PC829 Series

High Density Mounting Type Photocoupler

※ TÜV(VDE0884) approval type is also available as an option.

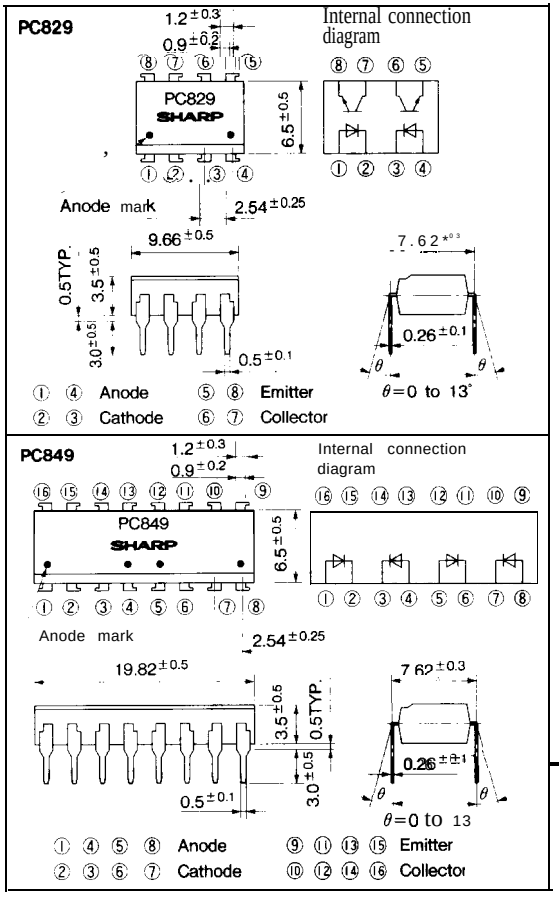
■ Features

1. Symmetrical terminal configuration
   PC829 : 2-channel type
   PC849 : 4-channel type
2. High current transfer ratio
   (CTR : MIN. 50% at I_F=5mA, V_{CE}=5V)
3. High isolation voltage between input and output (V_{iso} :5 000V_{rms})
4. Recognized by UL, file No. E64380

■ Applications

1. Telephone exchangers
2. Computer terminals
3. System appliances, measuring instruments
4. Signal transmission between circuits of different potentials and impedances

■ Outline Dimensions (Unit : mm)



■ Absolute Maximum Ratings (Ta = 25℃)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1 Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P	70	mW
output	Collector emitter voltage	V_{CEO}	35	V
	Emitter -collector voltage	Vaco	6	V
	Collector current	Ic	50	MA
	Collector power dissipation	P_C	150	mW
Total power dissipation		P_{tot}	170	mW
*2 Isolation voltage		V_{iso}	5 000	V_{rms}
Operating temperature		T_{opr}	-25 to +100	℃
Storage temperature		T_{stg}	-40 to +125	℃
*3 Soldering temperature		T_{sol}	260	℃

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

6 Photocouplers

"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 WARPs device."

■ Electro-optical Characteristics

(Ta = 25℃)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 20mA		1.2	1.4	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	Current transfer ratio		CTR	I_F = 5mA, V_{CE} = 5V	50	·	400	%
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 20mA, I_C = 1mA	—	0.1	0.2	V
	Isolation resistance		R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	10^{11}	—	Ω
	Floating capacitance		C_f	V=O, f = 1MHz	—	0.6	1.0	pF
	Cut-off frequency		f_c	V_{CE} = 5V, I_C = 2mA, R_L = 100Ω, -3dB	—	80	—	kHz
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA, R_L = 100Ω		4	—	μs
		Fall time	tf		—	3		μs

Fig. 1 Forward Current vs. Ambient Temperature

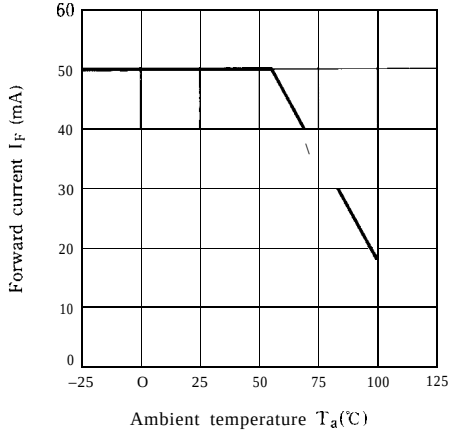


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

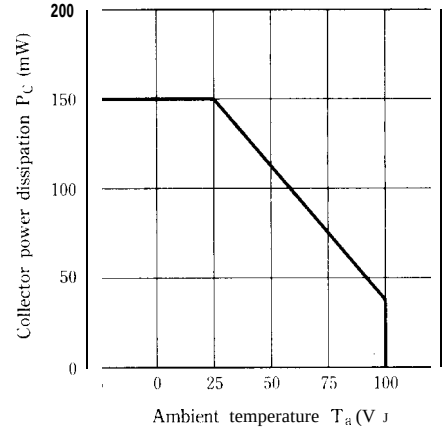


Fig. 3 Peak Forward Current vs. Duty Ratio

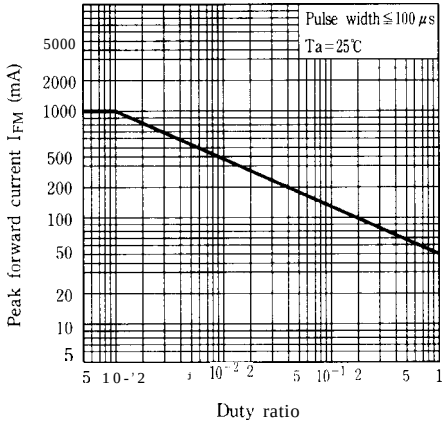


Fig. 4 Forward Current vs. Forward Voltage

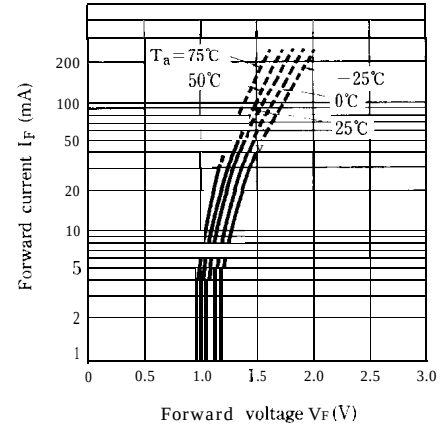


Fig. 5 Current Transfer Ratio vs. Forward Current

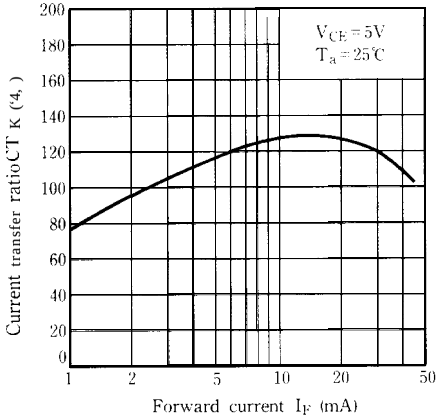


Fig. 6 Collector Current vs. Collector-emitter Voltage

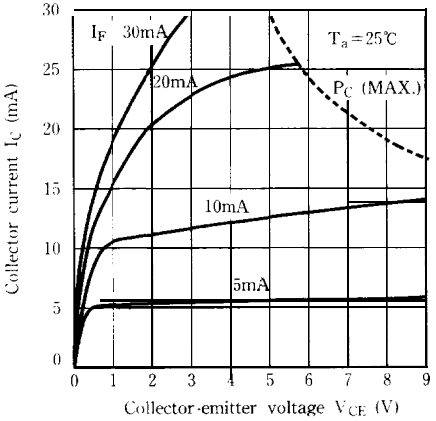


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

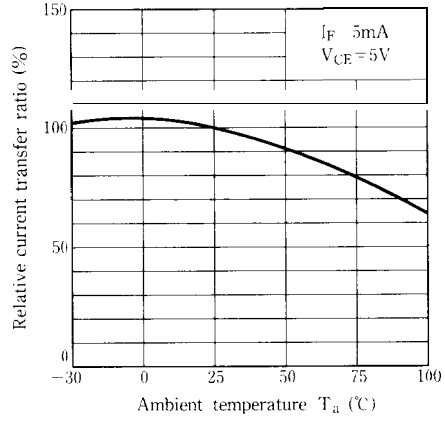


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

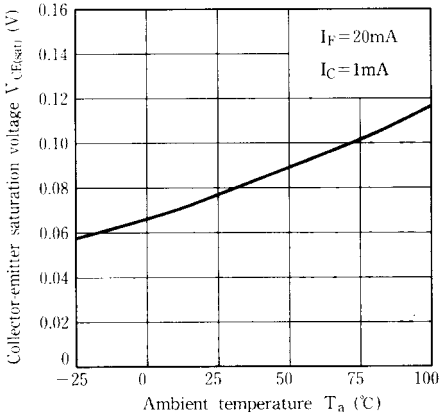


Fig. 9 Collector Dark Current vs. Ambient Temperature

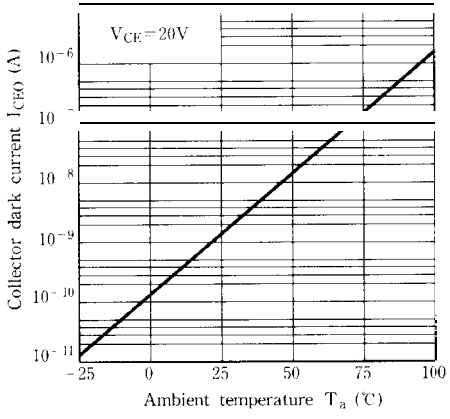


Fig.10 Response Time vs. Load Resistance

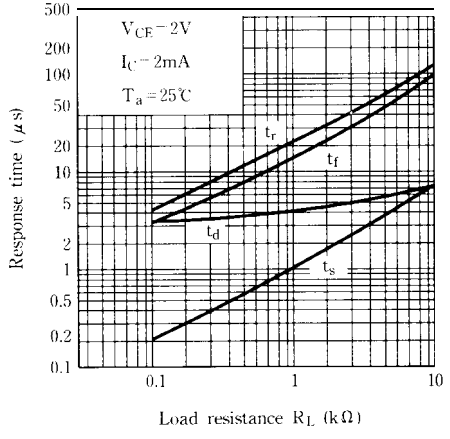
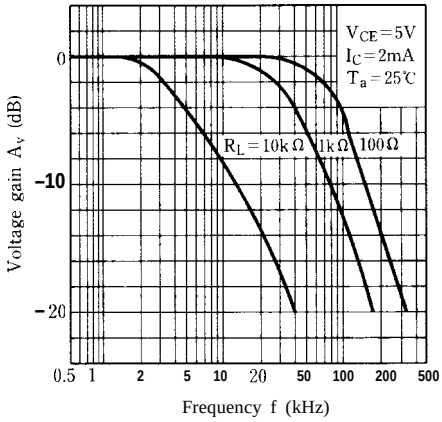


Fig.11 Frequency Response



Test Circuit for Response Time

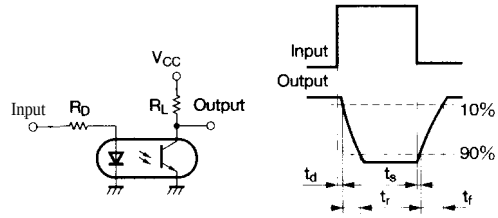
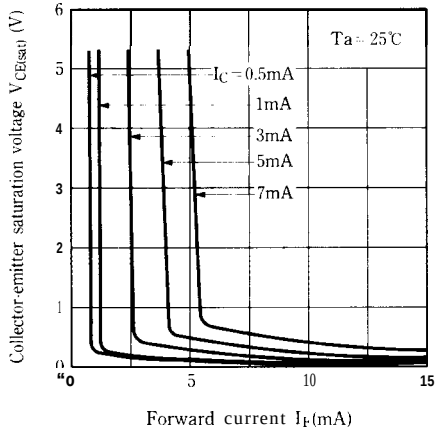
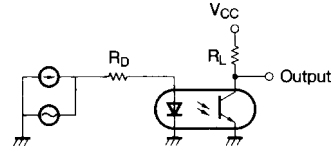


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Frepuency Response



● Please refer to the chapter “Precautions for Use” (Page 78 to 93)