

# PC3Q67/PC3Q67Q

## Mini-flat Package, General Purpose Half Pitch Photocoupler

### ■ Features

1. Mini-flat package
2. Half pitch type (lead pitch : 1.27mm)  
(Mounting area : 40% smaller than PC3Q17)
3. Isolation voltage :  $V_{iso} : 2\ 500V_{rms}$
4. Applicable to infrared ray reflow  
(230°C, For MAX. 30seconds)
5. High reliability (PC3Q67Q)

### ■ Applications

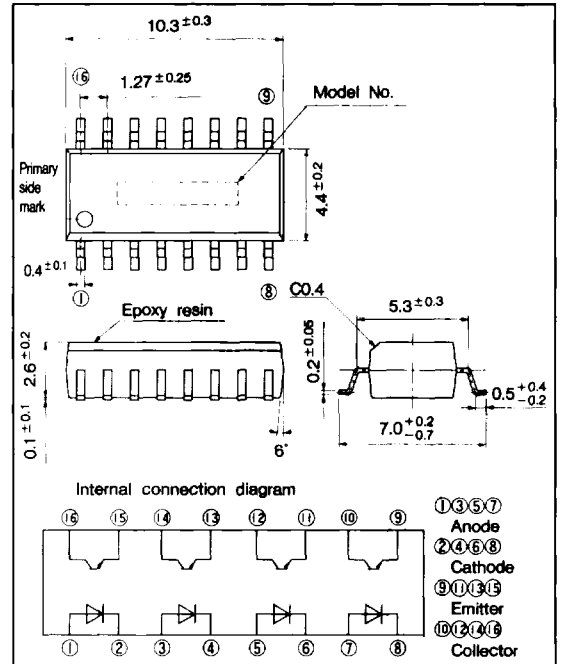
1. Programmable controllers

### ■ Package Specifications

Model No.	Taping specifications
PC3Q66/ PC3Q66Q	Taping reel diameter 330mm (1 000pcs.)

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

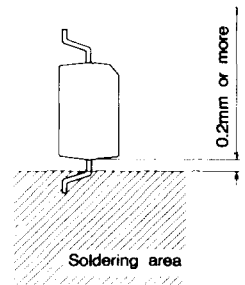
( $T_a = 25^\circ C$ )

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	$V_{CED}$	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
	*2 Isolation voltage	$V_{iso}$	2.5	kV <sub>rms</sub>
	Operating temperature	$T_{opr}$	-30 to +100	°C
Storage temperature	$T_{stg}$	-40 to +125	°C	
*3 Soldering temperature	$T_{sol}$	260	°C	

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

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

\*3 For 10 seconds



■ Electro-optical Characteristics

(T<sub>a</sub> = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward current	V <sub>F</sub>	I <sub>F</sub> = 20mA	—	1.2	1.4	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> = 4V	—	—	10	μA
	Terminal capacitance	C <sub>t</sub>	V = 0, f = 1kHz	—	30	250	pF
Output	Collector dark current	I <sub>CEO</sub>	V <sub>CE</sub> = 20V, I <sub>F</sub> = 0	—	—	100	nA
	Collector-emitter breakdown voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 0.1mA, I <sub>F</sub> = 0	35	—	—	V
	Emitter-collector breakdown voltage	BV <sub>ECO</sub>	I <sub>E</sub> = 10 μA, I <sub>F</sub> = 0	6	—	—	V
Transfer characteristics	Collector current	I <sub>C</sub>	I <sub>F</sub> = 5mA, V <sub>CE</sub> = 5V	2.5	5	30	mA
	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
	Response time	Rise time	t <sub>r</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> ≈ 2mA R <sub>L</sub> = 100Ω	—	4	18
Fall time		t <sub>f</sub>	—		3	18	μs

Fig. 1 Forward Current vs. Ambient Temperature

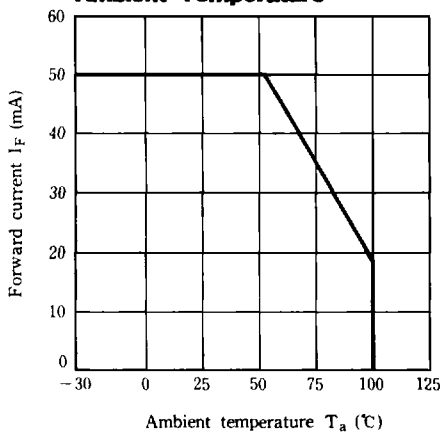
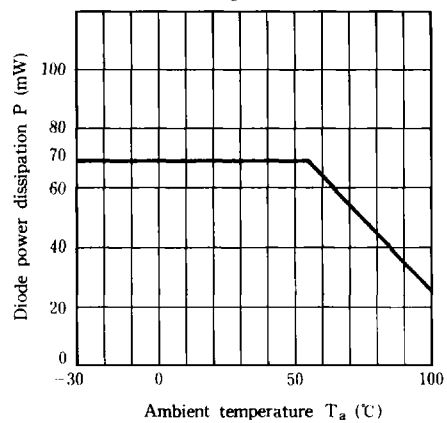
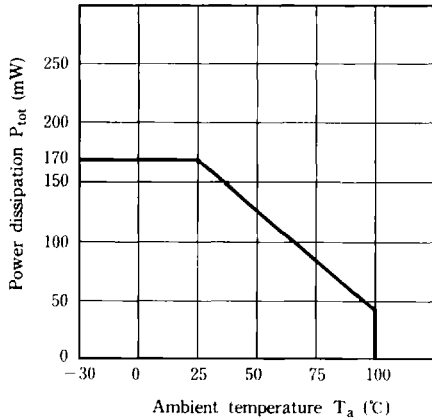


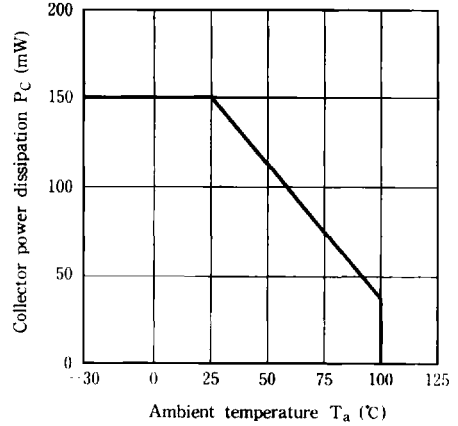
Fig. 2 Diode Power Dissipation vs. Ambient Temperature



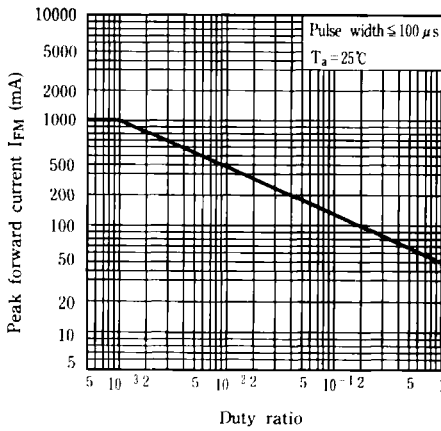
**Fig. 3 Power Dissipation vs. Ambient Temperature**



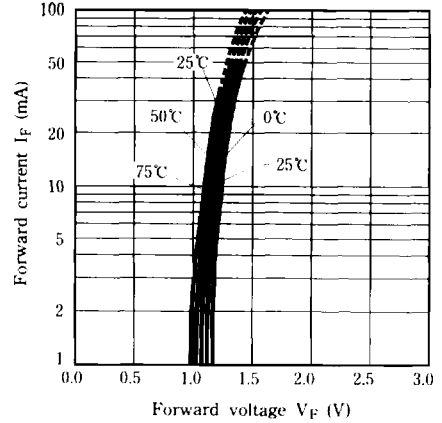
**Fig. 4 Collector Power Dissipation vs. Ambient Temperature**



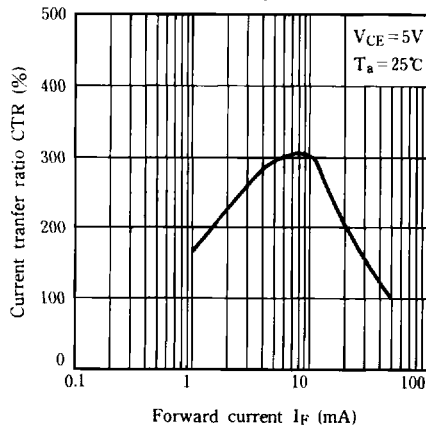
**Fig. 5 Peak Forward Current vs. Duty Ratio**



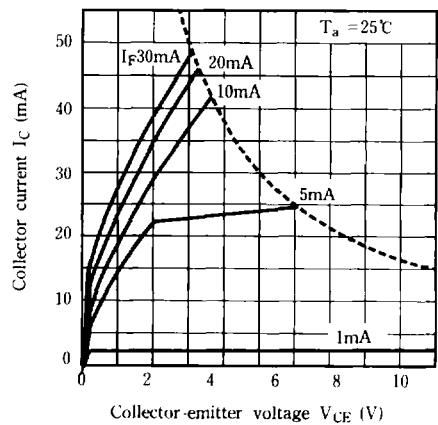
**Fig. 6 Forward Current vs. Forward Voltage**



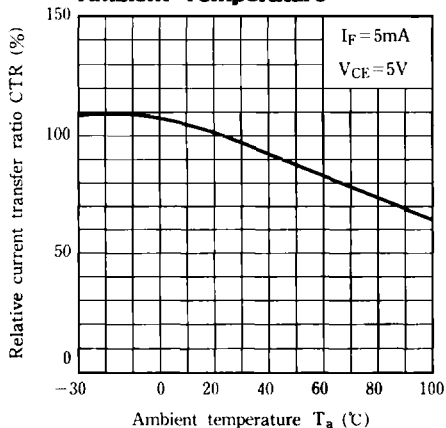
**Fig. 7 Current Transfer Ratio vs. Forward Current**



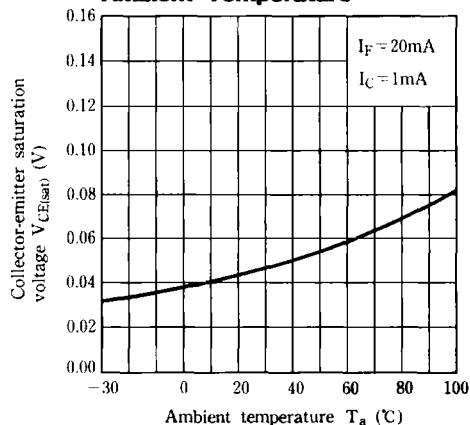
**Fig. 8 Collector Current vs. Collector-emitter Voltage**



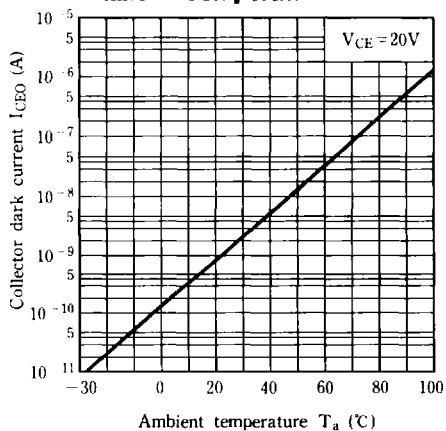
**Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature**



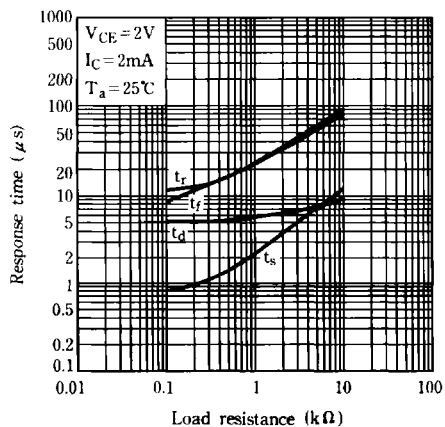
**Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature**



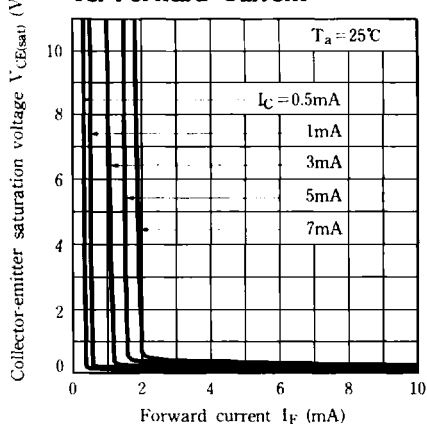
**Fig.11 Collector Dark Current vs. Ambient Temperature**



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



**Fig.13 Collector-emitter Saturation Voltage vs. Forward Current**



● Please refer to the chapter "Precautions for Use." (Page 78 to 93)

6 Photocouplers