

PC723V0NSZX/ PC723V0YSZX

High Collector-emitter Voltage Type Photocoupler

■ Features

1. TTL compatible output
2. High collector-emitter voltage (V_{CEO} :80V)
3. Isolation voltage (Viso (rms):5kV)
4. Recognized by UL, file No.E64380
Approved by TÜV (VDE0884)(PC723V0YSZX)
5. 6-pin DIP package

■ Applications

1. Home appliances
2. Programmable controllers
3. Peripheral equipment of personal computers

■ Model Line-up

Model No.	* Safety Standard Approval	
	UL	TÜV (VDE0884)
PC723V0NSZX	○	—
PC723V0YSZX	○	○

* Application Model No. PC723V

■ 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}	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
	*2 Isolation voltage	$V_{iso (rms)}$	5	kV
	Operating temperature	T_{opr}	-25 to +100	°C
	Storage temperature	T_{stg}	-40 to +125	°C
	*3 Soldering temperature	T_{sol}	260	°C

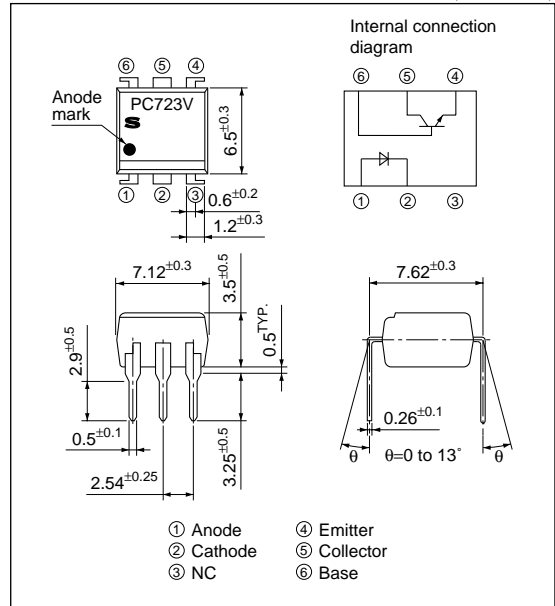
*1 Pulse widths ≤ 100 μs, Duty ratio = 0.001

*2 40 to 60% RH, AC for 1 min

*3 For 10 s

■ Outline Dimensions

(Unit : mm)



■ 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	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	
Transfer characteristics	Collector current	I_C	$I_F=5\text{mA}, V_{CE}=5\text{V}, R_{BE}=\infty$	2.5	5	20	mA	
	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	
	Cut-off frequency	f_c	$V_{CE}=5\text{V}, I_C=2\text{mA}, R_L=100\Omega, R_{BE}=\infty, -3\text{dB}$	-	50	-	kHz	
	Response time	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

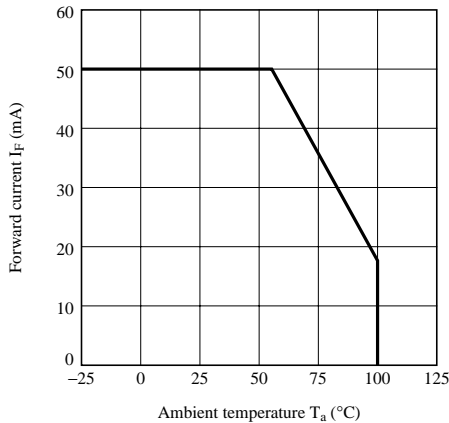


Fig.2 Collector Power Dissipation vs. Ambient Temperature

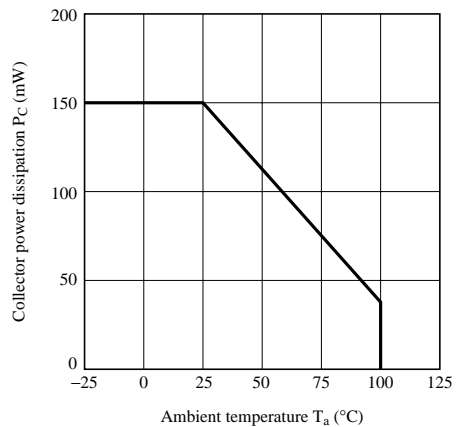


Fig.3 Peak Forward Current vs. Duty Ratio

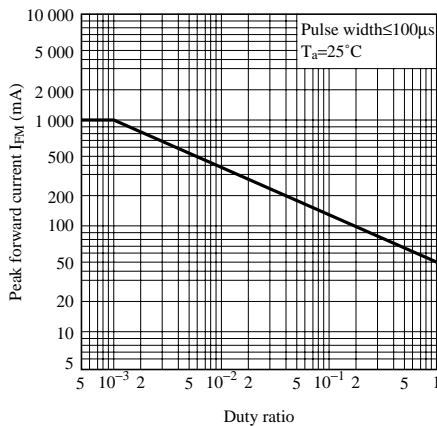


Fig.4 Forward Current vs. Forward Voltage

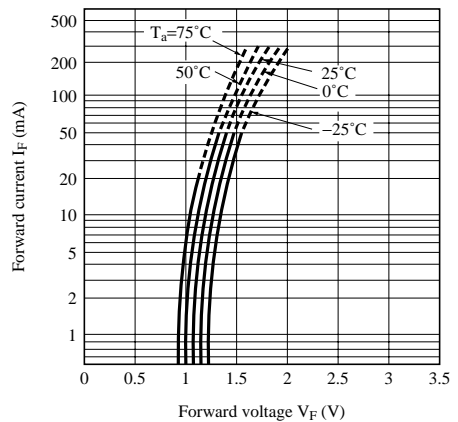


Fig.5 Current Transfer Ratio vs. Forward Current

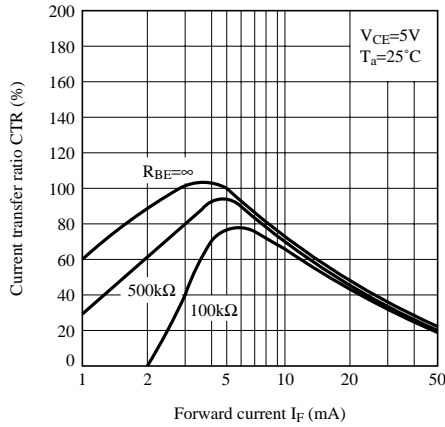


Fig.6 Collector Current vs. Collector-emitter Voltage

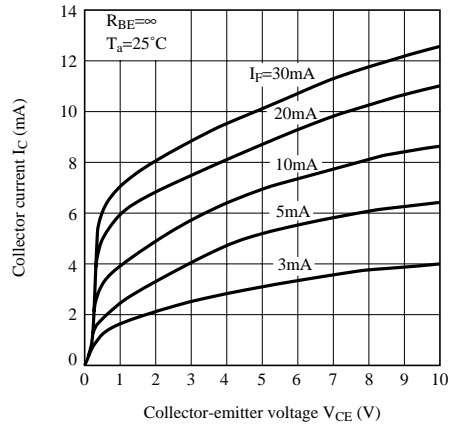


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

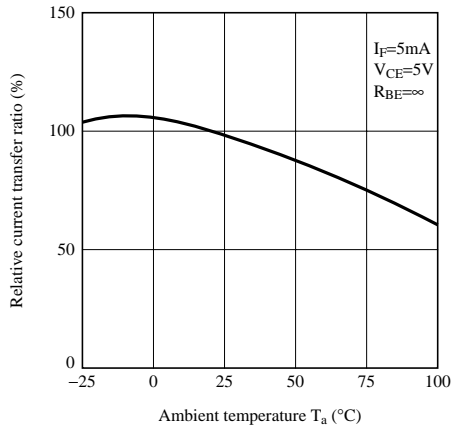


Fig.8 Collector - emitter Saturation Voltage vs. Ambient Temperature

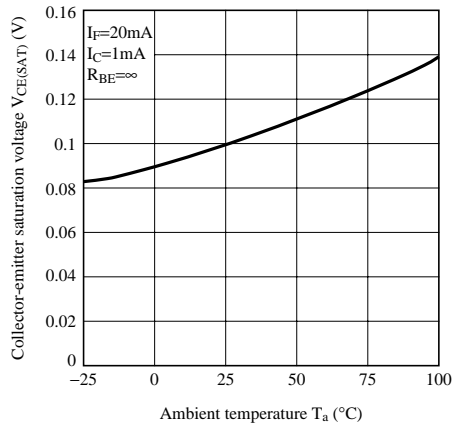


Fig.9 Collector Dark Current vs. Ambient Temperature

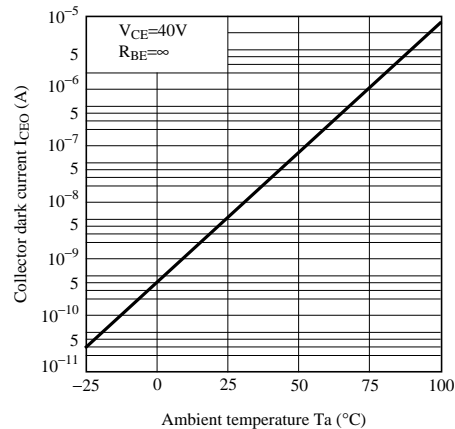


Fig.10 Collector-emitter Saturation Voltage vs. Forward Current

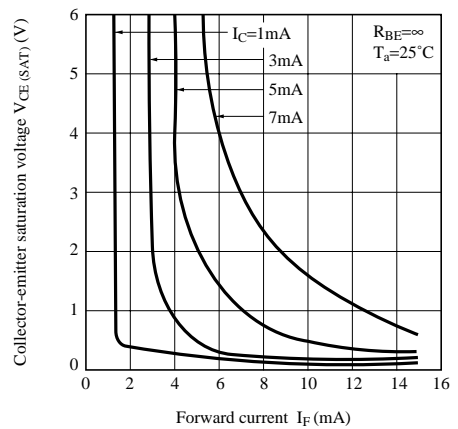


Fig.11 Response Time vs. Load Resistance

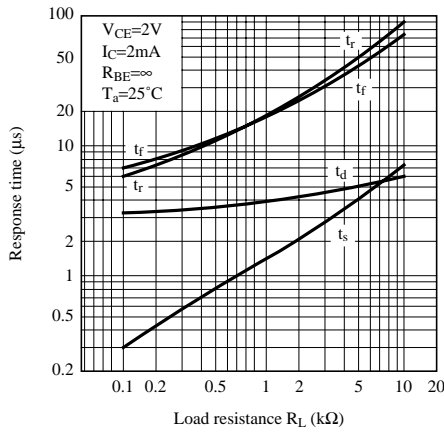


Fig.12 Test Circuit for Response Time

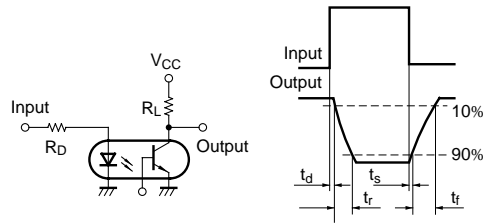


Fig.13 Frequency Response

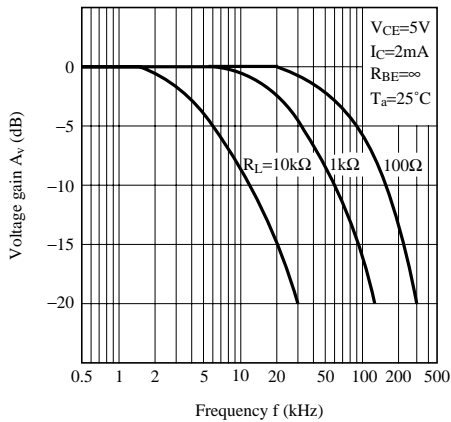
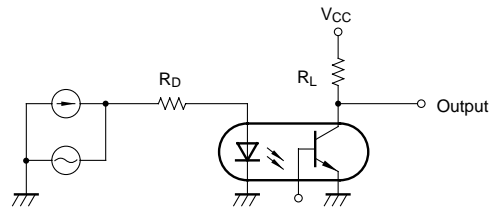


Fig.14 Test Circuit for Frequency Response



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