

# PC713V/PC714V

\* Lead forming type (I type) and taping reel type (P type) are also available. (PC713VI/PC714VI/PC713VP/PC714VP)

\*\* TÜV (VDE0884) approved type is also available as an option.

## ■ Features

1. TTL compatible output
2. Current transfer ratio  
(CTR : MIN. 50% at  $I_F = 5\text{mA}$ ,  $V_{CE} = 5\text{V}$ )
3. Low collector dark current  
( $I_{CEO}$  : MAX.  $10^{-7}\text{A}$  at  $V_{CE} = 20\text{V}$ )
4. High isolation voltage between input and output ( $V_{iso}$  :  $5\,000\text{V}_{rms}$ )
5. Recognized by UL, file No. E64380

## ■ Applications

1. System appliances, measuring instruments
2. Registers, copiers, automatic vending machines
3. Electric home appliances such as fan heaters
4. Signal transmission between circuits of different potentials and impedances

## ■ 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	$V_{CEO}$	35	V
	Emitter-collector voltage	$V_{ECO}$	6	V
	*2 Collector-base voltage	$V_{CBO}$	35	V
	*2 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
	*3 Isolation voltage	$V_{iso}$	5 000	$V_{rms}$
	Operating temperature	$T_{opr}$	- 25 to+ 100	°C
	Storage temperature	$T_{stg}$	- 40 to+ 125	°C
	*4 Soldering temperature	$T_{sol}$	260	°C

\*1 Pulse width  $\leq 100\mu\text{s}$ , Duty ratio : 0.001

\*2 Applies only to PC713V

\*3 40 to 60% RH, AC for 1 minute

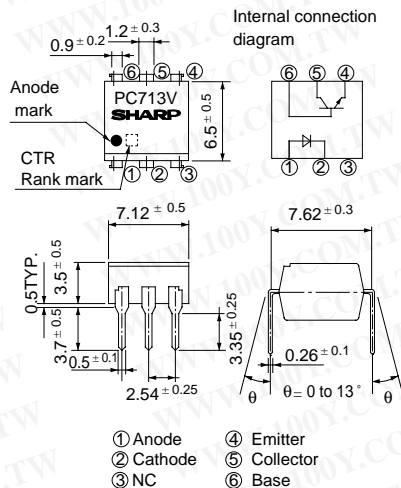
\*4 For 10 seconds

## High Isolation Voltage Type, General Purpose Photocoupler

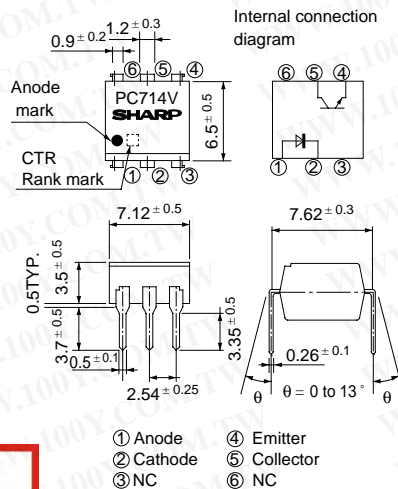
## ■ Outline Dimensions

(Unit : mm)

### PC713V



### PC714V



勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage	$V_F$	$I_F = 20\text{mA}$	-	1.2	1.4	V	
	Peak forward voltage	$V_{FM}$	$I_{FM} = 0.5\text{A}$	-	-	3.0	V	
	Reverse current	$I_R$	$V_R = 4\text{V}$	-	-	10	$\mu\text{A}$	
	Terminal capacitance	$C_t$	$V = 0, f = 1\text{kHz}$	-	30	250	pF	
Output	Collector dark current	$I_{CEO}$	$V_{CE} = 20\text{V}, I_F = 0, {}^{*5}R_{BE} = \infty$	-	-	$10^{-7}$	A	
	*6Current transfer ratio	CTR	$I_F = 5\text{mA}, V_{CE} = 5\text{V}, {}^{*5}R_{BE} = \infty$	50	-	600	%	
Transfer characteristics	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 1\text{mA}, {}^{*5}R_{BE} = \infty$	-	0.1	0.2	V	
	Isolation resistance	$R_{ISO}$	DC500V, 40 to 60% RH	$5 \times 10^{10}$	$10^{11}$	-	$\Omega$	
	Floating capacitance	$C_f$	$V = 0, f = 1\text{MHz}$	-	0.6	1.0	pF	
	Cut-off frequency	$f_c$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, R_L = 100\Omega, {}^{*5}R_{BE} = \infty$	-	80	-	kHz	
	Response time	Rise time	$t_r$	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$	-	4	18	$\mu\text{s}$
		Fall time	$t_f$	$R_L = 100\Omega, {}^{*5}R_{BE} = \infty$	-	3	18	$\mu\text{s}$

\*5 Applies only to **PC713V**

\*6 Classification table of current transfer ratio is shown below.

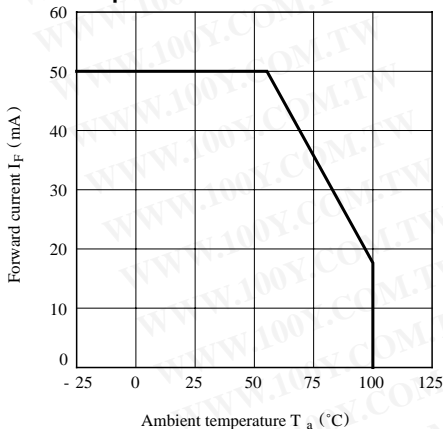
Model No.	Rank mark	CTR (%)
<b>PC713V1/PC714V1</b>	A	80 to 160
<b>PC713V2/PC714V2</b>	B	130 to 260
<b>PC713V3/PC714V3</b>	C	200 to 400
<b>PC713V5/PC714V5</b>	A or B	80 to 260
<b>PC713V6/PC714V6</b>	B or C	130 to 400
<b>PC713V8/PC714V8</b>	A, B or C	80 to 400
<b>PC713V/PC714V</b>	A, B, C or no marking	50 to 600

Measurement conditions

 $I_F = 5\text{mA}$  $V_{CE} = 5\text{V}$  $T_a = 25^\circ\text{C}$ 

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

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



### Fig. 2 Collector Power Dissipation vs. Ambient Temperature

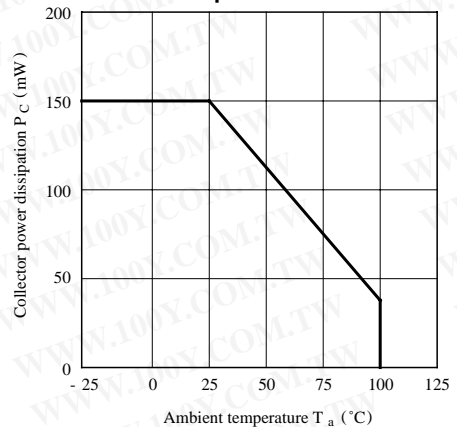


Fig. 3 Peak Forward Current vs. Duty Ratio

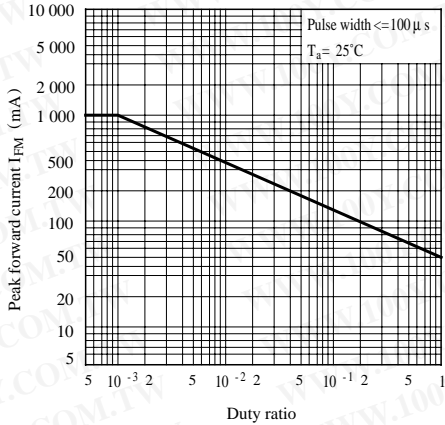


Fig. 4 Forward Current vs. Forward Voltage

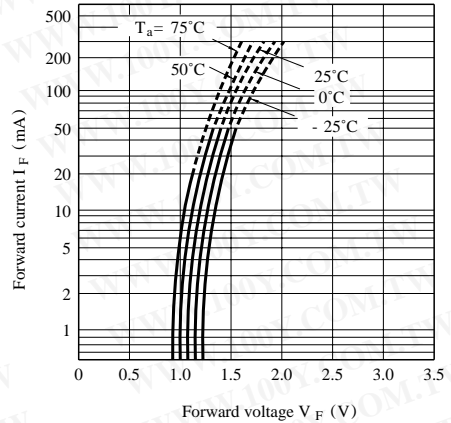


Fig. 5 Current Transfer Ratio vs. Forward Current

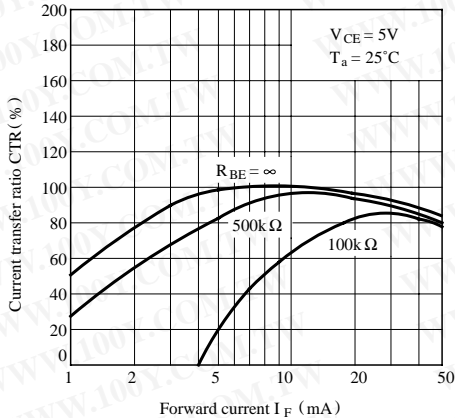


Fig. 6 Collector Current vs. Collector-emitter Voltage

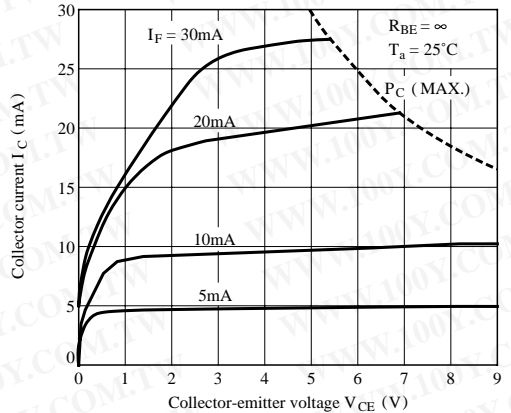


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

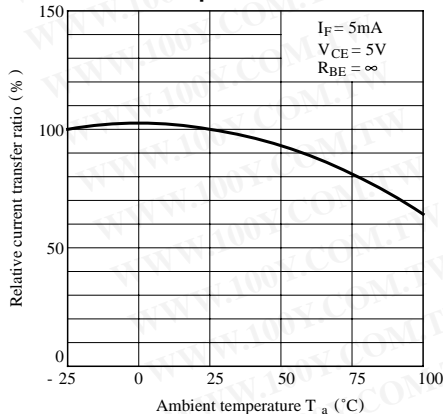


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

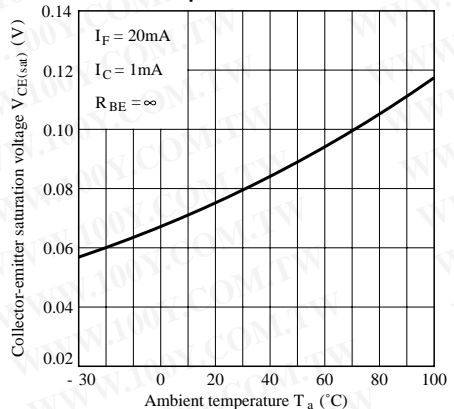


Fig. 9 Collector Dark Current vs. Ambient Temperature

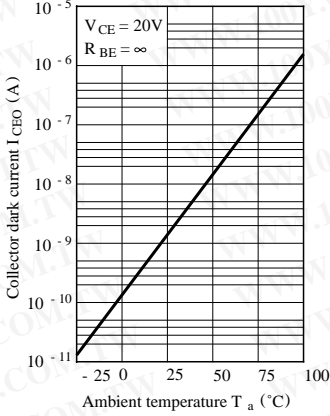


Fig.10 Collector-base Dark Current vs. Ambient Temperature(PC713V)

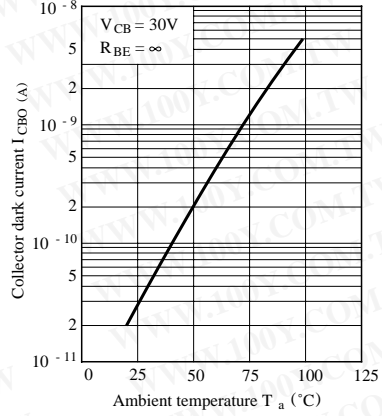


Fig.11 Response Time vs. Load Resistance

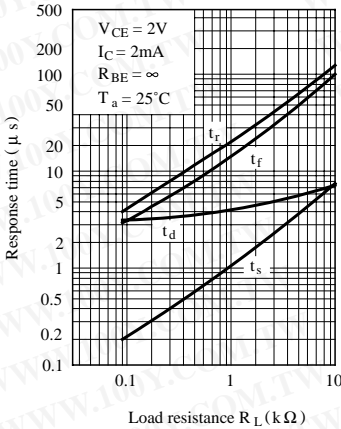
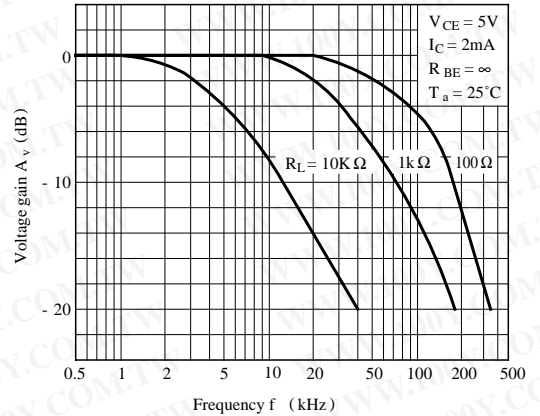
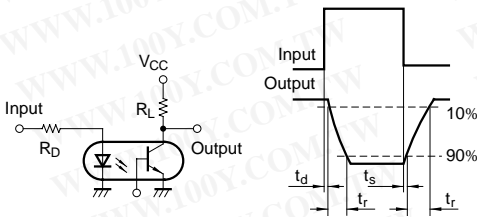


Fig.12 Frequency Response

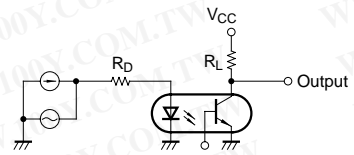


Test Circuit for Response Time



(PC714V has no base terminal. )

Test Circuit for Frequency Response



(PC714V has no base terminal. )

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

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
 Http://www.100y.com.tw