PC703V

High Collector-emitter Voltage Type Photocoupler

❋ Lead forming type（I type ）and taping reel type （P type ）are also available.（**PC703VI/PC703VP** ）

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

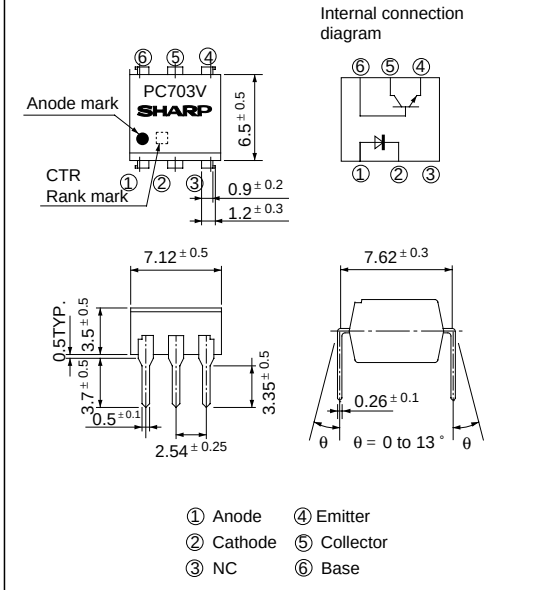
■ Features

1. High collector-emitter voltage（V_{CEO}： 70V）
2. High isolation voltage between input and output
   （V_{iso}： 5 000V $_{rms}$）
3. TTL compatible output
4. Recognized by UL, file No. E64380,

■ Applications

1. Telephone sets, telephone exchangers
2. System appliances, measuring instruments
3. Signal transmission between circuits of different potentials and impedances

■ Outline Dimensions （Unit： mm）



■ Absolute Maximum Ratings （Ta= 25˚C）

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V_{CEO}	70	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector-base voltage	V_{CBO}	70	V
	Emitter-base voltage	V_{EBO}	6	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	160	mW
Total power dissipation		P_{tot}	200	mW
*2Isolation voltage		V_{iso}	5 000	V_{rms}
Operating temperature		T_{opr}	- 30 to + 100	˚C
Storage temperature		T_{stg}	- 55 to + 125	˚C
*3Soldering temperature		T_{sol}	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_F	I_F = 20mA	-	1.2	1.4	V
	Peak forward voltage		V_{FM}	I_{FM} = 0.5A	-	-	3.0	V
	Reverse current		I_R	V_R = 4V	-	-	10	μA
	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
Transfer characteristics	*4Current transfer ratio		CTR	I_F = 10mA, V_{CE} = 5V	40	-	320	%
	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	5×10^{10}	10^{11}	-	Ω
	Floating capacitance		C_f	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency		f_C	V_{CE} = 5V, I_C = 2mA R_L = 100Ω, - 3dB	-	80	-	kHz
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA R_L = 100Ω	-	4	15	μs
		Fall time	t_f		-	3	15	μs

*4 Classification table of current transfer ratio is shown below.

Model No.	Rank mark	CTR (%)
PC703V1	A	40 to 80
PC703V2	B	63 to 125
PC703V3	C	100 to 200
PC703V4	D	160 to 320
PC703V5	A or B	40 to 125
PC703V6	B or C	63 to 200
PC703V7	C or D	100 to 320
PC703V	A, B, C or D	40 to 320

Measurement conditions

I_F = 10mA

V_{CE} = 5V

T_a = 25˚C

Fig. 1 Forward Current vs. Ambient Temperature

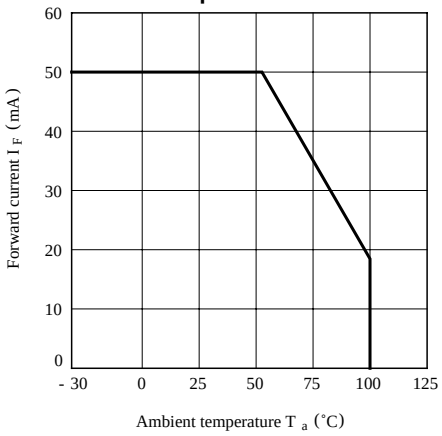


Fig.12 Collector Power Dissipation VS. Ambient Temperature

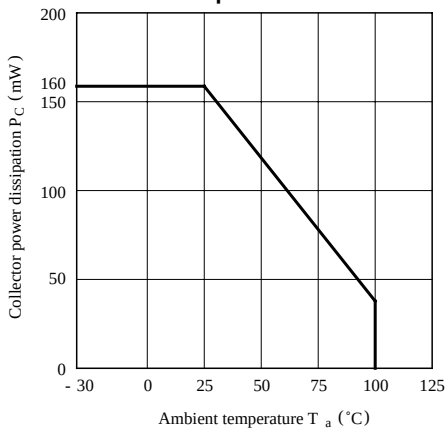


Fig. 3 Peak Forward Current vs. Duty Ratio

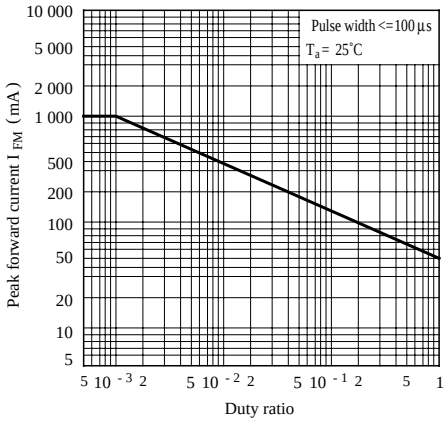


Fig. 4 Forward Current vs. Forward Voltage

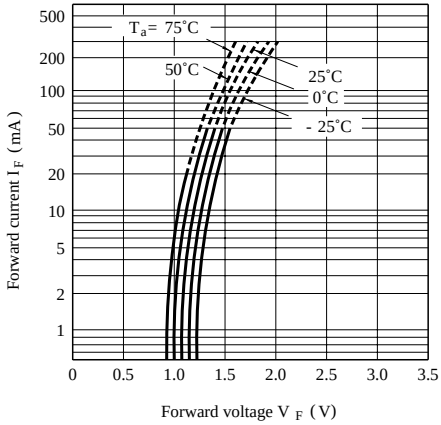


Fig. 5 Current Transfer Ratio vs. Forward Current

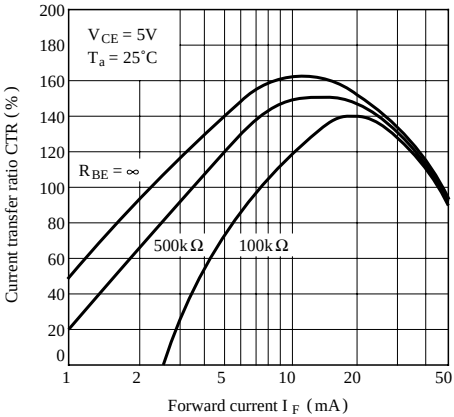


Fig. 6 Collector Current vs. Collector-emitter Voltage

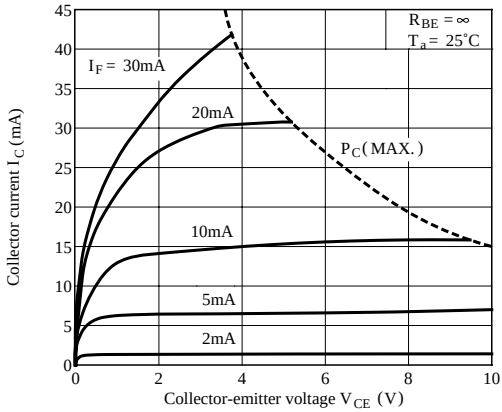


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

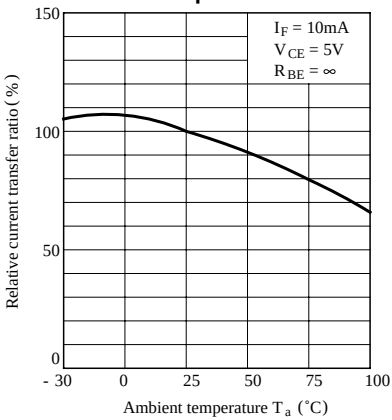


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

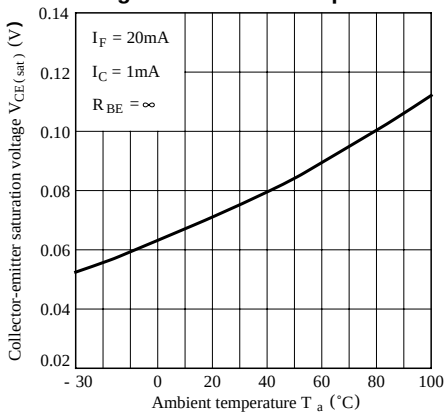


Fig. 9 Collector Dark Current vs. Ambient Temperature

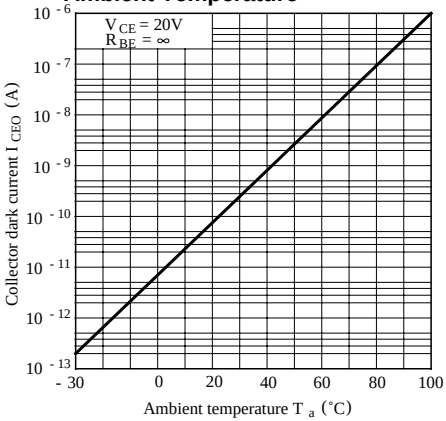


Fig.10 Response Time vs. Load Resistance

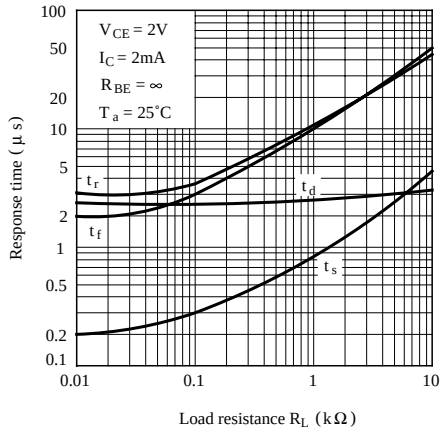
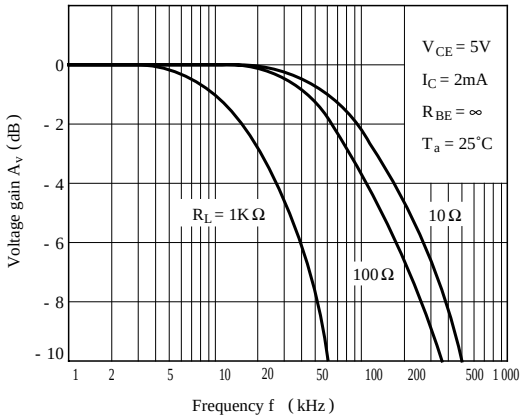


Fig.11 Frequency Response



Test Circuit for Response Time

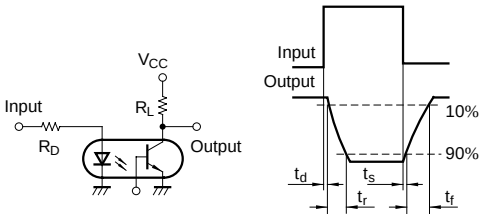
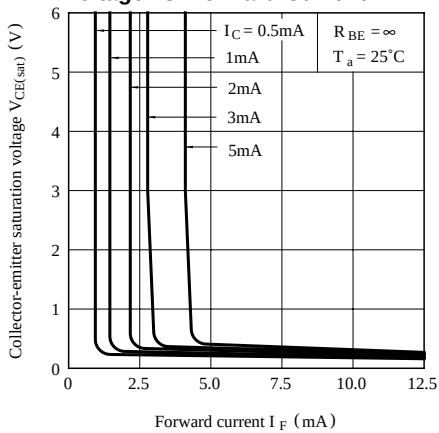
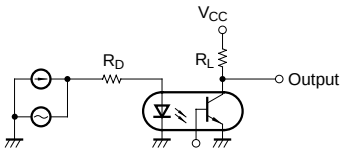


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Frequency Response



●Please refer to the chapter " Precautions for Use " .