

# PC715V0NSZX/ PC715V0YSZX

## ■ Features

1. High sensitivity (CTR:MIN. 600%)
2. Isolation voltage (Viso (rms):5kV)
3. Recognized by UL, file No.E64380  
Approved by TÜV (VDE0884)(PC715V0YSZX)
4. 6-pin DIP package

## ■ Applications

1. Home appliances
2. Programmable controllers
3. Peripheral equipment of personal computers

## ■ Model Line-up

Model No.	* Safty Standard Approval	
	UL	TÜV (VDE0884)
PC715V0NSZX	○	—
PC715V0YSZX	○	○

\* Application Model No. PC715V

## ■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I <sub>F</sub>	50	mA
	*1 Peak forward current	I <sub>FM</sub>	1	A
	Reverse voltage	V <sub>R</sub>	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V <sub>CEO</sub>	35	V
	Emitter-collector voltage	V <sub>ECO</sub>	6	V
	Collector current	I <sub>C</sub>	80	mA
	Collector power dissipation	P <sub>C</sub>	150	mW
	Total power dissipation	P <sub>tot</sub>	170	mW
	*2 Isolation voltage	V <sub>iso (rms)</sub>	5	kV
	Operating temperature	T <sub>opr</sub>	-25 to +100	°C
	Storage temperature	T <sub>stg</sub>	-40 to +125	°C
	*3 Soldering temperature	T <sub>sol</sub>	260	°C

\*1 Pulse width≤100μs, Duty ratio=0.001

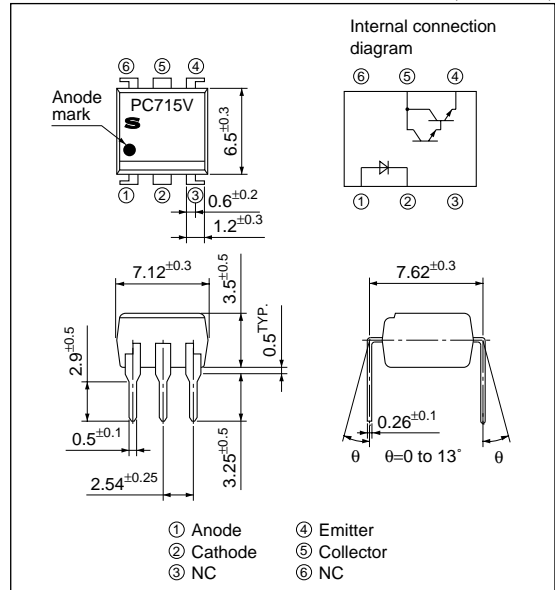
\*2 40 to 60%RH, AC for 1 min

\*3 For 10 s

## High Sensitivity Type Photocoupler

## ■ Outline Dimensions

(Unit : mm)



■ Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> =10mA	-	1.2	1.4	V
	Peak forward voltage	V <sub>FM</sub>	I <sub>FM</sub> =0.5A	-	-	3.0	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> =4V	-	-	10	μA
	Terminal capacitance	C <sub>t</sub>	V=0, f=1kHz	-	30	250	pF
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> =10V, I <sub>F</sub> =0	-	-	10 <sup>-6</sup>	A
Transfer characteristics	Collector current	I <sub>C</sub>	I <sub>F</sub> =1mA, V <sub>CE</sub> =2V	6	160	75	mA
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> =20mA, I <sub>C</sub> =5mA	-	-	1.0	V
	Isolation resistance	R <sub>ISO</sub>	DC500V, 40 to 60%RH	5×10 <sup>10</sup>	10 <sup>11</sup>	-	Ω
	Floating capacitance	C <sub>f</sub>	V=0, f=1MHz	-	0.6	1.0	pF
	Cut-off frequency	f <sub>c</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =2mA, R <sub>L</sub> =100Ω, -3dB	-	6	-	kHz
	Response time	Rise time	t <sub>r</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =10mA R <sub>L</sub> =100Ω	-	60	250
Fall time		t <sub>f</sub>	-		53	250	μs

Fig.1 Forward Current vs. Ambient Temperature

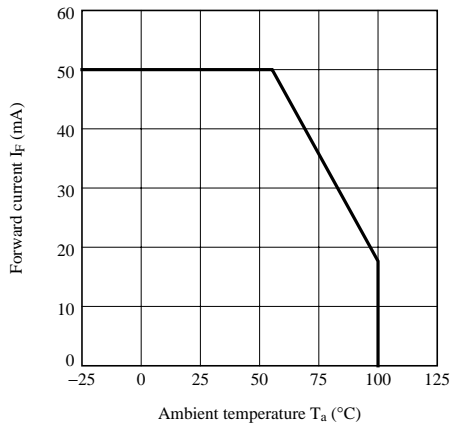


Fig.2 Collector Power Dissipation vs. Ambient Temperature

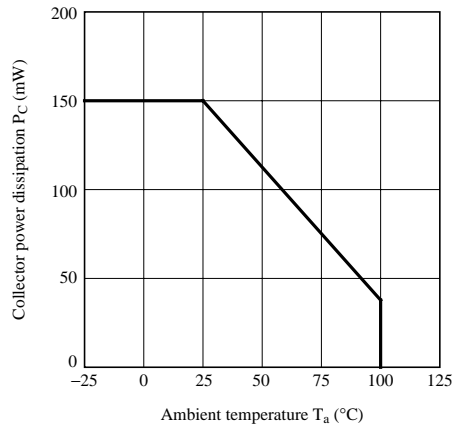


Fig.3 Peak Forward Current vs. Duty Ratio

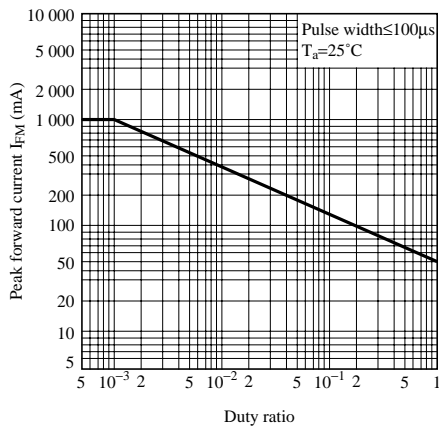
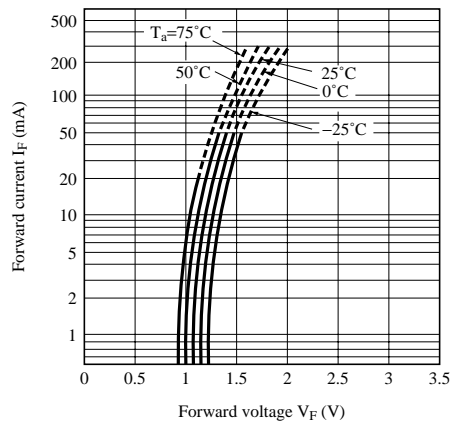
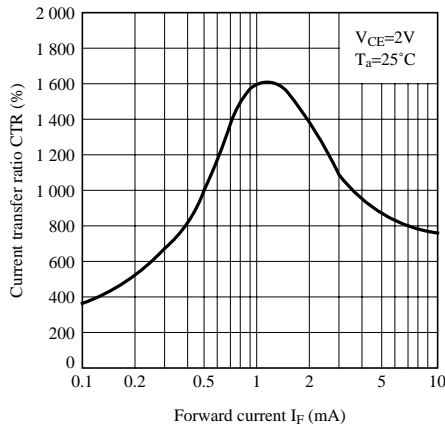


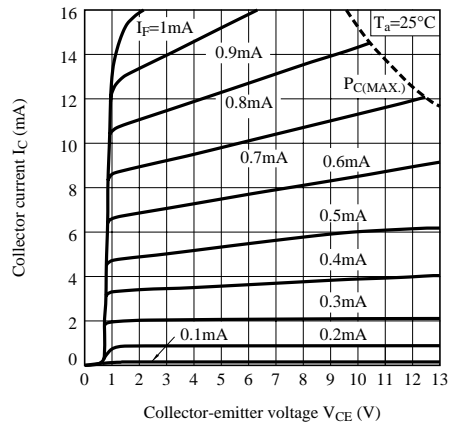
Fig.4 Forward Current vs. Forward Voltage



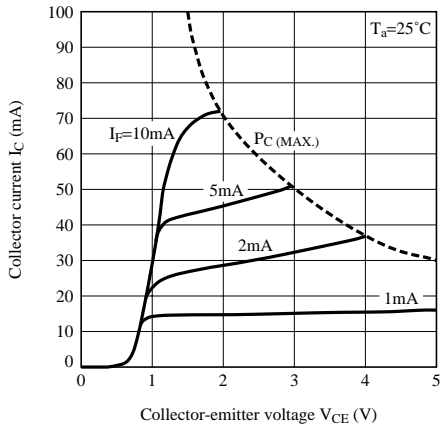
**Fig.5 Current Transfer Ratio vs. Forward Current**



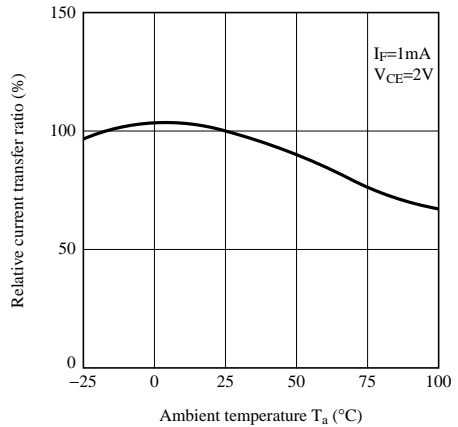
**Fig.6 Collector Current vs. Collector-emitter Voltage**



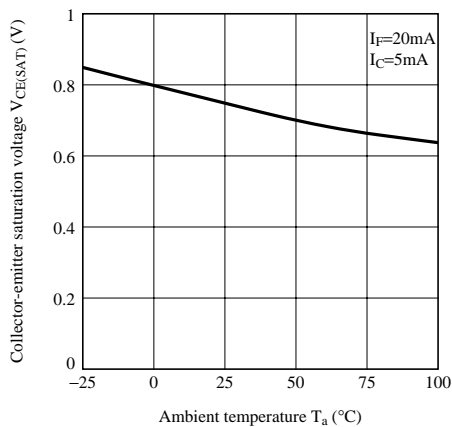
**Fig.7 Collector Current vs. Collector-emitter Voltage**



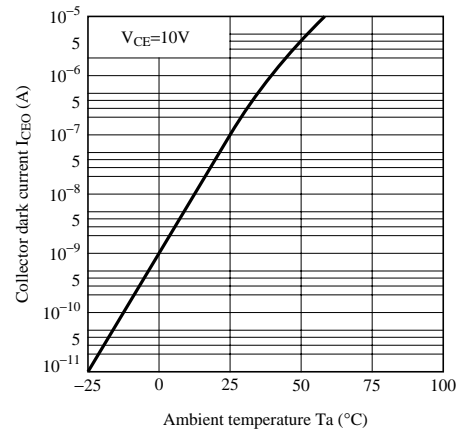
**Fig.8 Relative Current Transfer Ratio vs. Ambient Temperature**



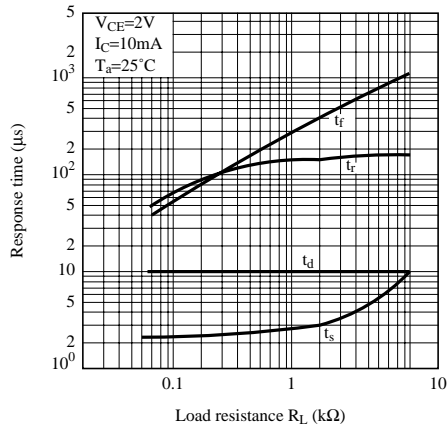
**Fig.9 Collector - emitter Saturation Voltage vs. Ambient Temperature**



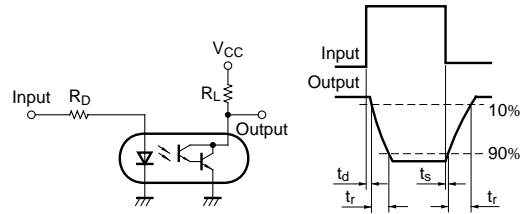
**Fig.10 Collector Dark Current vs. Ambient Temperature**



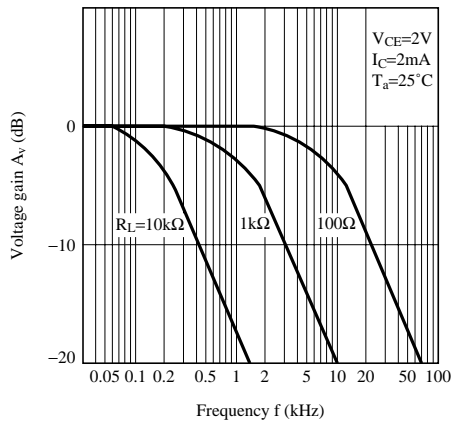
**Fig.11 Response Time vs. Load Resistance**



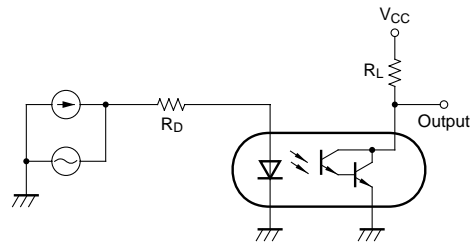
**Fig.12 Test Circuit for Response Time**



**Fig.13 Frequency Response**



**Fig.14 Test Circuit for Frequency Response**



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