PC729

Bi-directional Output Type Photocoupler

■ Features

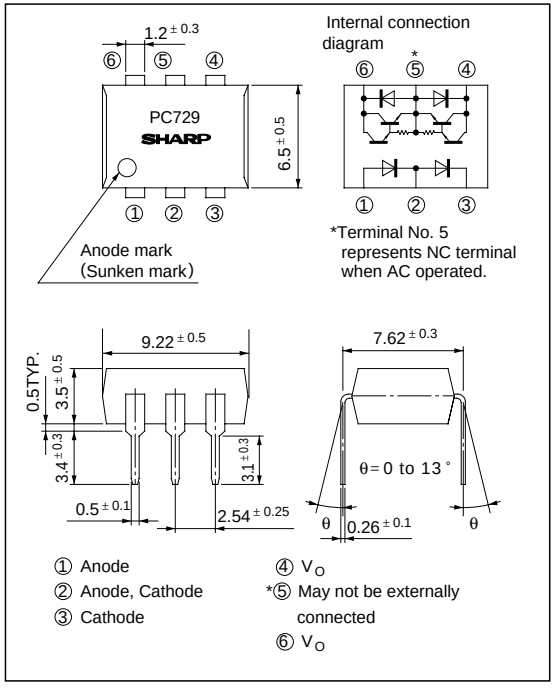
1. Bi-directional output type
2. High collector-emitter voltage (V_{BR} : 300V)
3. High collector output current (I_O : 150mA)
4. High isolation voltage between input and output (V_{iso} : 5 000V_{rms})

■ Applications

1. Telephone sets
2. Measuring instruments

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta= 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	30	mA
	*1Peak 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
*2Isolation voltage		V_{iso}	5 000	V_{rms}
Operating temperature		T_{opr}	- 25 to + 85	°C
Storage temperature		T_{stg}	- 55 to+ 125	°C
*3Soldering temperature		T_{sol}	260	°C

*1 Pulse width <=100μs, Duty ratio : 0.001
*2 40 to 60% RH, AC for 1 minute
*3 For 10 seconds

" In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device."

■ Electro-optical Characteristics

(Ta= 25°C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	*4Forward voltage		V_F	I_F = 10mA	-	1.2	1.4	V
	*4Reverse current		I_R	V_R = 4V	-	-	10	μA
	*4 Terminal capacitance		C_t	V = 0, f = 1kHz	-	30	250	pF
Output	Collector dark current		I_d	V_{46} = 200V, I_F = 0	-	-	10^{-6}	A
	Breakdown voltage		V_{BR}	I_O = 0.1mA, I_F = 0	300	-	-	V
Transfer characteristics	Output current		I_O	I_{F13} = 1mA, V_{46} = 3V	10	40	150	mA
	ON-state voltage		V_{on}	I_{F13} = 20mA, I_O = 100mA	-	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 = 1MHz	-	1.0	-	pF
	Cut-off frequency		f_c	V_{46} = 3V, I_O = 20mA, R_L = 100Ω, - 3dB	1	7	-	kHz
	Response time	Rise time	t_r	V_{46} = 3V, I_O = 20mA, R_L = 100Ω	-	50	300	μs
		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

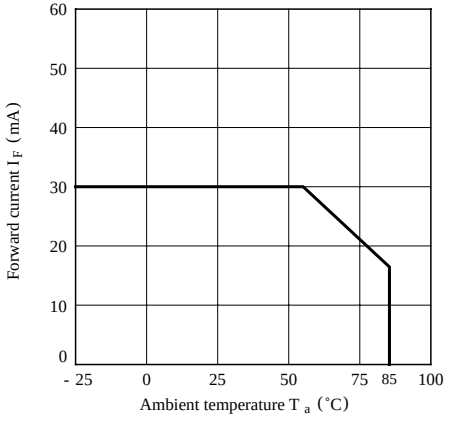


Fig. 2 Input Power Dissipation vs. Ambient Temperature

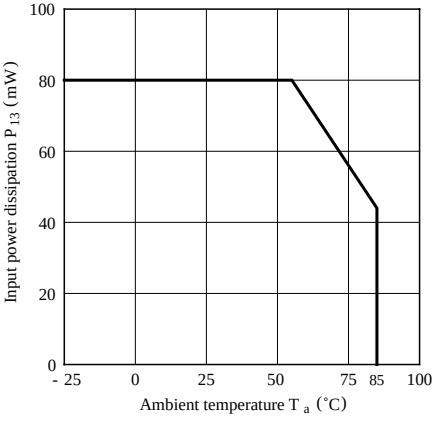


Fig. 3 Power Dissipation vs. Ambient Temperature

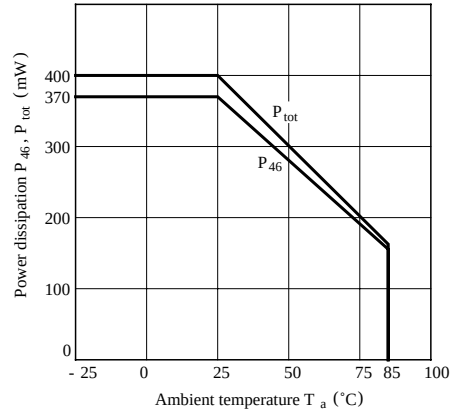


Fig. 4 Peak Forward Current vs. Duty Ratio

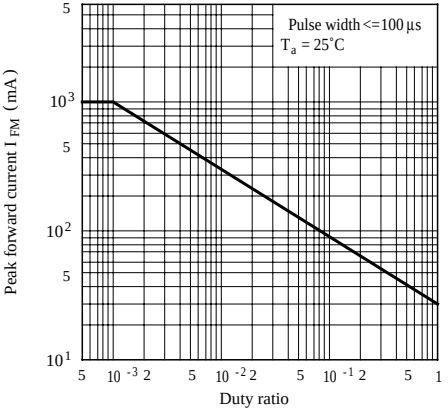


Fig. 5 Forward Current vs. Forward Voltage

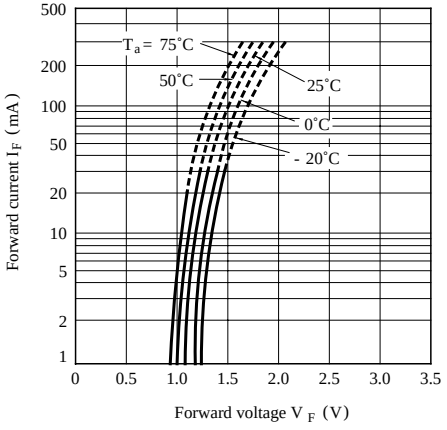


Fig. 6 Current Transfer Ratio vs. Forward Current

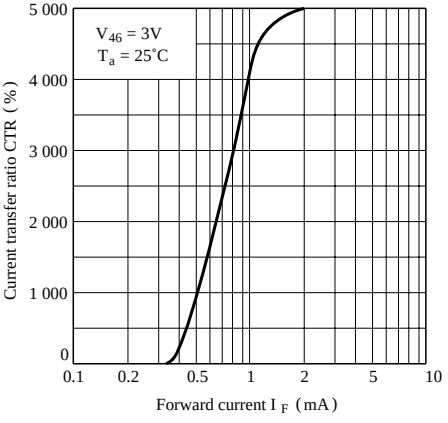


Fig. 7 Output Current vs. Output Voltage

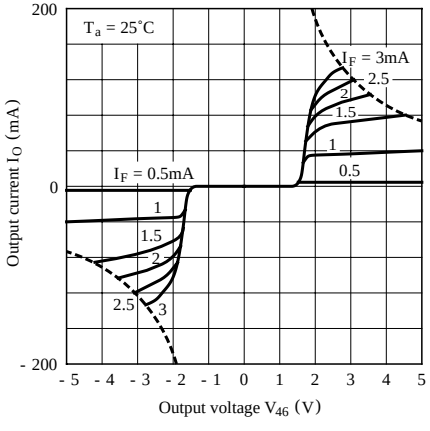


Fig. 8 Relative Current Transfer Ratio vs. Ambient Temperature

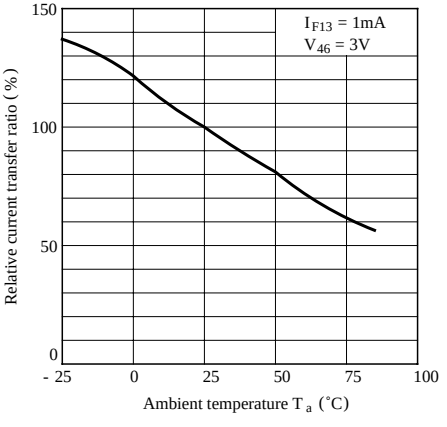


Fig. 9 ON-state Voltage vs. Ambient Temperature

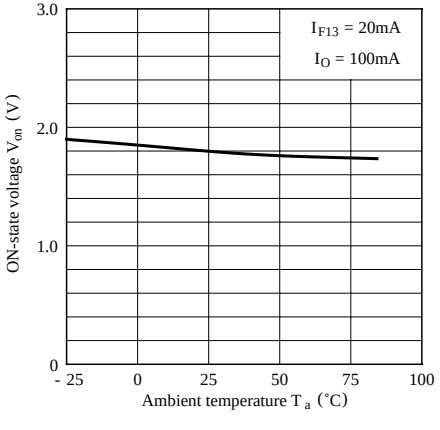


Fig.10 Collector Dark Current vs. Ambient Temperature

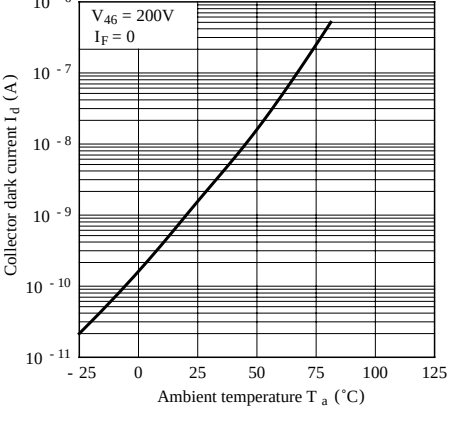


Fig.11 Response Time vs. Load Resistance

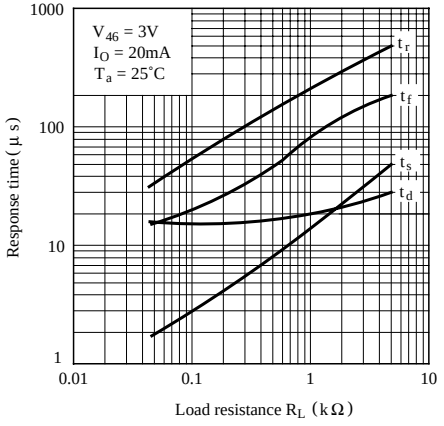


Fig.12 Output Voltage vs. Forward Current

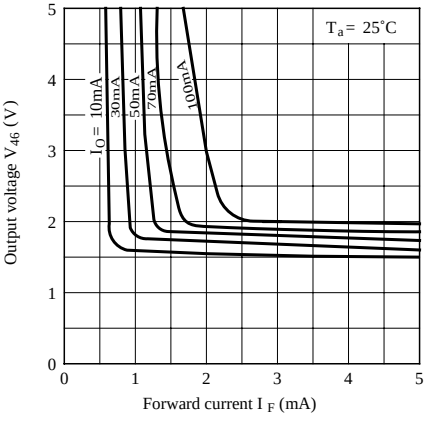
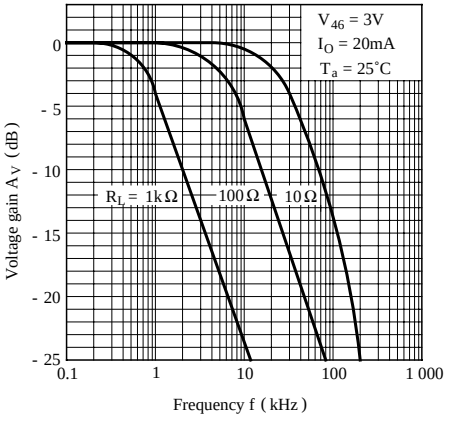


Fig.13 Frequency Response



●Please refer to the chapter "Precautions for Use".