

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.)

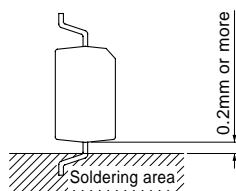
■ Absolute Maximum Ratings (Ta=25°C)

	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}	35	V
	Emitter-collector voltage	V _{ECO}	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

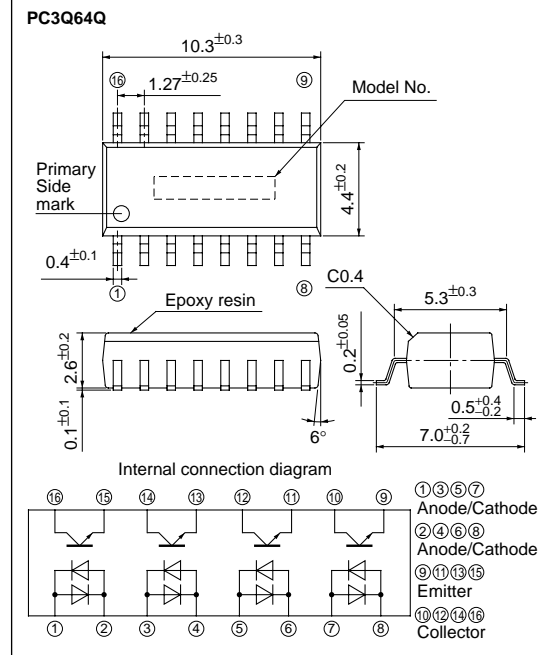
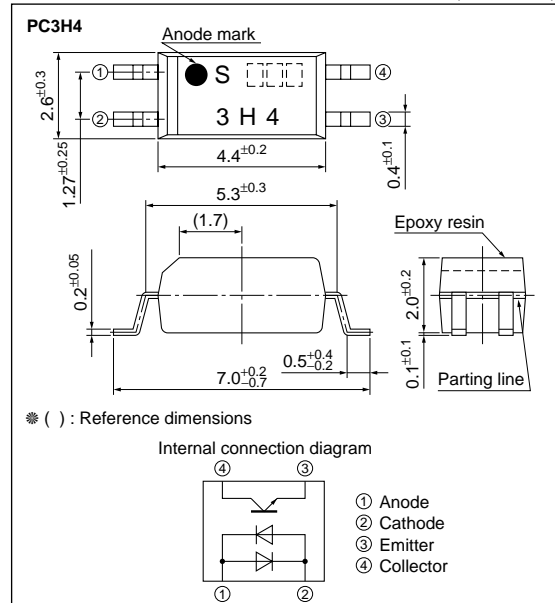
*2 AC for 1min, 40 to 60%RH, f=60Hz

*3 For 10s



■ Outline Dimensions

(Unit : mm)



Electro-optical Characteristics

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

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F=\pm 20\text{mA}$	-	1.2	1.4	V
	Terminal capacitance	C_t	$V=0, f=1\text{kHz}$	-	30	250	pF
Output	Collector dark current	PC3H4	$V_{CE}=50\text{V}, I_F=0$	-	-	100	nA
		PC3Q64Q	$V_{CE}=20\text{V}, I_F=0$	-	-	100	nA
	Collector-emitter breakdown voltage	PC3H4	$I_C=0.1\text{mA}, I_F=0$	70	-	-	V
		PC3Q64Q	$I_C=0.1\text{mA}, I_F=0$	35	-	-	V
Emitter-collector breakdown voltage	BV_{ECO}	$I_E=10\mu\text{A}, I_F=0$	6	-	-	V	
Transfer characteristics	Collector current	I_C	$I_F=\pm 1\text{mA}$ $V_{CE}=5\text{V}$	0.2	-	4.0	mA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=\pm 20\text{mA}$ $I_C=1\text{mA}$	-	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	$V=0, f=1\text{MHz}$	-	0.6	1.0	pF
	Response time	Rise time	t_r	$V_{CE}=2\text{V}$ $I_C=2\text{mA}$ $R_L=100\Omega$	-	4	18
Fall time		t_f		-	3	18	μs

Fig.1 Forward Current vs. Ambient Temperature

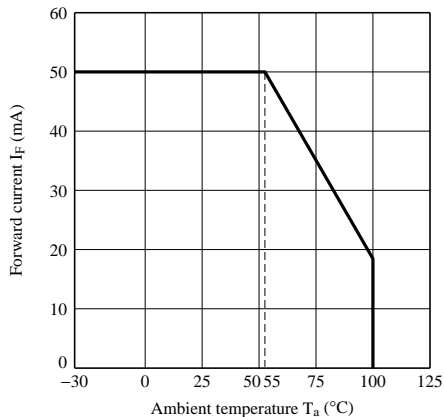


Fig.2 Diode Power Dissipation vs. Ambient Temperature

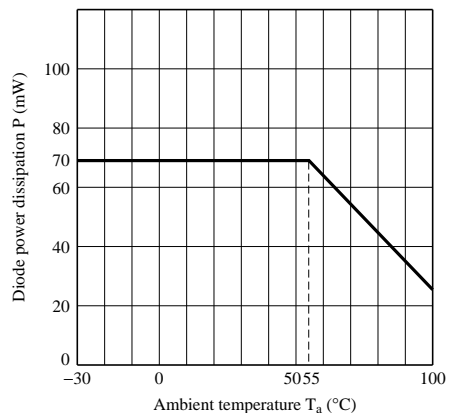


Fig.3 Collector Power Dissipation vs. Ambient Temperature

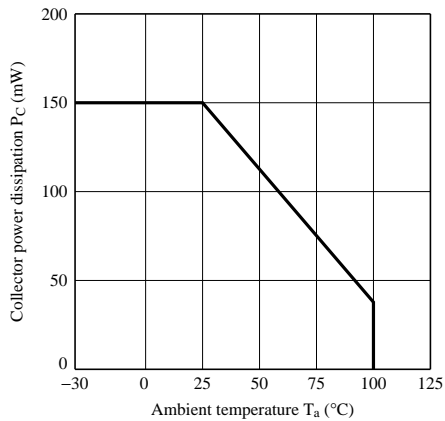


Fig.4 Total Power Dissipation vs. Ambient Temperature

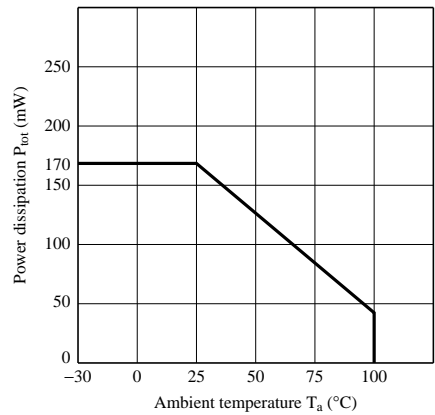


Fig.5 Peak Forward Current vs. Duty Ratio

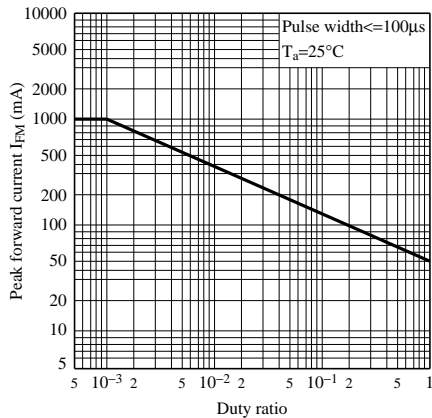


Fig.6 Forward Current vs. Forward Voltage

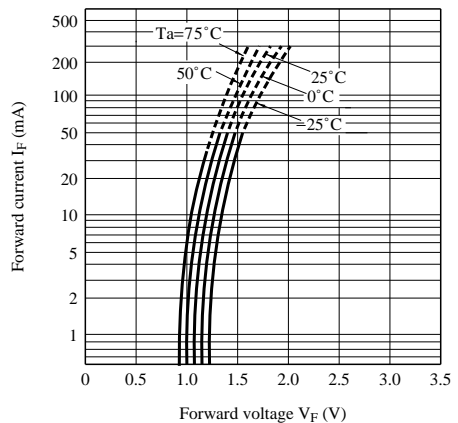


Fig.7 Current Transfer Ratio vs. Forward Current

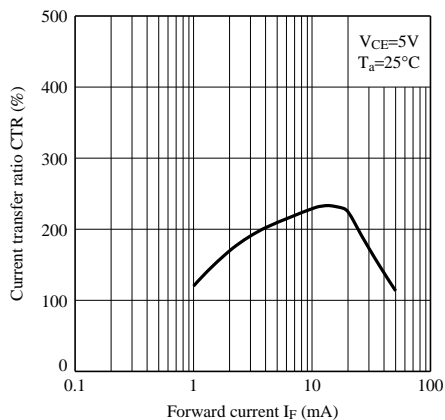


Fig.8 Collector Current vs. Collector-emitter Voltage

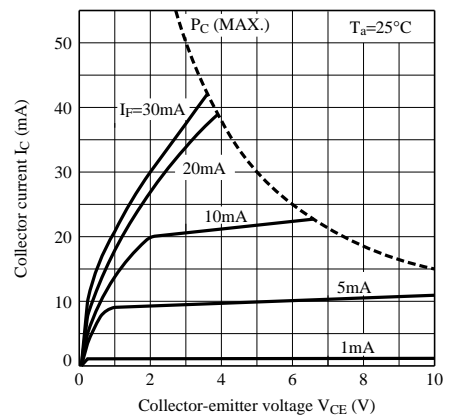


Fig.9 Relative Current Transfer Ratio vs. Ambient Temperature

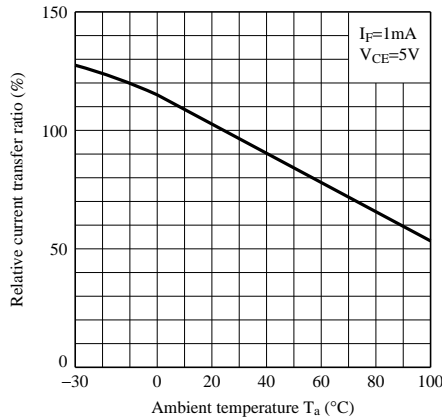


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature

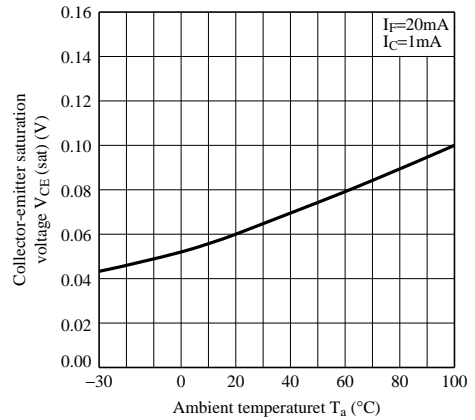


Fig.11 Collector Dark Current vs. Ambient Temperature

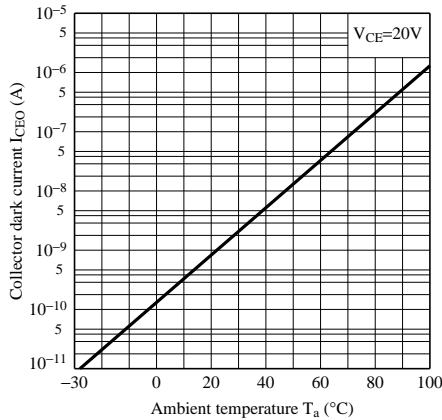


Fig.12 Response Time vs. Load Resistance

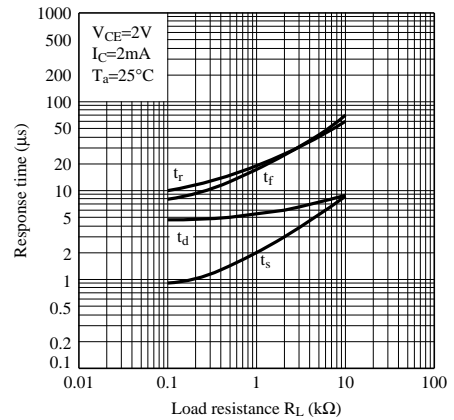


Fig.13 Test Circuit For Response Time

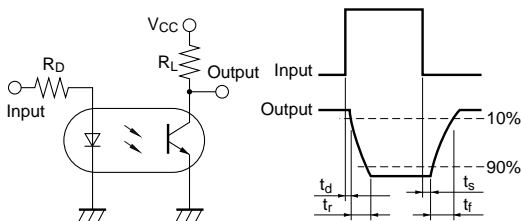


Fig.14 Collector-emitter Saturation Voltage vs. Forward Current

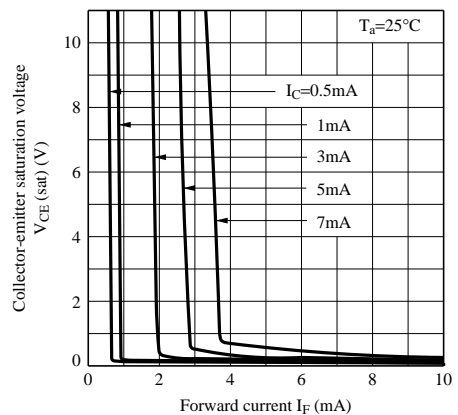
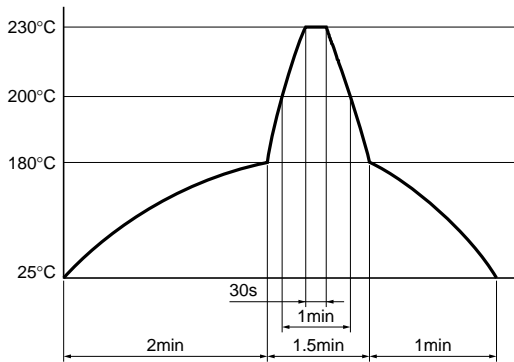


Fig.5 Reflow Soldering

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



■ Precautions for Use

Please refer to the chapter "Precautions for Use".