

PC3Q66/PC3Q66Q

Mini-flat Package, High Collector-Emitter Voltage Type Half Pitch Photocoupler

Features

1. High collector-emitter voltage ($V_{CEO} : 80V$)
2. Half pitch type (lead pitch : 1.27mm)
(Mounting area : 40% smaller than **PC3Q16**)
3. Isolation voltage between input and output ($V_{iso} : 2\ 500V_{rms}$)
4. Applicable to infrared ray reflow (230°C for MAX. 30seconds)
5. High reliability (**PC3Q66Q**)

Applications

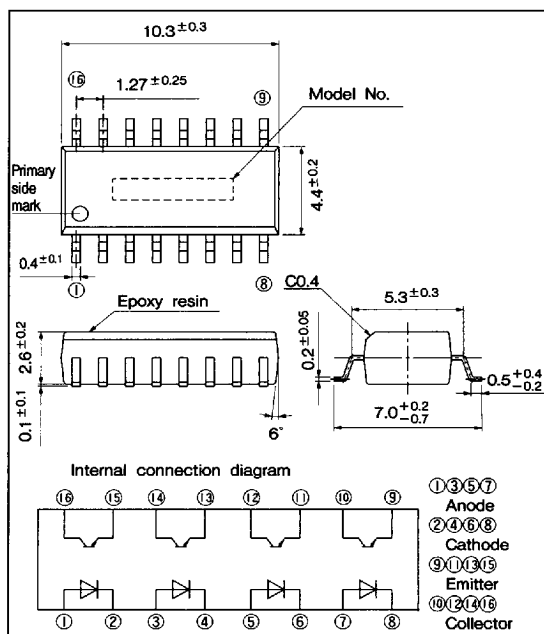
1. Programmable controllers

Package Specifications

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

Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

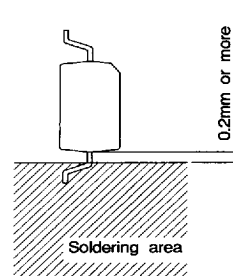
(Ta = 25°C)

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}	80	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 _{rms}
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 ≤ 100 μs, Duty ratio : 0.001

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

*3 For 10seconds



■ Electro-optical Characteristics

(Ta=25℃)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward current	V_F	$I_F=20\text{mA}$	—	1.2	1.4	V
	Reverse current	I_R	$V_R=4\text{V}$	—	—	10	μA
	Terminal capacitance	C_t	$V=0, f=1\text{kHz}$	—	30	250	pF
Output	Collector dark current	I_{CE0}	$V_{CE}=20\text{V}, I_F=0$	—	—	100	nA
	Collector-emitter breakdown voltage	BV_{CEO}	$I_C=0.1\text{mA}, I_F=0$	80	—	—	V
	Emitter-collector breakdown voltage	BV_{ECO}	$I_E=10\mu\text{A}, I_F=0$	6	—	—	V
Transfer charac- teristics	Collector current	I_C	$I_F=1\text{mA}, V_{CE}=5\text{V}$	1	—	4	mA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=20\text{mA}, I_C=1\text{mA}$	—	0.1	0.2	V
	Isolation resistance	R_{ISO}	DC500V 40 to 60%RH	5×10^{10}	10^{11}	—	Ω
	Floating capacitance	C_f	$V=0, f=1\text{MHz}$	—	0.6	1.0	pF
	Response time	Rise time	$V_{CE}=2\text{V}, I_C=2\text{mA}$	—	6	—	μs
		Fall time		—	8	—	μs

Fig. 1 Forward Current vs. Ambient Temperature

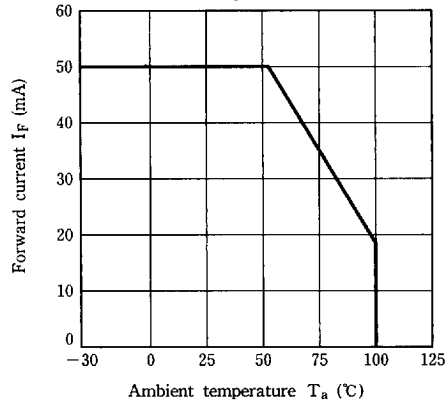


Fig. 2 Diode Power Dissipation vs. Ambient Temperature

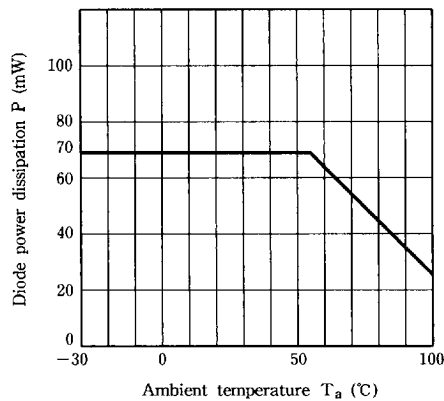


Fig. 3 Collector Power Dissipation vs. Ambient Temperature

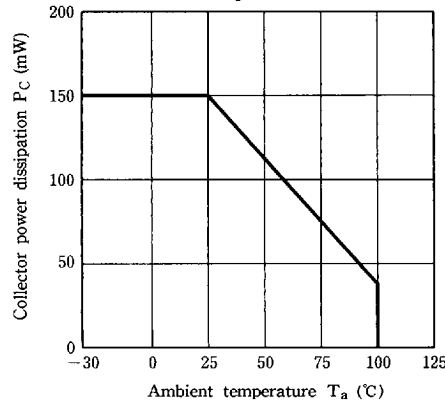


Fig. 4 Power Dissipation vs. Ambient Temperature

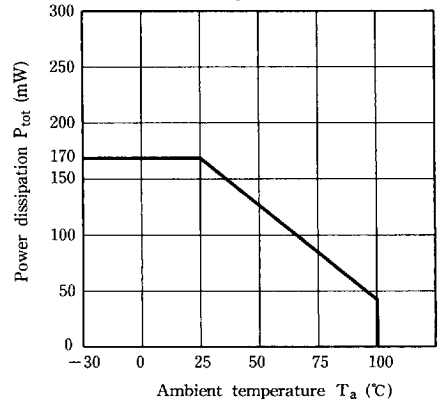


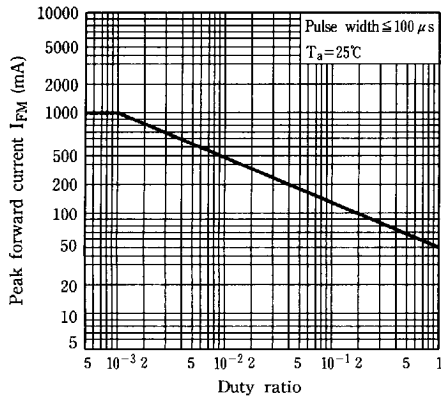
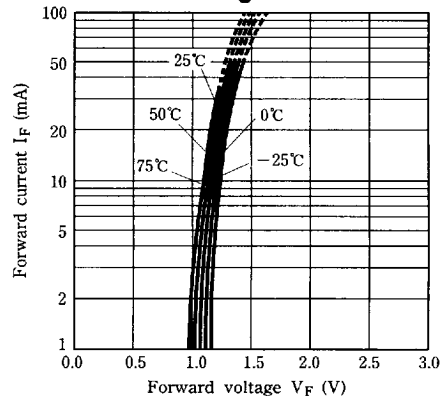
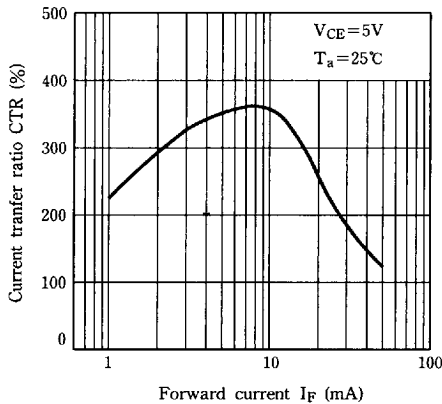
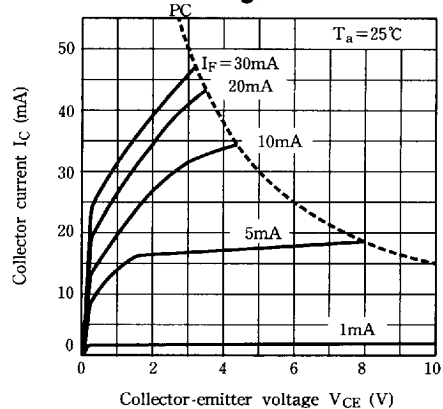
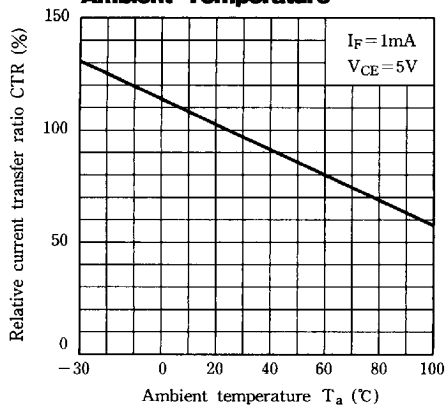
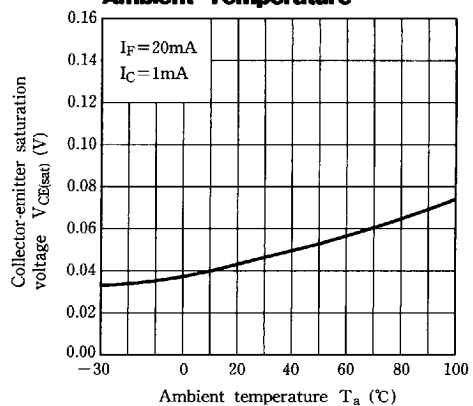
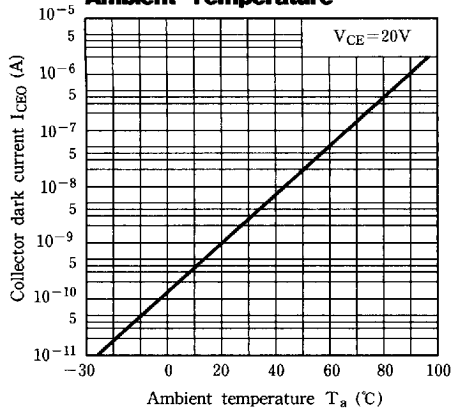
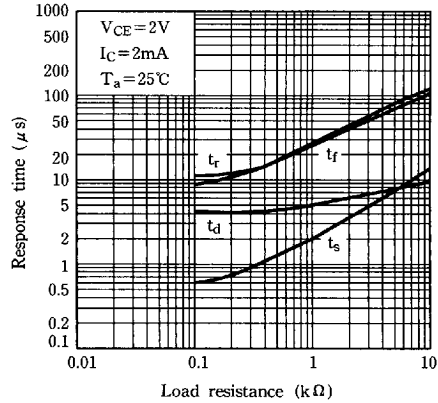
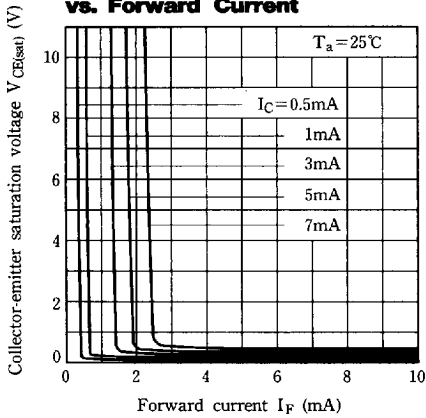
Fig. 5 Peak Forward Current vs. Duty Ratio**Fig. 6 Forward Current vs. Forward Voltage****Fig. 7 Current Transfer Ratio vs. Forward Current****Fig. 8 Collector Current vs. Collector-emitter Voltage****Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature****Fig. 10 Collector-emitter Saturation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

Fig.11 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).