

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.	* Safty 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

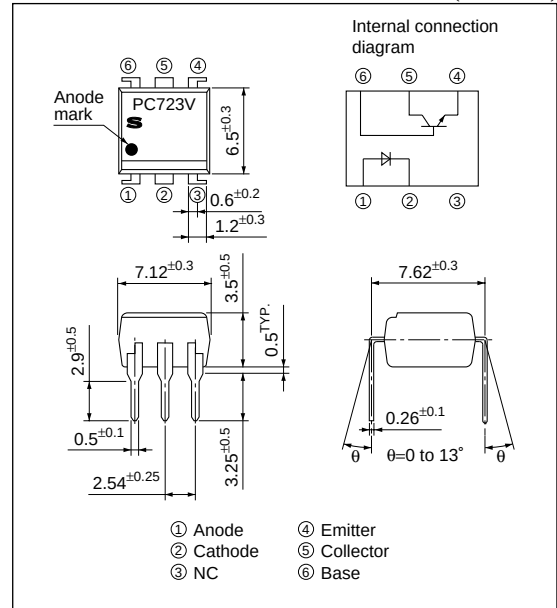
*1 Pulse width≤100μs, Duty ratio=0.001

*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 =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} =40V, I _F =0, R _{BE} =∞	—	—	10 ⁻⁷	A
Transfer charac- teristics	Collector current		I _C	I _F =5mA, V _{CE} =5V, R _{BE} =∞	2.5	5	20	mA
	Collector-emitter saturation voltage		V _{CE(sat)}	I _F =20mA, I _C =1mA, R _{BE} =∞	—	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=1MHz	—	0.6	1.0	pF
	Cut-off frequency		f _c	V _{CE} =5V, I _c =2mA, R _L =100Ω, R _{BE} =∞, -3dB	—	50	—	kHz
	Response time	Rise time	t _r	V _{CE} =2V, I _C =2mA R _L =100Ω, R _{BE} =∞	—	6	20	μs
Fall time		t _f	—		7	20	μs	

Fig.1 Forward Current vs. Ambient Temperature

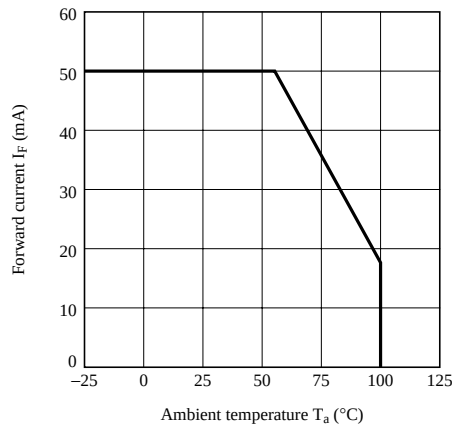


Fig.2 Collector Power Dissipation vs. Ambient Temperature

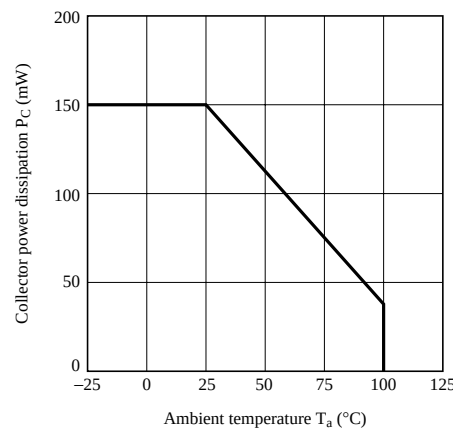


Fig.3 Peak Forward Current vs. Duty Ratio

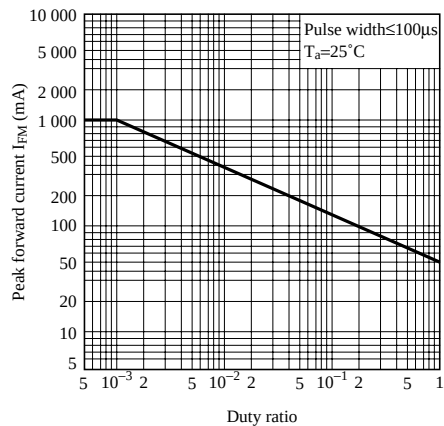


Fig.4 Forward Current vs. Forward Voltage

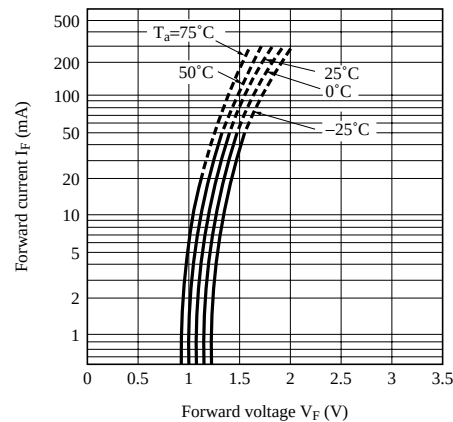


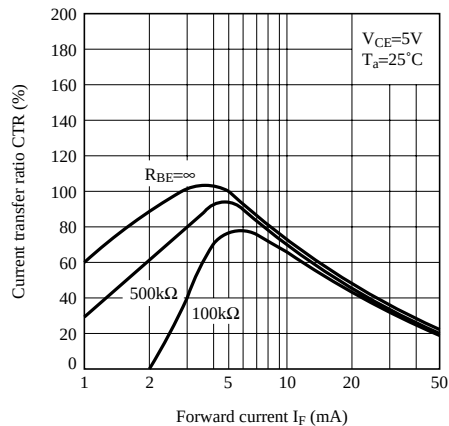
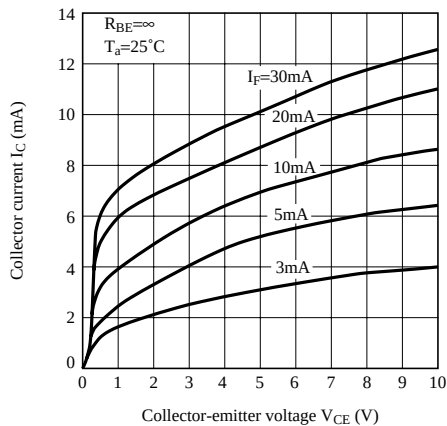
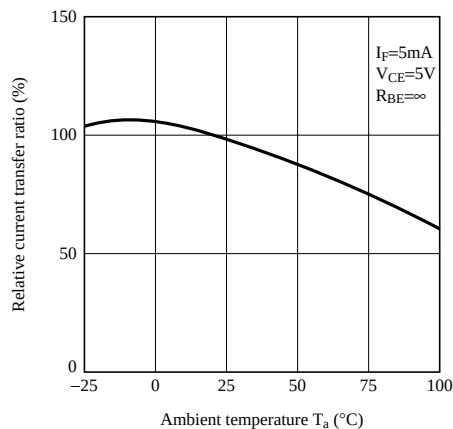
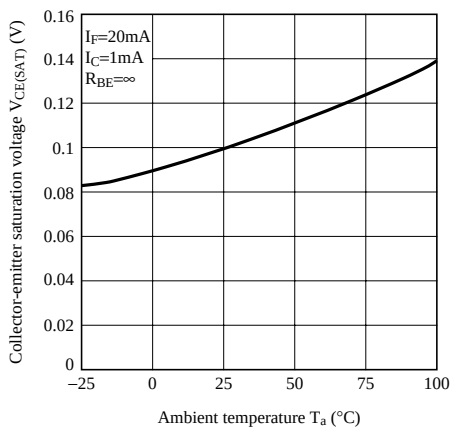
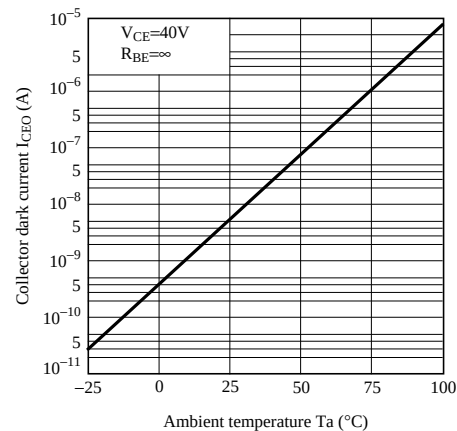
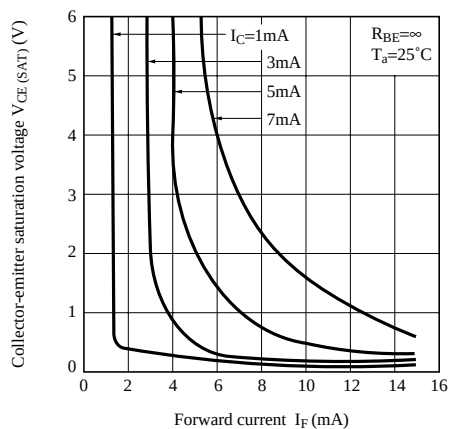
Fig.5 Current Transfer Ratio vs. Forward Current**Fig.6 Collector Current vs. Collector-emitter Voltage****Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature****Fig.8 Collector - emitter Saturation Voltage vs. Ambient Temperature****Fig.9 Collector Dark Current vs. Ambient Temperature****Fig.10 Collector-emitter Saturation Voltage vs. Forward Current**

Fig.11 Response Time vs. Load Resistance

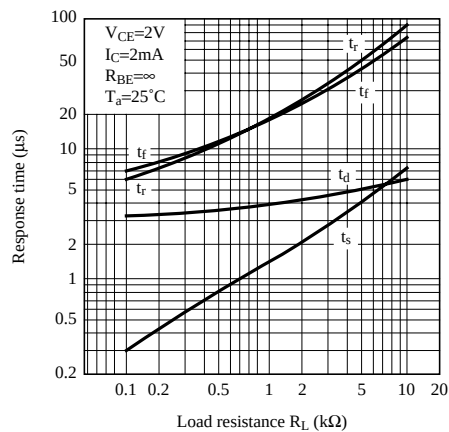


Fig.12 Test Circuit for Response Time

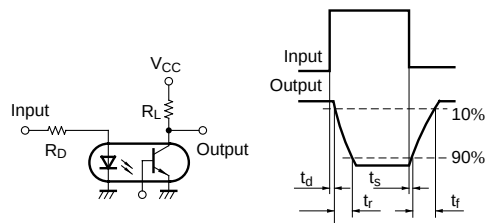


Fig.13 Frequency Response

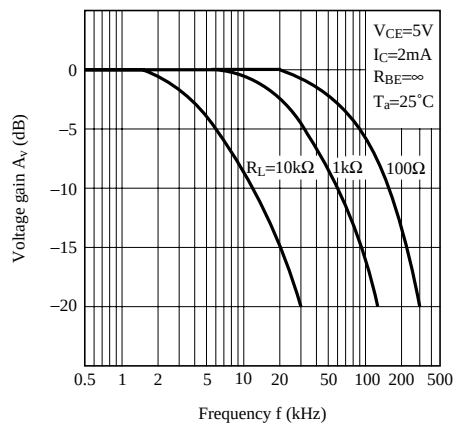
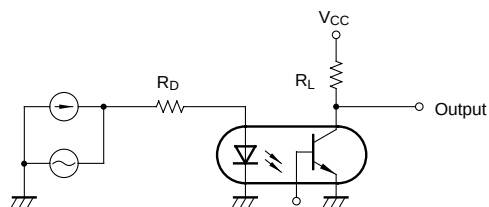


Fig.14 Test Circuit for Frequency Response



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