

# PC733 Datasheet



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DiGi Electronics Part Number	PC733-DG
Manufacturer	<a href="#">Sharp Microelectronics</a>
Manufacturer Product Number	PC733
Description	OPTOISO 5KV TRANS W/BASE 6DIP
Detailed Description	Optoisolator Transistor with Base Output 5000Vrms 1 Channel 6-DIP

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## Purchase and inquiry

Manufacturer Product Number:

PC733

Series:

-

Number of Channels:

1

Current Transfer Ratio (Min):

15% @ 1mA

Turn On / Turn Off Time (Typ):

-

Input Type:

AC, DC

Voltage - Output (Max):

35V

Voltage - Forward (Vf) (Typ):

1.2V

Vce Saturation (Max):

200mV

Mounting Type:

Through Hole

Supplier Device Package:

6-DIP

Manufacturer:

Sharp Microelectronics

Product Status:

Obsolete

Voltage - Isolation:

5000Vrms

Current Transfer Ratio (Max):

300% @ 1mA

Rise / Fall Time (Typ):

4 $\mu$ s, 3 $\mu$ s

Output Type:

Transistor with Base

Current - Output / Channel:

50mA

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

# PC733

## AC Input Type Photocoupler

※ Lead forming type (I type) is also available. (PC733I)

### ■ Features

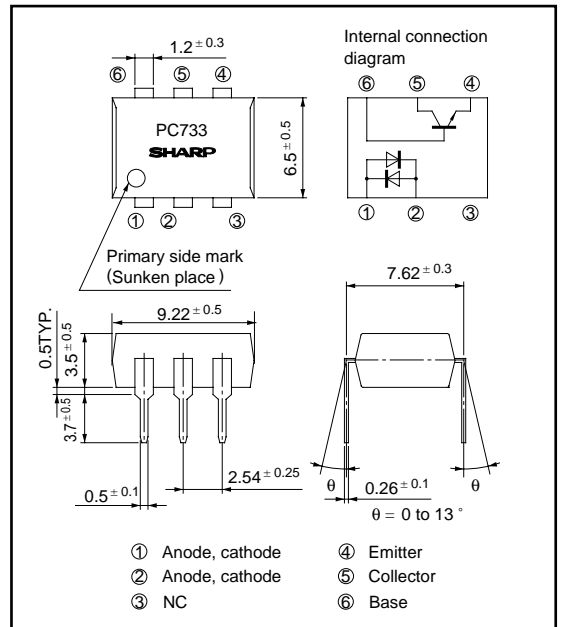
1. AC input response
2. High isolation voltage between input and output ( $V_{iso} : 5\,000V_{rms}$ )
3. Current transfer ratio  
CTR : MIN. 15% at  $I_F = \pm 1mA$ ,  $V_{CE} = 5V$
4. Low collector dark current  
( $I_{CEO} : MAX. 10^{-7}A$  at  $V_{CE} = 20V$ )
5. TTL compatible output
6. Recognized by UL, file No. E64380

### ■ Applications

1. Telephone sets
2. Programmable controllers
3. System appliances, measuring instruments
4. Signal transmission between circuits of different potentials and impedances

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

( $T_a = 25^\circ C$ )

Parameter		Symbol	Rating	Unit
Input	Forward current	$I_F$	$\pm 50$	mA
	*1 Peak forward current	$I_{FM}$	$\pm 1$	A
	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	$V_{iso}$	5 000	Vrms	
Operating temperature	$T_{opr}$	- 25 to + 100	$^\circ C$	
Storage temperature	$T_{stg}$	- 40 to + 125	$^\circ C$	
*3 Soldering temperature	$T_{sol}$	260	$^\circ C$	

\*1 Pulse width  $\leq 100\mu s$ , Duty ratio : 0.001

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

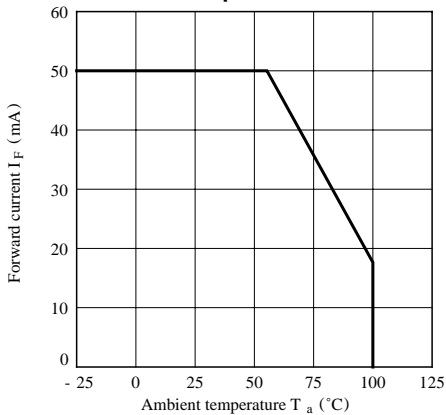
\*3 For 10 seconds

## ■ Electro-optical Characteristics

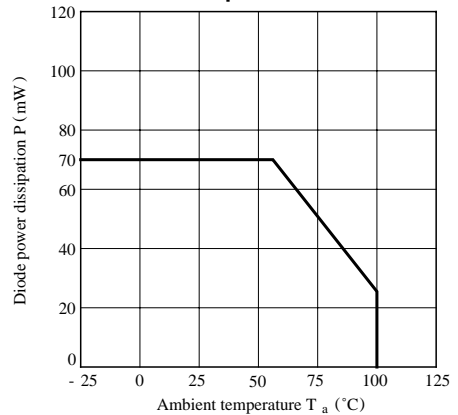
(T<sub>a</sub> = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> = ± 20mA	-	1.2	1.4	V	
	Peak forward voltage	V <sub>FM</sub>	I <sub>FM</sub> = ± 0.5A	-	-	3.0	V	
	Terminal capacitance	C <sub>t</sub>	V = 0, f = 1kHz	-	50	400	pF	
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> = 20V, I <sub>F</sub> = 0	-	-	10 <sup>-7</sup>	A	
Transfer characteristics	Current transfer ratio	CTR	I <sub>F</sub> = ± 1mA, V <sub>CE</sub> = 5V	15	-	300	%	
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> = ± 20mA, I <sub>C</sub> = 1mA	-	0.1	0.2	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	Response time	f <sub>c</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA, R <sub>L</sub> = 100Ω, -3dB	15	80	-	kHz
			Rise time	t <sub>r</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 2mA	-	4	18
	Fall time	t <sub>f</sub>	R <sub>L</sub> = 100Ω	-	3	18	μs	

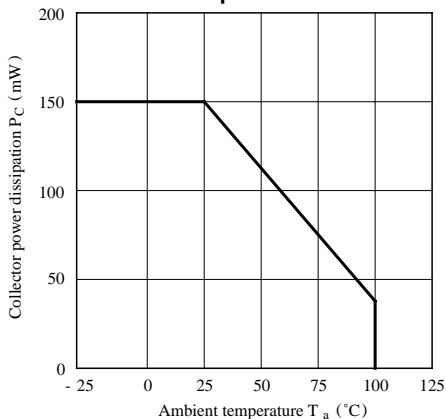
**Fig. 1 Forward Current vs. Ambient Temperature**



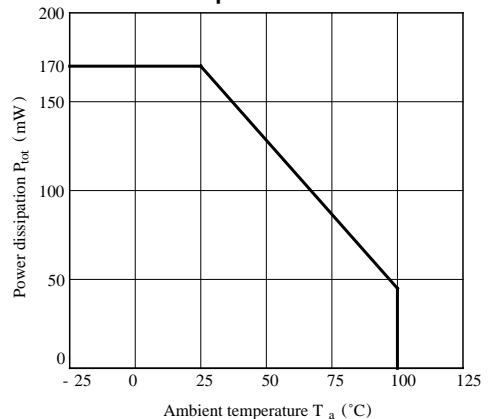
**Fig. 2 Diode Power Dissipation vs. Ambient Temperature**



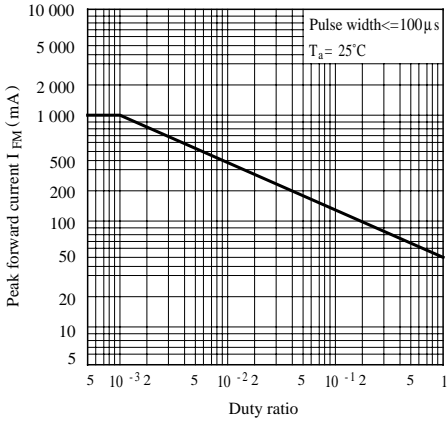
**Fig. 3 Collector Power Dissipation vs. Ambient Temperature**



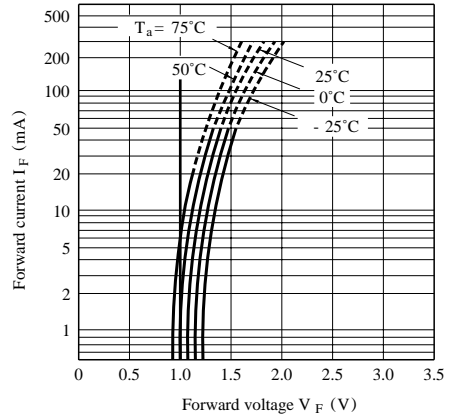
**Fig. 4 Power Dissipation vs. Ambient Temperature**



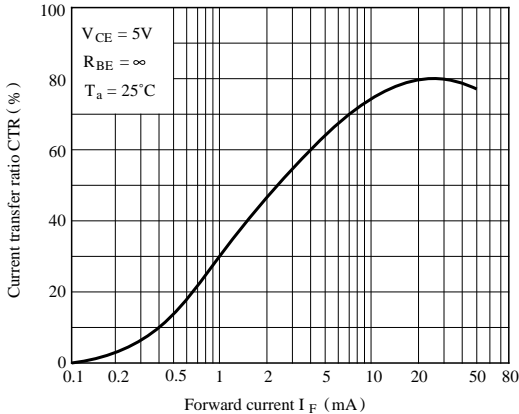
**Fig. 5 Peak Forward Current vs. Duty Ratio**



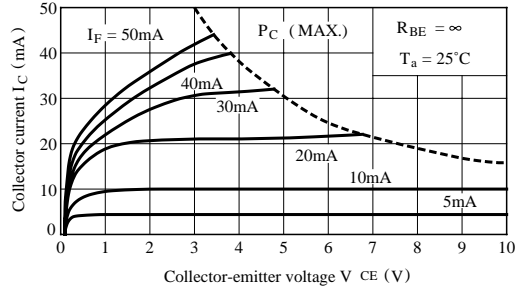
**Fig. 6 Forward Current vs. Forward Voltage**



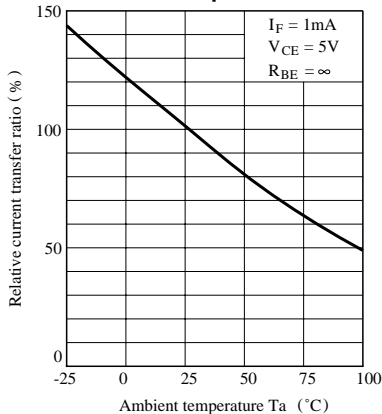
**Fig. 7 Current Transfer Ratio vs. Forward Current**



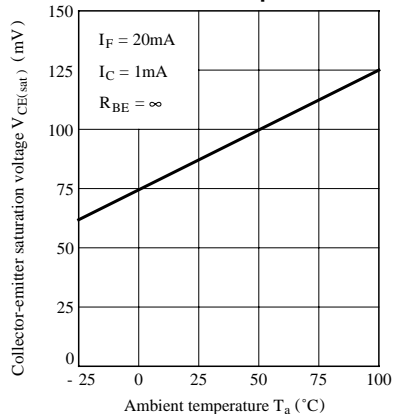
**Fig. 8 Collector Current vs. Collector-emitter Voltage**



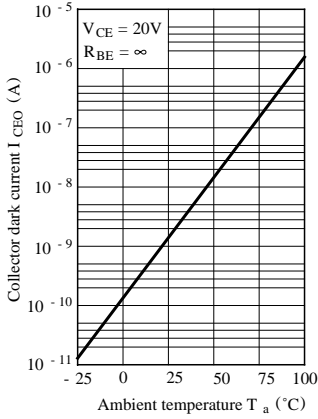
**Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature**



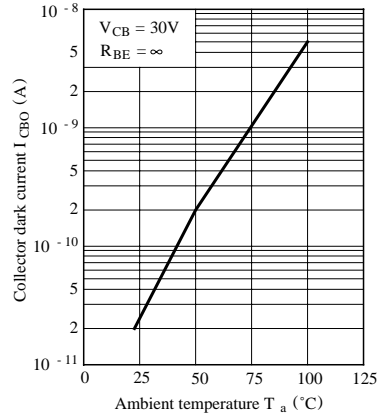
**Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature**



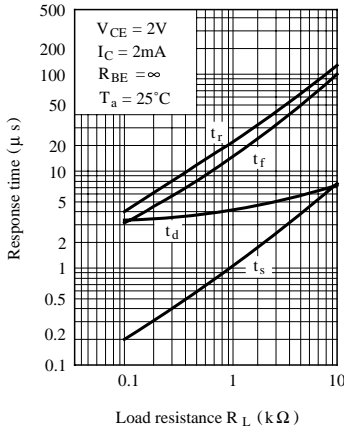
**Fig.11-a Collector Dark Current vs. Ambient Temperature**



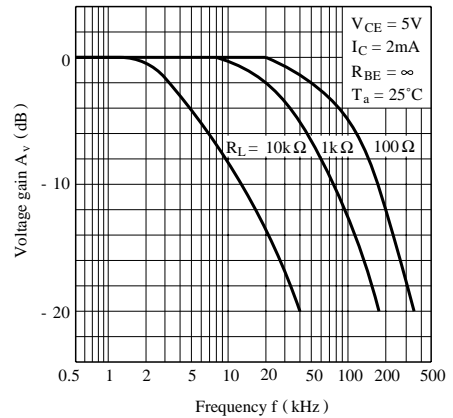
**Fig.11-b Collector-base Dark Current vs. Ambient Temperature**



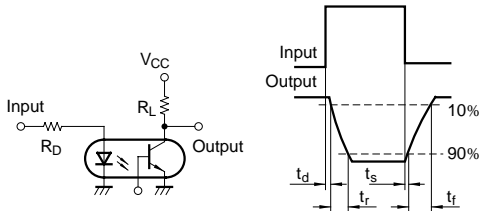
**Fig.12 Response Time vs. Load Resistance**



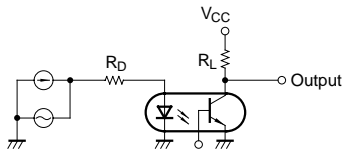
**Fig.13 Frequency Response**



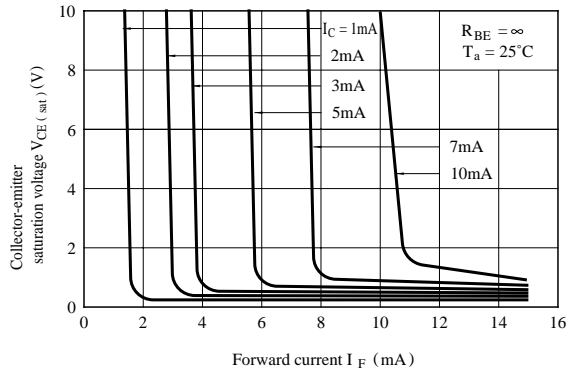
**Test Circuit for Response Time**



**Test Circuit for Frequency Response**



**Fig.14 Collector-emitter Saturation Voltage vs. Forward Current**



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