PC818

High Density Mounting Type Photocoupler

※Lead forming type (I type) and taping reel type (P type) are also available. (PC8181/~18p) (page 656)
※※TÜV (VDE0884) approved type is also available as an option.

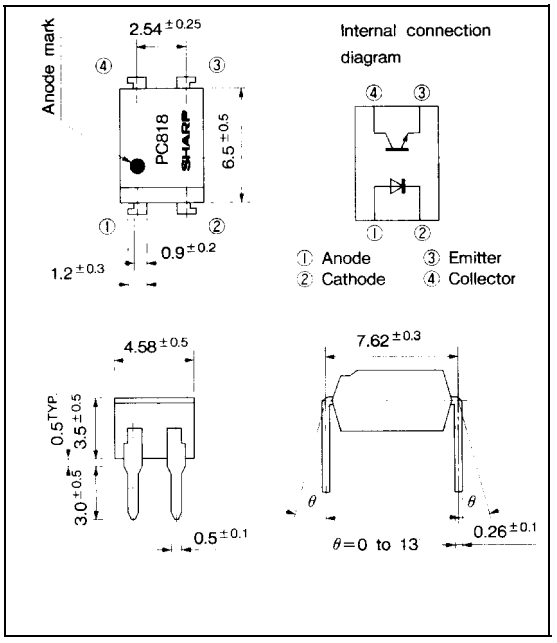
■ Features

1. High isolation voltage between input and output (V_{iso} : 5 000 V_{rms})
2. Low collector dark current (I_{CEO} : MAX. 6x 10⁻⁸A at V_{CE}=5V)
3. Current transfer ratio (CTR: MIN. 10% at I_F= lmA, V_{CE}=0.4V
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 (Ta=25℃)

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	℃
Storage temperature		T_{stg}	-55 to +125	℃
*3 Soldering temperature		T_{sol}	260	℃

*1 Pulse width ≤ 100 μs, Duty ratio = 0.001
*2 40 to 60% RH, AC for 1 minute
*3 For 10 seconds

■ Electro-optical Characteristics (Ta = 25℃)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX,	Unit
Input	Forward voltage		V_F	IF= 20mA		1,2	1.4	V
	Peak forward voltage		V_{FM}	I_{FM} = 0.5A			3.0	V
	Reverse current		I_R	V_R = 4V	−	−	10	μA
	Terminal capacitance		C_t	V = 0, f = 1kHz		30	250	pF
output	Collector dark current		I_{CEO}	V_{CE} = 5V, I_F = 0	−	−	6×10^{-9}	A
Transfer characteristics	Current tranfer ratio		CTR	I_F = 1mA, V_{CE} = 0.4V	10	30	100	%
	Collector-emitter saturation voltage		$V_{CE(sat)}$	IF = 20mA, I_C = 5mA	−	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 = 1MHz		0,6	1.0	pF
	Turn-off time		t_{off}	V_{CC} = 5V, I_F = 1mA, R_L = 110kΩ			650	μs
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA, R_L = 1kΩ		7	40	μs
		Fall time	t_f		−	6	40	μs

Fig. 1 Forward Current vs. Ambient Temperature

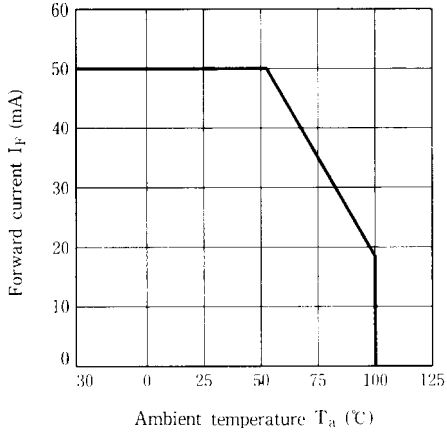


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

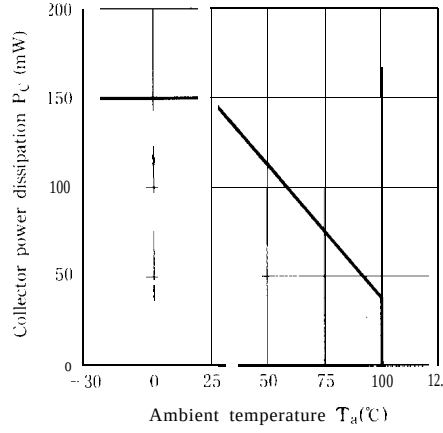


Fig. 3 Peak Forward Current vs. Duty Ratio

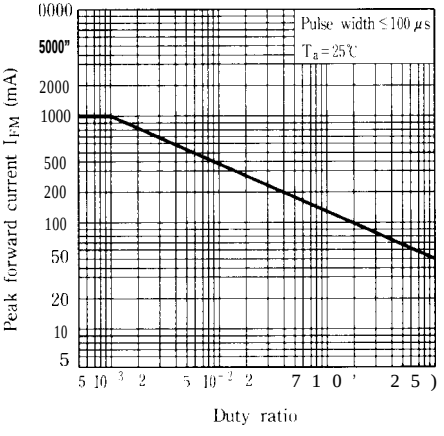


Fig. 4 Forward Current vs. Forward Voltage

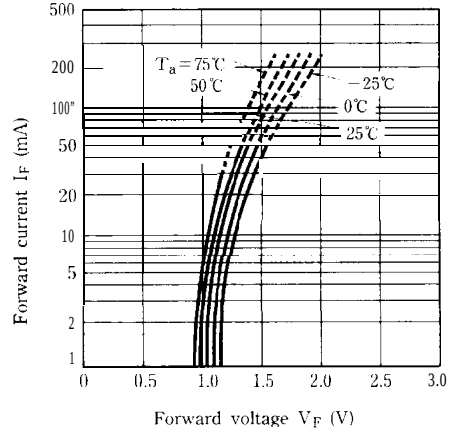


Fig. 5 Current Transfer Ratio vs. Forward Current

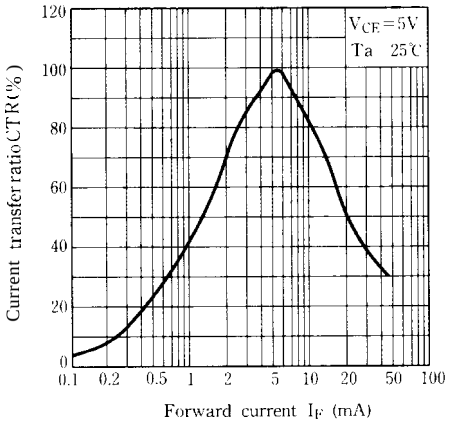


Fig. 6 Collector Current vs. Collector-emitter Voltage

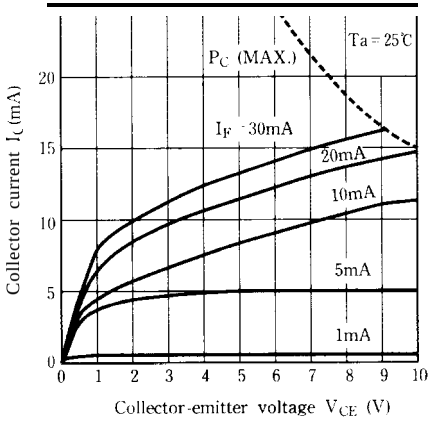


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

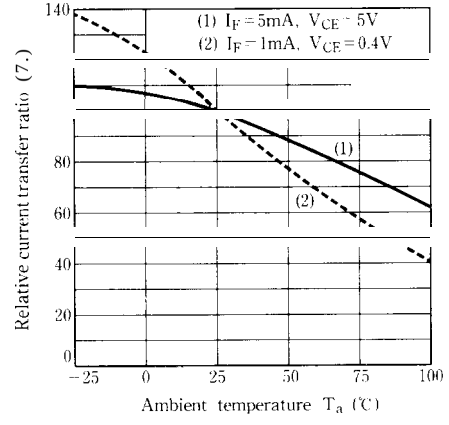


Fig. 8 Collector-emitter Saturation vs. Ambient Temperature

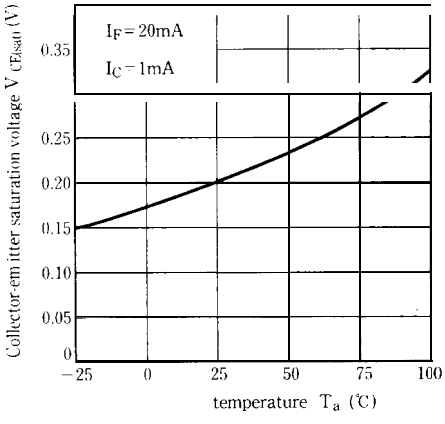


Fig. 9 Collector Dark Current vs. Ambient Temperature

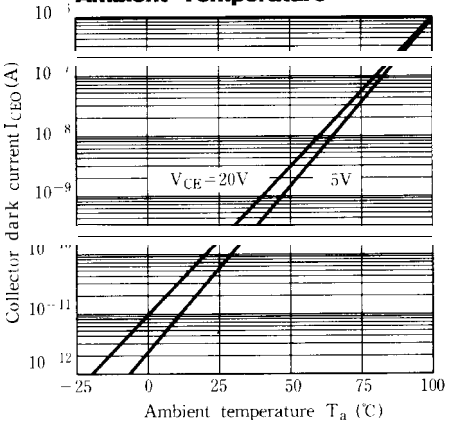


Fig.10 Response Time vs. Load Resistance

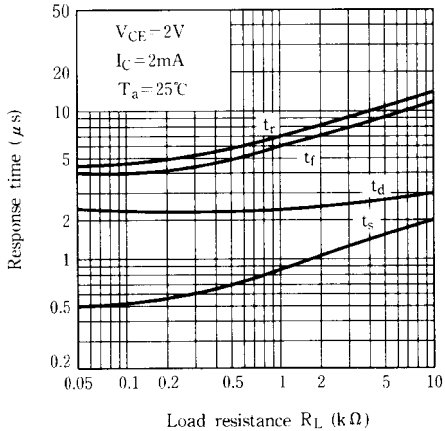


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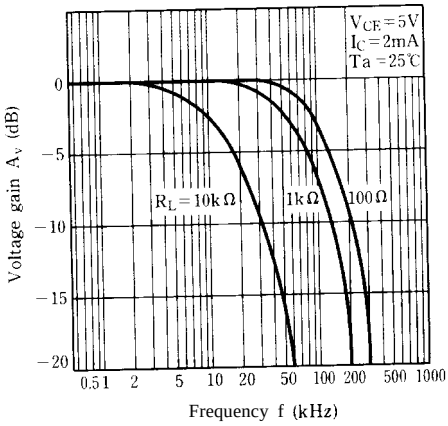
Fig.11 Frequency Response



Test Circuit for Response Time

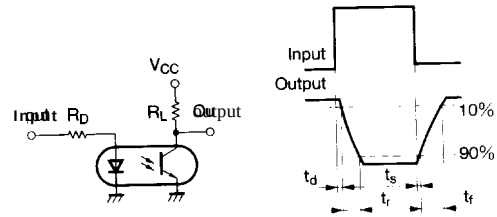
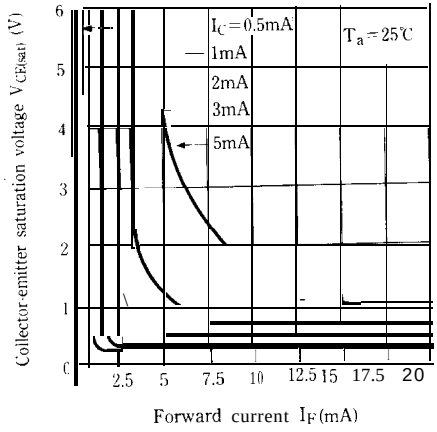
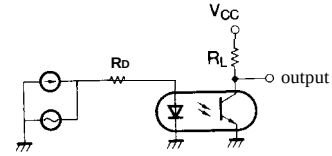


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



Test Circuit for Frepuency Response



● Please refer to the chapter “Precautions for Use” (Page 78 to 93)