

# PC724V

## High Input Current Type Photocoupler

\* Lead forming type ( W type ) and taping reel type ( P type ) are also available. ( PC724W/PC724VP )

### ■ Features

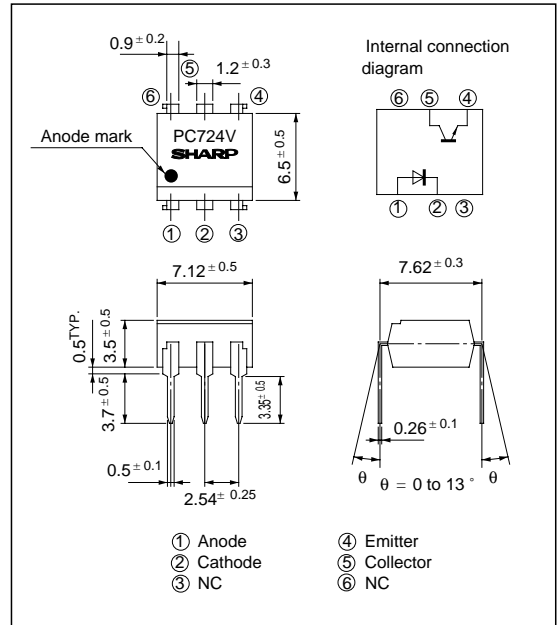
1. High input current (  $I_F$  : MAX. 150mA )
2. High isolation voltage between input and output  
(  $V_{iso}$  : 5 000V<sub>rms</sub> )
3. Standard dual-in-line package
4. Recognized by UL, file no. E64380

### ■ Applications

1. Telephone sets
2. I/O interfaces for microcomputer
3. System appliances, measuring instruments
4. Signal transmission between circuits of different potentials and impedances

### ■ Outline Dimensions

( Unit : mm )



### ■ Absolute Maximum Ratings

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

	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		$V_{iso}$	5 000	V <sub>rms</sub>
Operating temperature		$T_{opr}$	- 25 to + 100	$^\circ\text{C}$
Storage temperature		$T_{stg}$	- 55 to + 125	$^\circ\text{C}$
*3 Soldering temperature		$T_{sol}$	260	$^\circ\text{C}$

\*1 Pulse width  $\leq 100\mu\text{s}$ , Duty ratio : 0.001

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

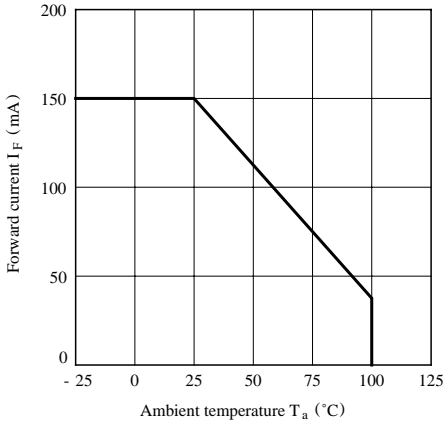
\*3 For 10 seconds

**■ Electro-optical Characteristics**

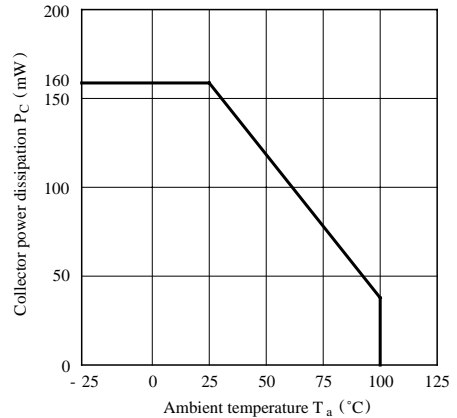
( $T_a = 25^\circ\text{C}$ )

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	Current transfer ratio	CTR	$I_F = 100\text{mA}, V_{CE} = 2\text{V}$	20	-	80	%	
	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	
	Response time	Cut-off frequency	$f_c$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, R_L = 100\Omega, -3\text{dB}$	-	100	-	kHz
		Rise time	$t_r$	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$	-	4	18	$\mu\text{s}$
Fall time	$t_f$	$R_L = 100\Omega$	-		3	18	$\mu\text{s}$	

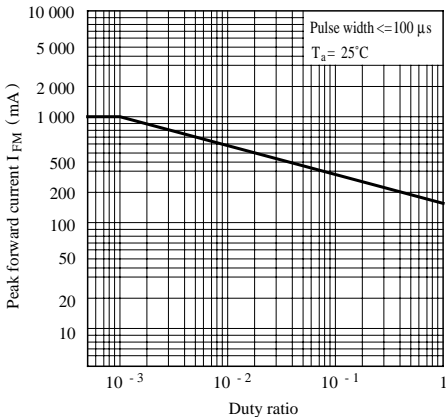
**Fig. 1 Forward Current vs. Ambient Temperature**



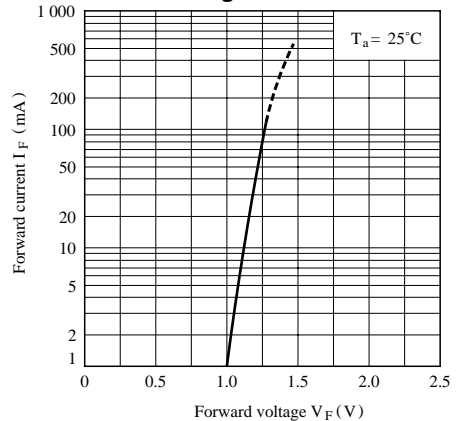
**Fig. 2 Collector Power Dissipation vs. Ambient Temperature**



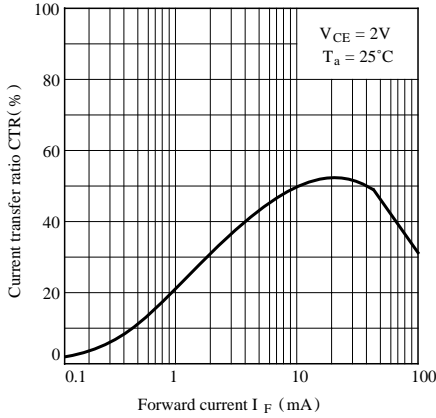
**Fig. 3 Peak Forward Current vs. Duty Ratio**



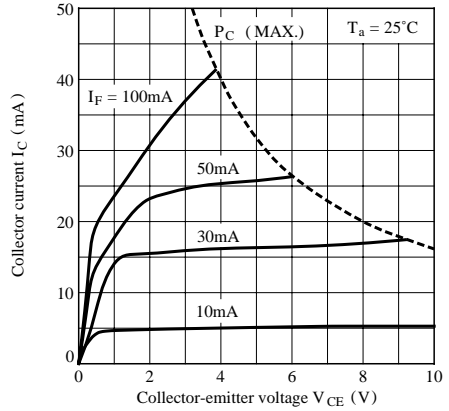
**Fig. 4 Forward Current vs. Forward Voltage**



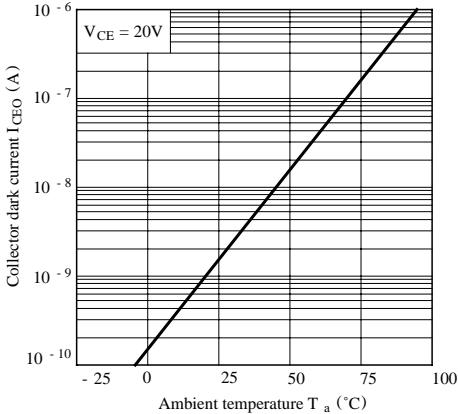
**Fig. 5 Current Transfer Ratio vs. Forward Current**



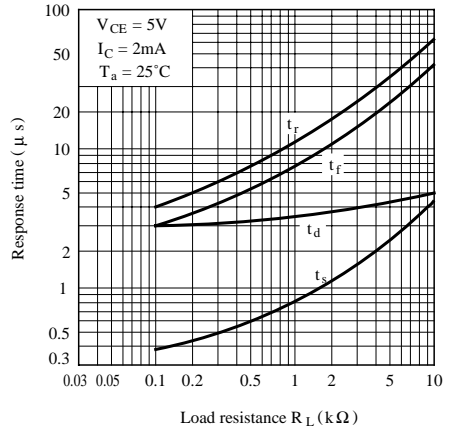
**Fig. 6 Collector Current vs. Collector-emitter Voltage**



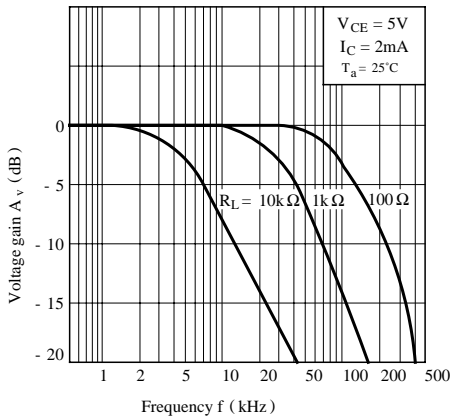
**Fig. 7 Collector Dark Current vs. Ambient Temperature**



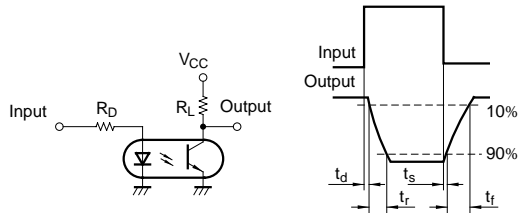
**Fig. 8 Response Time vs. Load Resistance**



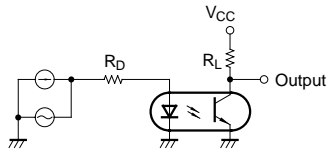
**Fig. 9 Frequency Response**



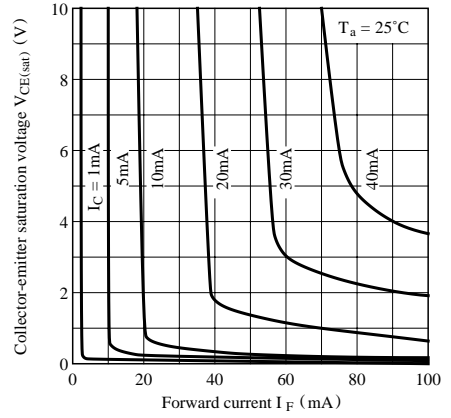
**Test Circuit for Response Time**



**Test Circuit for Frequency Response**



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



● Please refer to the chapter “Precautions for Use”.