating temperature		T <sub>opr</sub>	- 30 to + 100	- 30 to + 100		°C
Storage temperature		T <sub>stg</sub>	- 55 to + 125	- 55 to + 125		°C
<sup>*3</sup> Soldering temperature		T <sub>sol</sub>	260	260		°C

\*1 Pulse width<=100μs, 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> = 10mA	-	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> = 200V, I <sub>F</sub> = 0	-	-	2 x 10 <sup>-7</sup>	A
Transfer characteristics	Current transfer ratio		CTR	I <sub>F</sub> = 1mA, V <sub>CE</sub> = 2V	1 000	4 000	15 000	%
	Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>F</sub> = 20mA, I <sub>C</sub> = 100mA	-	-	1.2	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
	Cut-off frequency		f <sub>c</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 20mA, R <sub>L</sub> = 100Ω, - 3dB	1	7	-	kHz
	Response time	Rise time	t <sub>r</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 20mA R <sub>L</sub> = 100Ω	-	100	300	μs
		Fall time	t <sub>f</sub>		-	20	100	μs

Fig. 1 Forward Current vs. Ambient Temperature

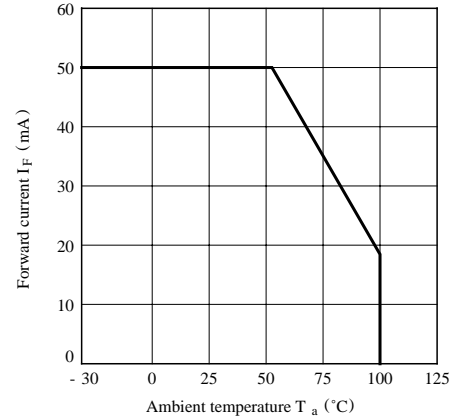


Fig. 2-a Collector Power Dissipation vs. Ambient Temperature (PC852 Series)

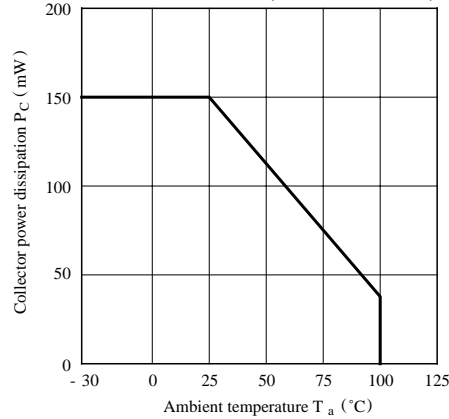


Fig. 2-b Collector Power Dissipation vs. Ambient Temperature (PC853/PC853H)

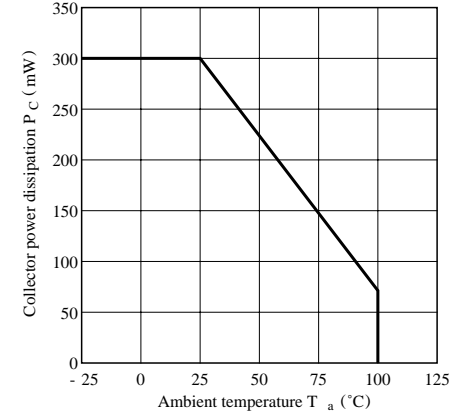


Fig. 3 Peak Forward Current vs. Duty Ratio

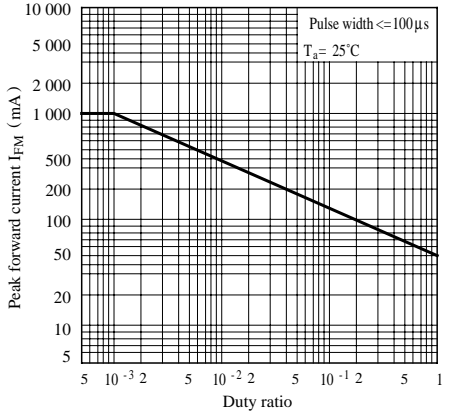


Fig. 4 Forward Current vs. Forward Voltage

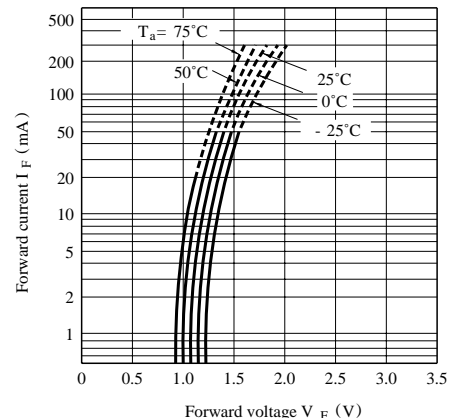
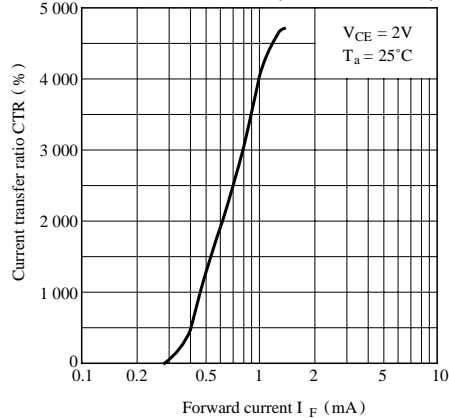
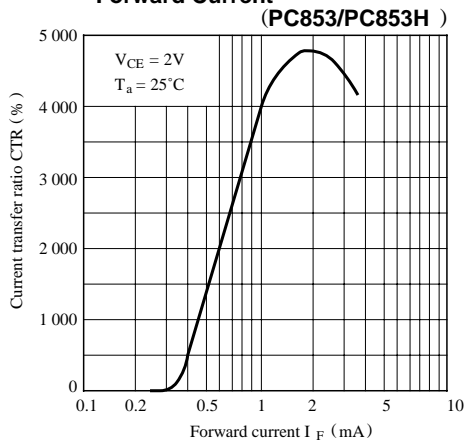


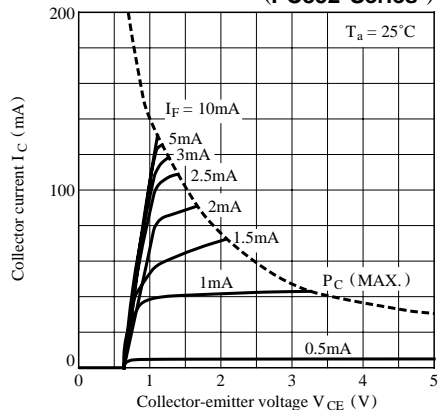
Fig. 5-a Current Transfer Ratio vs. Forward Current (PC852 Series)



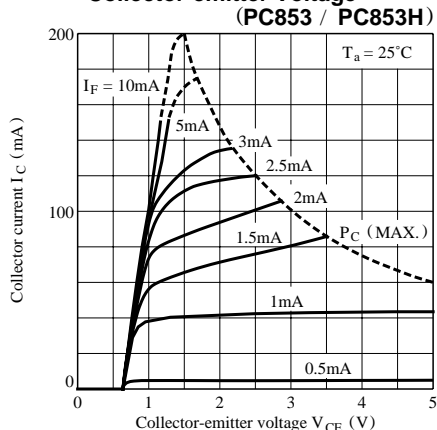
**Fig. 5-b Current Transfer Ratio vs.  
Forward Current**



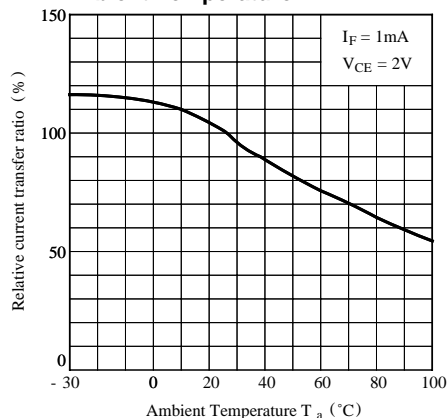
**Fig. 6-a Collector Current vs.  
Collector-emitter Voltage**



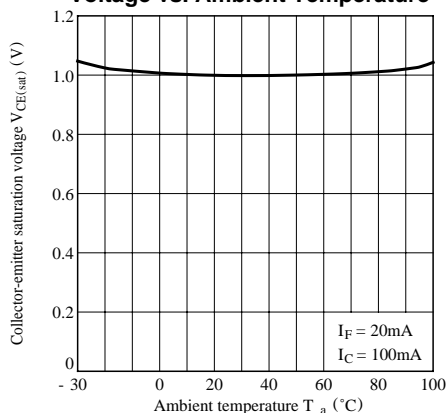
**Fig. 6-b Collector Current vs.  
Collector-emitter Voltage**



**Fig. 7 Relative Current Transfer Ratio vs.  
Ambient Temperature**



**Fig. 8 Collector-emitter Saturation  
Voltage vs. Ambient Temperature**



**Fig. 9 Collector Dark Current vs.  
Ambient Temperature**

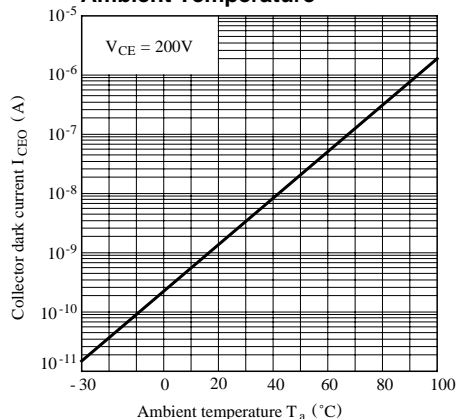


Fig.10 Response Time vs. Load Resistance

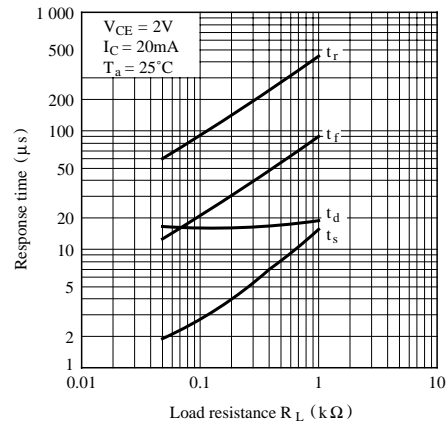


Fig.11 Frequency Response

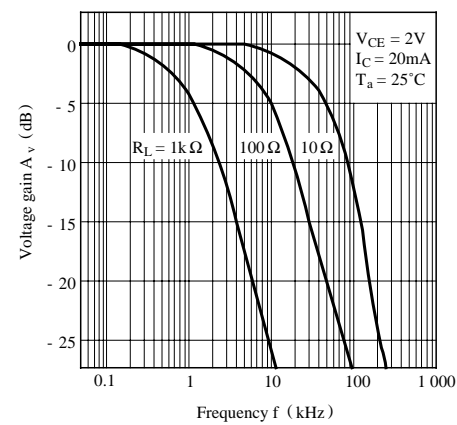
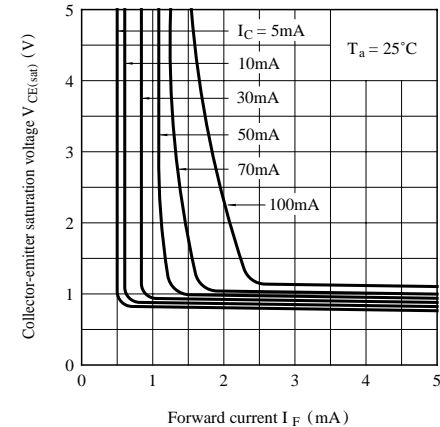


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



● Please refer to the chapter “Precautions for Use ”

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