

PC713VxNSZX Series/ PC713VxYSZX Series

■ Features

1. TTL compatible output
2. Isolation voltage (Viso (rms):5kV)
3. Recognized by UL, file No.E64380
Approved by TÜV (VDE0884)(PC713VxYSZX Series)
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)
PC713VxNSZX Series	○	—
PC713VxYSZX Series	○	○

* Application Model No. PC713V

■ 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-base voltage	V_{CBO}	35	V
	Emitter-base voltage	V_{EBO}	6	V
	Collector current	I_C	50	mA
	Collector power dissipation	Pc	150	mW
	Total power dissipation	P_{tot}	170	mW
	*2 Isolation voltage	$V_{iso (rms)}$	5	kV
	Operating temperature	T_{opr}	-25 to +100	°C
	Storage temperature	T_{sig}	-40 to +125	°C
	*3 Soldering temperature	T_{sol}	260	°C

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

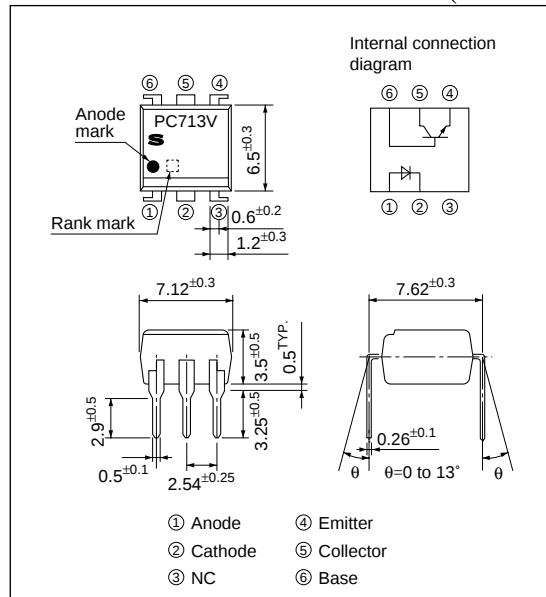
*2 40 to 60%RH, AC for 1 min

*3 For 10 s

High Isolation Voltage Type Photocoupler

■ Outline Dimensions

(Unit : mm)



■ 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
	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} =20V, I _F =0, R _{BE} =∞	—	—	10 ⁻⁷	A
Transfer charac- teristics	*4 Collector current		I _C	I _F =5mA, V _{CE} =5V, R _{BE} =∞	2.5	—	30	mA
	Collector-emitter saturation voltage		V _{CE(sat)}	I _F =20mA, I _C =1mA, R _{BE} =∞	—	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=1MHz	—	0.6	1.0	pF
	Cut-off frequency		f _c	V _{CE} =5V, I _C =2mA, R _L =100Ω, R _{BE} =∞	—	80	—	kHz
	Response time	Rise time	t _r	V _{CE} =2V, I _C =2mA	—	4	18	μs
Fall time		t _f	R _L =100Ω, R _{BE} =∞	—	3	18	μs	

*4 Classification table of collector current is shown below.

Model No. *5	Rank mark	I_C (mA)
PC713V1NSZX	A	4.0 to 8.0
PC713V2NSZX	B	6.5 to 13.0
PC713V3NSZX	C	10.0 to 20.0
PC713V5NSZX	A or B	4.0 to 13.0
PC713V6NSZX	B or C	6.5 to 20.0
PC713V8NSZX	A, B or C	4.0 to 20.0
PC713V0NSZX	A, B, C or no marking	2.5 to 30.0

Measuring Conditions

$I_F=5\text{mA}$

$V_{CE}=5\text{V}$

$T_a=25^\circ\text{C}$

*5 PC713VxYSZX Series are equivalent.

Fig.1 Forward Current vs. Ambient Temperature

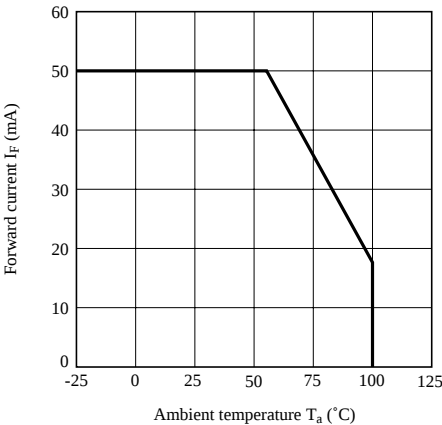


Fig.2 Collector Power Dissipation vs. Ambient Temperature

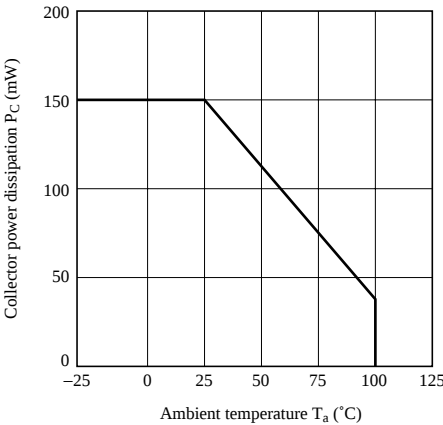


Fig.3 Peak Forward Current vs. Duty Ratio

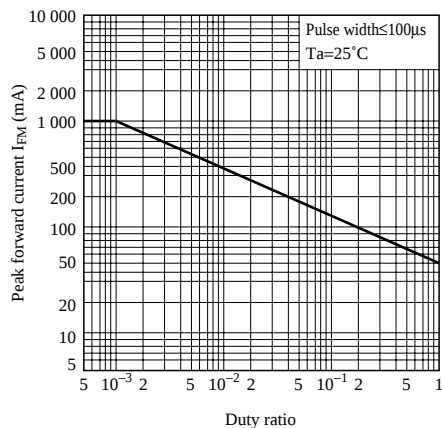


Fig.4 Forward Current vs. Forward Voltage

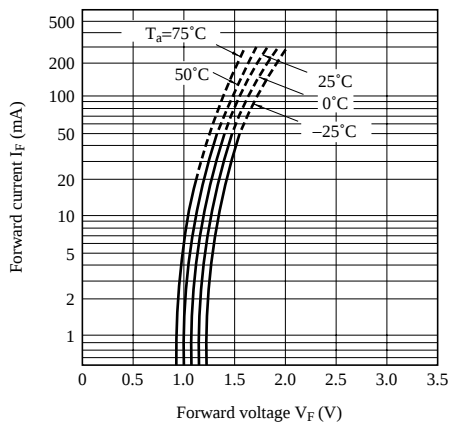


Fig.5 Current Transfer Ratio vs. Forward Current

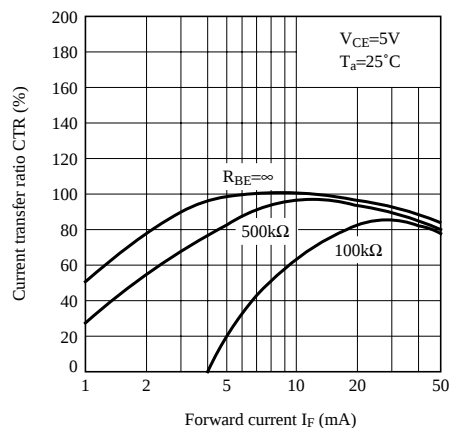


Fig.6 Collector Current vs. Collector-emitter Voltage

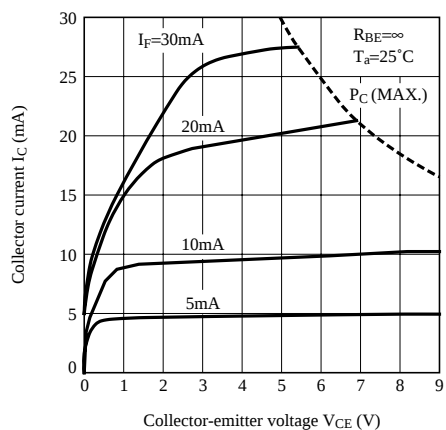


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

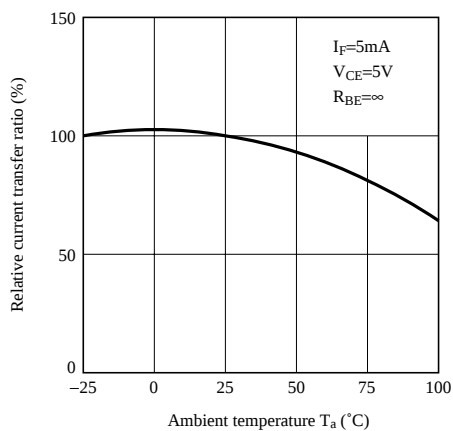


Fig.8 Collector - emitter Saturation Voltage vs. Ambient Temperature

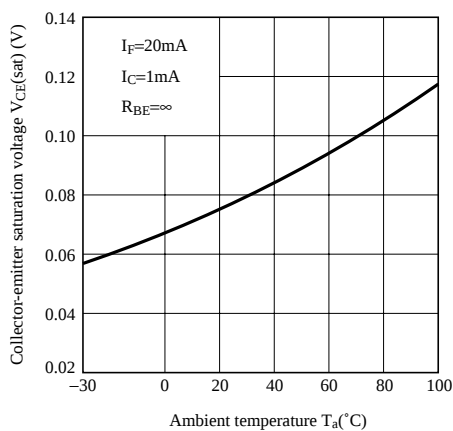
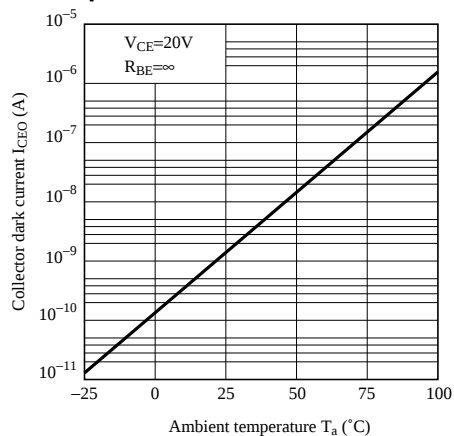
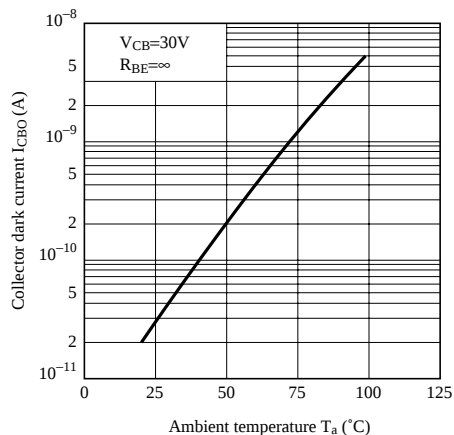
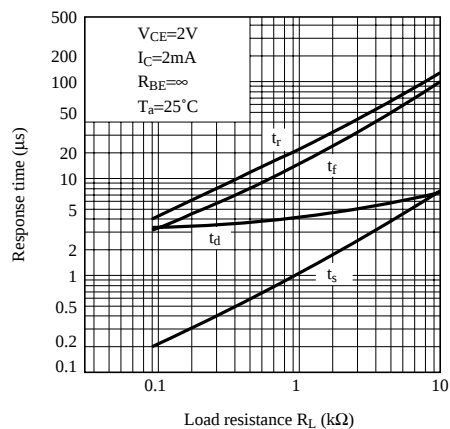
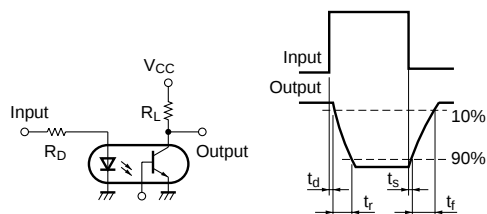
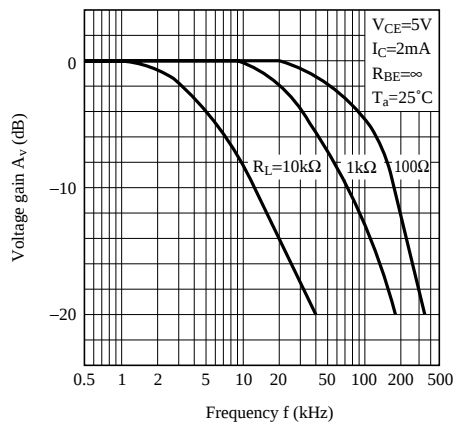
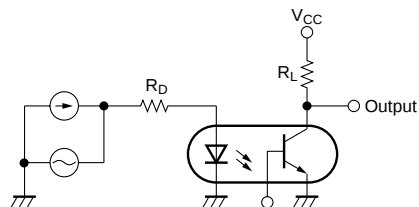


Fig.9 Collector Dark Current vs. Ambient Temperature**Fig.10 Collector-base Dark Current vs. Ambient Temperature****Fig.11 Response Time vs. Load Resistance****Fig.12 Test Circuit for Response Time****Fig.13 Frequency Response****Fig.14 Test Circuit for Frequency Response**

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