

PC817X

- ※ Lead forming type (I type) and taping reel type (P type) are also available. (PC817XI/PC817XP)
 ※※ TÜV (VDE0884) approved type is also available as an option. (approved name:PC817)

■ Features

1. Current transfer ratio (CTR:MIN. 50% at $I_F=5\text{mA}$, $V_{CE}=5\text{V}$)
2. High isolation voltage between input and output ($V_{\text{iso (rms)}}:5\text{kV}$)
3. Compact dual-in-line package
4. Recognized by UL, file No. E64380 (model No. PC817)

■ Applications

1. OA equipment
2. Copiers
3. Home appliances

■ Absolute Maximum Ratings

(T_a=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}	35	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 (rms)}	5	kV
	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

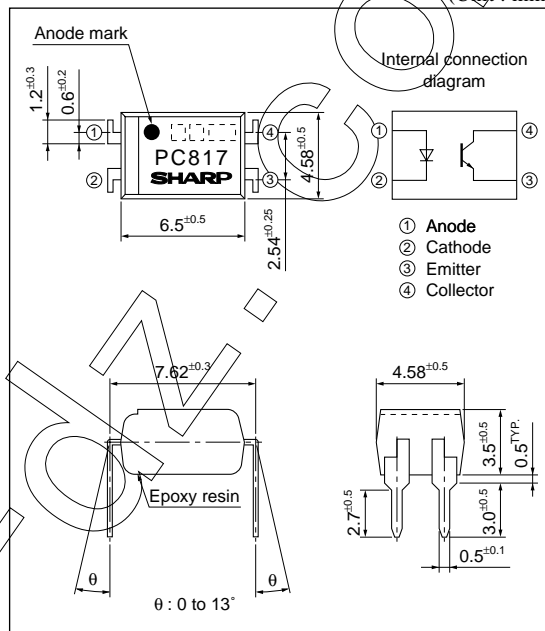
*2 40 to 60%RH, AC for 1 minute

*3 For 10s

High Density Mounting Type Photocoupler

■ Outline Dimensions

(Unit: mm)



■ Electro-optical Characteristics

($T_a=25^{\circ}\text{C}$)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F=20\text{mA}$	—	1.2	1.4	V
	Peak forward voltage	V_{FM}	$I_{FM}=0.5\text{V}$	—	—	3.0	V
	Reverse current	I_R	$V_R=4\text{V}$	—	—	40	μA
	Terminal capacitance	C_t	$V=0, f=1\text{kHz}$	—	30	250	pF
Output	Collector dark current	I_{CEO}	$V_{CE}=20\text{V}, I_F=0$	—	—	100	nA
	Collector current	I_C	$I_F=5\text{mA}, V_{CE}=5\text{V}$	2.5	—	30.0	mA
Transfer characteristics	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
	Cut-off frequency	f_c	$V_{CE}=5\text{V}, I_C=2\text{mA}, R_L=100\Omega, -3\text{dB}$	—	80	—	kHz
	Response time	Rise time	t_r	$V_{CE}=2\text{V}, I_C=2\text{mA}, R_L=100\Omega$	—	4	18
Fall time		t_f	—		3	18	μs

■ Rank Table

($I_F=5\text{mA}, V_{CE}=5\text{V}, T_a=25^{\circ}\text{C}$)

Model No.	Rank mark	I_C (mA)
PC817X	A, B, C, D or no mark	2.5 to 30.0
PC817X1	A	4.0 to 8.0
PC817X2	B	6.5 to 13.0
PC817X3	C	10.0 to 20.0
PC817X4	D	15.0 to 30.0
PC817X5	A or B	4.0 to 13.0
PC817X6	B or C	6.5 to 20.0
PC817X7	C or D	10.0 to 30.0
PC817X8	A, B or C	4.0 to 20.0
PC817X9	B, C or D	6.5 to 30.0
PC817X0	A, B, C or D	4.0 to 30.0

Fig.1 Forward Current vs. Ambient Temperature

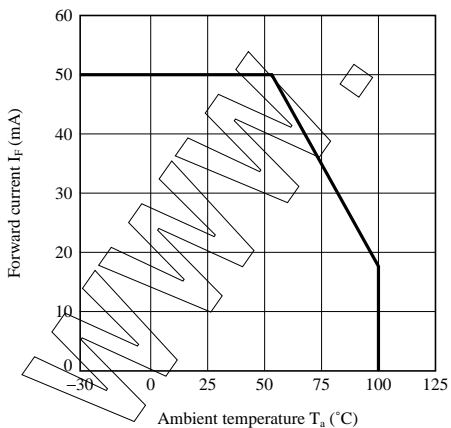


Fig.2 Collector Power Dissipation vs. Ambient Temperature

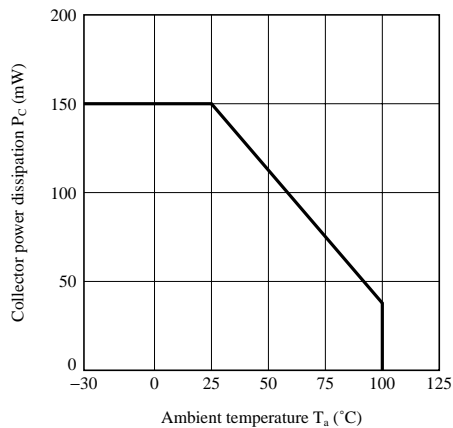


Fig.3 Peak Forward Current vs. Duty Ratio

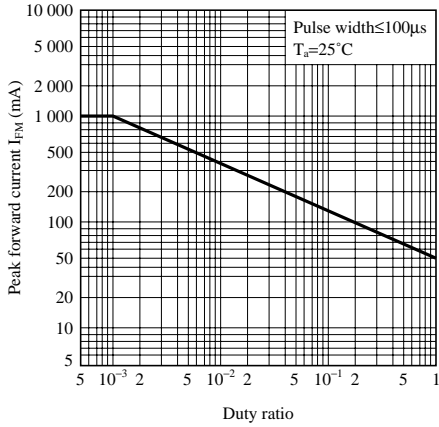


Fig.4 Current Transfer Ratio vs. Forward Current

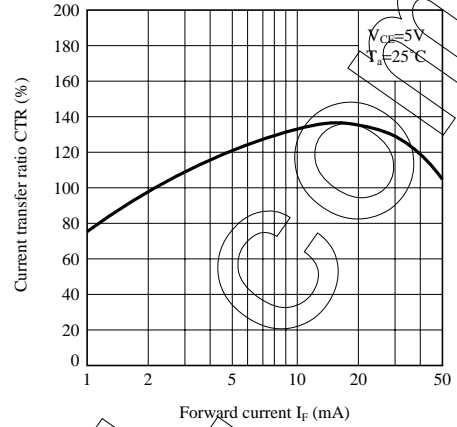


Fig.5 Forward Current vs. Forward Voltage

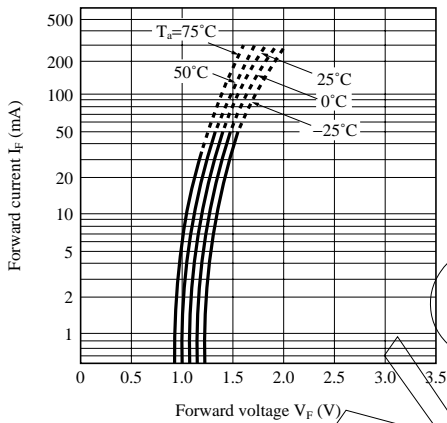


Fig.6 Collector Current vs. Collector-emitter Voltage

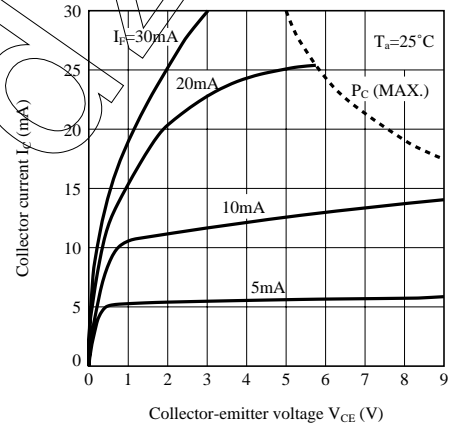


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

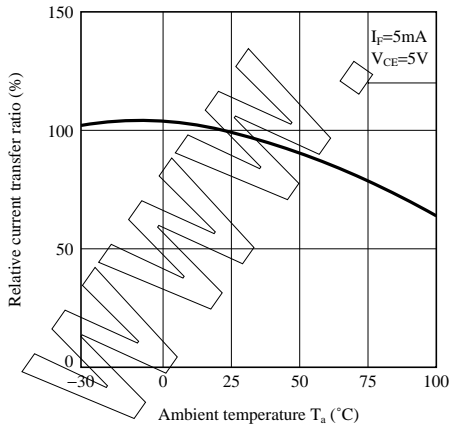


Fig.8 Collector - emitter Saturation Voltage vs. Ambient Temperature

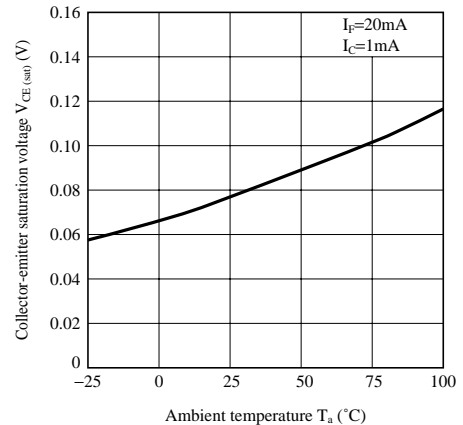


Fig.9 Collector Dark Current vs. Ambient Temperature

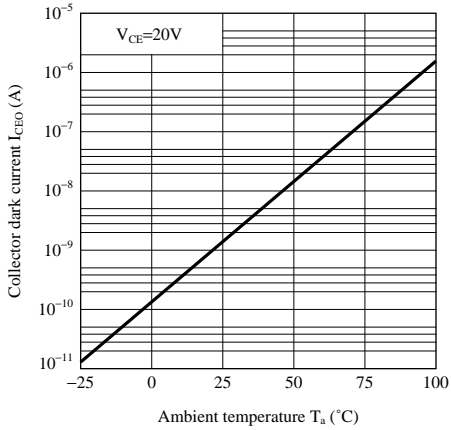


Fig.10 Collector-emitter Saturation Voltage vs. Forward Current

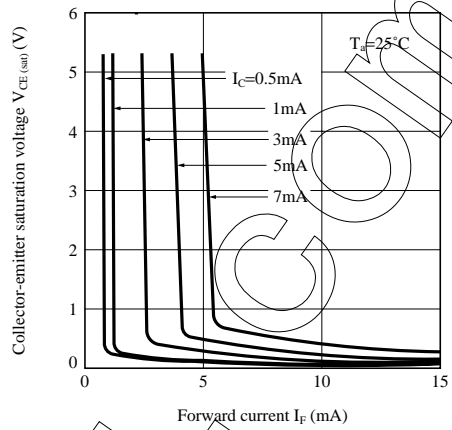
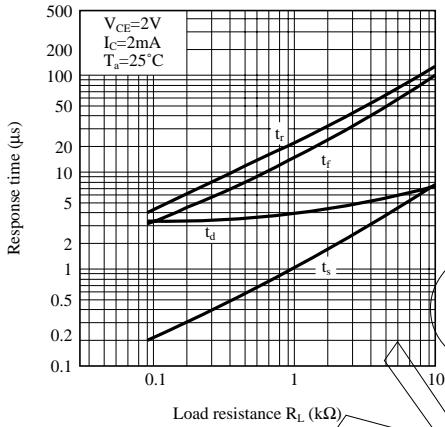


Fig.11 Response Time vs. Load Resistance



Test Circuit for Response Time

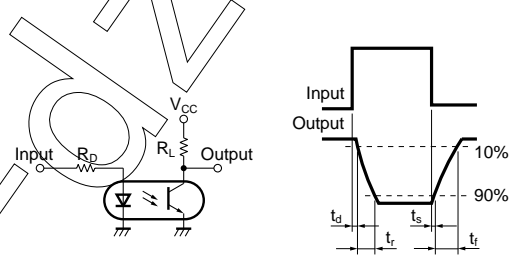
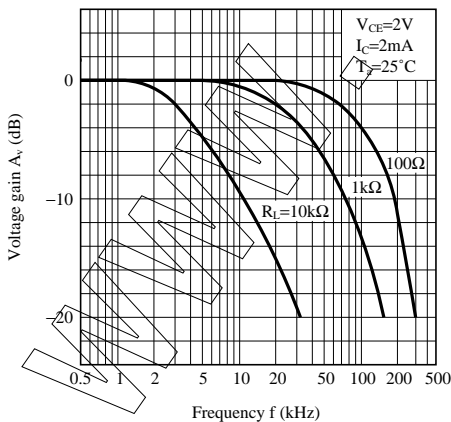
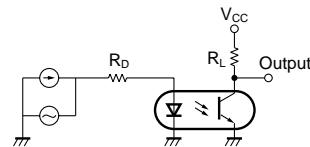


Fig.12 Frequency Response



Test Circuit for Frequency Response



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