

PC733H

High Input Current, AC Input Type Photocoupler

※ Lead forming type (I type) and taping reel type (P type) are also available (PC733HI/PC733HP) (Page 656)

■ Features

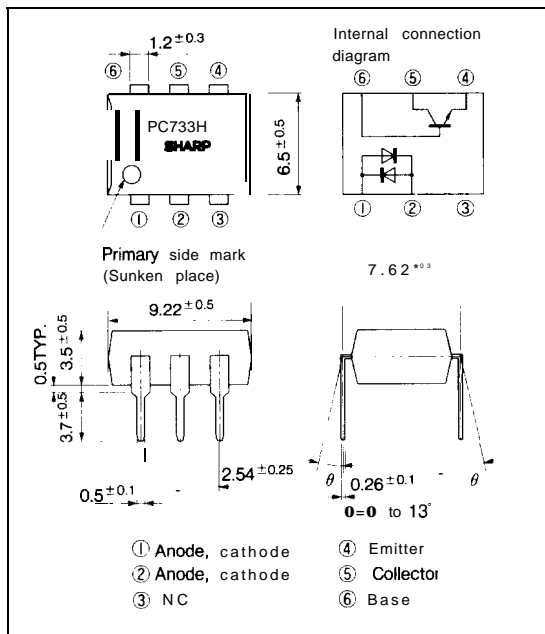
1. AC input response
2. High input current (IF : MAX. 150mA)
3. High isolation voltage between input and output
($V_{iso} : 5000 V_{rms}$)
4. Low collector dark current
($I_{CEO} : \text{MAX. } 10^{-7} \text{ A at } V_{CE} = 20\text{V}$)
5. TTL compatible output
6. Recognized by UL, file No. E64380

■ Applications

1. Telephone sets
2. System appliances, measuring instruments
3. 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
Forward current	I_F	± 150	mA
*1 Peak forward current	I_{FM}	± 1	A
Power dissipation	P	230	mW
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	80	mA
Collector power dissipation	P_C	160	mW
Total power dissipation	P_{tot}	320	mW
*2 Isolation voltage	V_{iso}	5000	V_{rms}
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 widths 100 μs , 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	$I_F = \pm 100\text{mA}$		1.4	1.7	V	
	Peak forward voltage	V_{FM}	$I_{FM} = \pm 0.5\text{A}$	-	-	3.0	v	
	Terminal capacitance	C_t	$V=0, f=1\text{kHz}$		50	400	pF	
output	Collector dark current	I_{CEO}	$V_{CE} = 20\text{V}, I_F = 0, R_{BE} = \infty$			10^{-7}	A	
	Current transfer ratio	CTR	$I_F = \pm 100\text{mA}, V_{CE} = 2\text{V}, R_{BE} = \infty$	20	-	80	%	
Transfer characteristics	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = \pm 100\text{mA}, I_C = 1\text{mA}, R_{BE} = \infty$	-	0.1	0.2	v	
	Isolation resistance	R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	10^{11}	-	Ω	
	Floating capacitance	C_f	$V=0, f=1\text{MHz}$		0.6	1.0	pF	
	Cut-off frequency	f_c	$V_{CE} = 3\text{V}, I_C = 2\text{mA}, R_L = 100\Omega, R_{BE} = \infty - 3\text{dB}$	15	80	-	kHz	
	Response time	Rise time	t_r	$V_{CE} = 2\text{V}, I_C = 2\text{mA}, R_L = 100\Omega, R_{BE} = \infty$		4	18	μs
		Fall time	t_f			3	18	μs

Fig. 1 Forward Current vs. Ambient Temperature

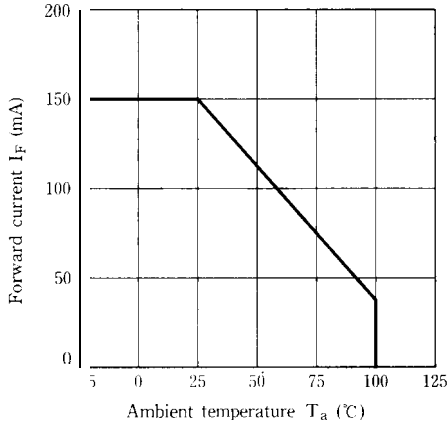


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

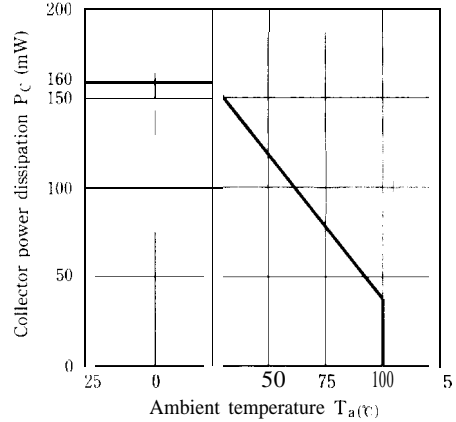


Fig. 3 Peak Forward Current vs. Duty Ratio

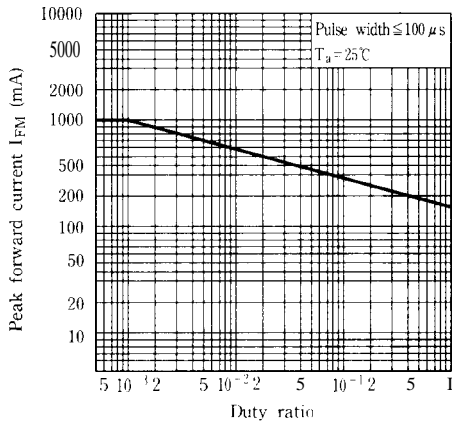


Fig. 4 Forward Current vs. Forward Voltage

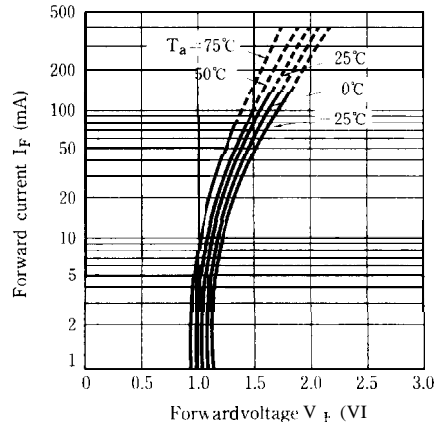


Fig. 5 Current Transfer Ratio vs. Forward Current

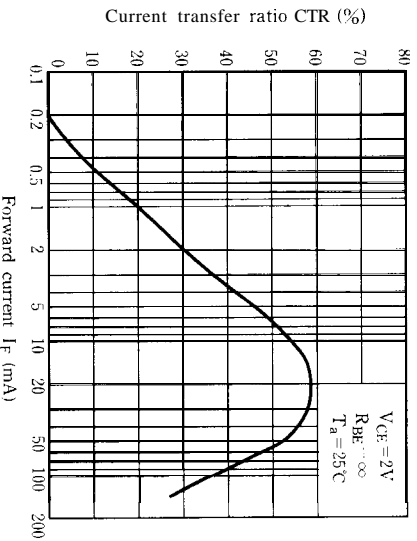


Fig. 6 Collector Current vs. Collector-emitter Voltage

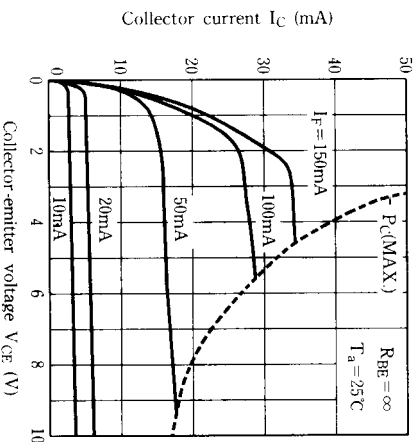


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

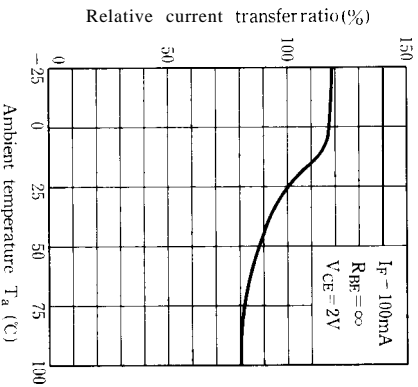


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

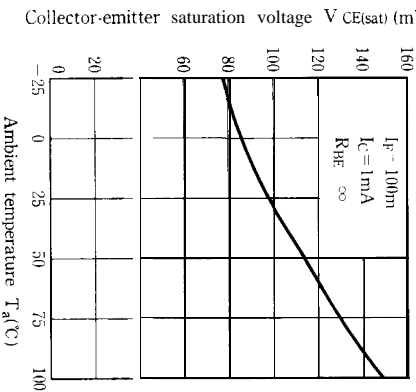


Fig. 9-a Collector Dark Current vs. Ambient Temperature

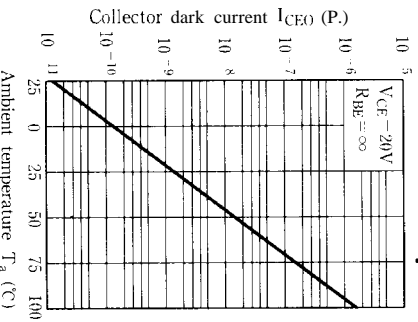


Fig. 9-b Collector-base Dark Current vs. Ambient Temperature

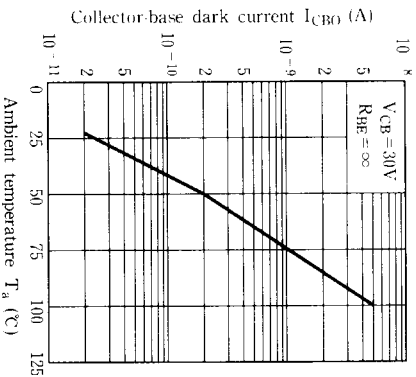
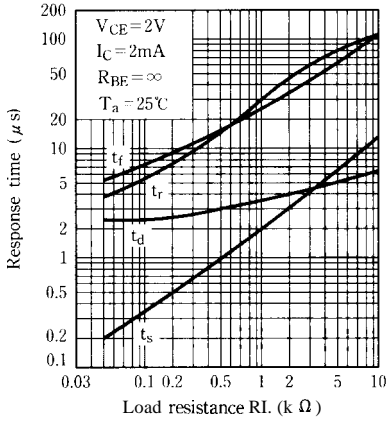
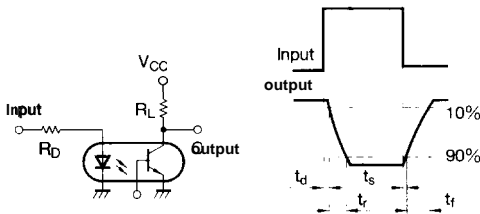


Fig.10 Response Time vs. Load Resistance



Test Circuit for Response Time



Test Circuit for Frequency Response

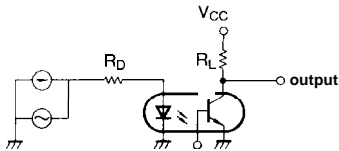


Fig.11 Frequency Response

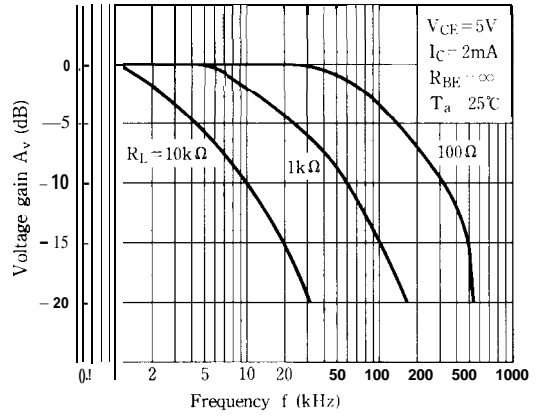
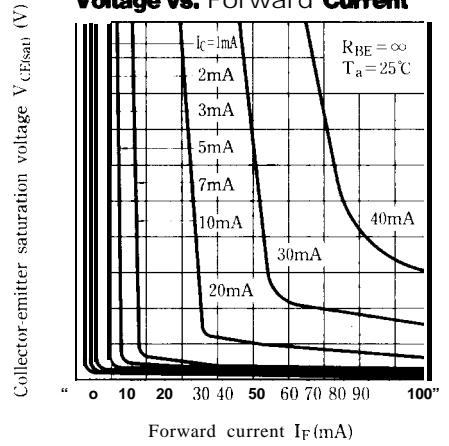


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



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