PC724V0NSZX

Large Input Current Type Photocoupler

■ Features

1. Large input current type (I_F:MAX. 150mA)
2. Isolation voltage (Viso (rms):5kV)
3. Recognized by UL, file No.E64380
4. 6-pin DIP package
5. Sleeve packing

■ Applications

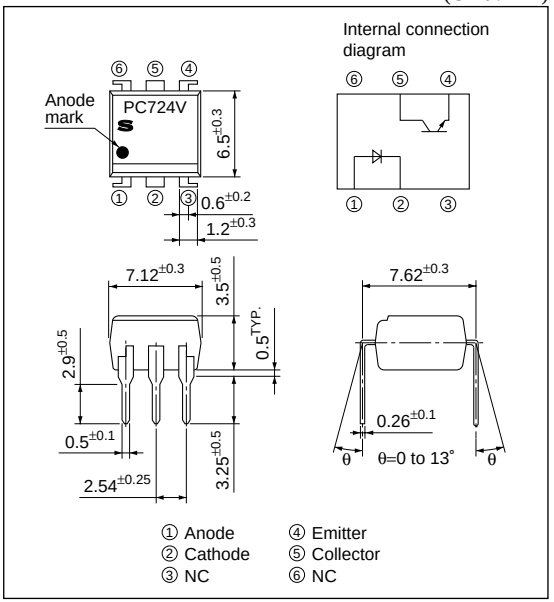
1. Programmable controllers
2. Facsimiles
3. Telephones

■ Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	150	mA
	*1 Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P	230	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	80	mA
	Collector power dissipation	P_C	160	mW
Total power dissipation		P_{tot}	320	mW
*2 Isolation voltage		$V_{iso\ (rms)}$	5	kV
Operating temperature		T_{opr}	−25 to +100	°C
Storage temperature		T_{stg}	−55 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=100mA	–	1.4	1.7	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	Collector current		I_C	I_F=100mA, V_{CE}=2V	20	–	80	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F=100mA, I_C=1mA	–	0.1	0.2	V
	Isolation resistance		R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	1×10^{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	–	100	–	kHz
	Response time	Rise time	t_r	V_{CE}=5V, I_C=2mA, R_L=100Ω	–	4	18	μs
		Fall time	t_f		–	3	18	μs

Fig.1 Forward Current vs. Ambient Temperature

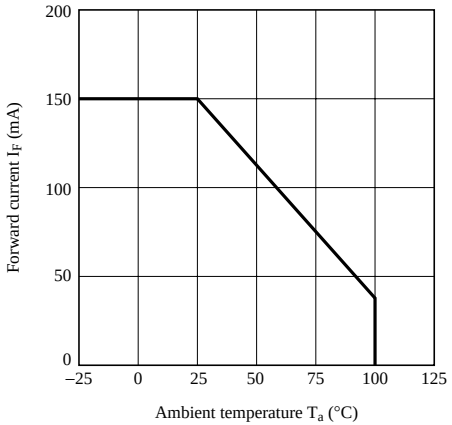


Fig.2 Collector Power Dissipation vs. Ambient Temperature

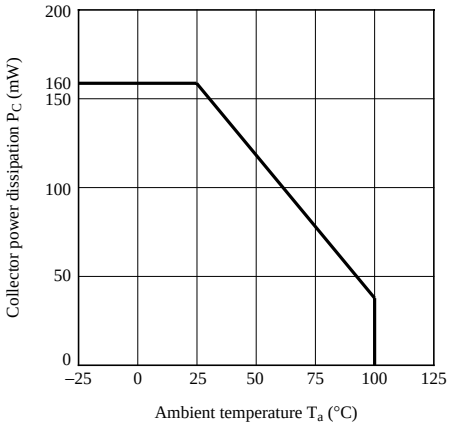


Fig.3 Peak Forward Current vs. Duty Ratio

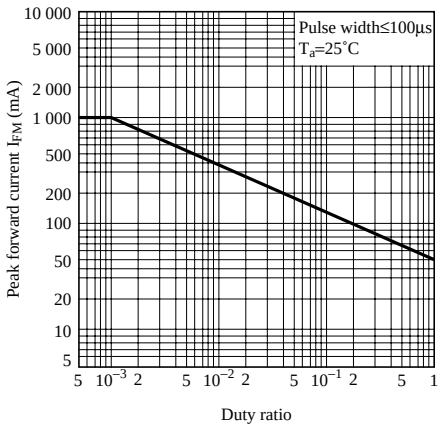


Fig.4 Forward Current vs. Forward Voltage

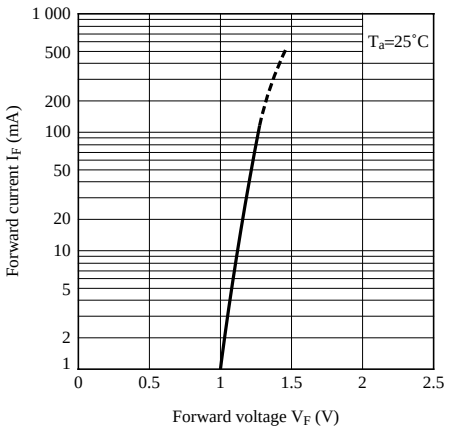


Fig.5 Current Transfer Ratio vs. Forward Current

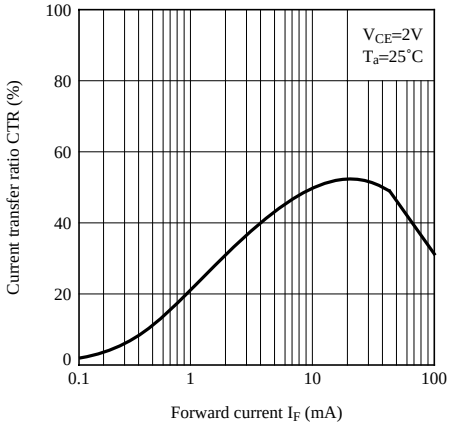


Fig.6 Collector Current vs. Collector-emitter Voltage

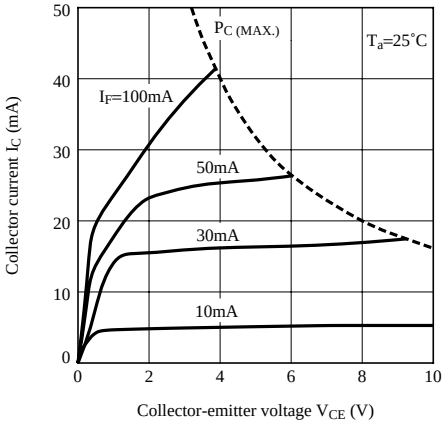


Fig.7 Collector Dark Current vs. Ambient Temperature

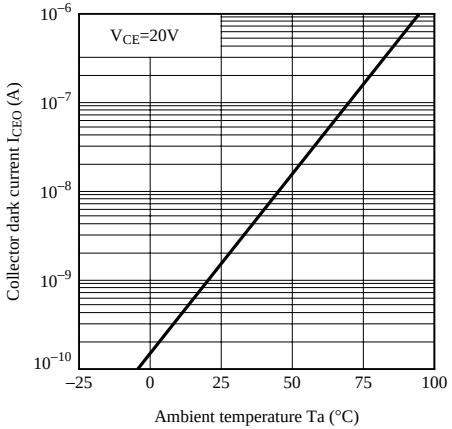


Fig.8 Collector-emitter Saturation Voltage vs. Forward Current

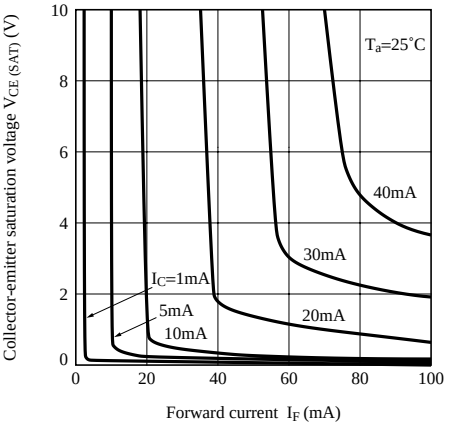


Fig.9 Response Time vs. Load Resistance

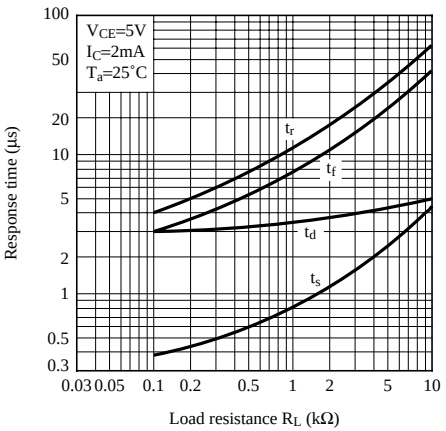


Fig.10 Test Circuit for Response Time

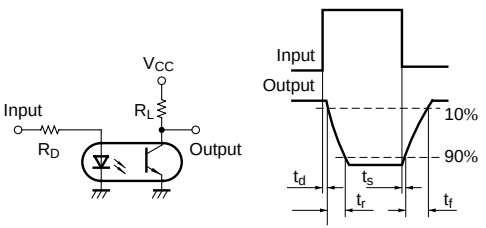
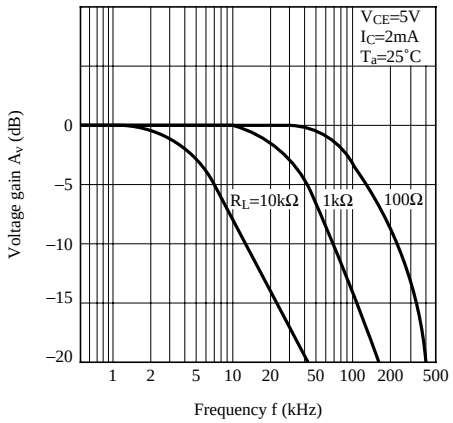


Fig.11 Frequency Response



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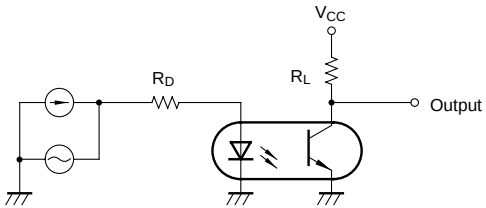

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— Personal computers
— Office automation equipment
— Telecommunication equipment [terminal]
— Test and measurement equipment
— Industrial control
— Audio visual equipment
— Consumer electronics

(ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliability such as:
— Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
— Traffic signals
— Gas leakage sensor breakers
— Alarm equipment
— Various safety devices, etc.

(iii) SHARP devices shall not be used for or in connection with equipment that requires an extremely high level of reliability and safety such as:
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— Nuclear power control equipment
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PC724V0NIPX

Large Input Current Type Photocoupler

■ Features

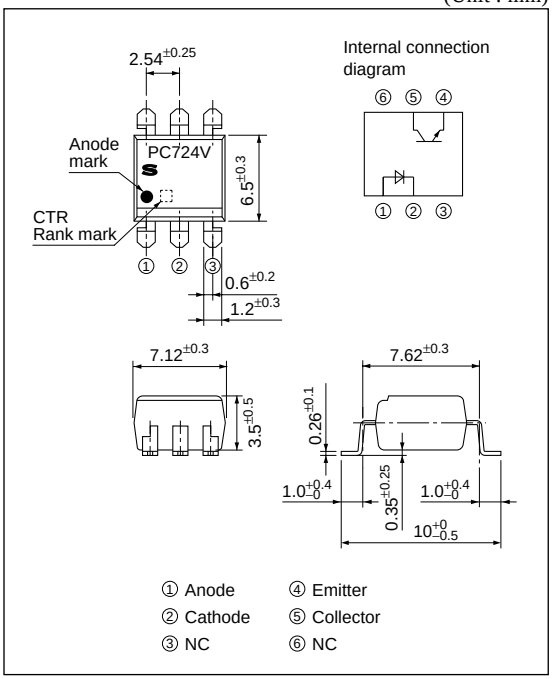
1. Large input current type (I_F:MAX. 150mA)
2. Isolation voltage (Viso (rms):5kV)
3. Recognized by UL, file No.E64380
4. 6-pin DIP package (Lead forming type)
5. Taped packing

■ Applications

1. Programmable controllers
2. Facsimiles
3. Telephones

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	150	mA
	*1 Peak forward current	I_{FM}	1	A
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Total power dissipation		P_{tot}	320	mW
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	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	Collector current		I_C	I_F=100mA, V_{CE}=2V	20	–	80	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F=100mA, I_C=1mA	–	0.1	0.2	V
	Isolation resistance		R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	1×10^{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	–	100	–	kHz
	Response time	Rise time	t_r	V_{CE}=5V, I_C=2mA, R_L=100Ω	–	4	18	μs
		Fall time	t_f		–	3	18	μs

Fig.1 Forward Current vs. Ambient Temperature

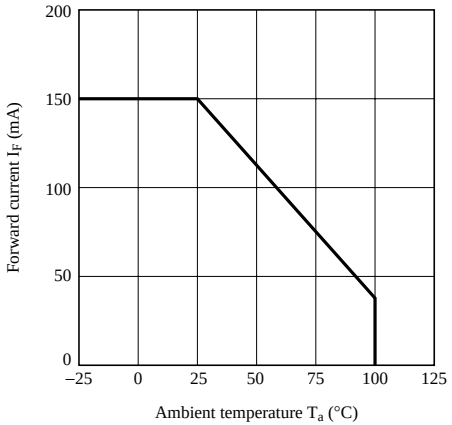


Fig.2 Collector Power Dissipation vs. Ambient Temperature

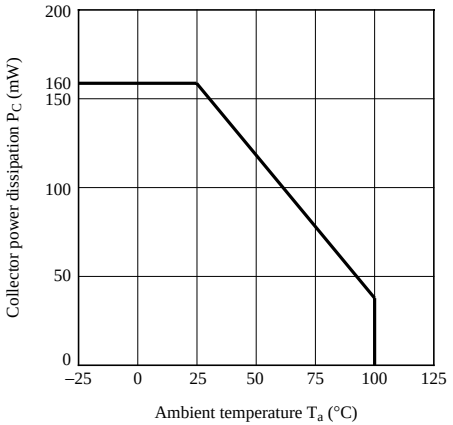


Fig.3 Peak Forward Current vs. Duty Ratio

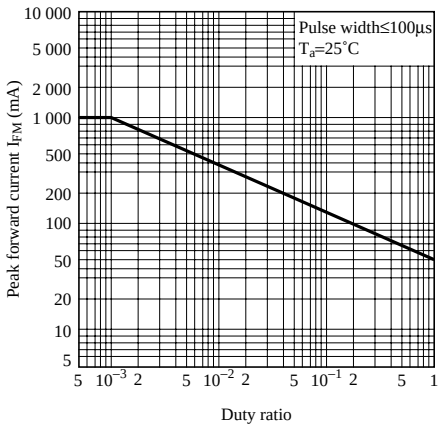


Fig.4 Forward Current vs. Forward Voltage

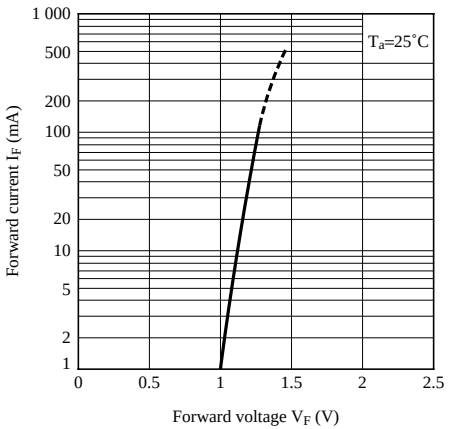


Fig.5 Current Transfer Ratio vs. Forward Current

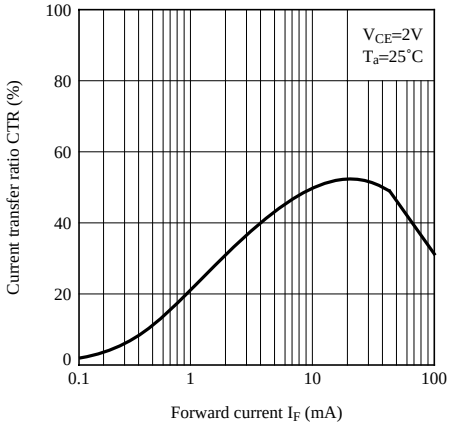


Fig.6 Collector Current vs. Collector-emitter Voltage

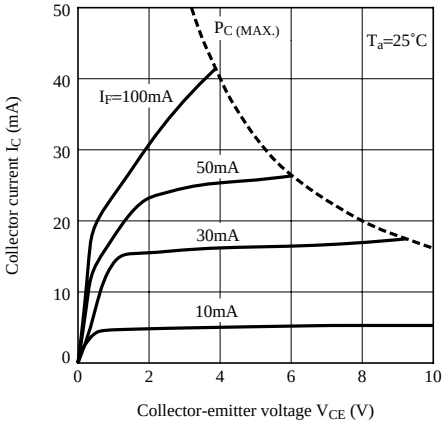


Fig.7 Collector Dark Current vs. Ambient Temperature

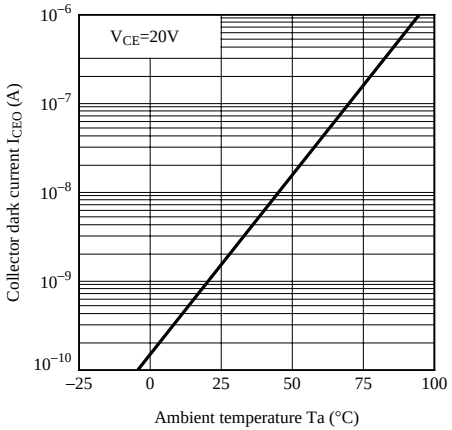


Fig.8 Collector-emitter Saturation Voltage vs. Forward Current

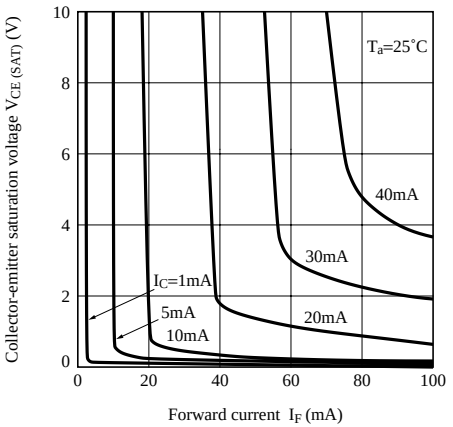


Fig.9 Response Time vs. Load Resistance

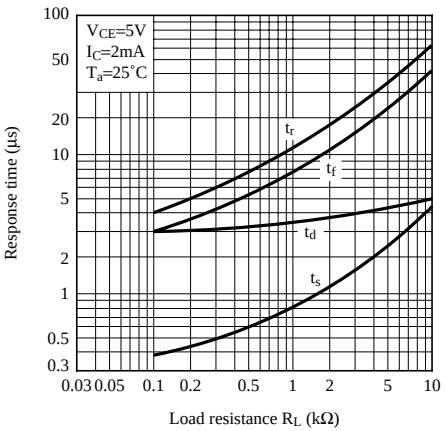


Fig.10 Test Circuit for Response Time

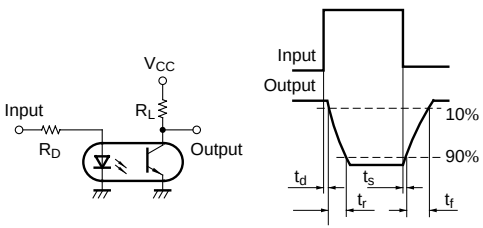


Fig.11 Frequency Response

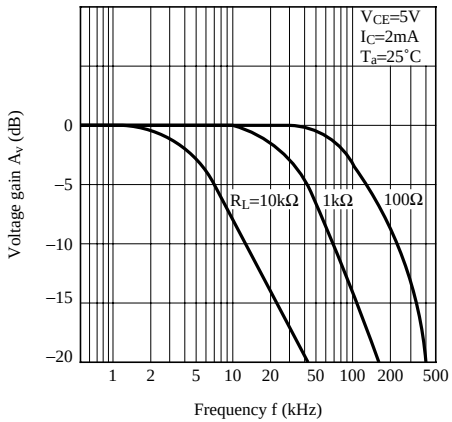
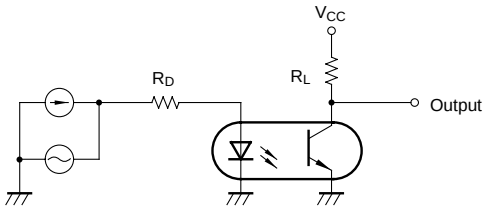


Fig.12 Test Circuit for Frequency Response



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