PC452

Compact Surface Mount, High Collector emitter Voltage Type Photocoupler

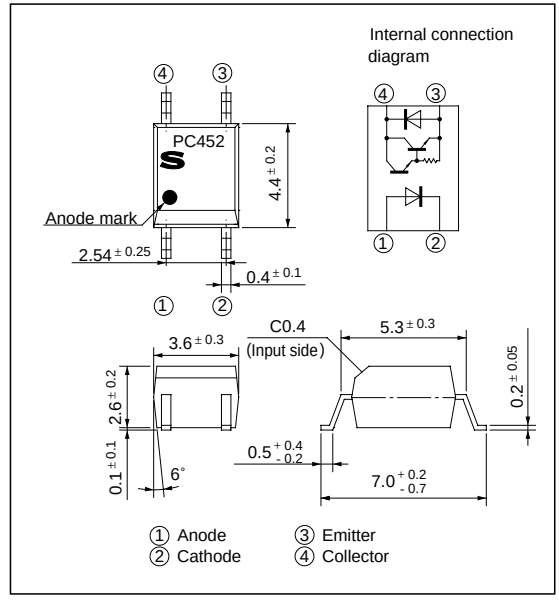
■ Features

1. Mini-flat package
2. High collector-emitter voltage
   (V_{CEO} : 300V)
3. High current transfer ratio
   (CTR : MIN. 1 000% at I_F = 1mA, V_{CE} = 2V)
4. High isolation voltage between input and output
   (Viso : 3 750 V_{rms})

■ Applications

1. Telephone sets
2. Copiers, facsimiles
3. Interfaces with various power supply cir-
   cuits, power distribution boards
4. Hybrid substrates which reguire high
   density mounting

■ Outline Dimensions (Unit : mm)

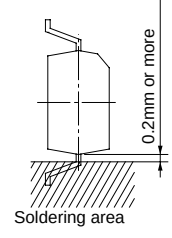


■ Package Specifications

Model No.	Package specifications	Diameter of reel	Tape width
PC452	Taping package (Net : 3 000pcs.)	ϕ 370mm	12mm
PC452T	Taping package (Net : 750pcs.)	ϕ 178mm	12mm
PC452Z	Sleeve package (Net : 100pcs.)	-	-

■ Absolute Maximum Ratings (Ta=25˚C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V_{CEO}	300	V
	Collector current (forward direction)	I_C	150	mA
	Emitter-collector voltage	V_{ECO}	0.1	V
	Collecotr power dissipation	P_C	150	mW
Total power dissipation		P_{tot}	170	mW
*1Isolation voltage		V_{iso}	3 750	V_{rms}
Operating temperture		T_{opr}	- 30 to + 100	˚C
Storage temperature		T_{stg}	- 40 to + 125	˚C
*2Soldering temperature		T_{sol}	260	˚C



*1 AC for 1 minute, 40 to 60% RH
*2 10 seconds or less, 0.2mm or more from the root of lead.

■ Electro-optical Characteristics

(Ta= 25˚C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 10mA	-	1.2	1.4	V
	Reverse current		I_R	V_R = 4V	-	-	10	μA
	Terminal capacitance		C_t	V = 0, f = 1kHz	-	30	250	pF
Output	Collecor-emitter breakdown voltage		BV_{CEO}	I_F = 0, I_C = 0.1mA	300	-	-	V
	Collector dark current		I_{CEO}	V_{CE} = 200V, I_F = 0	-	-	2×10^{-7}	A
Transfer characteristics	Collector current		I_C	I_F = 1mA, V_{CE} = 2V	10	-	-	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 20mA, I_C = 100mA	-	-	1.2	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
	Cut-off frequency		f_c	V_{CE} = 2V, I_C = 20mA, R_L = 100Ω, - 3dB	1	7	-	kHz
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 20mA, R_L = 100Ω	-	100	300	μs
		Fall time	t_f		-	20	100	μs

Fig. 1 Forward Current vs. Ambient Temperature

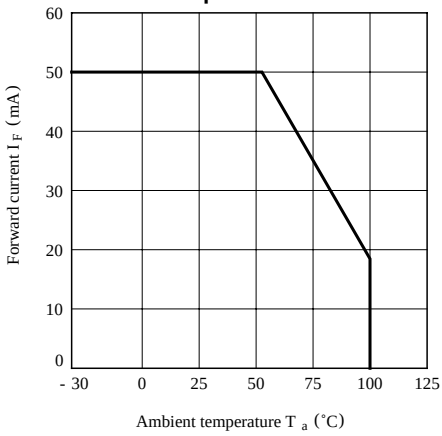


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

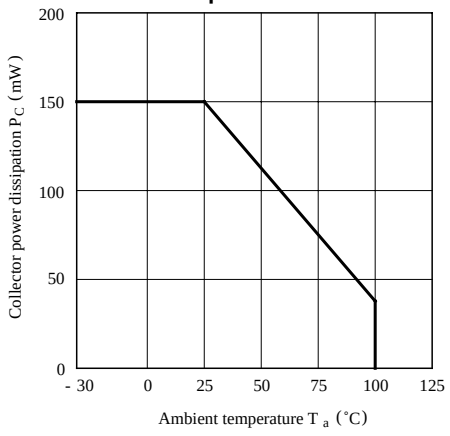


Fig. 3 Peak Forward Current vs. Duty Ratio

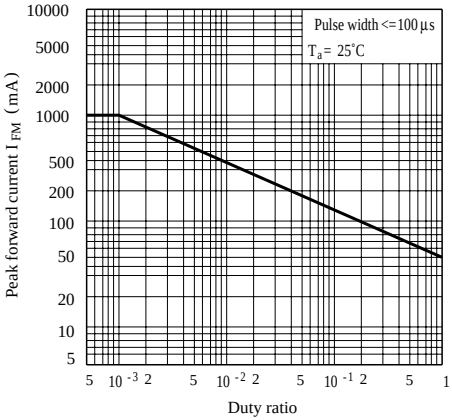


Fig. 4 Forward Current vs. Forward Voltage

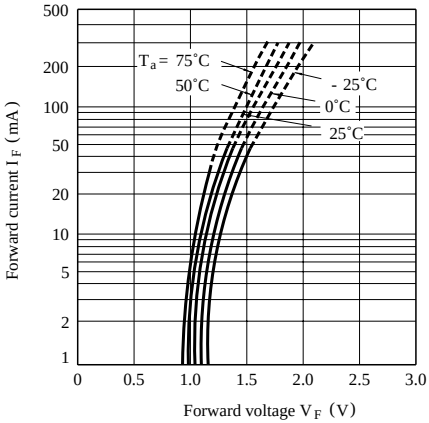


Fig. 5 Current Transfer Ratio vs. Forward Current

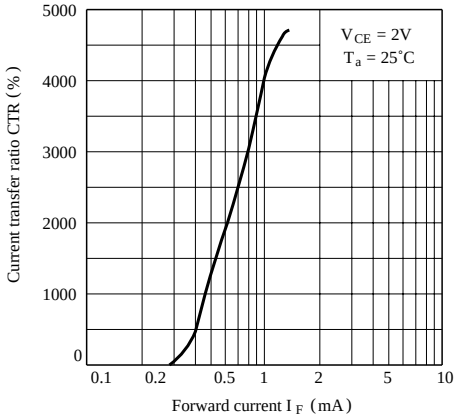


Fig. 6 Collector Current vs. Collector-emitter Voltage

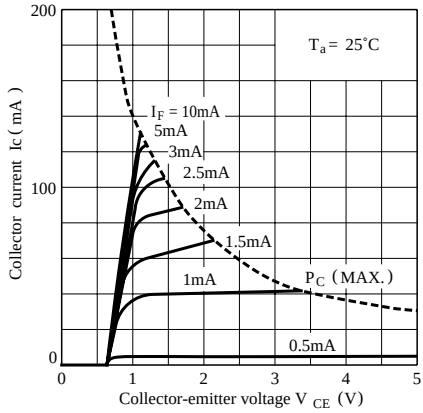


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

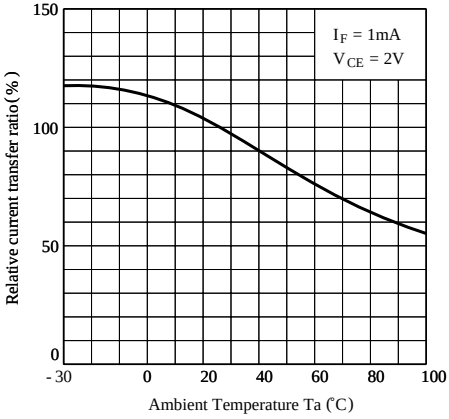


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

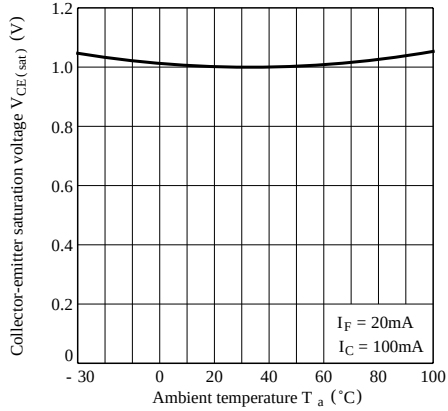


Fig. 9 Collector Dark Current vs. Ambient Temperature

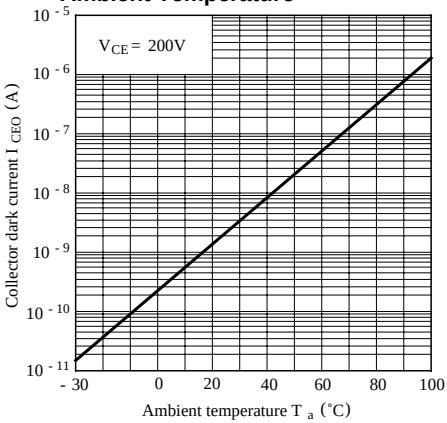


Fig.10 Response Time vs. Load Resistance

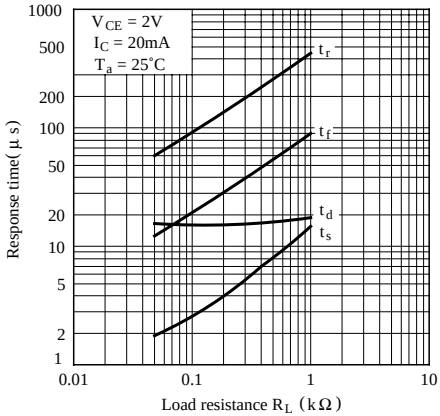


Fig.11 Frequency Response

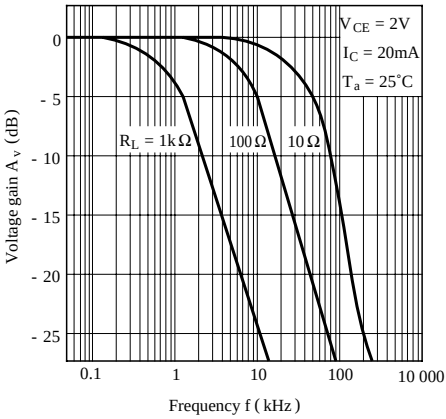
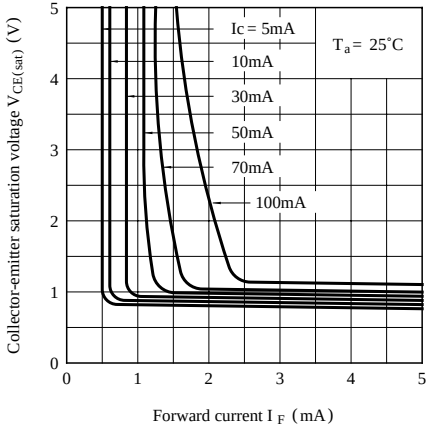


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



● Please refer to the chapter "Precautions for Use."