PC866 Series

Low Driving Current Type Photocoupler

■ Features

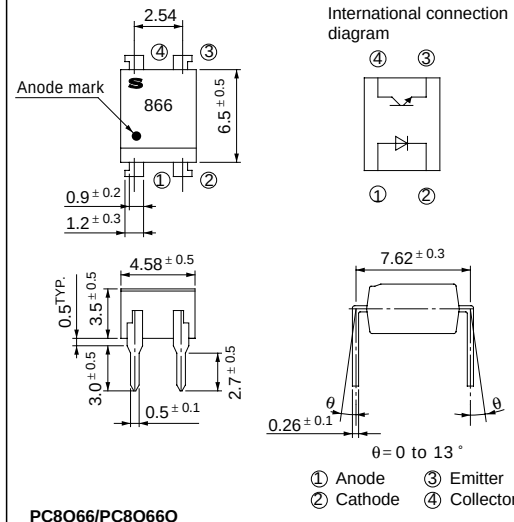
1. Low driving current（single Tr. output）
   （CTR ： MIN. 100 % at I_F = 1mA）
2. High collector-emitter voltage（V_{CEO} ： 80V）
3. Isolation voltage between input and output
   （V_{iso} ： 5 000V_{rms}）
4. Also available burn-in type
   （**PC866Q**/**PC8D66Q**/**PC8Q66Q**）

■ Applications

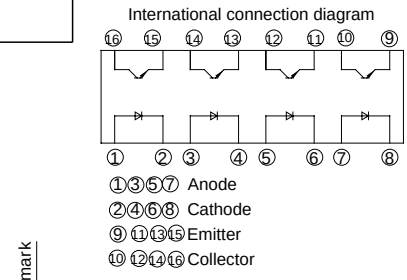
1. Telephone sets
2. Computer terminals
3. System appliances, measuring instruments

■ Outline Dimensions （Unit： mm）

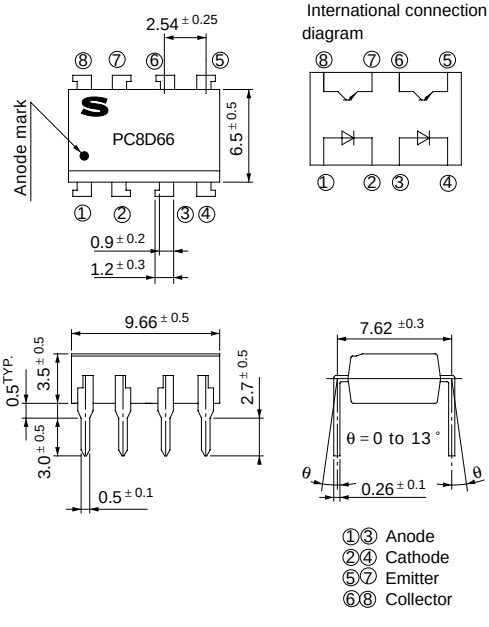
PC866/PC866Q

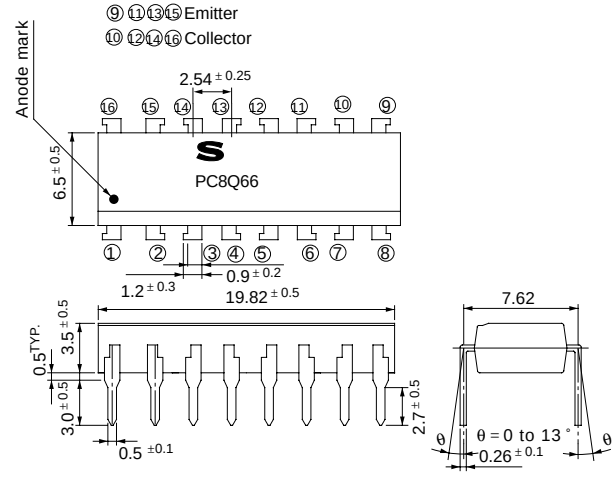


PC8Q66/PC8Q66Q



PC8D66/PC8D66Q





■ Absolute Maximum Ratings (Ta= 25˚C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1Peak 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
*2Isolation voltage		V_{iso}	5 000	V_{rms}
Operating temperature		T_{opr}	- 30 to + 100	˚C
Storage temperature		T_{stg}	- 55 to + 125	˚C
*3Soldering 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 = 10μA, 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		fc	V_{CE} = 5V, I_C = 2mA, R_L = 100Ω - 3dB	-	50	-	kHz
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA	-	8	-	μs
		Fall time	t_f	R_L = 100Ω	-	8	-	

Fig. 1 Forward Current vs. Ambient Temperature

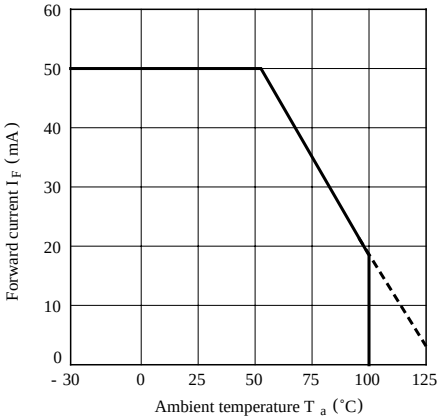


Fig. 2 Diode Power Dissipation vs. Ambient Temperature

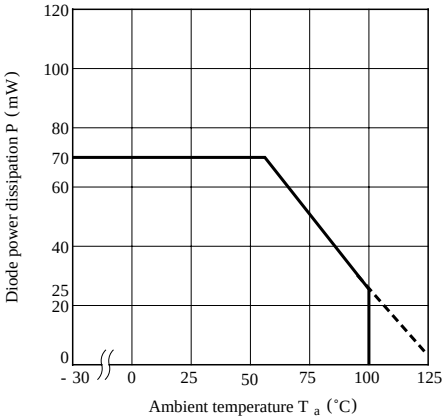


Fig. 3 Collector Power Dissipation vs. Ambient Temperature

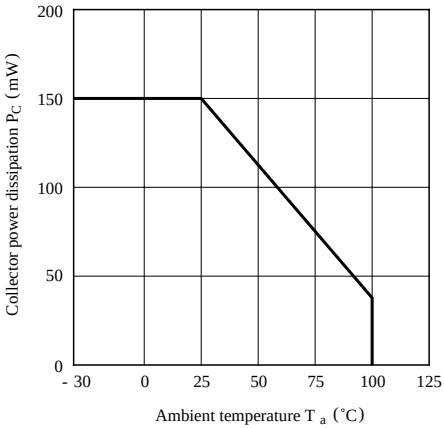


Fig. 4 Power Dissipation vs. Ambient Temperature

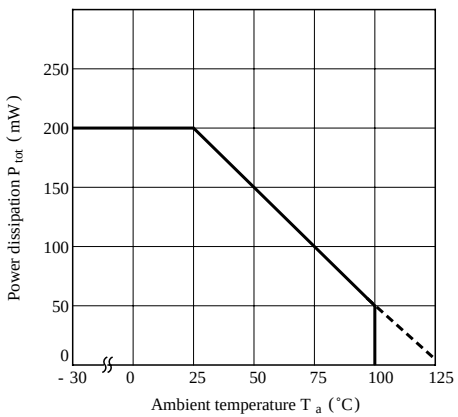


Fig. 5 Peak Forward Current vs. Duty Ratio

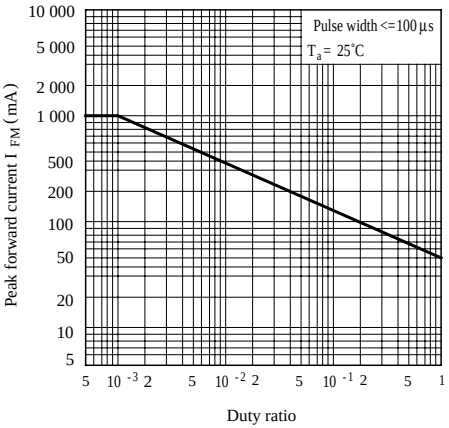


Fig. 6 Forward Current vs. Forward Voltage

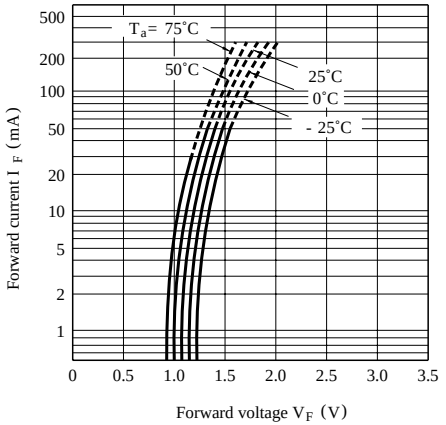


Fig. 7 Current Transfer Ratio vs. Forward Current

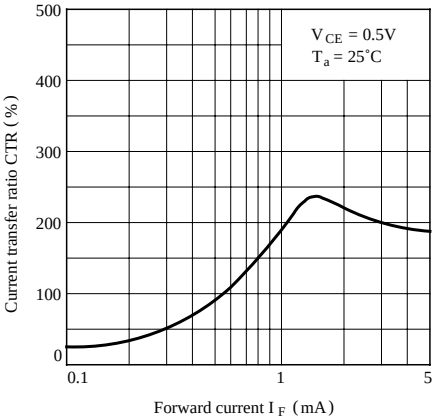


Fig. 8 Collector Current vs. Collector-emitter Voltage

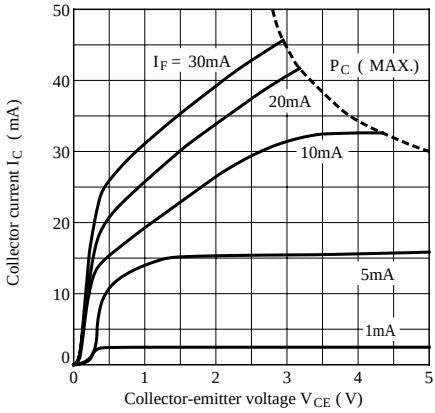


Fig. 9 Relative Current Transfer Ratio vs. Ambient Temperature

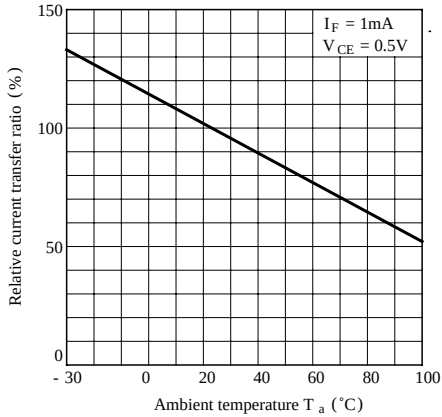


Fig.10 Collector-emitter Saturation Voltage vs. Ambient Temperature

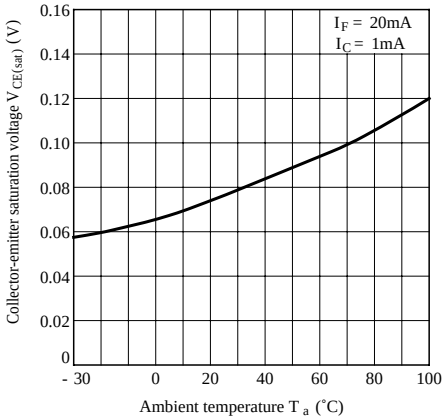


Fig.11 Collector Dark Current vs. Ambient Temperature

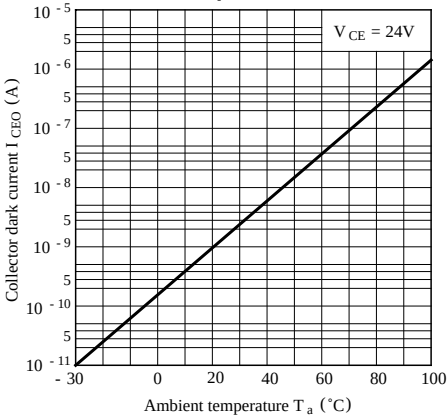


Fig.12 Response Time vs. Load Resistance

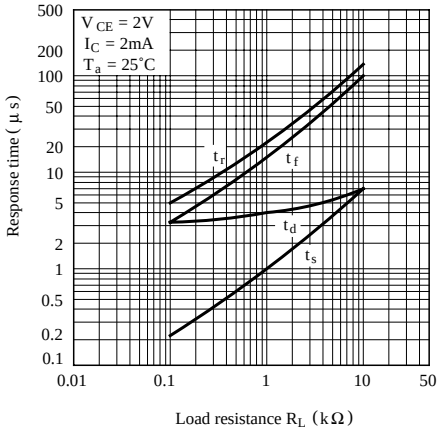


Fig.13 Frequency Response

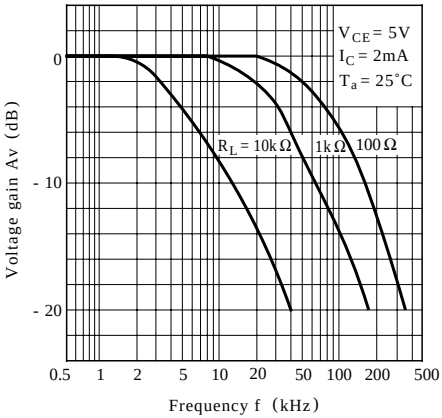
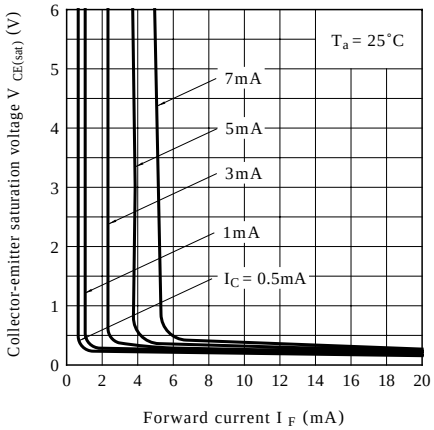
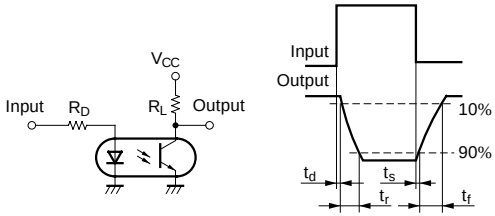


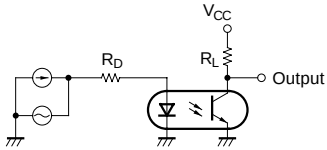
Fig.14 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Response Time



Test Circuit for Frepuency Response



● Please refer to the chapter "Precautions for Use"

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- Industrial control
- Audio visual equipment
- Consumer electronics

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- Traffic signals
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- Alarm equipment
- Various safety devices, etc.

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