

# 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

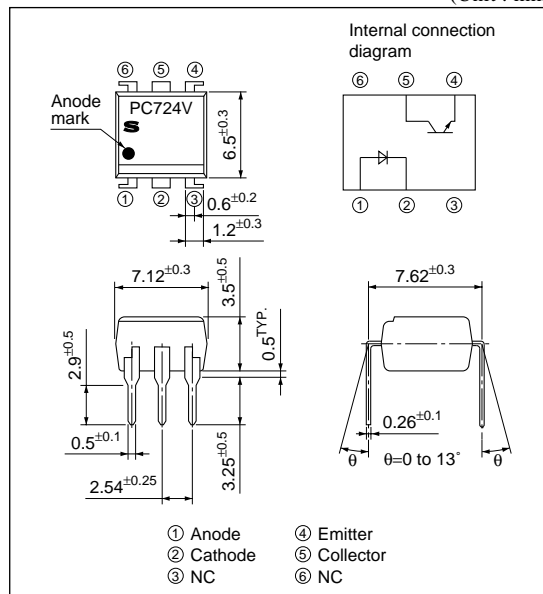
\*1 Pulse widths $\leq$ 100 $\mu$ s, Duty ratio=0.001

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

\*3 For 10 s

### ■ Outline Dimensions

(Unit : mm)



■ Electro-optical Characteristics

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

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	$V_F$	$I_F=100\text{mA}$	—	1.4	1.7	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	$\mu\text{A}$
	Terminal capacitance	$C_t$	$V=0, f=1\text{kHz}$	—	30	250	pF
Output	Collector dark current	$I_{CEO}$	$V_{CE}=20\text{V}, I_F=0$	—	—	$10^{-7}$	A
Transfer characteristics	Collector current	$I_C$	$I_F=100\text{mA}, V_{CE}=2\text{V}$	20	—	80	mA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=100\text{mA}, I_C=1\text{mA}$	—	0.1	0.2	V
	Isolation resistance	$R_{ISO}$	DC500V, 40 to 60%RH	$5 \times 10^{10}$	$1 \times 10^{11}$	—	$\Omega$
	Floating capacitance	$C_f$	$V=0, f=1\text{MHz}$	—	0.6	1.0	pF
	Cut-off frequency	$f_c$	$V_{CE}=5\text{V}, I_C=2\text{mA}, R_L=100\Omega, -3\text{dB}$	—	100	—	kHz
	Response time	Rise time	$t_r$	$V_{CE}=5\text{V}, I_C=2\text{mA}, R_L=100\Omega$	—	4	18
Fall time		$t_f$	—		3	18	$\mu\text{s}$

Fig.1 Forward Current vs. Ambient Temperature

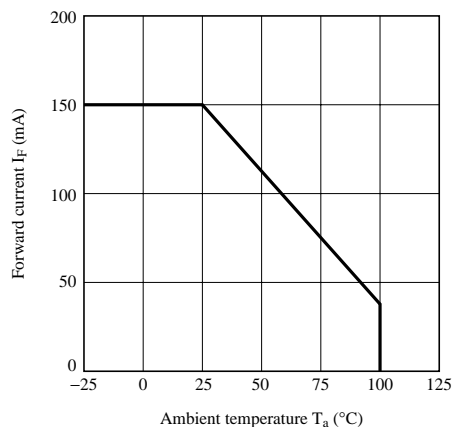


Fig.2 Collector Power Dissipation vs. Ambient Temperature

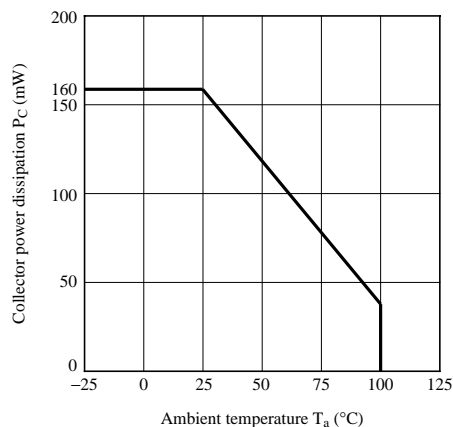


Fig.3 Peak Forward Current vs. Duty Ratio

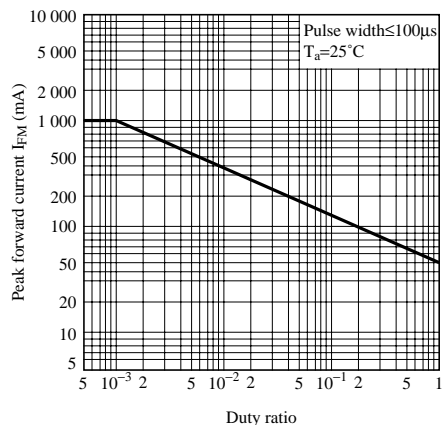
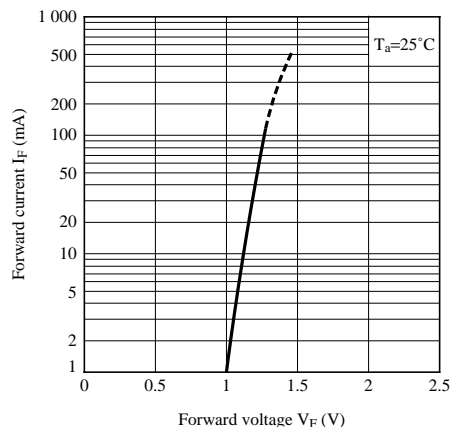
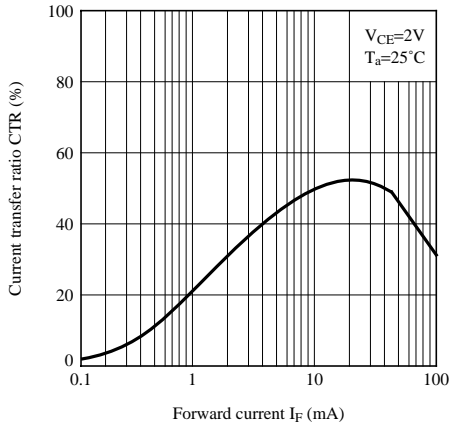


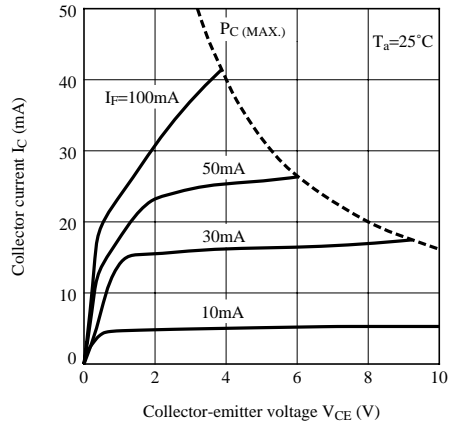
Fig.4 Forward Current vs. Forward Voltage



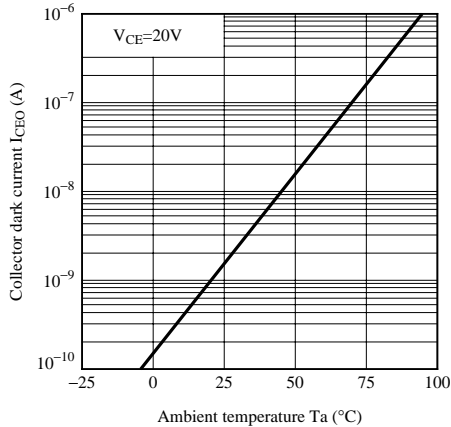
**Fig.5 Current Transfer Ratio vs. Forward Current**



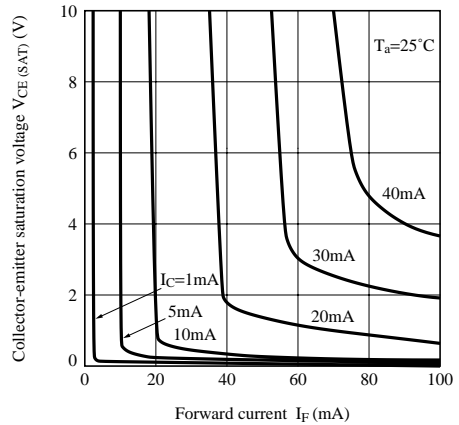
**Fig.6 Collector Current vs. Collector-emitter Voltage**



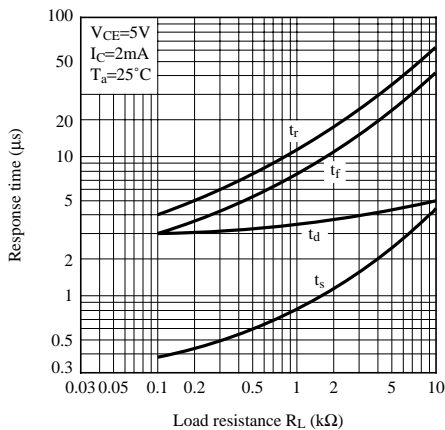
**Fig.7 Collector Dark Current vs. Ambient Temperature**



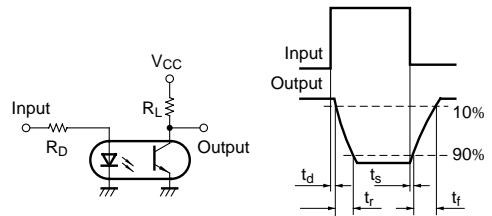
**Fig.8 Collector-emitter Saturation Voltage vs. Forward Current**



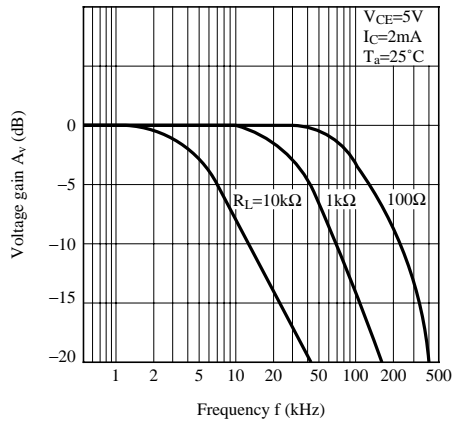
**Fig.9 Response Time vs. Load Resistance**



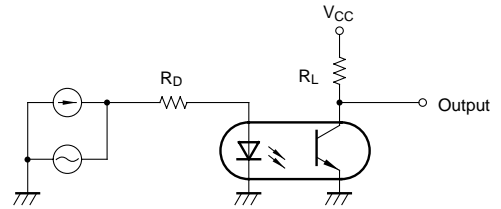
**Fig.10 Test Circuit for Response Time**



**Fig.11 Frequency Response**



**Fig.12 Test Circuit for Frequency Response**



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    - 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:
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  - (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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# PC724V0NIPX

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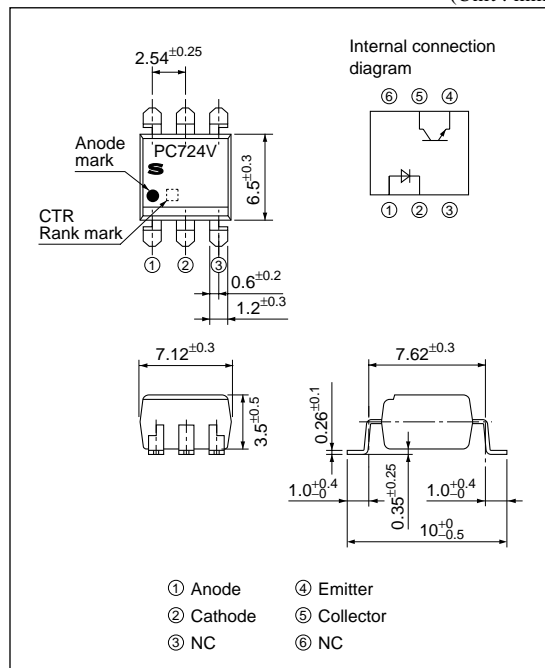
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Fall time		$t_f$	-		3	18	$\mu\text{s}$

Fig.1 Forward Current vs. Ambient Temperature

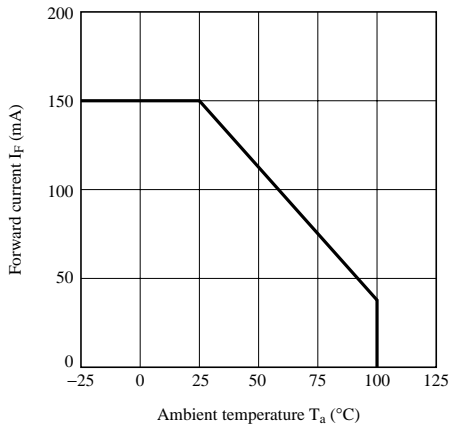


Fig.2 Collector Power Dissipation vs. Ambient Temperature

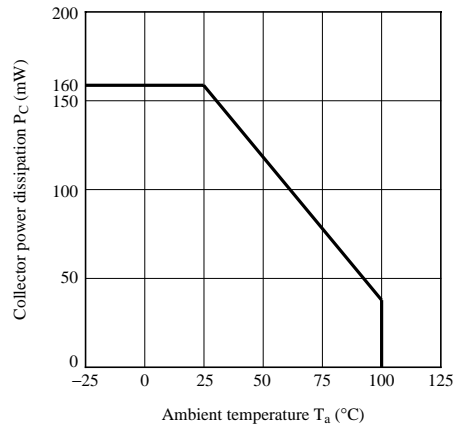


Fig.3 Peak Forward Current vs. Duty Ratio

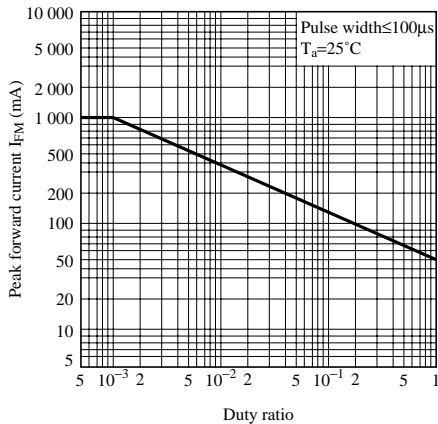
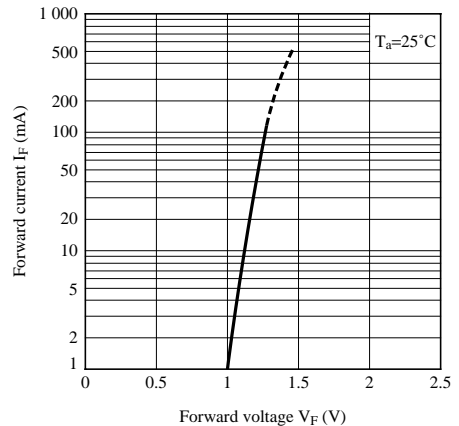
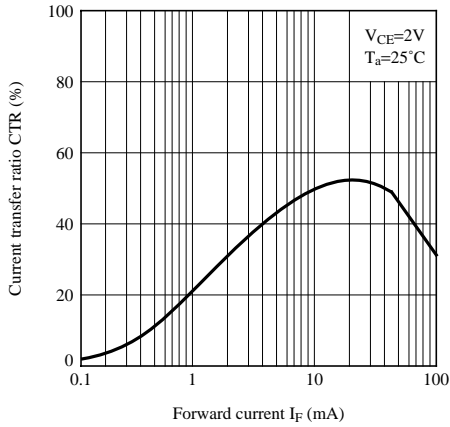


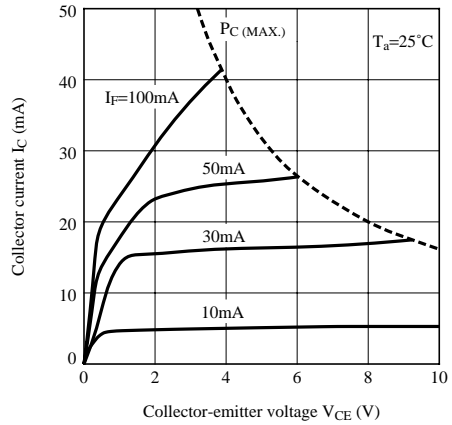
Fig.4 Forward Current vs. Forward Voltage



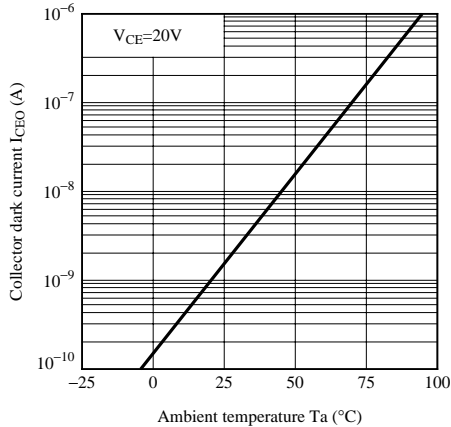
**Fig.5 Current Transfer Ratio vs. Forward Current**



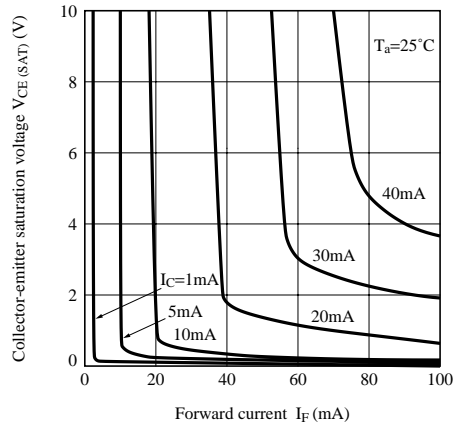
**Fig.6 Collector Current vs. Collector-emitter Voltage**



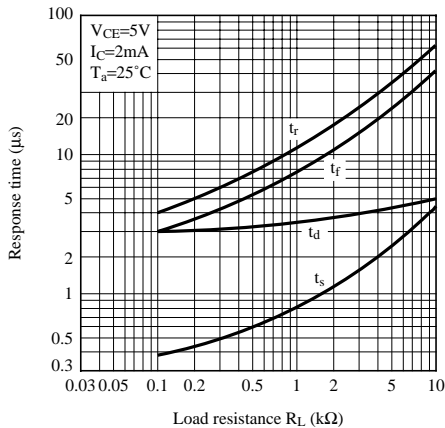
**Fig.7 Collector Dark Current vs. Ambient Temperature**



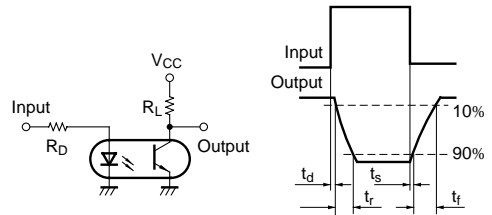
**Fig.8 Collector-emitter Saturation Voltage vs. Forward Current**



**Fig.9 Response Time vs. Load Resistance**

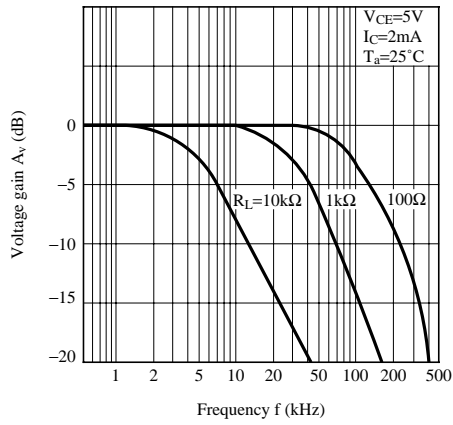


**Fig.10 Test Circuit for Response Time**

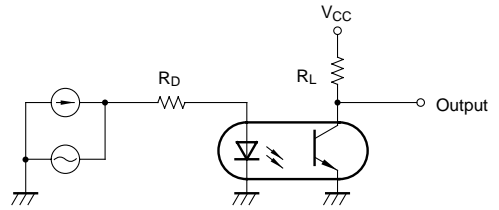




**Fig.11 Frequency Response**



**Fig.12 Test Circuit for Frequency Response**



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