PC725V

High Sensitivity, High Collector-emitter Voltage Type Photocoupler

❋ Lead forming type（W type ）and taping reel type（P type ）are also available.（**PC725W/PC725VP** ）
❋❋ TÜV（VDE0884）approved type as an option is also available.

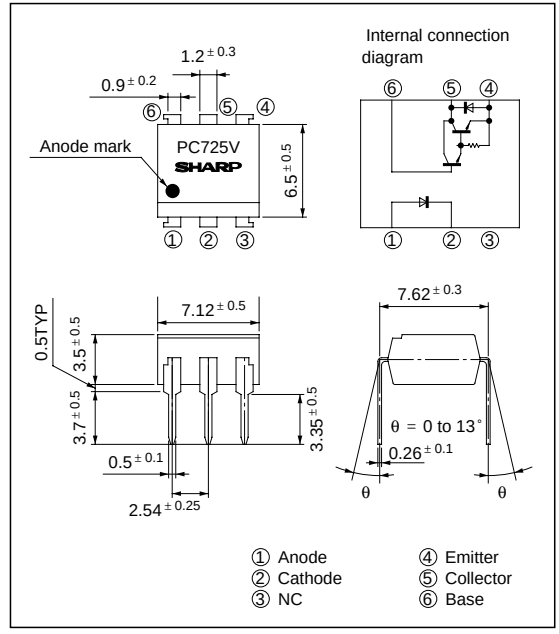
■ Features

1. High collector-emitter voltage
（V_{CEO}： 300V）
2. High current transfer ratio
（CTR： MIN. 1 000% at I_F = 1mA, V_{CE} = 2V）
3. High isolation voltage between input and output （V_{ISO}： 5 000V_{rms}）
4. Low collector dark current
（I_{CEO}： MAX. 10^{-6}A at V_{CE} = 200V）
5. Recognized by UL, file No. E64380

■ Applications

1. Telephone sets, telephone exchangers
2. Power apparatus switchboards
3. Numerical control machines
4. DC-DC SSRs, DC motor controllers

■ Outline Dimensions （Unit : mm）



■ Absolute Maximum Ratings （T_a= 25°C）

Parameter		Symbol	Rating	Unit
Input	Forward voltage	I_F	50	mA
	*1Peak forward voltage	I_{FM}	1	A
	Reverse current	V_R	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V_{CEO}	300	V
	Collector-base voltage	V_{CBO}	300	V
	Emitter-base voltage	V_{EBO}	6	V
	Collector current	I_C	150	mA
	Collector current （reverse ）	- I_C	10	mA
	Collector power dissipation	P_C	300	mW
Total power dissipation		P_{tot}	350	mW
*2Isolation voltage		V_{iso}	5 000	V_{rms}
Operating temperature		T_{opr}	- 25 to + 100	°C
Storage temperature		T_{stg}	- 40 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

■ Electro-optical Characteristics

(Ta= 25˚C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 10mA	-	1.2	1.4	V
	Peak forward voltage		V_{FM}	I_{FM} = 0.5A	-	-	3	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} = 200V, I_F = 0, R_{BE} = ∞	-	-	10^{-6}	A
Transfer characteristics	Current transfer ratio		CTR	I_F = 1mA, V_{CE} = 2V, R_{BE} = ∞	1 000	4 000	15 000	%
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 20mA, I_C = 100mA, R_{BE} = ∞	-	-	1.2	V
	Isolation resistance		R_{ISO}	DC500V, 40 to 60% RH	5×10^{10}	10^{11}	-	Ω
	Floating capacitance		C_f	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency		f_c	V_{CE} = 2V, I_C = 20mA, R_L = 100Ω, R_{BE} = ∞, -3dB	1	7	-	kHz
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 20mA	-	100	300	μs
		Fall time	t_f	R_L = 100Ω, R_{BE} = ∞	-	20	100	μs

Fig. 1 Forward Current vs. Ambient Temperature

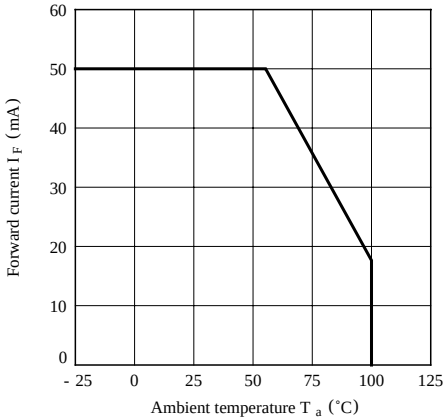


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

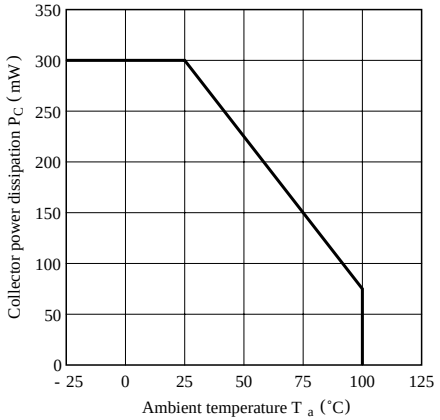


Fig. 3 Peak Forward Current vs. Duty Ratio

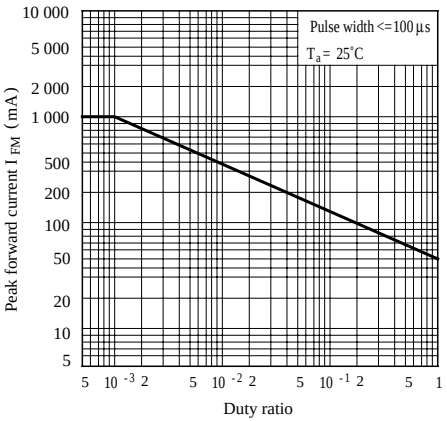


Fig. 4 Forward Current vs. Forward Voltage

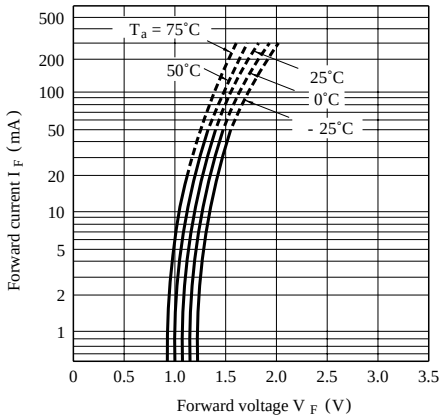


Fig. 5 Current Transfer Ratio vs. Forward Current

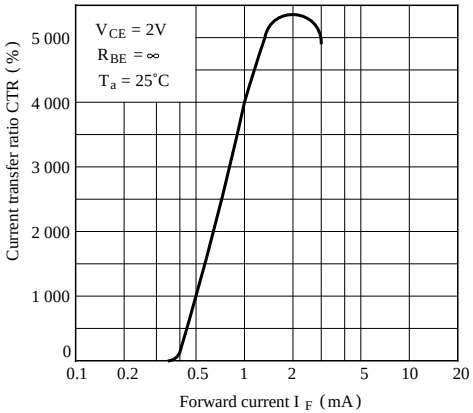


Fig. 6 Collector Current vs. Collector-emitter Voltage

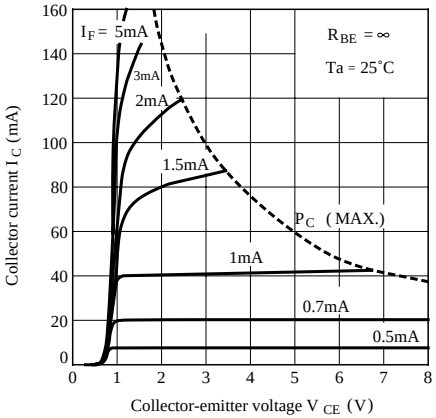


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

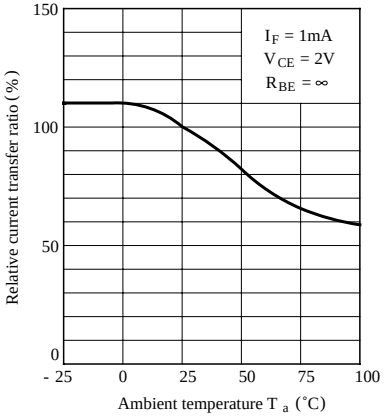


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

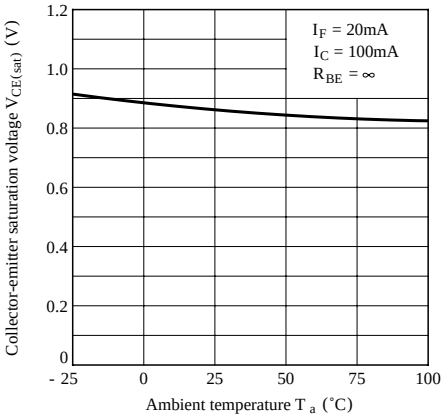


Fig. 9 Collector Dark Current vs. Ambient Temperature

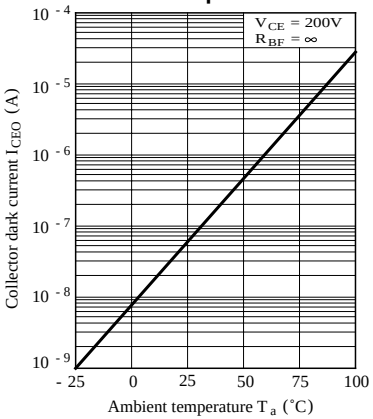
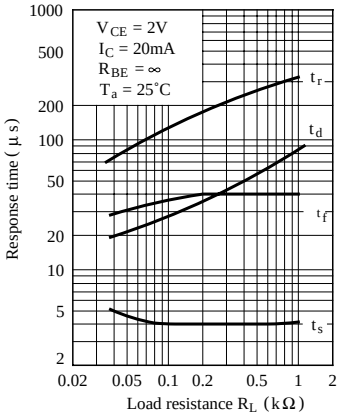


Fig.10 Response Time vs. Load Resistance



Test Circuit for Response Time

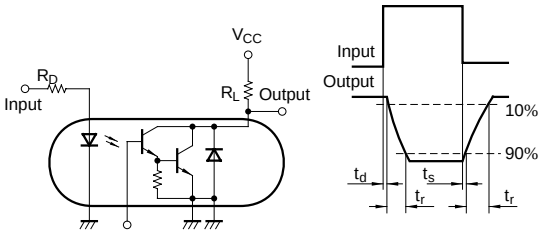
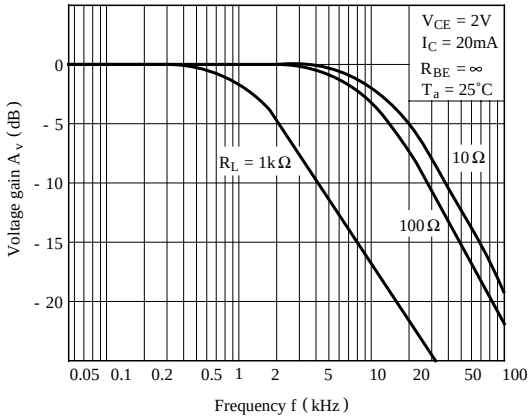
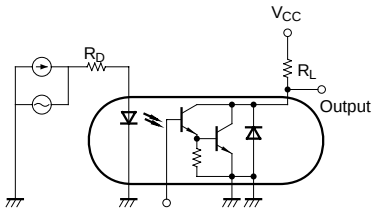


Fig.10 Frequency Response



Test Circuit for Frepuency Response



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