

PC866 Series

Low Driving Current Type Photocoupler

■ Features

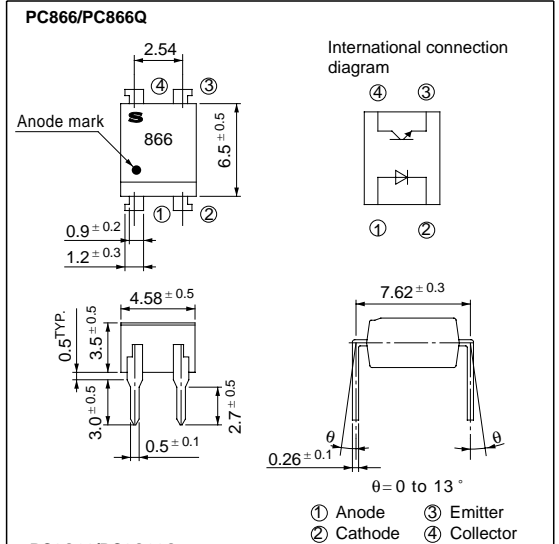
1. Low driving current (single Tr. output)
(CTR : MIN. 100 % at $I_F = 1\text{mA}$)
2. High collector-emitter voltage ($V_{CE0} : 80\text{V}$)
3. Isolation voltage between input and output
($V_{iso} : 5000\text{V}_{rms}$)
4. Also available burn-in type
(PC866Q / PC8D66Q / PC8Q66Q)

■ Applications

1. Telephone sets
2. Computer terminals
3. System appliances, measuring instruments

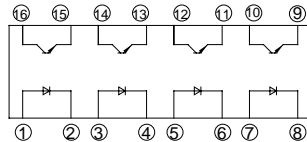
■ Outline Dimensions

(Unit : mm)

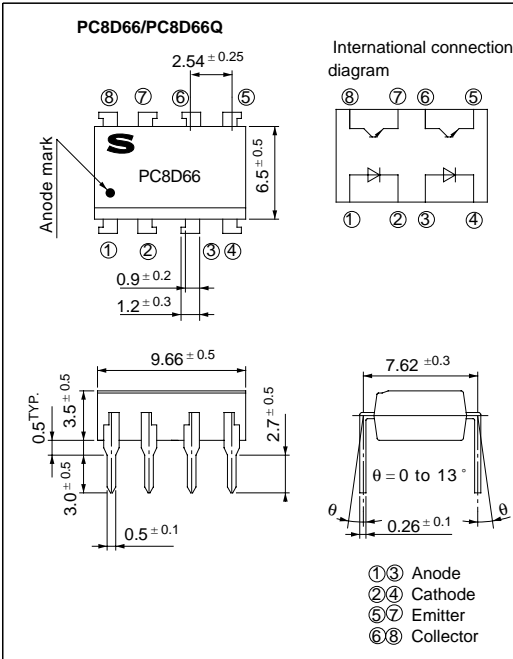
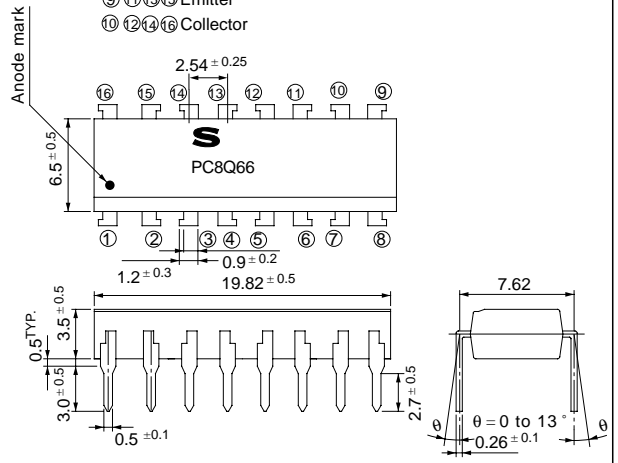


PC8Q66/PC8Q66Q

International connection diagram



- ①③⑤⑦ Anode
②④⑥⑧ Cathode
⑨⑪⑬⑮ Emitter
⑩⑫⑭⑯ Collector



■ 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}	200	mW
*2 Isolation voltage		V _{iso}	5 000	V _{rms}
Operating temperature		T _{opr}	- 30 to + 100	°C
Storage temperature		T _{stg}	- 55 to + 125	°C
*3 Soldering temperature		T _{sol}	260	°C

*1 Pulse width <=100μs, Duty ratio : 0.001

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

*3 For 10 seconds

■ Electoro-optical Characteristics

(Ta= 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage	V _F	I _F = 10mA	-	1.2	1.4	V	
	Peak forward voltage	V _{FM}	I _{FM} = 0.5A	-	-	3.0	V	
	Reverse current	I _R	V _R = 4V	-	-	10	μA	
	Terminal capacitance	C _t	V = 0, f = 1kHz	-	30	250	pF	
Output	Collector dark current	I _{CEO}	V _{CE} = 24V, I _F = 0	-	-	100	nA	
	Collector-emitter breakdown voltage	BV _{CEO}	I _C = 0.1mA, I _F = 0	80	-	-	V	
Emitter-collector breakdown voltage		BV _{ECO}	I _E = 10 μA, I _F = 0	6	-	-	V	
Transfer characteristics	Current transfer ratio		CTR	I _F = 1mA, V _{CE} = 0.5V	100	-	-	%
	Collector-emitter saturation voltage		V _{CE(sat)}	I _F = 1mA, I _C = 0.2mA	-	-	0.4	V
	Isolation resistance		R _{ISO}	DC500V, 40 to 60% RH	5 × 10 ¹⁰	10 ¹¹	-	Ω
	Floating capacitance		C _f	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency		f _c	V _{CE} = 5V, I _C = 2mA, R _L = 100Ω - 3dB	-	50	-	kHz
	Response time	Rise time	t _r	V _{CE} = 2V, I _C = 2mA R _L = 100Ω	-	8	-	μs
Fall time		t _f	-		8	-		

Fig. 1 Forward Current vs. Ambient Temperature

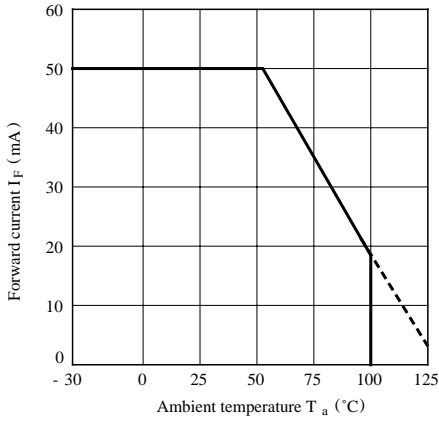


Fig. 2 Diode Power Dissipation vs. Ambient Temperature

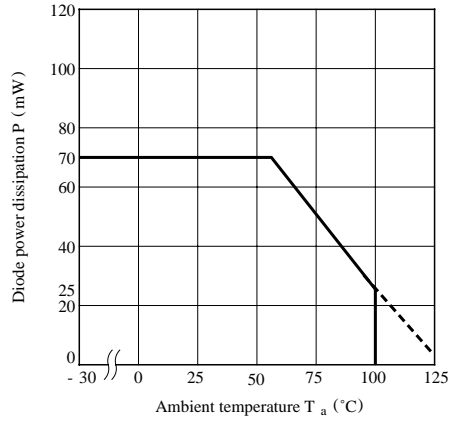


Fig. 3 Collector Power Dissipation vs. Ambient Temperature

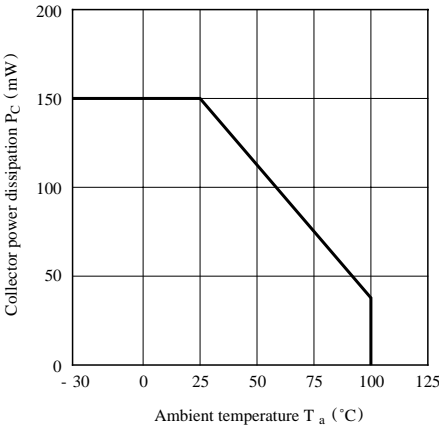


Fig. 4 Power Dissipation vs. Ambient Temperature

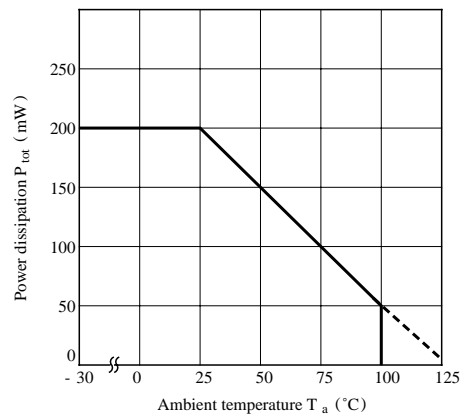


Fig. 5 Peak Forward Current vs. Duty Ratio

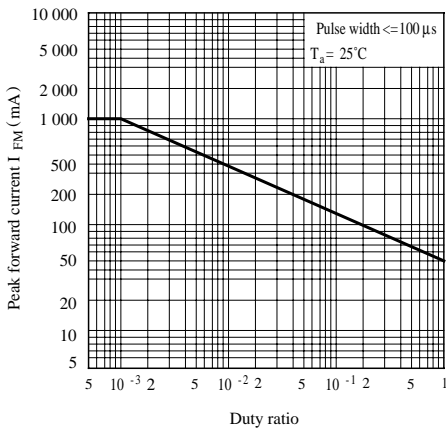


Fig. 6 Forward Current vs. Forward Voltage

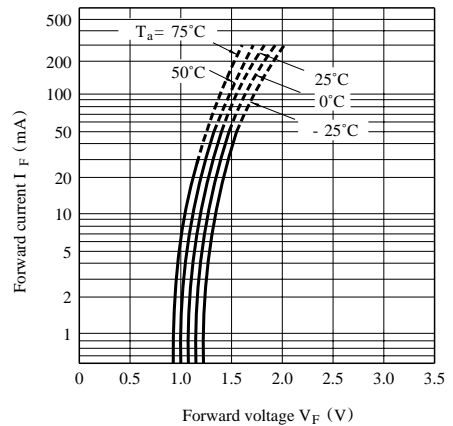


Fig. 7 Current Transfer Ratio vs. Forward Current

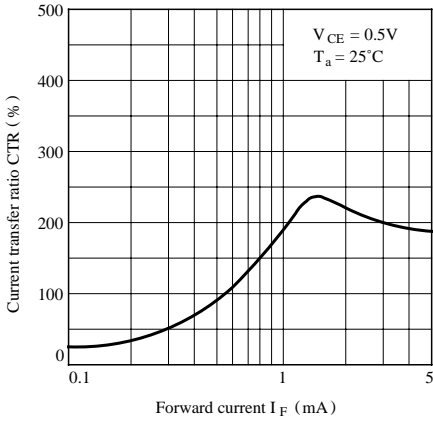


Fig. 8 Collector Current vs. Collector-emitter Voltage

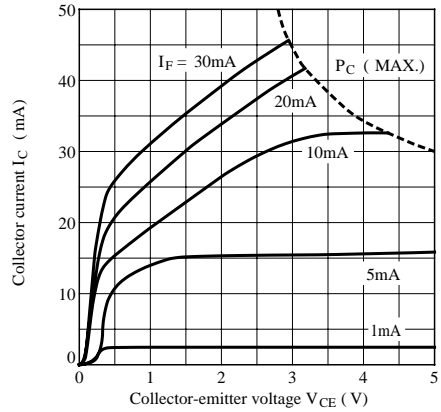


Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature

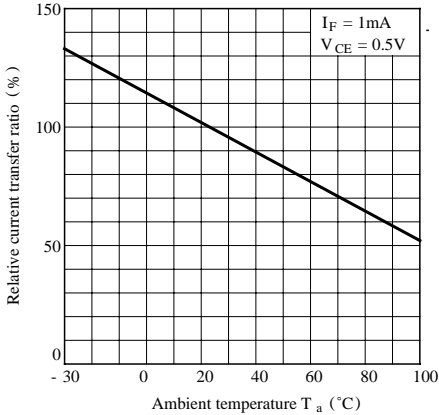


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature

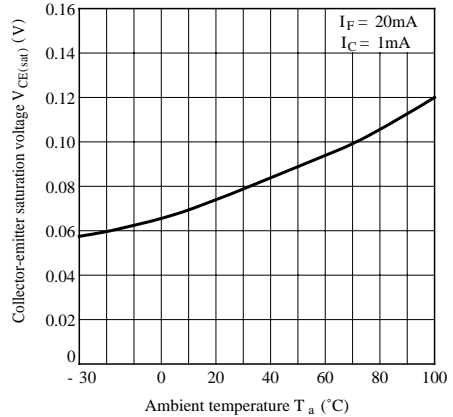


Fig.11 Collector Dark Current vs. Ambient Temperature

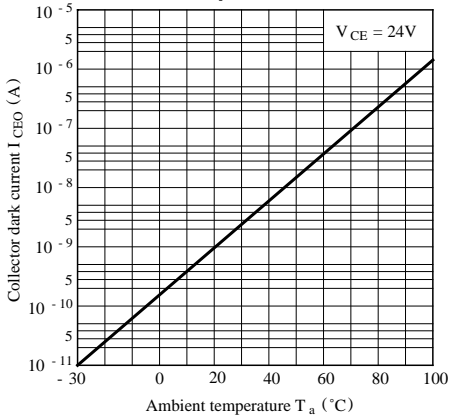


Fig.12 Response Time vs. Load Resistance

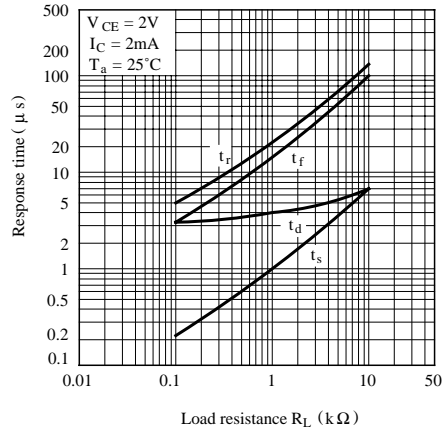


Fig.13 Frequency Response

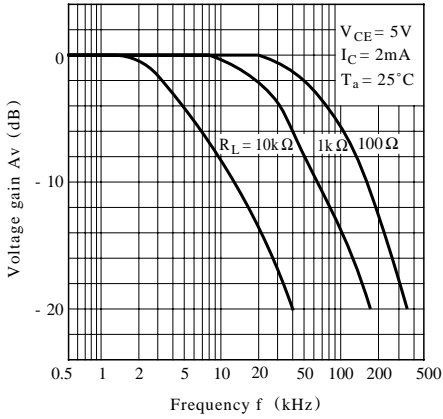
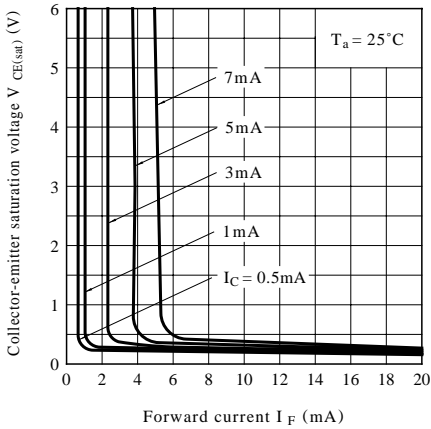
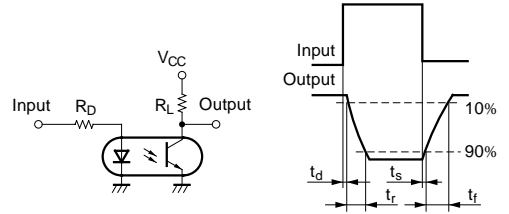


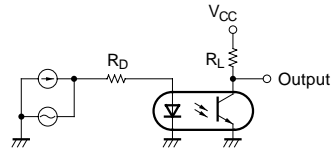
Fig.14 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Response Time



Test Circuit for Frequency Response



● Please refer to the chapter “Precautions for Use”