

PC817X

High Density Mounting Type Photocoupler

* 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

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

	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	$V_{\text{iso (rms)}}$	5	kV
	Operating temperature	T_{opr}	-30 to +100	$^\circ\text{C}$
	Storage temperature	T_{stg}	-55 to +125	$^\circ\text{C}$
	*3 Soldering temperature	T_{sol}	260	$^\circ\text{C}$

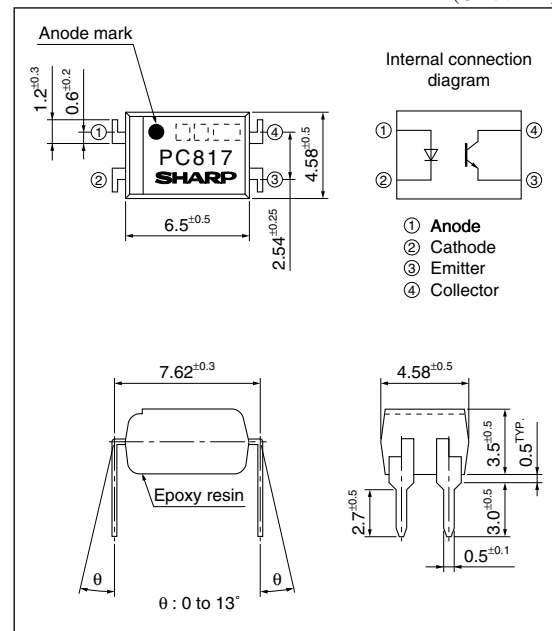
*1 Pulse width $\leq 100\mu\text{s}$, Duty ratio:0.001

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

*3 For 10s

■ 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		1.2	1.4	V	
	Peak forward voltage	V_{FM}		-	3.0	V	
	Reverse current	I_R		-	10	μA	
	Terminal capacitance	C_t		30	250	pF	
Output	Collector dark current	I_{CEO}		-	100	nA	
	Collector current	I_C		2.5	30.0	mA	
Transfer characteristics	Collector-emitter saturation voltage	$V_{CE(sat)}$		0.1	0.2	V	
	Isolation resistance	R_{ISO}		5×10^{10}	10^{11}	Ω	
	Floating capacitance	C_f		0.6	1.0	pF	
	Cut-off frequency	f_c		-	80	kHz	
	Response time	Rise time	t_r		4	18	μs
		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

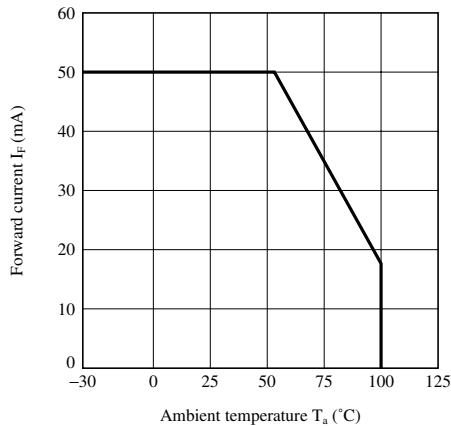


Fig.2 Collector Power Dissipation vs. Ambient Temperature

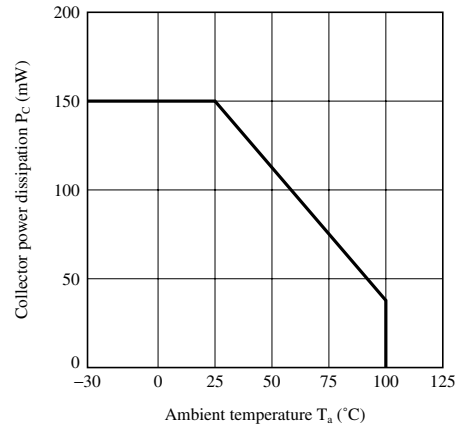


Fig.3 Peak Forward Current vs. Duty Ratio

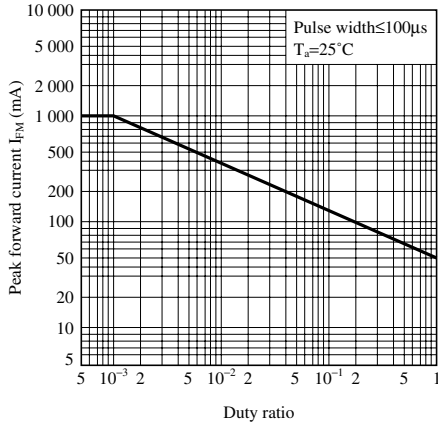


Fig.4 Current Transfer Ratio vs. Forward Current

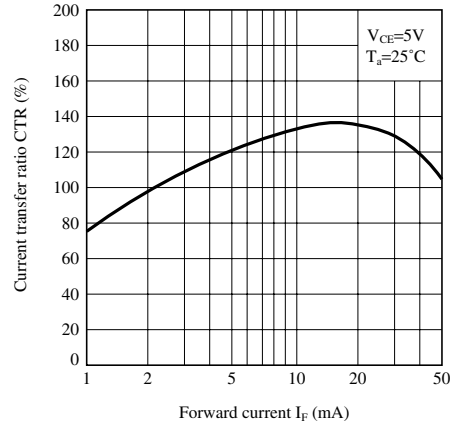


Fig.5 Forward Current vs. Forward Voltage

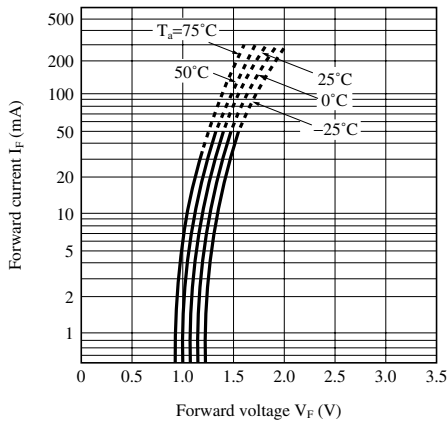


Fig.6 Collector Current vs. Collector-emitter Voltage

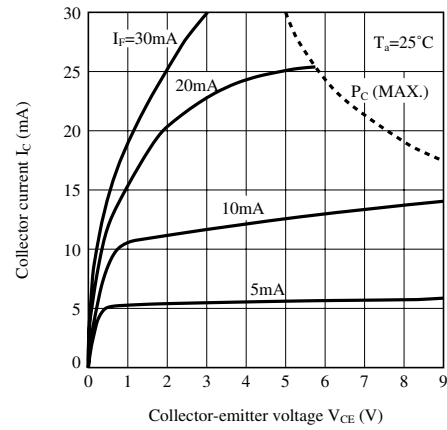


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

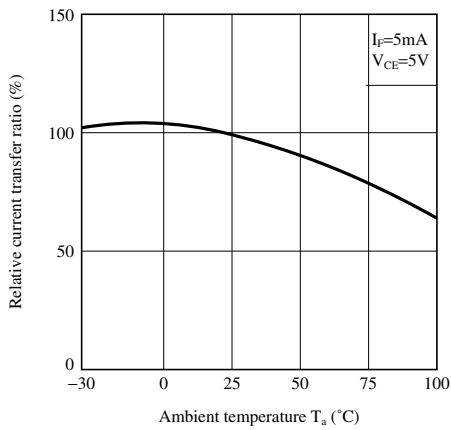


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

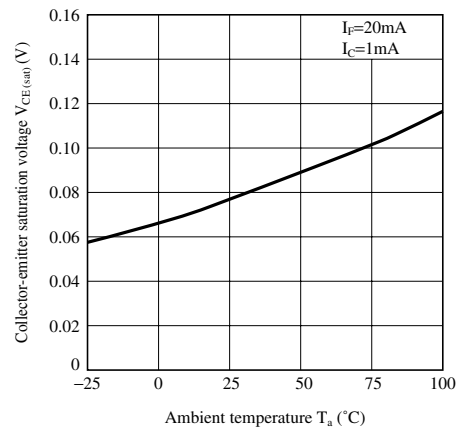


Fig.9 Collector Dark Current vs. Ambient Temperature

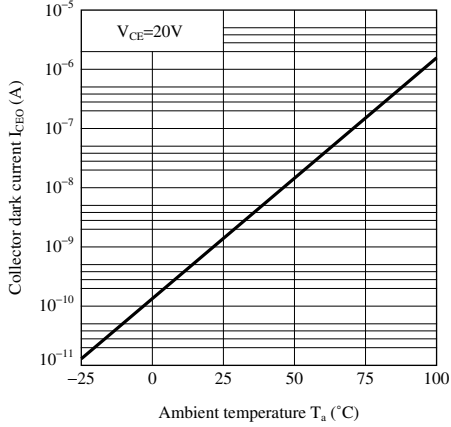


Fig.10 Collector-emitter Saturation Voltage vs. Forward Current

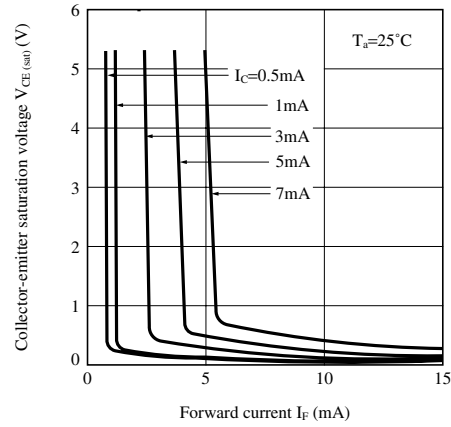
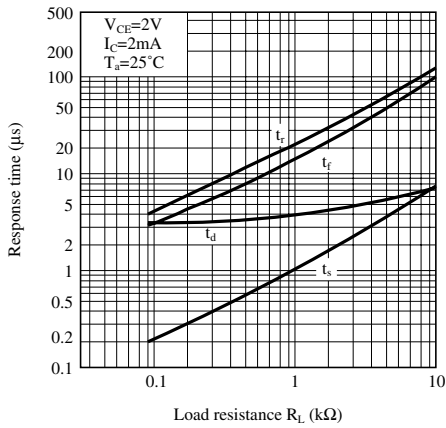


Fig.11 Response Time vs. Load Resistance



Test Circuit for Response Time

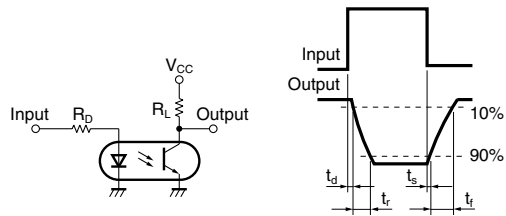
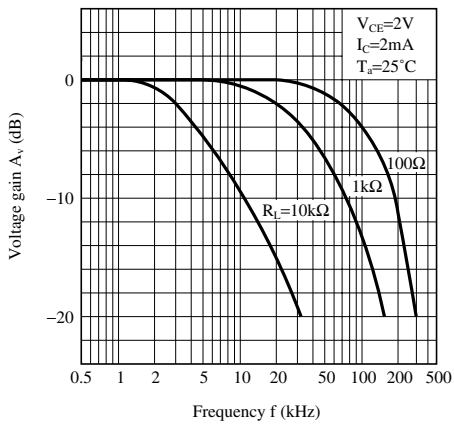
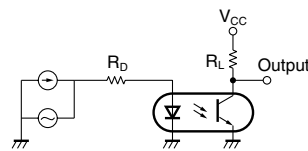


Fig.12 Frequency Response



Test Circuit for Frequency Response



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