

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	P_C	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_{stg}	-40 to +125	°C	
*3 Soldering temperature	T_{sol}	260	°C	

*1 Pulse width \leq 100 μ s, Duty ratio=0.001

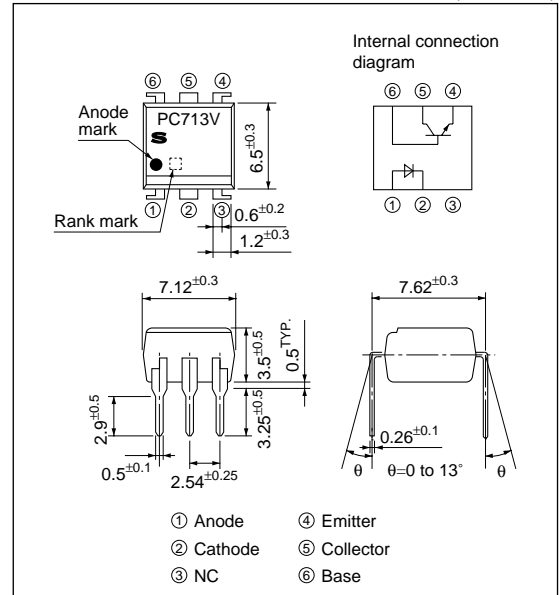
*2 40 to 60%RH, AC for 1 min

*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	$I_F=20\text{mA}$	–	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}	$V_{CE}=20\text{V}, I_F=0, R_{BE}=\infty$	–	–	10^{-7}	A	
Transfer characteristics	*4 Collector current		I_C	$I_F=5\text{mA}, V_{CE}=5\text{V}, R_{BE}=\infty$	2.5	–	30	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_F=20\text{mA}, I_C=1\text{mA}, R_{BE}=\infty$	–	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	$V_{CE}=5\text{V}, I_C=2\text{mA}, R_L=100\Omega, R_{BE}=\infty$	–	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	

*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

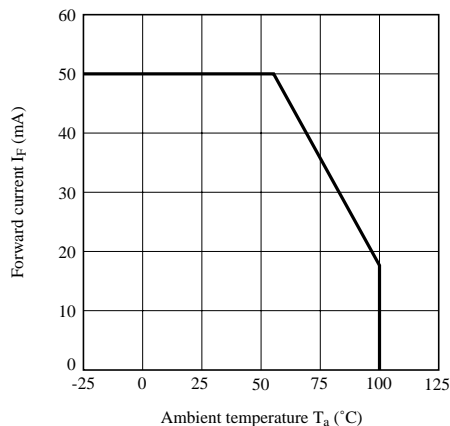


Fig.2 Collector Power Dissipation vs. Ambient Temperature

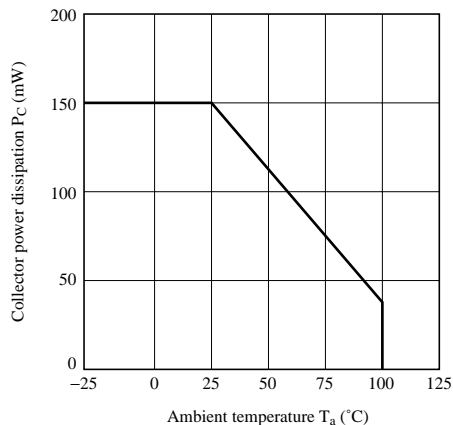


Fig.3 Peak Forward Current vs. Duty Ratio

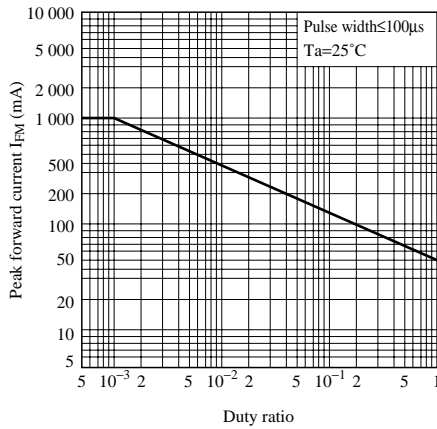


Fig.4 Forward Current vs. Forward Voltage

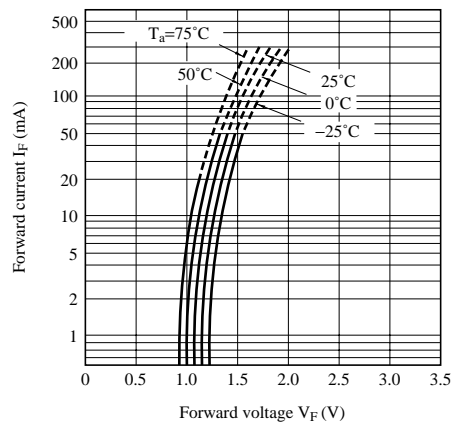


Fig.5 Current Transfer Ratio vs. Forward Current

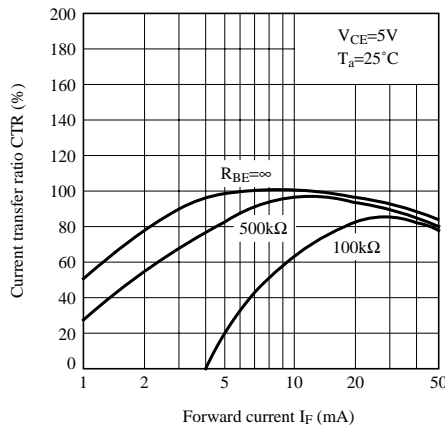


Fig.6 Collector Current vs. Collector-emitter Voltage

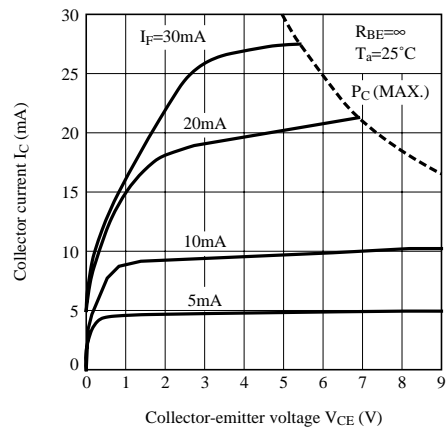


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

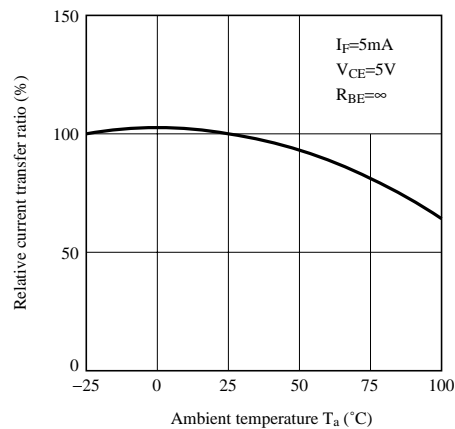


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

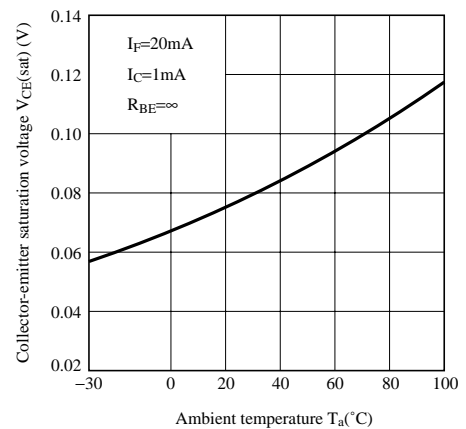


Fig.9 Collector Dark Current vs. Ambient Temperature

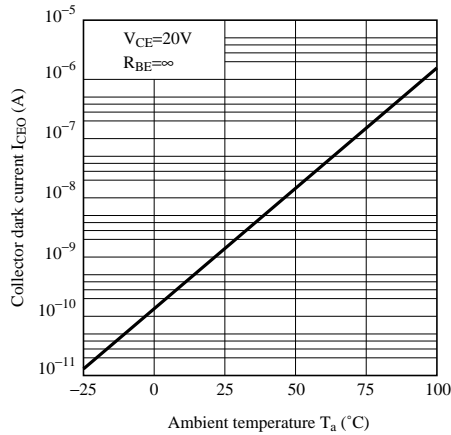


Fig.10 Collector-base Dark Current vs. Ambient Temperature

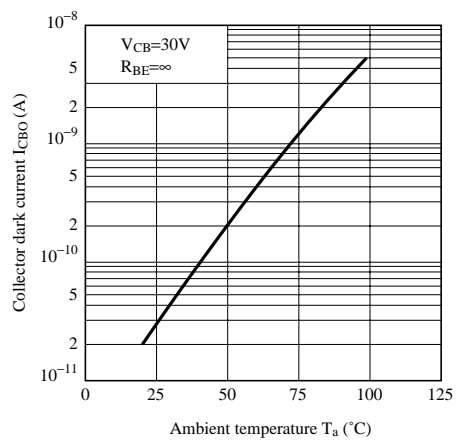


Fig.11 Response Time vs. Load Resistance

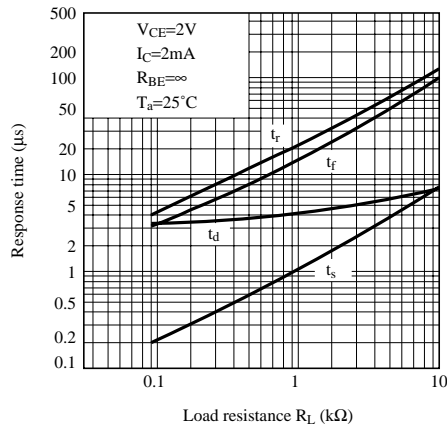


Fig.12 Test Circuit for Response Time

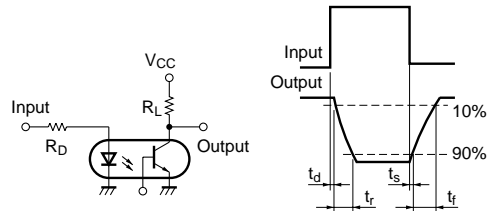


Fig.13 Frequency Response

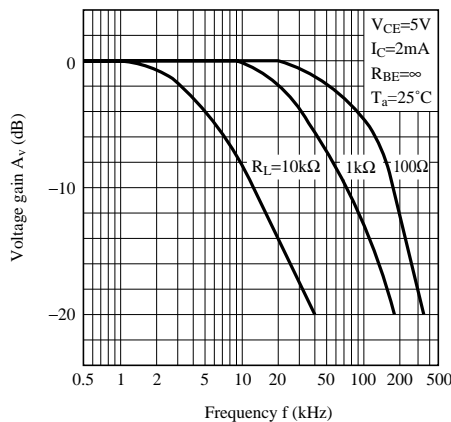
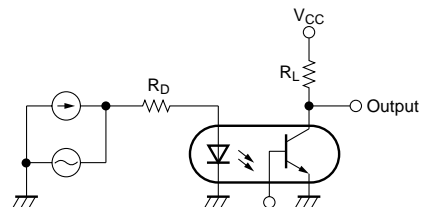


Fig.14 Test Circuit for Frequency Response



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