

PC71 5V

High Sensitivity Type Photocoupler

※Lead forming type (1 type) and taping reel type (P type) are also available. (PC715V1/PC715VP) (Page 656)
 ※※ *TUV (VDE0884) approved type is also available as an option.

■ Features

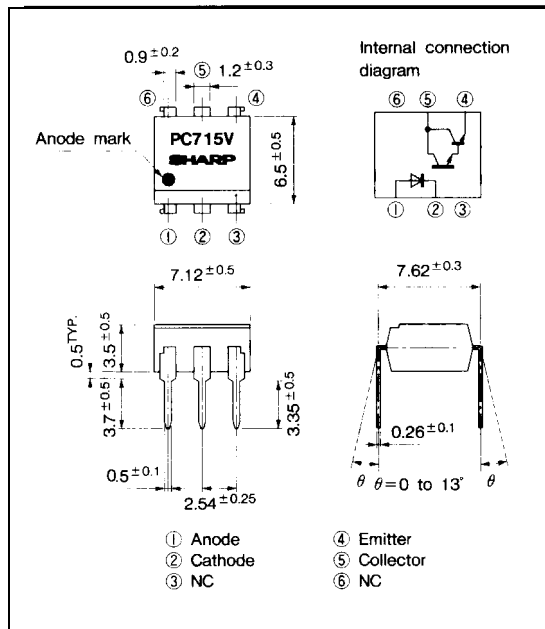
1. High current transfer ratio
(CTR : MIN. 600% at $I_F = 1\text{mA}$, $V_{CE} = 2\text{V}$)
2. High isolation voltage between input and output
($V_{iso} : 5\ 000V_{rms}$)
3. Recognized by UL, file No. E64380

■ Applications

1. System appliances, measuring instruments
2. Copiers, automatic vending machines
3. Medical 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 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	V_{ECO}	6	V
	Collector current	I_C	80	mA
	Collector power dissipation	P_C	150	mW
Total power dissipation		P_T	170	mW
*2 Isolation voltage		V_{iso}	5 000	V _m
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 $\leq 100\ \mu\text{s}$, Duty ratio = 0.001

*2 40 to 60%, RH, AC fo

*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	$I_F = 10\text{mA}$	—	1.2	1.4	v
	Peak forward voltage	V_{FM}	$I_{FM} = 0.5\text{A}$	—	—	3.0	v
	Reverse current	I_R	$V_R = 4\text{V}$	—	—	10	μA
	Terminal capacitance	C_t	$V = 0, f = 1\text{kHz}$	—	30	250	pF
output	Collector dark current	I_{CEO}	$V_{CE} = 10\text{V}, I_F = 0$	—	—	10^{-6}	A
Transfer characteristics	Current transfer ratio	CTR	$I_F = 1\text{mA}, V_{CE} = 2\text{V}$	600	1 600	7 500	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 5\text{mA}$	—	—	1.0	v
	Isolation resistance	R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	10^{11}	—	Ω
	Floating capacitance	cl	$V = 0, f = 1\text{MHz}$	—	0.6	1.0	pF
	Cut off frequency	f_c	$V_{CE} = 2\text{V}, I_C = 2\text{mA}, R_L = 100\Omega, -3\text{dB}$	—	6	—	kHz
	Response time	Rise time Fall time	t_r t_f	$V_{CE} = 2\text{V}, I_C = 10\text{mA}, R_L = 100\Omega$	— —	60 5.3	250 250

Fig. 1 Forward Current vs. Ambient Temperature

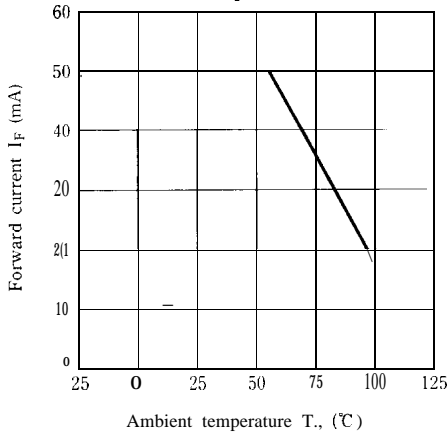


Fig. 2 Collector Power Dissipation VS. Ambient Temperature

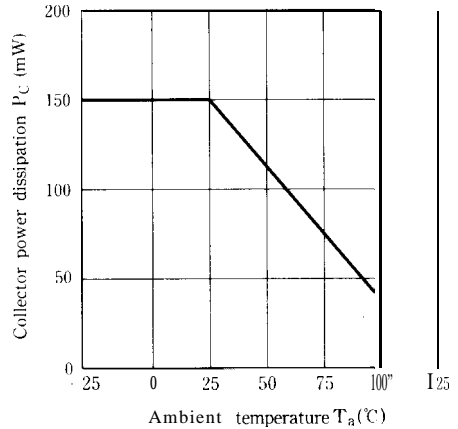


Fig. 3 Peak Forward Current vs. Duty Ratio

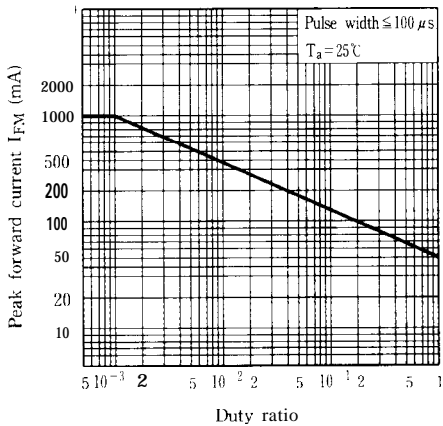


Fig. 4 Forward Current vs. Forward Voltage

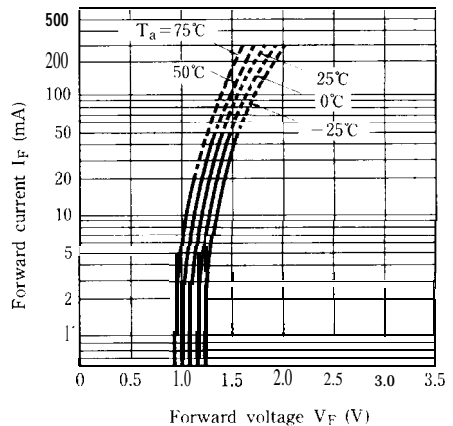


Fig. 5 Current Transfer Ratio vs. Forward Current

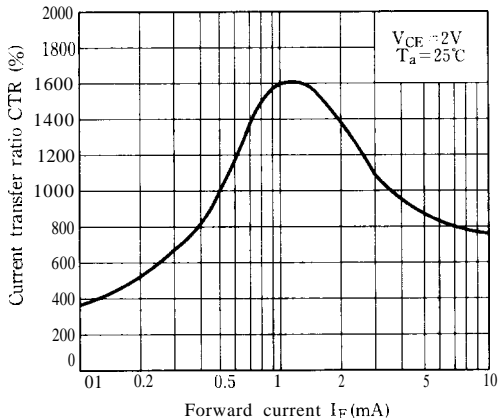


Fig. 6-a Collector Current vs. Collector-emitter Voltage

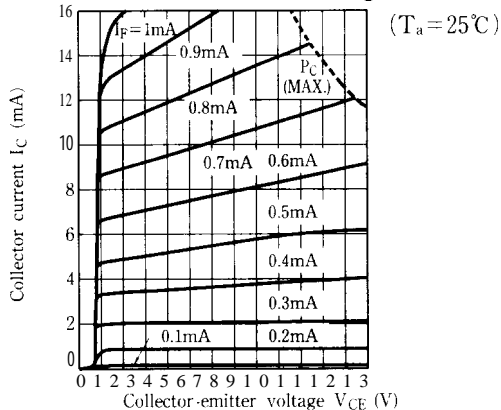


Fig. 6-b Collector Current vs. Collector-emitter Voltage

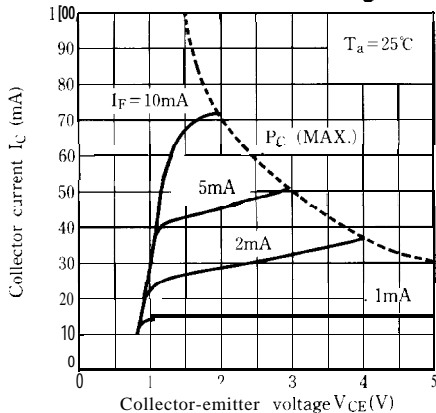


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

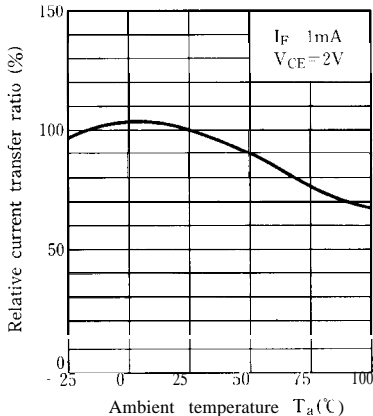


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

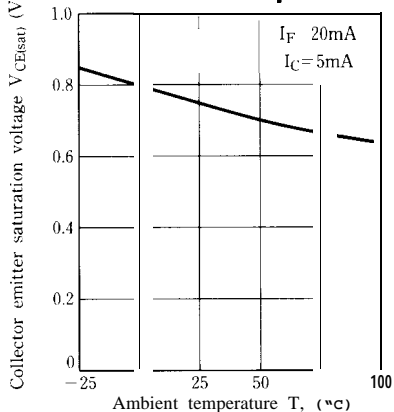
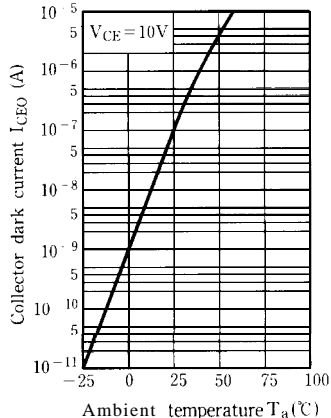


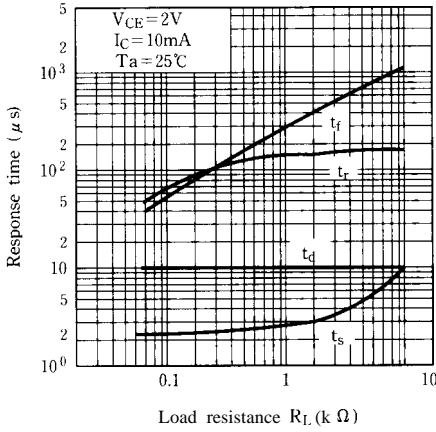
Fig. 9 Collector Dark Current vs. Ambient Temperature



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Photocouplers

Fig.10 Response Time vs. Load Resistance



Test Circuit for Response Time

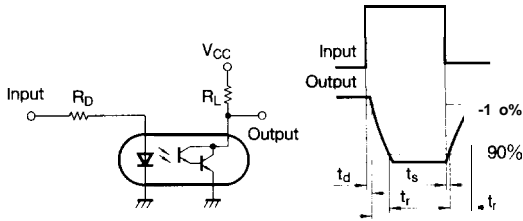
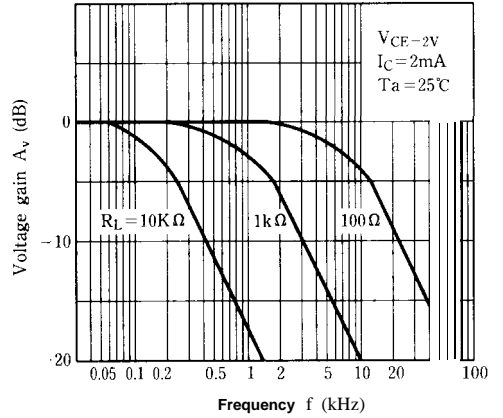
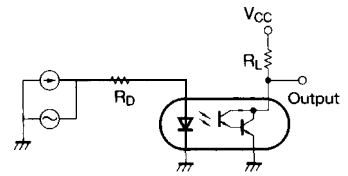


Fig.11 Frequency Response



Test Circuit for Frequency Response



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