

PC3H4/PC3Q64Q

Mini-falt Package AC Input Type Half Pitch Photocoupler

■ Features

1. AC input type
2. Half pitch type (lead pitch : 1.27mm)
3. Isolation voltage between input and output
(Viso: 2 500Vrms)
4. Applicable to infrared ray reflow
(230°C, for MAX. 30s)
5. High reliability
6. Taping package
PC3H4 (1ch), **PC3Q64Q** (4ch)
7. Recognized by UL, file No. E64380
Approved by VDE, No.5922UG

■ Applications

1. Programmable controllers

■ Package Specifications

Model No.	Taping specifications
PC3H4	Taping reel diameter 330mm (3 000pcs.)
PC3Q64Q	Taping reel diameter 330mm (1 000pcs.)

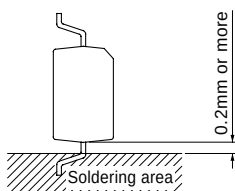
■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I _F	±50	mA
	*1Peak forward current	I _{FM}	±1	A
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V _{CEO}	70	V
	PC3H4	V _{CEO}	35	V
	PC3Q64Q	V _{CEO}	6	V
	Collector current	I _C	50	mA
	Collector power dissipation	P _C	150	mW
	Total power dissipation	P _{tot}	170	mW
	*2Isolation voltage	V _{iso}	2.5	kV _{rms}
	Operating temperature	T _{opr}	-30 to +100	°C
	Storage temperature	T _{stg}	-40 to +125	°C
	*3Soldering temperature	T _{sol}	260	°C

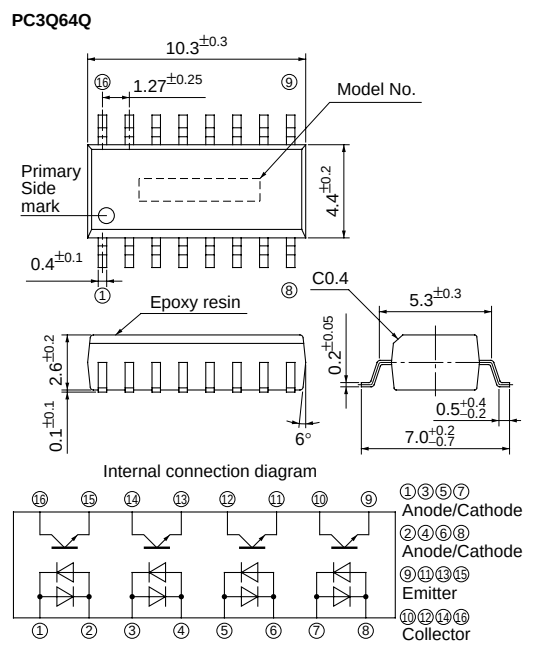
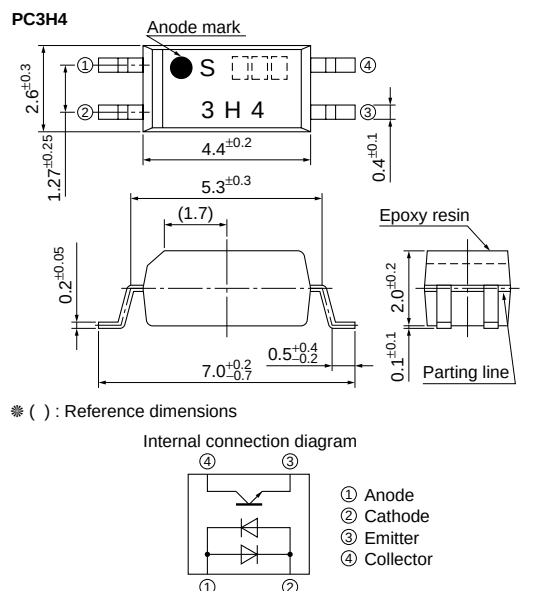
*1 Pulse width≤100μs, Duty ratio : 0.001

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

*3 For 10s



■ 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
	Terminal capacitance		C _t	V=0, f=1kHz	—	30	250	pF
Output	Collector dark current	PC3H4	I _{CEO}	V _{CE} =50V, I _F =0	—	—	100	nA
		PC3Q64Q	I _{CEO}	V _{CE} =20V, I _F =0	—	—	100	nA
	Collector-emitter breakdown voltage	PC3H4	BV _{CEO}	I _C =0.1mA, I _F =0	70	—	—	V
		PC3Q64Q	BV _{CEO}	I _C =0.1mA, I _F =0	35	—	—	V
	Emitter-collector breakdown voltage		BV _{ECO}	I _E =10μA, I _F =0	6	—	—	V
Transfer characteristics	Collector current		I _C	I _F =±1mA V _{CE} =5V	0.2	—	4.0	mA
	Collector-emitter saturation voltage		V _{CE(sat)}	I _F =±20mA I _C =1mA	—	0.1	0.2	V
	Isolation resistance		R _{ISO}	DC500V 40 to 60%RH	5×10 ¹⁰	1×10 ¹¹	—	Ω
	Floating capacitance		C _f	V=0, f=1MHz	—	0.6	1.0	pF
	Response time	Rise time	t _r	V _{CE} =2V I _C =2mA R _L =100Ω	—	4	18	μs
		Fall time	t _f		—	3	18	μs

Fig.1 Forward Current vs. Ambient Temperature

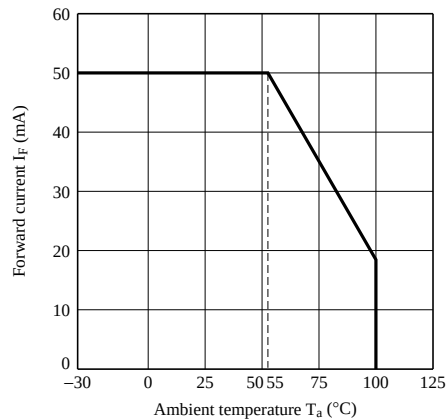


Fig.2 Diode Power Dissipation vs. Ambient Temperature

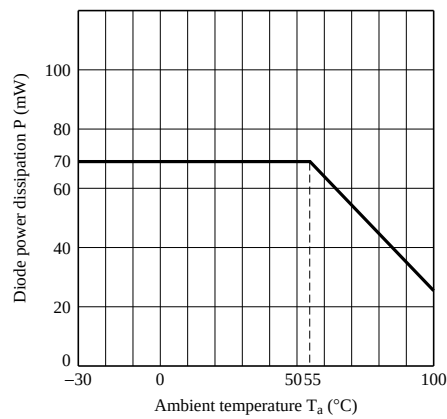


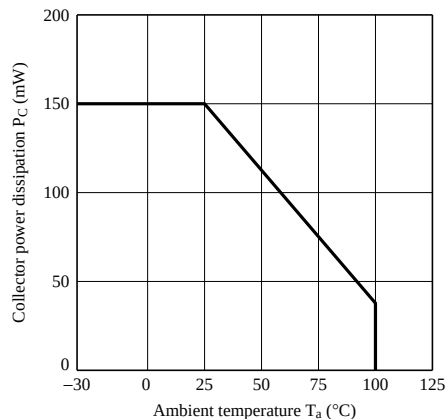
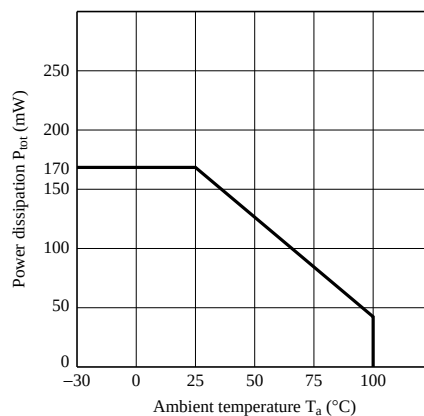
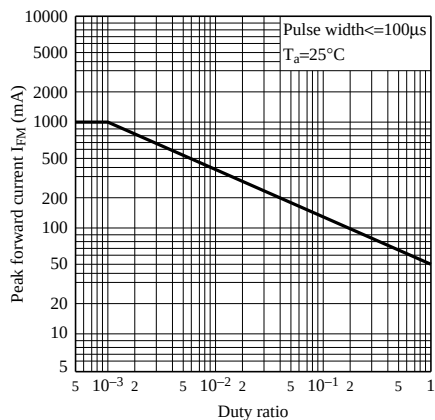
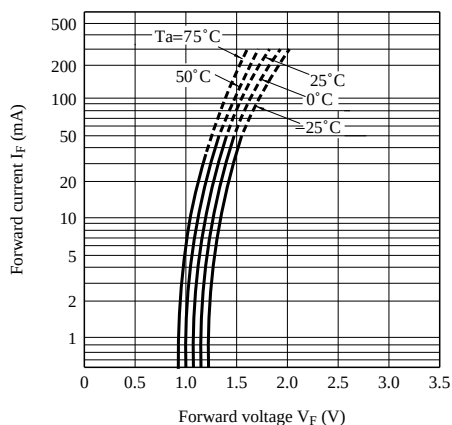
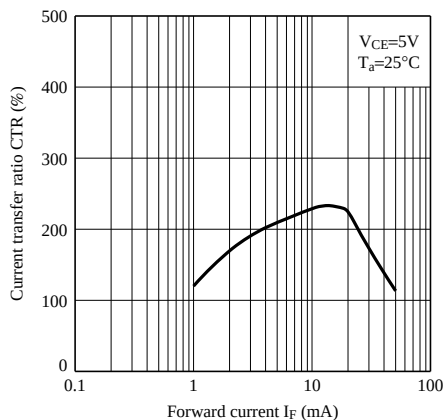
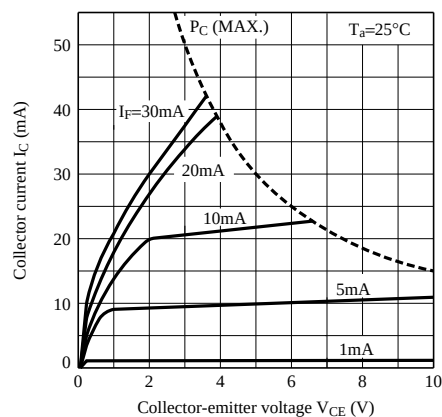
Fig.3 Collector Power Dissipation vs. Ambient Temperature**Fig.4 Total Power Dissipation vs. Ambient Temperature****Fig.5 Peak Forward Current vs. Duty Ratio****Fig.6 Forward Current vs. Forward Voltage****Fig.7 Current Transfer Ratio vs. Forward Current****Fig.8 Collector Current vs. Collector-emitter Voltage**

Fig.9 Relative Current Transfer Ratio vs. Ambient Temperature

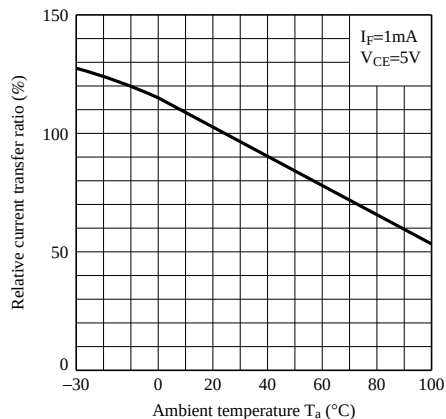


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature

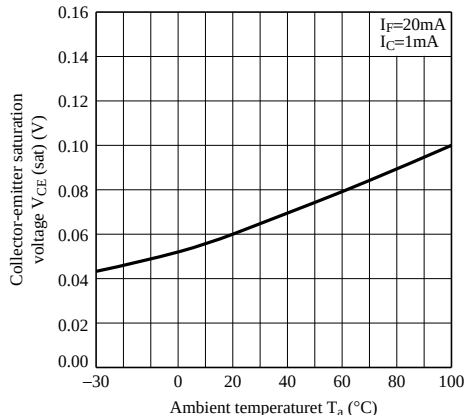


Fig.11 Collector Dark Current vs. Ambient Temperature

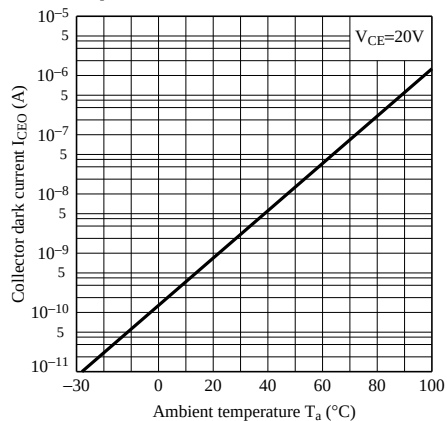


Fig.12 Response Time vs. Load Resistance

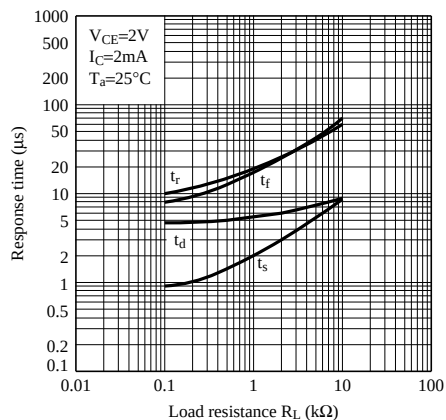


Fig.13 Test Circuit For Response Time

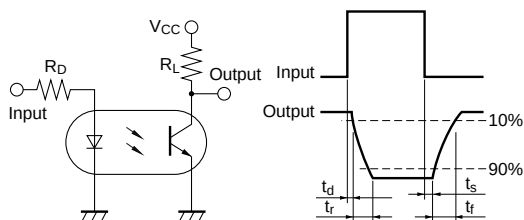


Fig.14 Collector-emitter Saturation Voltage vs. Forward Current

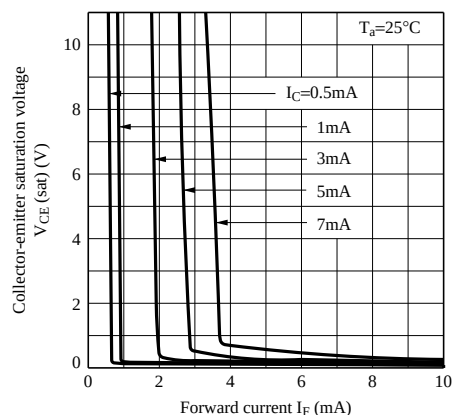
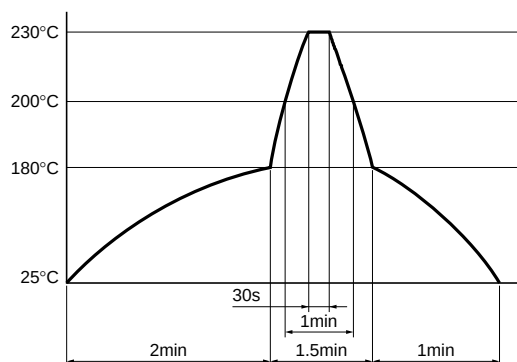


Fig.5 Reflow Soldering

Only one time soldering is recommended within the temperature profile shown below.



■ Precautions for Use

Please refer to the chapter "Precautions for Use".