

PC818

High Density Mounting Type Photocoupler

※ Lead forming type (I type) and taping reel type (P type) are also available. (PC818I/PC818P)

※ TÜV (VDE0884) approved type is also available as an option.

■ Features

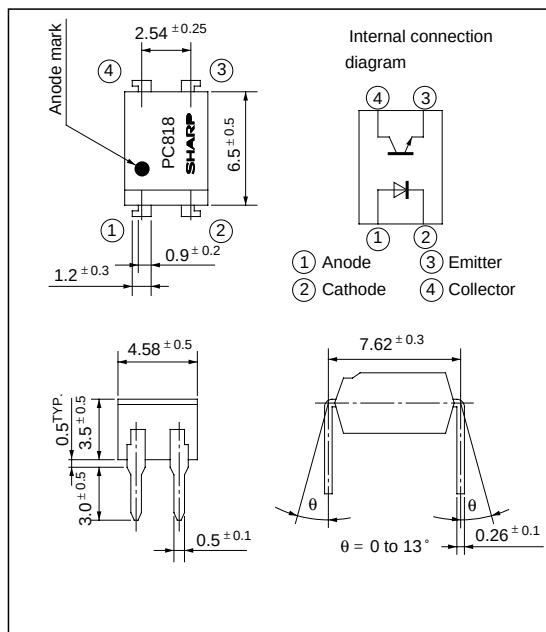
1. High isolation voltage between input and output
(V_{iso} : 5 000V_{rms})
2. Low collector dark current
(I_{CEO} : MAX. 6×10^{-9} A at $V_{CE} = 5$ V)
3. Current transfer ratio
(CTR : MIN. 10% at $I_F = 1$ mA, $V_{CE} = 0.4$ V)
4. Compact dual-in-line package
5. Recognized by UL, file No. E64380

■ Applications

1. Computer terminals
2. System appliances, measuring instruments
3. Copiers, automatic vending machines, medical instruments
4. Signal transmission between circuits of different potentials and impedances

■ Outline Dimensions

(Unit : mm)



■ 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_{iso}	5 000	V _{rms}
	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 10 seconds

■ Electro-optical Characteristics

(Ta= 25°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}	$I_{FM} = 0.5\text{A}$	-	-	3.0	V
	Reverse current	I_R	$V_R = 4\text{V}$	-	-	10	μA
	Terminal capacitance	C_t	$V = 0, f = 1\text{kHz}$	-	30	250	pF
Output	Collector dark current	I_{CEO}	$V_{CE} = 5\text{V}, I_F = 0$	-	-	6×10^{-9}	A
Transfer characteristics	Current tranfer ratio	CTR	$I_F = 1\text{mA}, V_{CE} = 0.4\text{V}$	10	30	100	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 1\text{mA}$	-	0.2	0.4	V
	Isolation resistance	R_{ISO}	DC500V, 40 to 60% RH	5×10^{10}	10^{11}	-	Ω
	Floating capacitance	C_f	$V = 0, f = 1\text{MHz}$	-	0.6	1.0	pF
	Turn-off time	t_{off}	$V_{CC} = 5\text{V}, I_F = 1\text{mA}, R_L = 110\text{k}\Omega$	-	-	650	μs
	Response time	Rise time	$V_{CE} = 2\text{V}, I_C = 2\text{mA}, R_L = 1\text{k}\Omega$	-	7	40	μs
		Fall time		-	6	40	μs

Fig. 1 Forward Current vs. Ambient Temperature

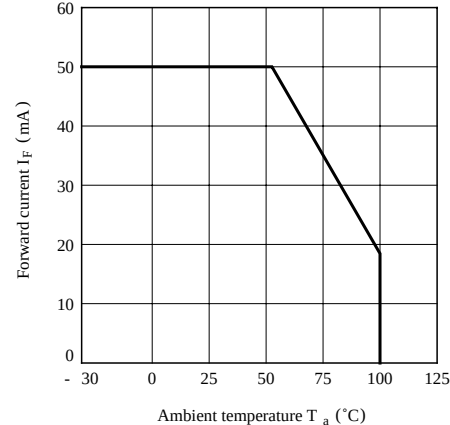


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

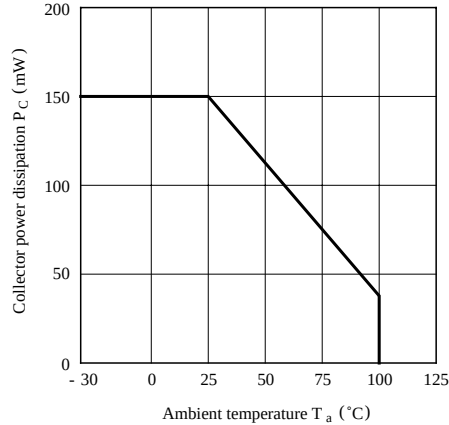


Fig. 3 Peak Forward Current vs. Duty Ratio

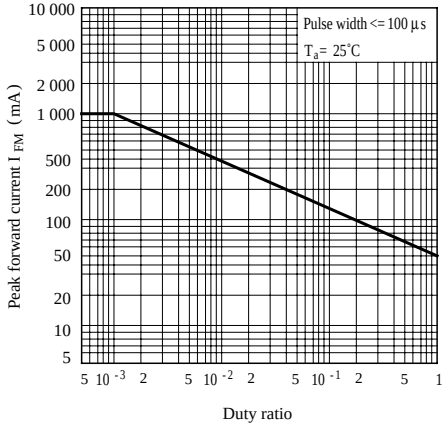


Fig. 4 Forward Current vs. Forward Voltage

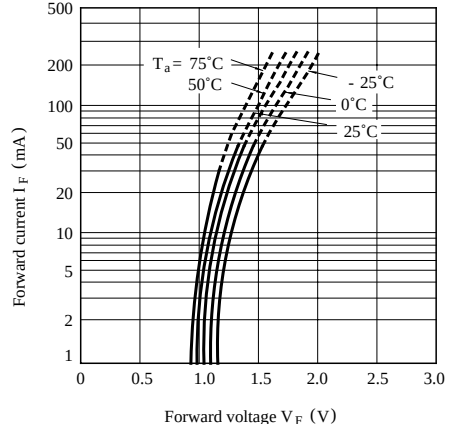


Fig. 5 Current Transfer Ratio vs. Forward Current

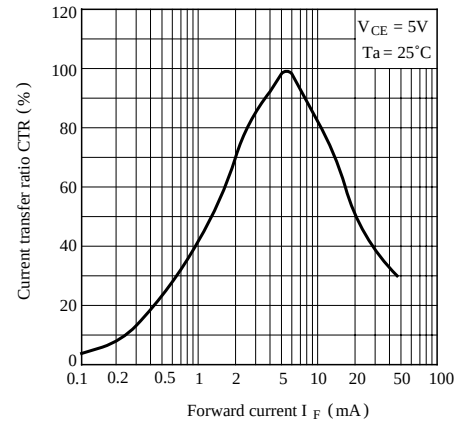


Fig. 6 Collector Current vs. Collector-emitter Voltage

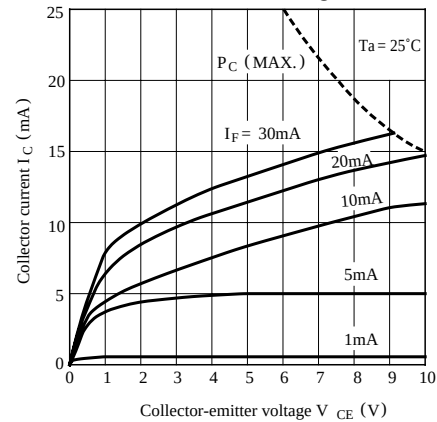


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

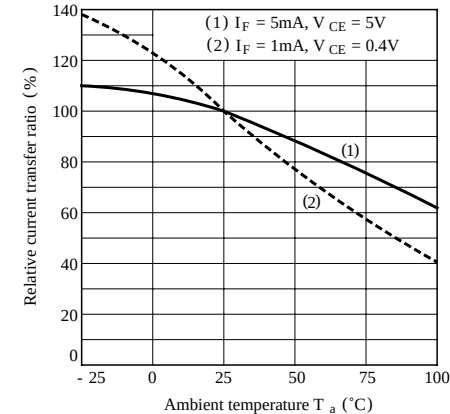


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

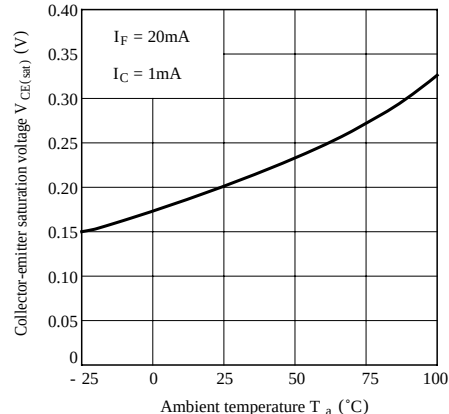


Fig. 9 Collector Dark Current vs. Ambient Temperature

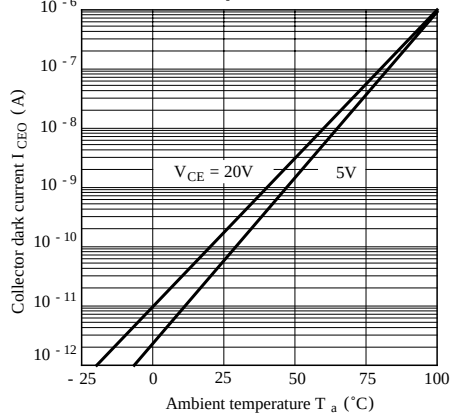


Fig.10 Response Time vs. Load Resistance

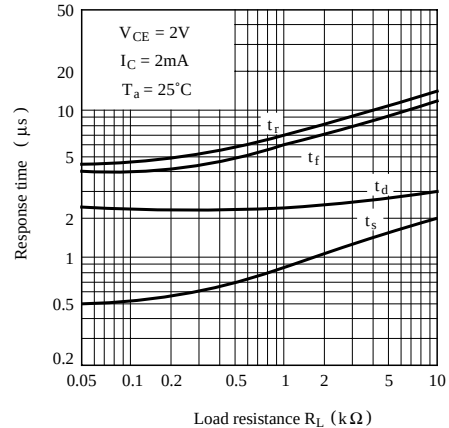


Fig.11 Frequency Response

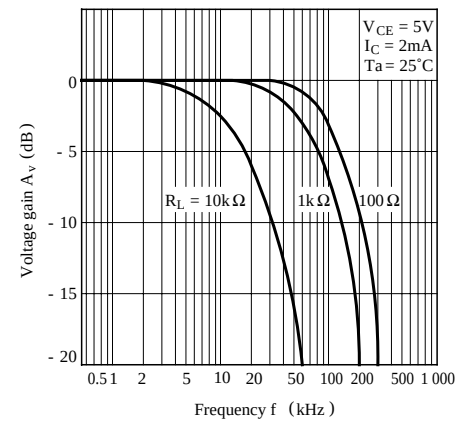
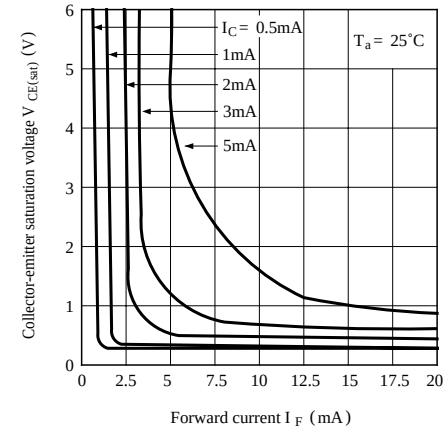
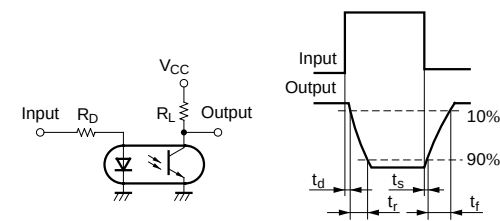


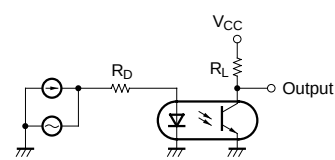
Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Response Time



Test Circuit for Frequency Response



● Please refer to the chapter “Precautions for Use ”