T-41-83

PC4N25V/PC4N26V PC4N27V/PC4N28V

General Purpose Type Photocoupler

※ Lead forming type (I type) is also available. (PC4N25VI/PC4N26VI/PC4N27VI/PC4N28VI) (Page 482)

■ Features

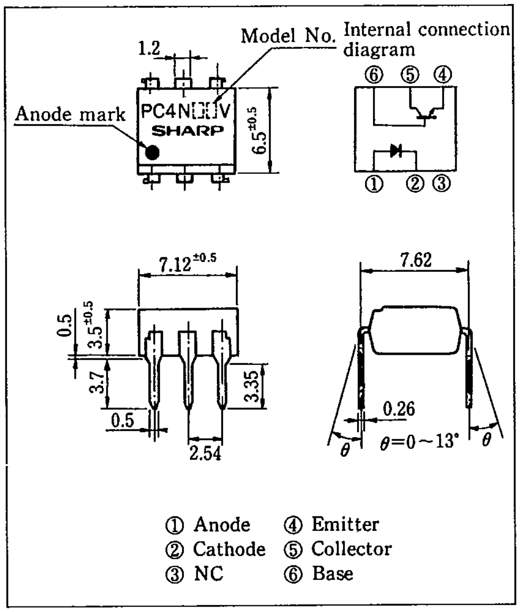
1. Response time
   t_r : TYP. 3μs at V_{CE}=10V, I_C=2mA, R_L=100Ω
2. UL recognized, file No. E64380
   TÜV approoved (PC4N25V: No. R40182, PC4N26V/27V: No. R40183)

■ Applications

1. I/O interfaces for computers
2. System appliances, measuring instruments
3. Signal transmission between circuits of different potentials and impedances

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(T_a=25°C)

Parameter			Symbol	Rating	Unit
Input	Forward current		I_F	80	mA
	*1Peak forward current		I_{FM}	3	A
	Reverse voltage		V_R	6	V
	Power dissipation		P	150	mW
Output	Collector-emitter voltage		V_{CEO}	30	V
	Emitter-collector voltage		V_{ECO}	7	V
	Collector-base voltage		V_{CBO}	70	V
	Collector current		I_C	100	mA
	Collector power dissipation		P_C	150	mW
Total power dissipation			P_{tot}	250	mW
*2Isolation voltage		PC4N25V	V_{iso}	2500	Vrms
		PC4N26V,27V		1,500	
		PC4N28V		500	
Operating temperature			T_{opr}	−55~+100	°C
Storage temperature			T_{stg}	−55~+150	°C
*3Soldering temperature			T_{sol}	260	°C

*1 Pulse width≦1μs, Duty ratio=0.001 *3 For 10 seconds
*2 RH=40~60%, AC for 1 minute

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■ Electro-optical Characteristics

(Ta=25°C)

	Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F=10mA	—	1.2	1.5	V
	Reverse current		I_R	V_R=4V	—	—	10	μA
	Terminal capacitance		C_t	V=0, f=1kHz	—	50	—	pF
Output	Collector dark current	PC4N25V~27V	I_{CEO}	V_{CE}=10V, I_F=0	—	—	5×10^{-8}	A
		PC4N28V			—	—	10^{-7}	
	Collector-emitter breakdown voltage		BV_{CEO}	I_C=0.1mA, I_F=0	30	—	—	V
	Emitter-collector breakdown voltage		BV_{ECO}	I_E=10μA, I_F=0	7	—	—	V
	Collector-base breakdown voltage		BV_{CBO}	I_C=0.1mA, I_F=0	70	—	—	V
Transfer charac-teristics	Current transfer ratio	PC4N25V,26V	CTR	I_F=10mA, V_{CE}=10V Pulse test : input width=300μs, duty ratio≦0.02	20	—	—	%
		PC4N27V,28V			10	—	—	
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F=50mA, I_C=2mA	—	0.1	0.5	V
	Isolation resistance		R_{ISO}	DC500V, RH=40~60%	5×10^{10}	10^{11}	—	Ω
	Floating capacitance		C_f	V=0, f=1MHz	—	1.0	—	PF
	Response time (Rise)		t_r	V_{CE}=10V, I_C=2mA	—	3	—	μs
	Response time (Fall)		t_f	R_L=100Ω, R_{BE}=∞	—	3	—	μs

Fig. 1 Forward Current vs. Ambient Temperatumre

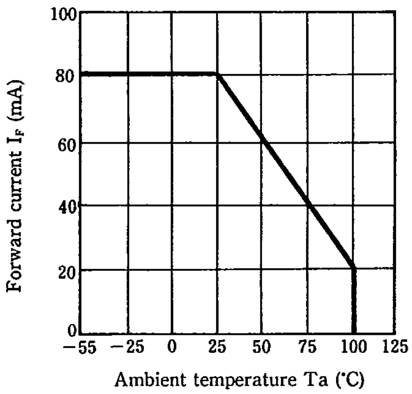

Fig. 2 Collector Power Dissipation vs. Ambient Temperature

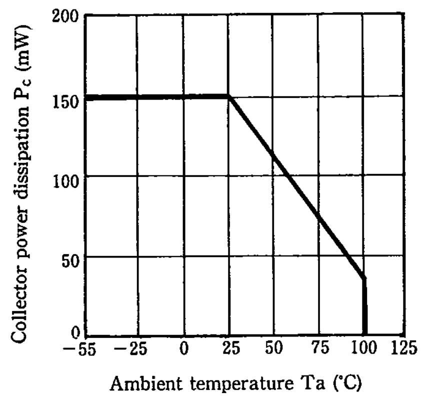

Fig. 3 Forward Current vs. Forward Voltage

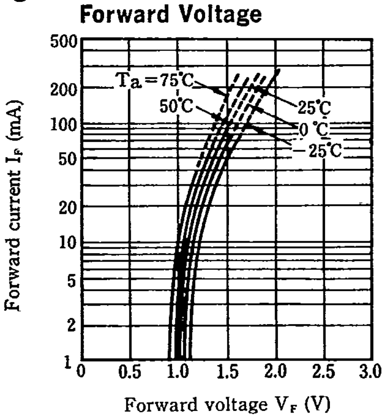

Fig. 4 Current Transfer Ratio vs. Forward Current

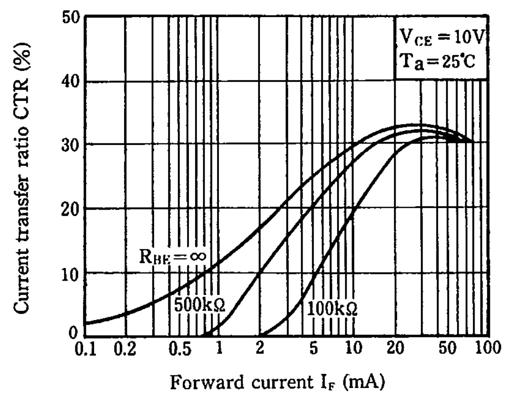

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Fig. 5 Collecter Current vs. Collecter-emitter Voltage

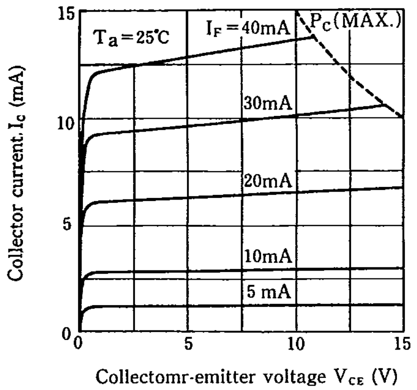


Fig. 6 Relative Current Transfer Ratio vs. Ambient Temperature

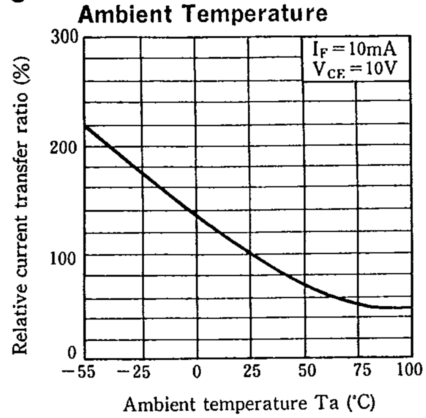


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

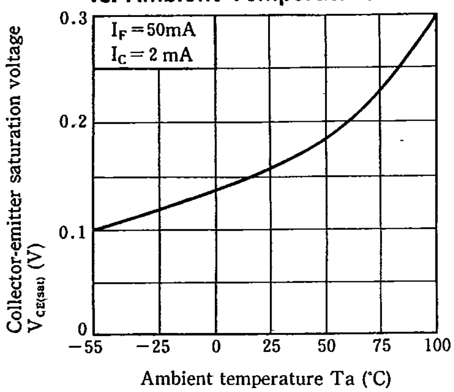


Fig. 8 Collector Dark Current vs. Ambient Temperature

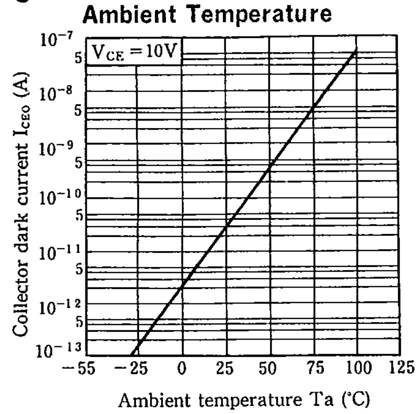


Fig. 9 Response Time vs. Load Resistance

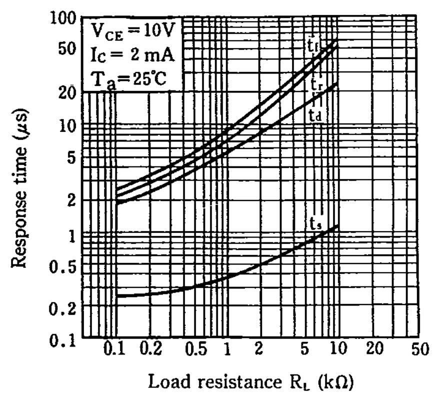


Fig. 10 Frequency Response

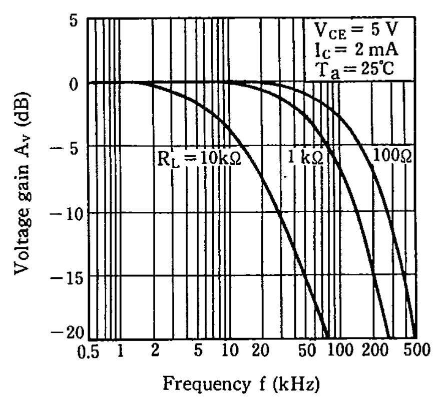
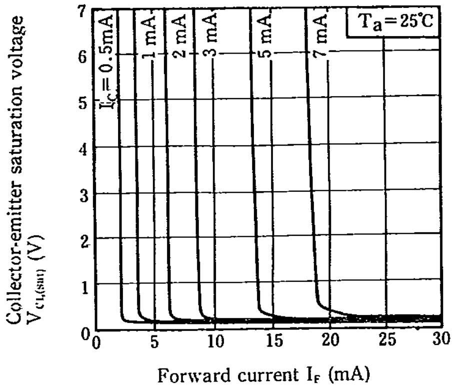
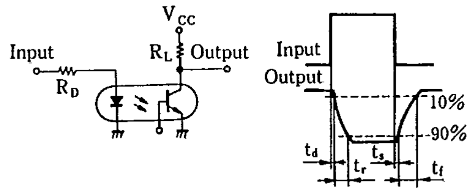


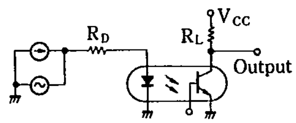
Fig. 11 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Response Time



Test Circuit for Frequency Response



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