

PC729

Bi-directional Output Type Photocoupler

■ Features

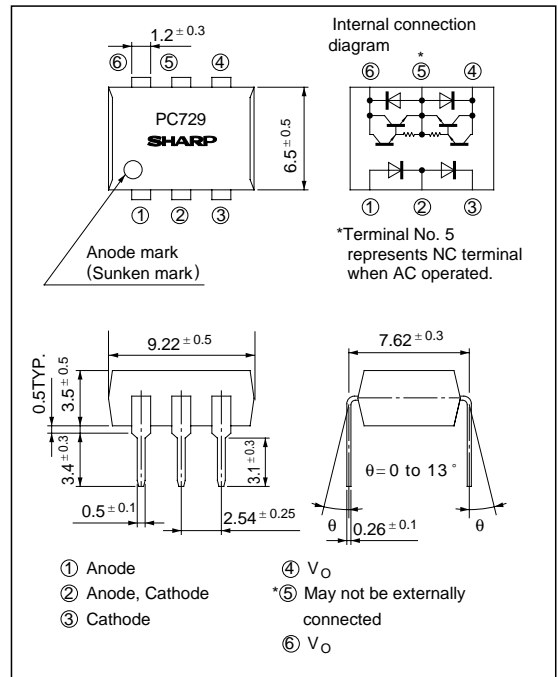
1. Bi-directional output type
2. High collector-emitter voltage ($V_{BR} : 300V$)
3. High collector output current ($I_O : 150mA$)
4. High isolation voltage between input and output ($V_{iso} : 5\,000V_{rms}$)

■ Applications

1. Telephone sets
2. Measuring instruments

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

($T_a = 25^\circ C$)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	30	mA
	*1 Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P_{13}	80	mW
Output	Breakdown voltage	V_{BR}	300	V
	Output current	I_O	150	mA
	Power dissipation	P_{46}	370	mW
	Total power dissipation	P_{tot}	400	mW
*2 Isolation voltage		V_{iso}	5 000	V_{rms}
Operating temperature		T_{opr}	- 25 to + 85	$^\circ C$
Storage temperature		T_{stg}	- 55 to + 125	$^\circ C$
*3 Soldering temperature		T_{sol}	260	$^\circ C$

*1 Pulse width $\leq 100\mu s$, 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	*4 Forward voltage	V_F	$I_F = 10\text{mA}$	-	1.2	1.4	V	
	*4 Reverse current	I_R	$V_R = 4\text{V}$	-	-	10	μA	
	*4 Terminal capacitance	C_t	$V = 0, f = 1\text{kHz}$	-	30	250	pF	
Output	Collector dark current	I_d	$V_{46} = 200\text{V}, I_F = 0$	-	-	10^{-6}	A	
	Breakdown voltage	V_{BR}	$I_O = 0.1\text{mA}, I_F = 0$	300	-	-	V	
Transfer characteristics	Output current	I_O	$I_{F13} = 1\text{mA}, V_{46} = 3\text{V}$	10	40	150	mA	
	ON-state voltage	V_{on}	$I_{F13} = 20\text{mA}, I_O = 100\text{mA}$	-	1.8	2.4	V	
	Isolation resistance	R_{ISO}	DC500V, 40 to 60% RH	5×10^{10}	10^{11}	-	Ω	
	Floating capacitance	C_f	$V = 0, f = 1\text{MHz}$	-	1.0	-	pF	
	Cut-off frequency	f_c	$V_{46} = 3\text{V}, I_O = 20\text{mA}$ $R_L = 100\Omega, -3\text{dB}$	1	7	-	kHz	
				Response time	Rise time	t_r	$V_{46} = 3\text{V}, I_O = 20\text{mA}$ $R_L = 100\Omega$	-
		Fall time	t_f		-	20	100	μs

*4 Between terminals 1 and 2, and between terminals 2 and 3

Fig. 1 Forward Current vs. Ambient Temperature

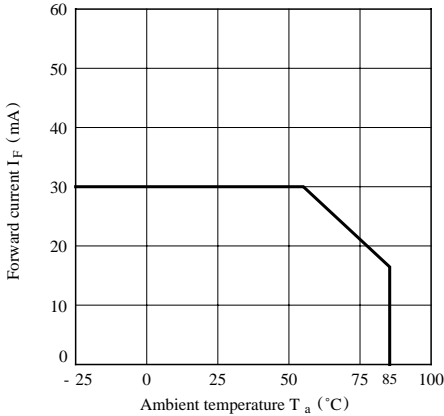


Fig. 2 Input Power Dissipation vs. Ambient Temperature

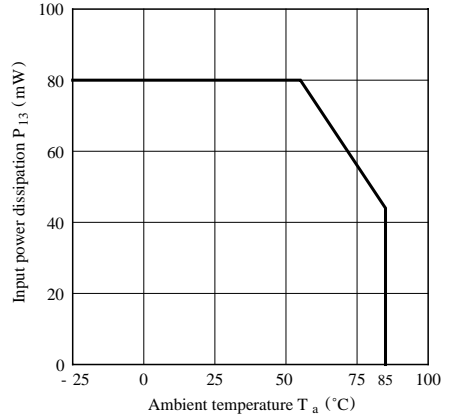


Fig. 3 Power Dissipation vs. Ambient Temperature

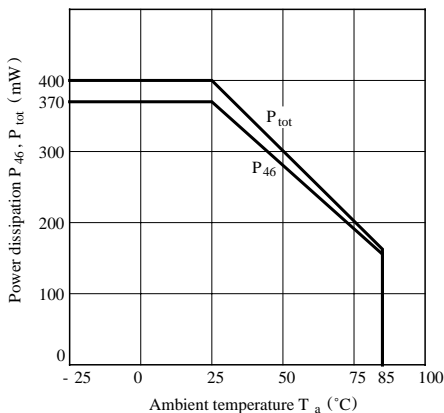


Fig. 4 Peak Forward Current vs. Duty Ratio

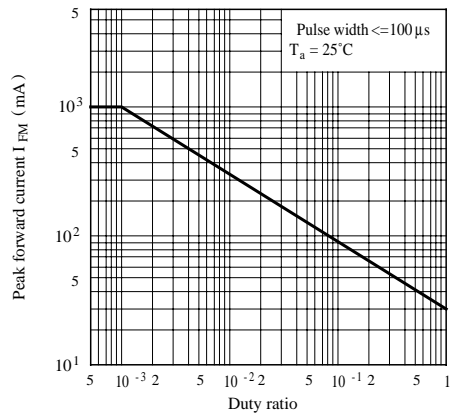


Fig. 5 Forward Current vs. Forward Voltage

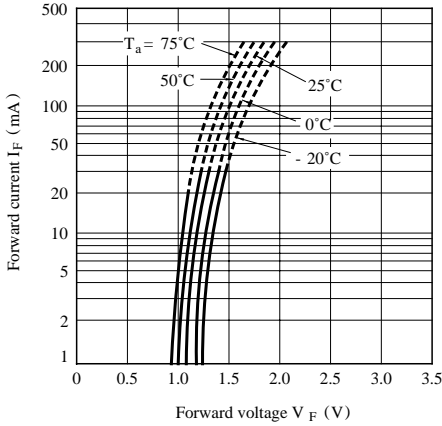


Fig. 6 Current Transfer Ratio vs. Forward Current

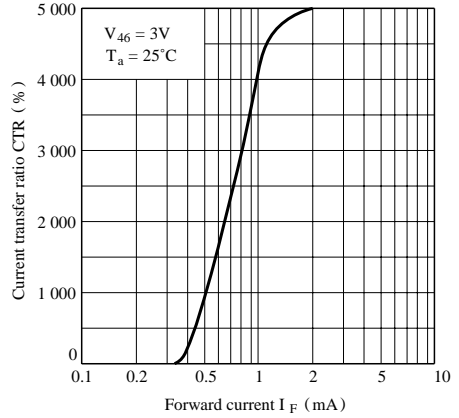


Fig. 7 Output Current vs. Output Voltage

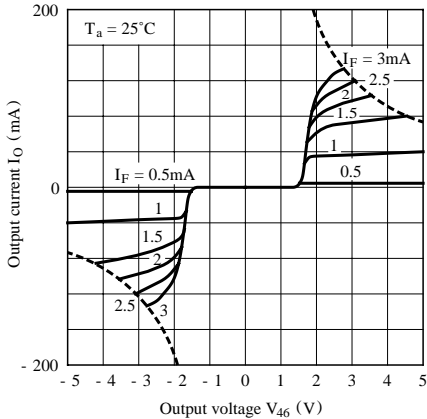


Fig. 8 Relative Current Transfer Ratio vs. Ambient Temperature

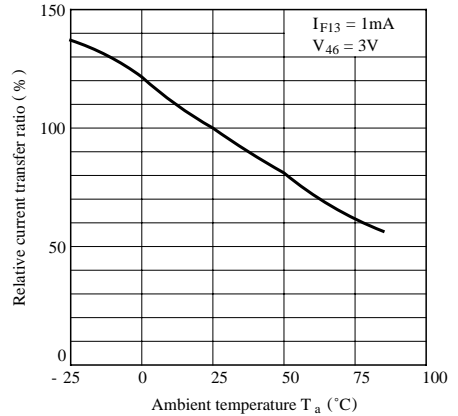


Fig. 9 ON-state Voltage vs. Ambient Temperature

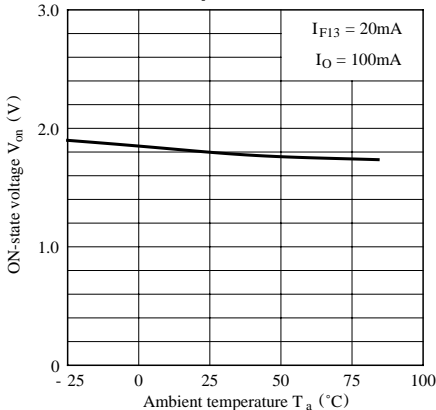


Fig.10 Collector Dark Current vs. Ambient Temperature

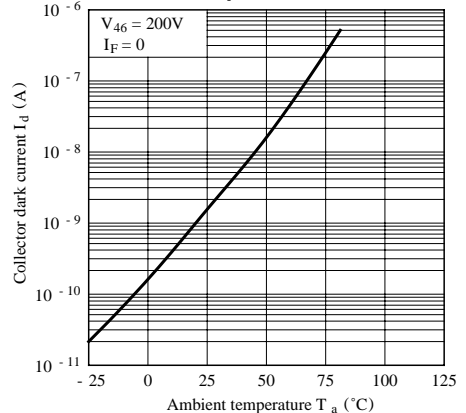


Fig.11 Response Time vs. Load Resistance

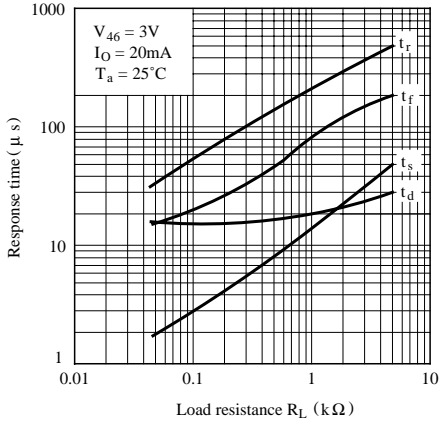


Fig.12 Output Voltage vs. Forward Current

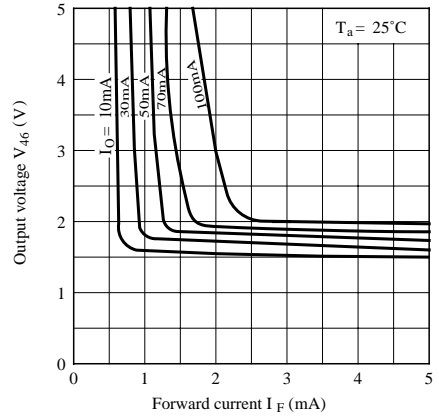
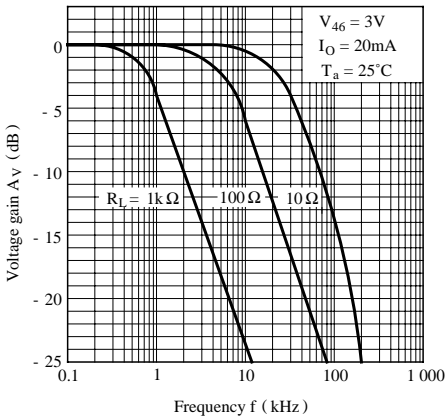


Fig.13 Frequency Response



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