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PC733

AC Input Type Photocoupler

❋ Lead forming type（I type）is also available.（**PC733I**）

■ Features

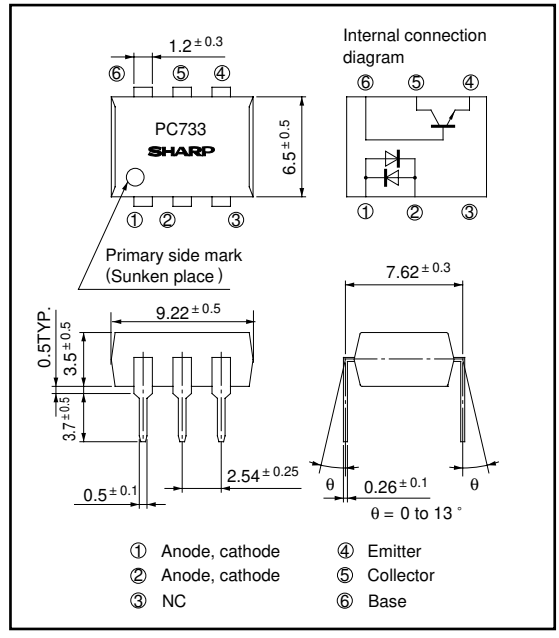
1. AC input response
2. High isolation voltage between input and output（V_{iso}：5 000V_{rms}）
3. Current transfer ratio
   CTR：MIN. 15% at I_F = ± 1mA, V_{CE} = 5V
4. Low collector dark current
   （I_{CEO}：MAX. 10^{-7}A at V_{CE} = 20V）
5. TTL compatible output
6. Recognized by UL, file No. E64380

■ Applications

1. Telephone sets
2. Programmable controllers
3. System appliances, measuring instruments
4. Signal transmission between circuits of different potentials and impedances

■ Outline Dimensions

（Unit：mm）



■ Absolute Maximum Ratings

（Ta= 25°C）

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	± 50	mA
	*1 Pead forward current	I_{FM}	± 1	A
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector-base voltage	V_{CBO}	35	V
	Emitter-base voltage	V_{EBO}	6	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	150	mW
Total power dissipation		P_{tot}	170	mW
*2 Isolation voltage		V_{iso}	5 000	Vrms
Operating temperature		T_{opr}	- 25 to + 100	°C
Storage temperature		T_{stg}	- 40 to + 125	°C
*3 Soldering 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

■ Electro-optical Characteristics

(Ta= 25°C)

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
	Terminal capacitance		C_t	V = 0, f = 1kHz	-	50	400	pF
Output	Collector dark current		I_{CEO}	V_{CE} = 20V, I_F = 0	-	-	10^{-7}	A
Transfer characteristics	Current transfer ratio		CTR	I_F = ± 1mA, V_{CE} = 5V	15	-	300	%
	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 x 10^{10}	10^{11}	-	Ω
	Floating capacitance		C_f	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency		f_C	V_{CE} = 5V, I_C = 2mA, R_L = 100Ω, -3dB	15	80	-	kHz
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA	-	4	18	μs
		Fall time	t_f	R_L = 100Ω	-	3	18	μs

Fig. 1 Forward Current vs. Ambient Temperature

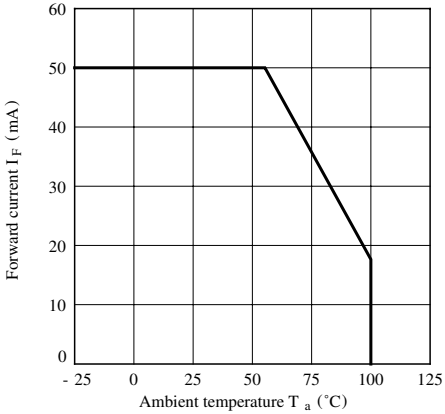


Fig. 2 Diode Power Dissipation vs. Ambient Temperature

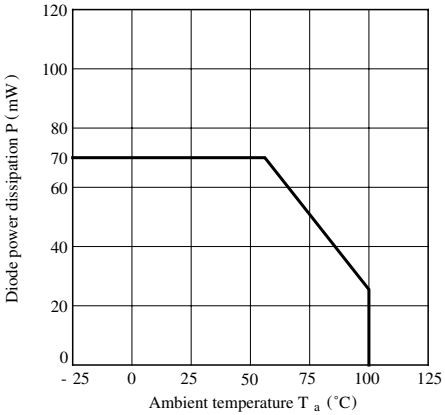


Fig. 3 Collector Power Dissipation VS. Ambient Temperature

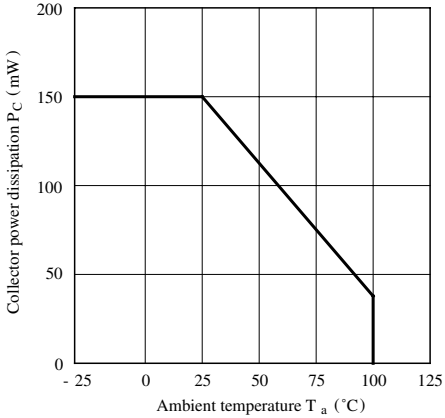


Fig. 4 Power Dissipation vs. Ambient Temperature

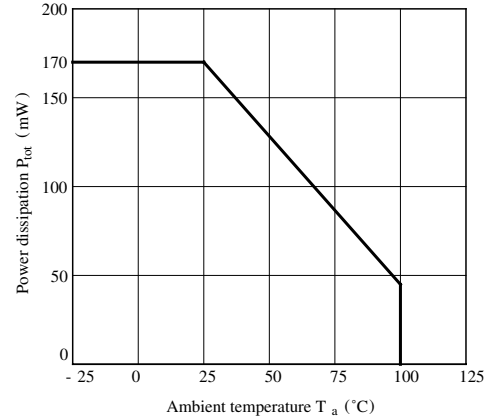


Fig. 5 Peak Forward Current vs. Duty Ratio

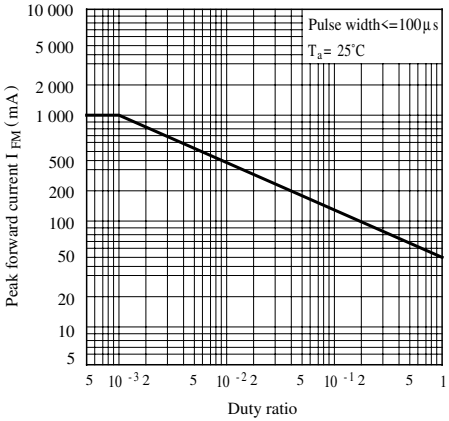


Fig. 6 Forward Current vs. Forward Voltage

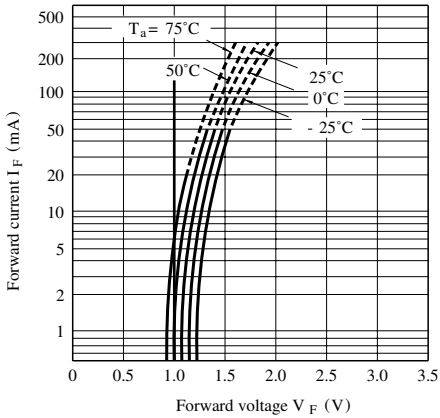


Fig. 7 Current Transfer Ratio vs. Forward Current

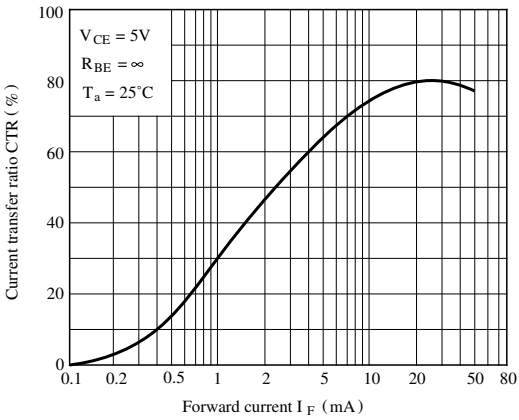


Fig. 8 Collector Current vs. Collector-emitter Voltage

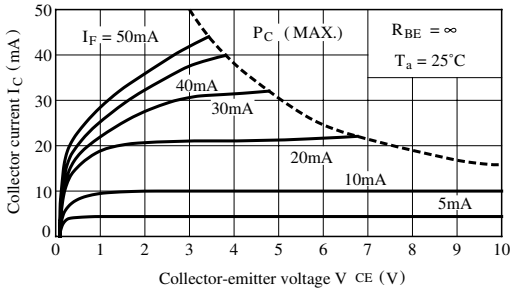


Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature

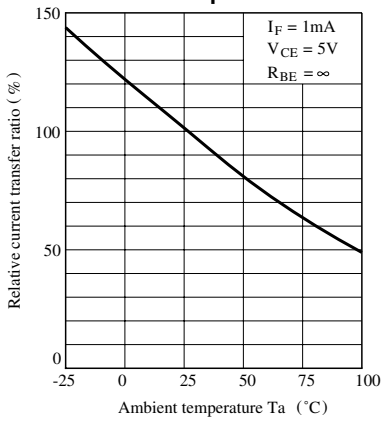


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature

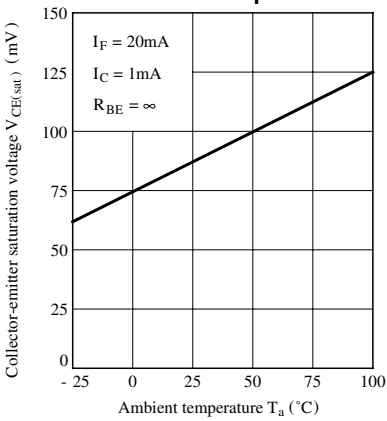


Fig.11-a Collector Dark Current vs. Ambient Temperature

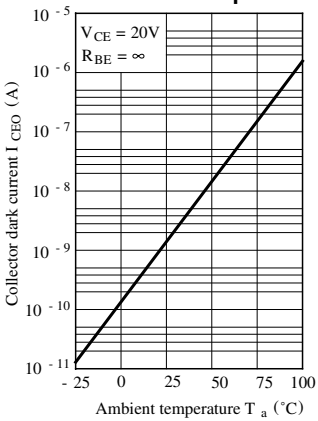


Fig.11-b Collector-base Dark Current vs. Ambient Temperature

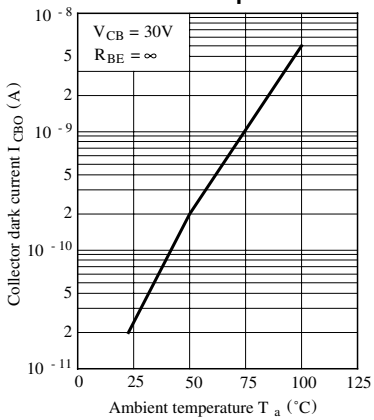


Fig.12 Response Time vs. Load Resistance

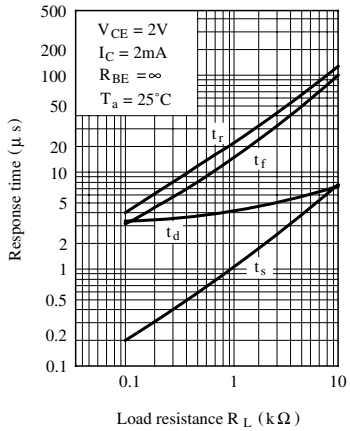
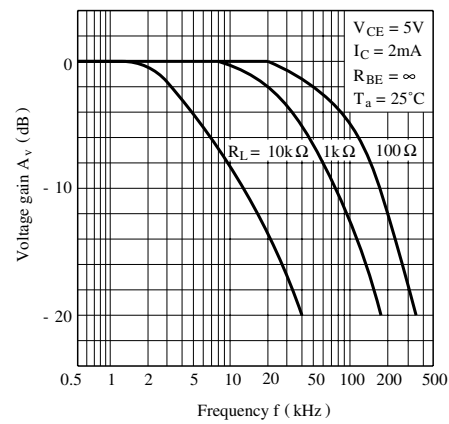
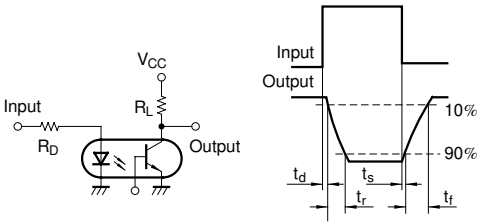


Fig.13 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

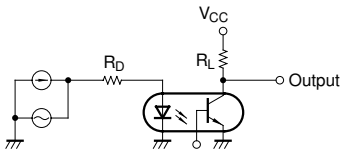
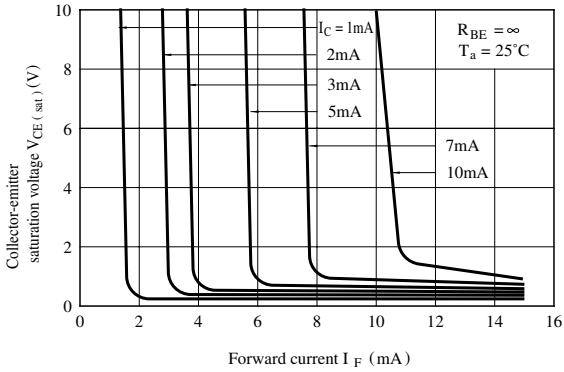


Fig.14 Collector-emitter Saturation Voltage vs. Forward Current



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

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