

PC716V0YSZX Datasheet



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DiGi Electronics Part Number	PC716V0YSZX-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	PC716V0YSZX
Description	OPTOISOLTR 5KV DARLINGTON 6-DIP
Detailed Description	Optoisolator Darlington Output 5000Vrms 1 Channel 6-DIP

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Manufacturer Product Number:

PC716V0YSZX

Series:

-

Number of Channels:

1

Current Transfer Ratio (Min):

-

Turn On / Turn Off Time (Typ):

-

Input Type:

DC

Voltage - Output (Max):

35V

Voltage - Forward (Vf) (Typ):

1.2V

Vce Saturation (Max):

1.2V

Mounting Type:

Through Hole

Supplier Device Package:

6-DIP

Manufacturer:

Sharp Microelectronics

Product Status:

Obsolete

Voltage - Isolation:

5000Vrms

Current Transfer Ratio (Max):

-

Rise / Fall Time (Typ):

130µs, 60µs

Output Type:

Darlington

Current - Output / Channel:

200mA

Current - DC Forward (If) (Max):

50 mA

Operating Temperature:

-25°C ~ 100°C

Package / Case:

6-DIP (0.300", 7.62mm)

Environmental & Export classification

RoHS Status:

RoHS non-compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

1 (Unlimited)

HTSUS:

8541.49.8000

PC716V0NSZX/ PC716V0YSZX

■ Features

1. High collector current (I_c:MAX. 200mA)
2. High sensitivity (CTR:MIN. 1 000%)
3. Isolation voltage (Viso (rms):5kV)
4. Recognized by UL, file No.E64380
Approved by TÜV (VDE0884)(PC716V0YSZX)
5. 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)
PC716V0NSZX	○	—
PC716V0YSZX	○	○

* Application Model No. PC716V

■ 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	200	mA
	Collector power dissipation	P _C	300	mW
	Total power dissipation	P _{tot}	350	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≤100μs, Duty ratio=0.001

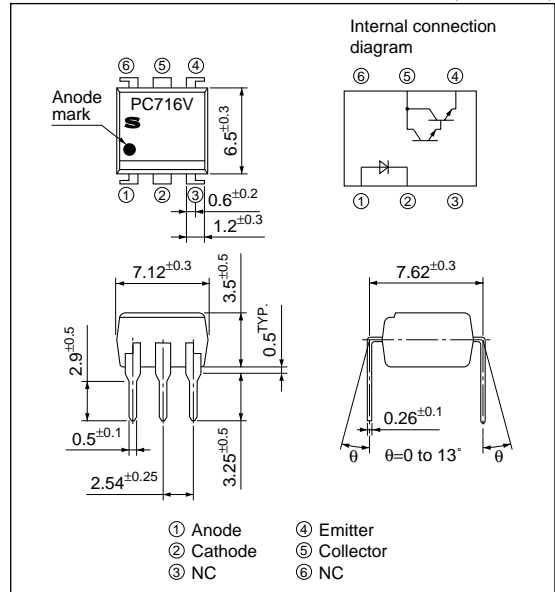
*2 40 to 60%RH, AC for 1 min

*3 For 10 s

High Sensitivity and High Collector Current Type Photocoupler

■ Outline Dimensions

(Unit : mm)



■ Electro-optical Characteristics

(T_a=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	—	—	3.0	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} =10V, I _F =0	—	—	10 ⁻⁶	A
Transfer characteristics	Collector current	I _C	I _F =1mA, V _{CE} =2V	10	60	150	mA
	Collector-emitter saturation voltage	V _{CE(sat)}	I _F =20mA, I _C =10mA	—	—	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 =10mA, R _L =100Ω, -3dB	—	3	—	kHz
	Response time	Rise time	t _r	V _{CE} =2V, I _C =20mA R _L =100Ω	—	130	400
Fall time		t _f	—		60	350	μs

Fig.1 Forward Current vs. Ambient Temperature

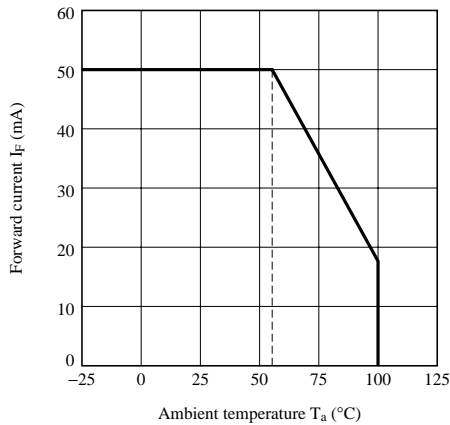


Fig.2 Collector Power Dissipation vs. Ambient Temperature

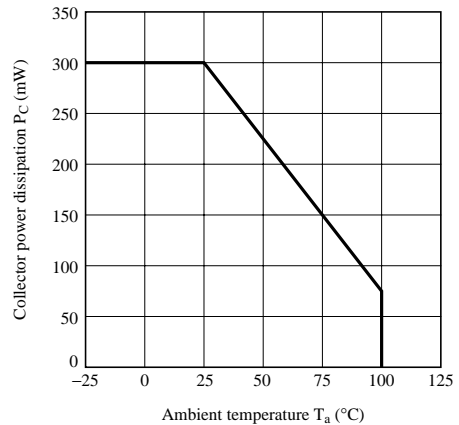


Fig.3 Peak Forward Current vs. Duty Ratio

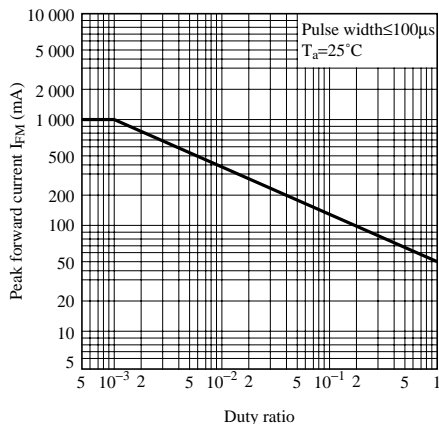


Fig.4 Forward Current vs. Forward Voltage

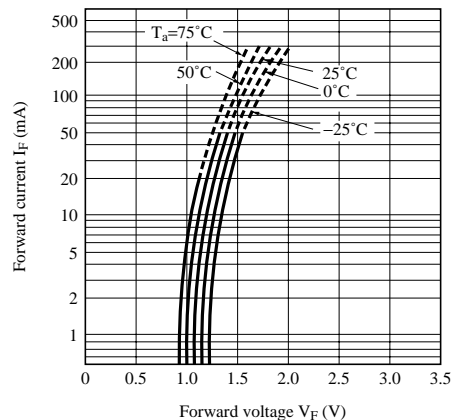


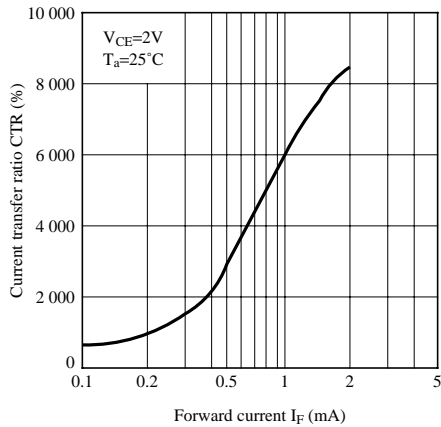
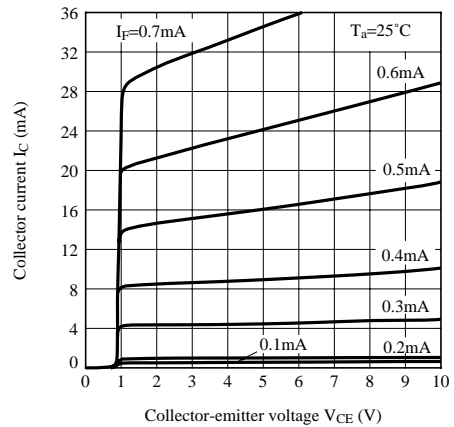
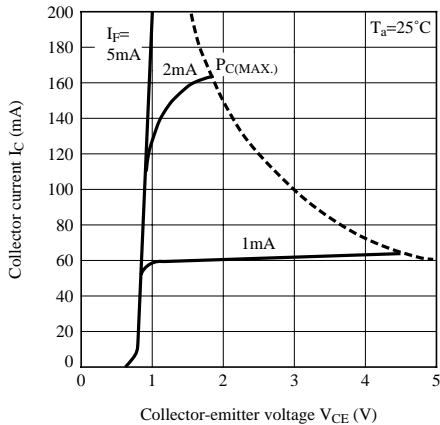
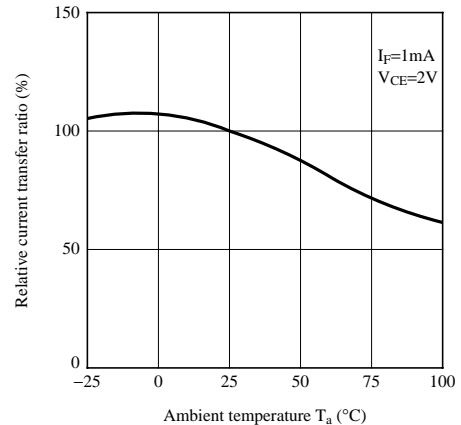
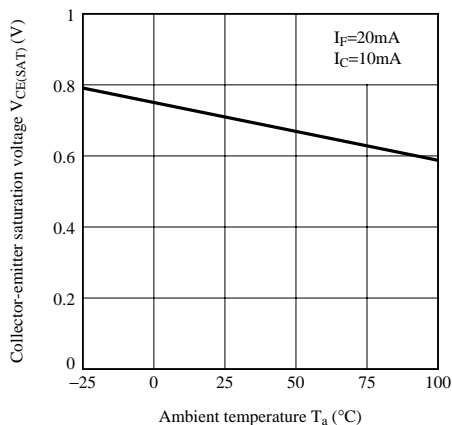
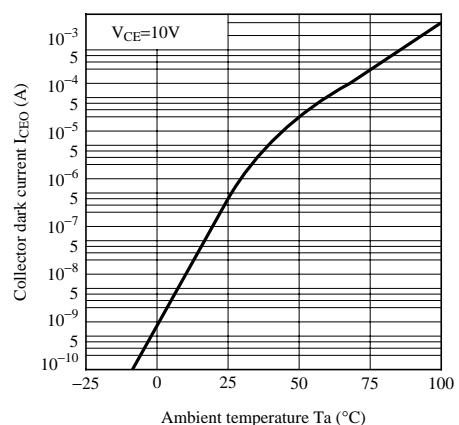
Fig.5 Current Transfer Ratio vs. Forward Current**Fig.6 Collector Current vs. Collector-emitter Voltage****Fig.7 Collector Current vs. Collector-emitter Voltage****Fig.8 Relative Current Transfer Ratio vs. Ambient Temperature****Fig.9 Collector - emitter Saturation Voltage vs. Ambient Temperature****Fig.10 Collector Dark Current vs. Ambient Temperature**

Fig.11 Response Time vs. Load Resistance

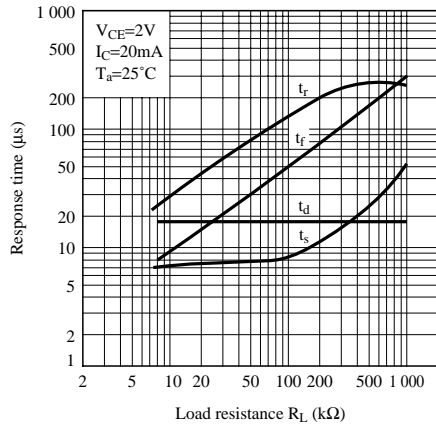


Fig.13 Frequency Response

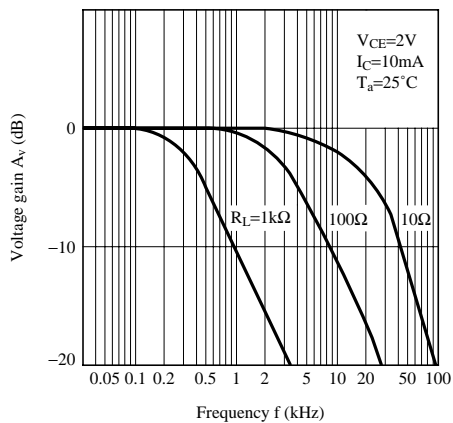


Fig.12 Test Circuit for Response Time

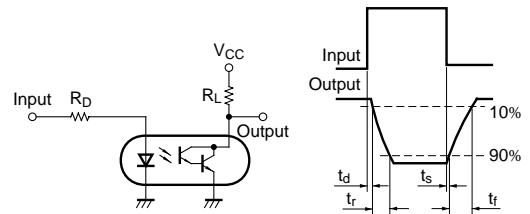
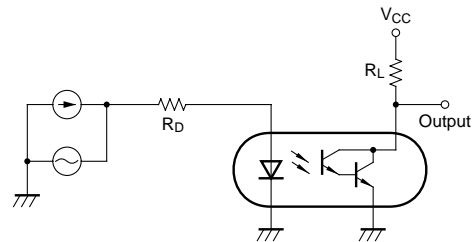


Fig.14 Test Circuit for Frequency Response



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