

PC723V

High Collector-emitter Voltage Type Photocoupler

※ Lead forming type (I type) and taping reel type (P type) are also available. (PC723VI/PC723VP) (Page 656)
 ※※ TÜV (VDE0884) approved type as an option is also available.

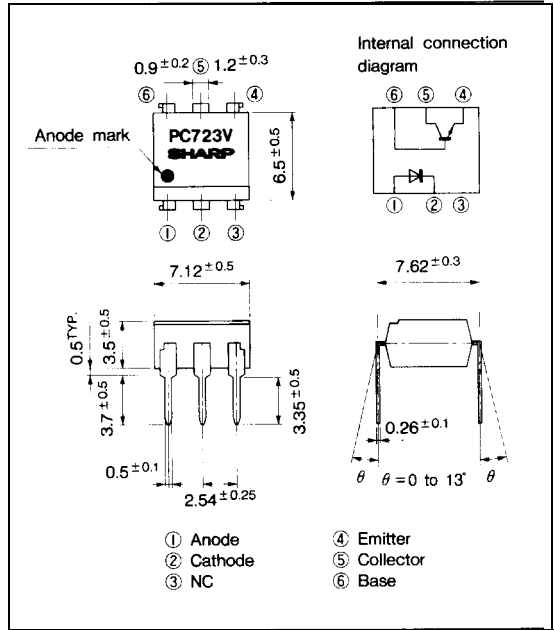
■ Features

1. High collector-emitter voltage (V_{CEO} : 80V)
2. High isolation voltage between input and output (V_{iso} : 5 000V_{rms})
3. Current transfer ratio
CTR : MIN. 50% at $I_F=5mA$, $V_{CE}=5V$
4. TTL compatible output
5. Recognized by UL, file No. E64380

■ Applications

1. Telephone systems, telegram systems
2. System appliances, measuring instruments
3. Signal transmission between circuits of different potentials and impedances

■ Outline Dimensions (Unit : mm)



■ Absolute Maximum Ratings

	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}	130	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}	200	mW
	*Isolation voltage	V_{iso}	5000	V _{rms}
	Operating temperature	T_{opr}	-25 to +100	°C
	Storage temperature	T_{stg}	-40 to +125	°C
	*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

6 Photocouplers

■ Electro-optical Characteristics

($T_a = 25^\circ\text{C}$)

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	μA	
	Terminal capacitance	C_t	$V = 0, f = 1\text{kHz}$	—	30	250	pF	
Output	Collector dark current	I_{CEO}	$V_{CE} = 40\text{V}, I_F = 0, R_{BE} = \infty$			10^{-7}	A	
	Current transfer ratio	CTR	$I_F = 5\text{mA}, V_{CE} = 5\text{V}, R_{BE} = \infty$	50	100	400	%	
Transfer charac- teristics	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 1\text{mA}, R_{BE} = \infty$	—	0.1	0.3	V	
	Isolation resistance	R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	10^{11}	—	Ω	
	Floating capacitance	C_f	$V = 0, f = 1\text{MHz}$	—	0.6	1.0	pF	
	Response time	Cut-off frequency	f'	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, R_L = 100\Omega, R_{BE} = \infty, -3\text{dB}$	—	50		kHz
		Rise time	t_r	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega, R_{BE} = \infty$		6	20	μs
Fall time	t_f		—		7	20	μs	

Fig. 1 Forward Current vs. Ambient Temperature

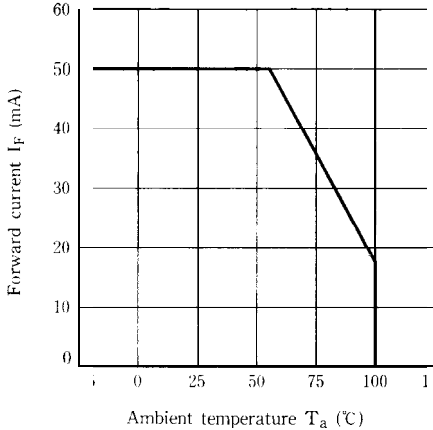


Fig. 2 Collector Power Dissipation VS. Ambient Temperature

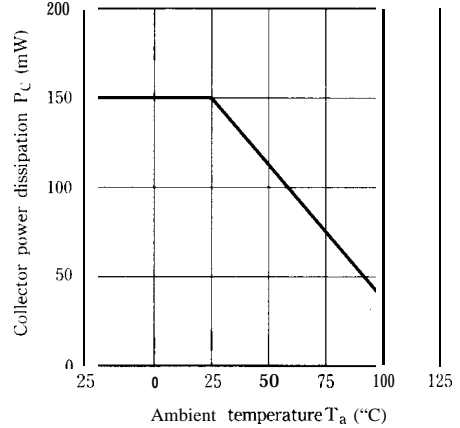


Fig. 3 Peak Forward Current vs. Duty Ratio

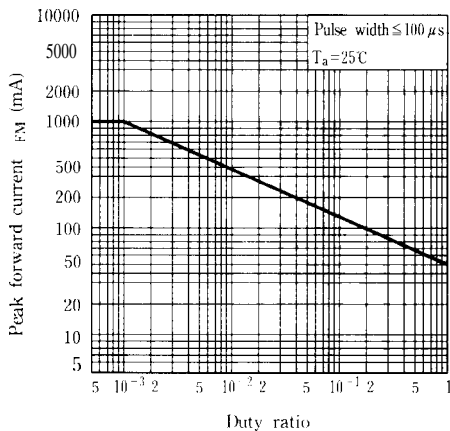


Fig. 4 Forward Current vs. Forward Voltage

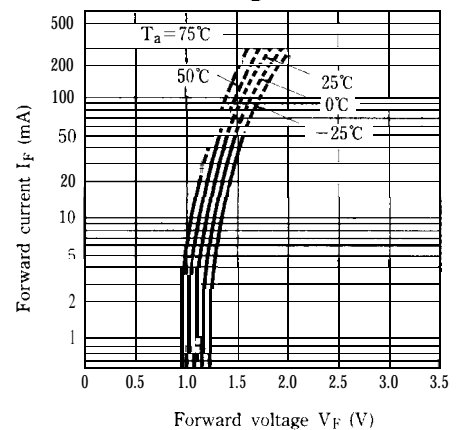


Fig. 5 Current Transfer Ratio vs. Forward Current

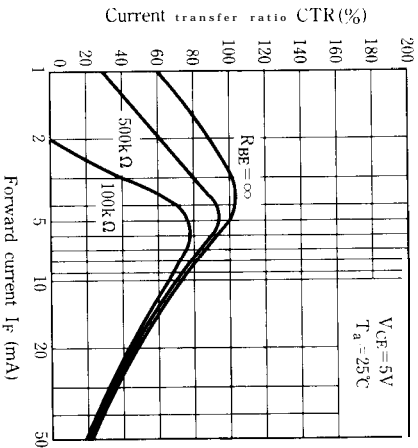


Fig. 6 Collector Current vs. Collector-emitter Voltage

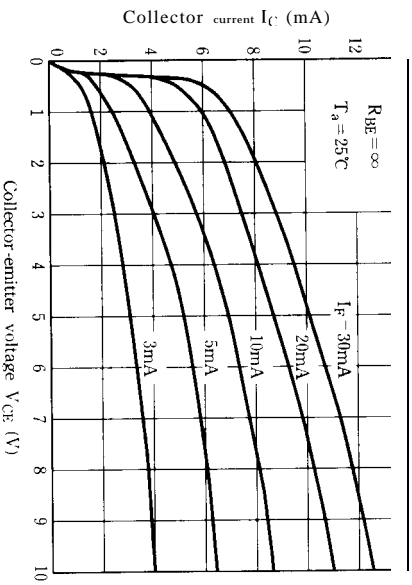


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

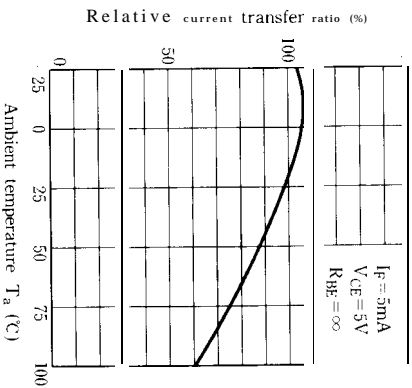


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

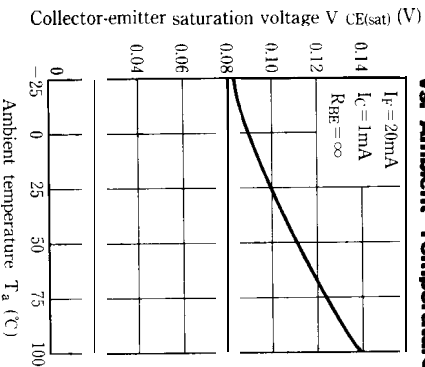


Fig. 9 Collector Dark Current vs. Ambient Temperature

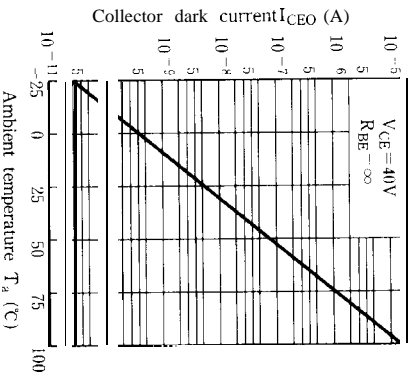


Fig. 10 Response Time vs. Load Resistance

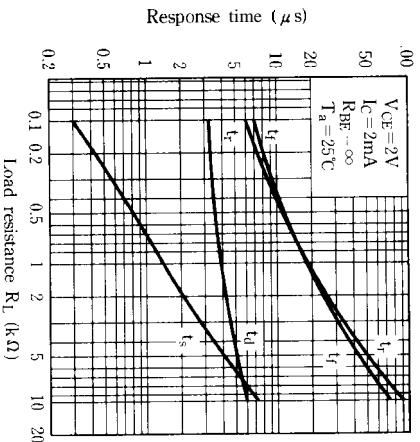
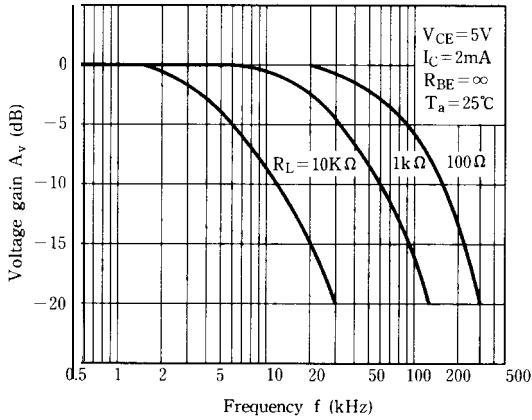


Fig.11 Frequency Response



Test Circuit for Response Time

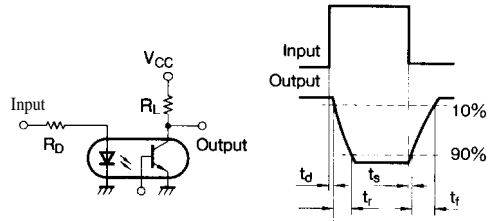
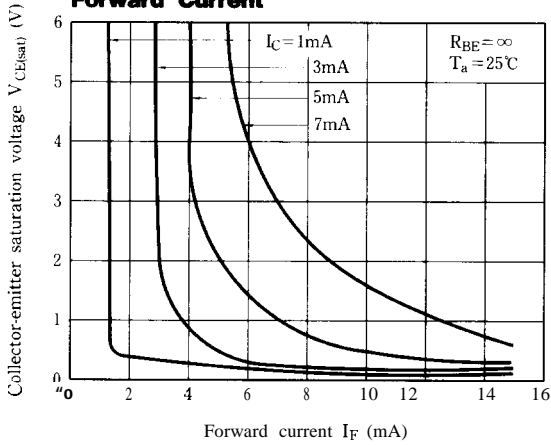
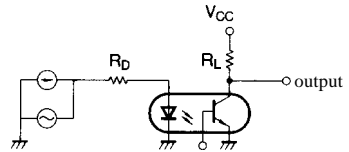


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Frequency Response



● Please refer to the chapter "Precautions for Use" (Page 78 to 93)