

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)

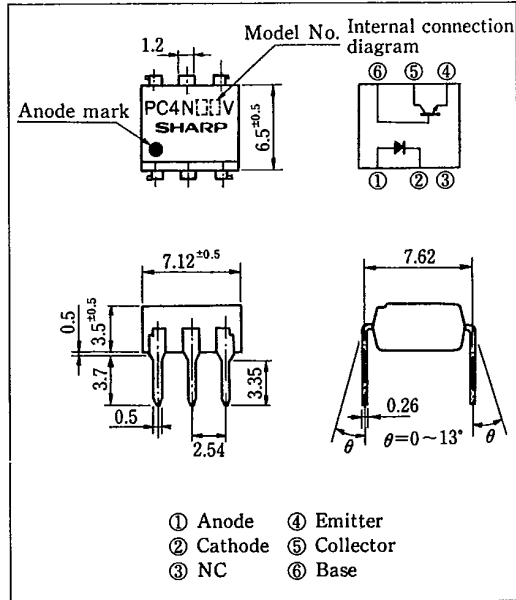
■ Features

1. Response time
 t_r : TYP. $3\mu s$ at $V_{CE}=10V$, $I_C=2mA$, $R_L=100\Omega$
2. UL recognized, file No. E64380
TUV approved (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

($T_a=25^\circ C$)

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	$^\circ C$
Storage temperature		T_{stg}	-55 ~ +150	$^\circ C$
*3Soldering temperature		T_{sol}	260	$^\circ C$

*1 Pulse width $\leq 1\mu s$, Duty ratio = 0.001 *2 RH = 40~60%, AC for 1 minute *3 For 10 seconds

■ Electro-optical Characteristics

T-41-83

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F=10\text{mA}$	—	1.2	1.5	V
	Reverse current	I_R	$V_R=4\text{V}$	—	—	10	μA
	Terminal capacitance	C_t	$V=0, f=1\text{kHz}$	—	50	—	pF
Output	Collector dark current	I_{CEO}	$V_{CE}=10\text{V}$	—	—	5×10^{-8}	A
	$I_F=0$		—	—	10^{-7}		
	Collector-emitter breakdown voltage	BV_{CEO}	$I_C=0.1\text{mA}, I_F=0$	30	—	—	V
	Emitter-collector breakdown voltage	BV_{ECO}	$I_E=10\mu\text{A}, I_F=0$	7	—	—	V
	Collector-base breakdown voltage	BV_{CBO}	$I_C=0.1\text{mA}, I_F=0$	70	—	—	V
Transfer characteristics	Current transfer ratio	CTR	$I_F=10\text{mA}, V_{CE}=10\text{V}$	20	—	—	%
			Pulse test : input width=300 μs , duty ratio ≤ 0.02	10	—	—	
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=50\text{mA}, I_C=2\text{mA}$	—	0.1	0.5	V
	Isolation resistance	R_{ISO}	DC500V, RH=40~60%	5×10^9	10^{11}	—	Ω
	Floating capacitance	C_f	$V=0, f=1\text{MHz}$	—	1.0	—	PF
	Response time (Rise)	t_r	$V_{CE}=10\text{V}, I_C=2\text{mA}$	—	3	—	μs
	Response time (Fall)	t_f	$R_F=100\Omega, R_{BE}=\infty$	—	3	—	μs

Fig. 1 Forward Current vs. Ambient Temperature

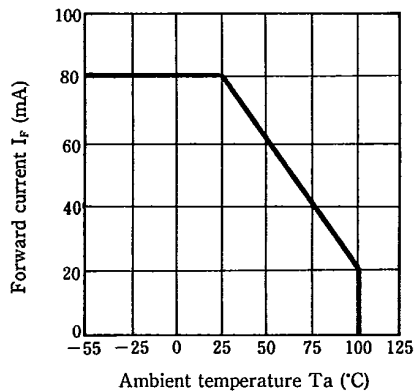


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

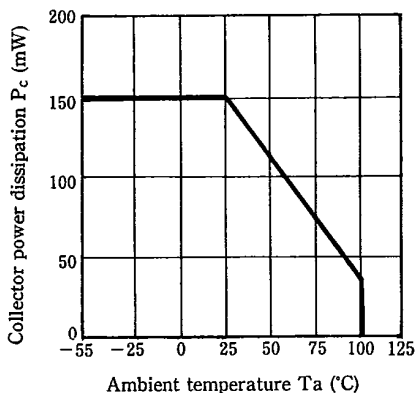


Fig. 3 Forward Current vs. Forward Voltage

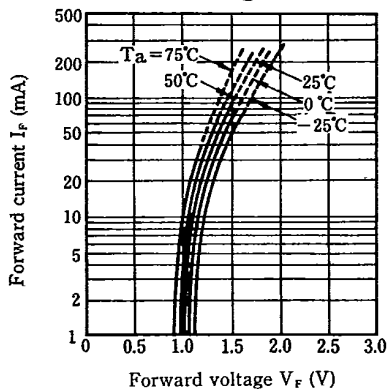
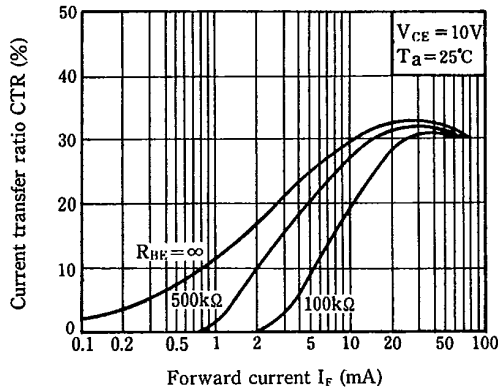


Fig. 4 Current Transfer Ratio vs. Forward Current



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Fig. 5 Collector Current vs. Collector-emitter Voltage

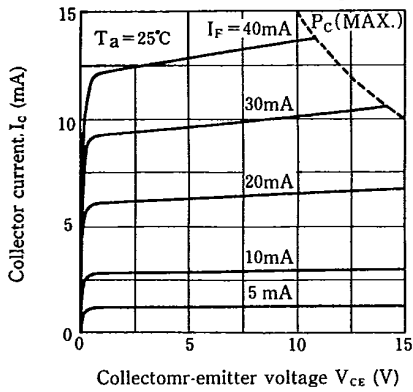


Fig. 6 Relative Current Transfer Ratio vs. Ambient Temperature

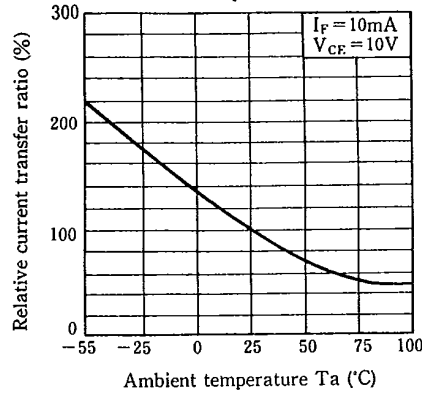


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

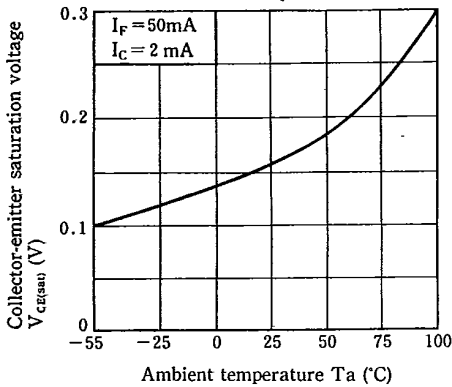


Fig. 8 Collector Dark Current vs. Ambient Temperature

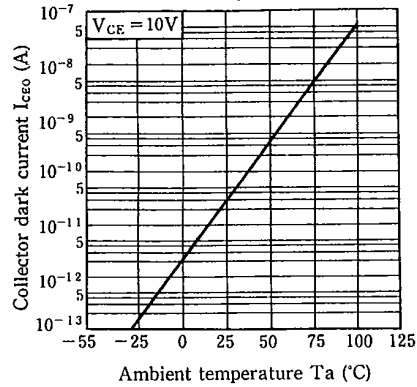


Fig. 9 Response Time vs. Load Resistance

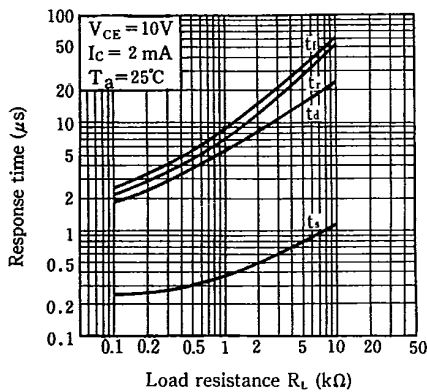


Fig. 10 Frequency Response

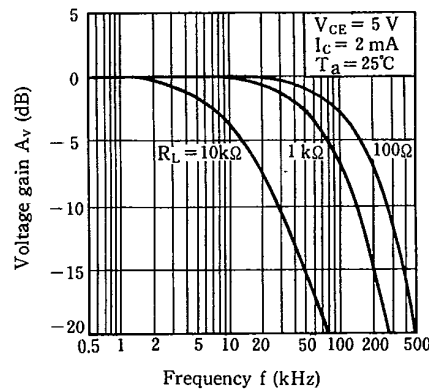
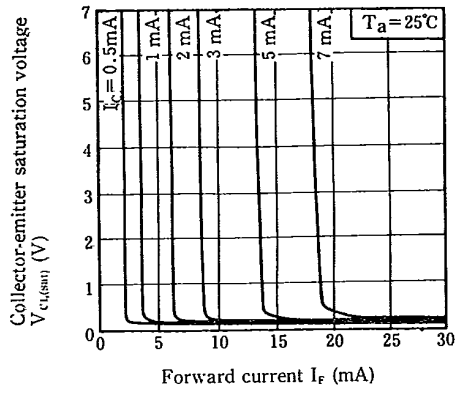
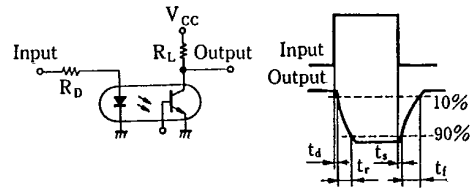


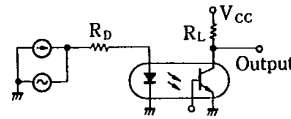
Fig. 11 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Response Time



Test Circuit for Frequency Response



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