

# PC317 Series

## ■ Features

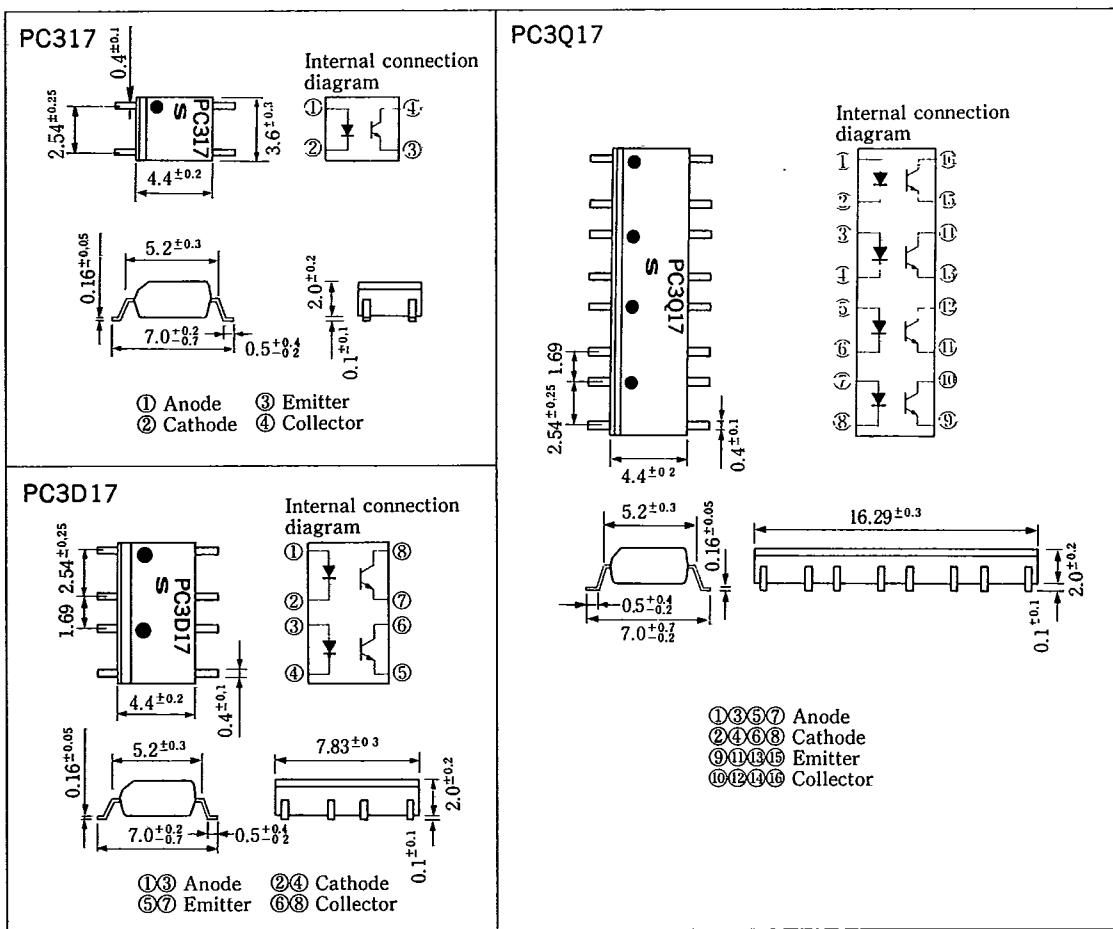
1. Opaque type, mini-flat package  
PC317 (1-channel)    PC3D17 (2-channel)  
PC3Q17 (4-channel)
  2. Subminiature type  
(The volume is smaller than that of our conventional DIP type by as far as 30%).
  3. Current transfer ratio  
CTR: MIN. 50% at  $I_F = 5\text{mA}$ ,  $V_{CE} = 5\text{V}$
  4. Isolation voltage between input and output  
 $V_{iso}$ : 2,500VRms
- \* Employs double transfer mold technology.

## ■ Applications

1. Hybrid substrates that require high density mounting
2. Programmable controllers

## ■ Outline Dimensions

(Unit : mm)



## ■ Absolute Maximum Ratings

(Ta=25°C)

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Parameter	Symbol	Rating	Unit
Input	Forward current	I <sub>F</sub>	50 mA
	*1 Peak forward current	I <sub>FM</sub>	1 A
	Reverse voltage	V <sub>R</sub>	6 V
	Power dissipation	P	70 mW
Output	Collector-emitter voltage	V <sub>CEO</sub>	35 V
	Emitter-collector voltage	V <sub>EKO</sub>	6 V
	Collector current	I <sub>C</sub>	50 mA
	Collector power dissipation	P <sub>C</sub>	150 mW
Total power dissipation		P <sub>tot</sub>	170 mW
*2 Isolation voltage		V <sub>iso</sub>	2,500 Vrms
Operating temperature		T <sub>opr</sub>	-30 ~ +100 °C
Storage temperature		T <sub>stg</sub>	-40 ~ +125 °C
*3 Soldering temperature		T <sub>sot</sub>	260 °C

\*1 Pulse width ≤ 100 μs, Duty ratio = 0.001

\*2 RH = 40 ~ 60%, AC for 1 minute

\*3 For 10 seconds

## ■ Electro-optical Characteristics

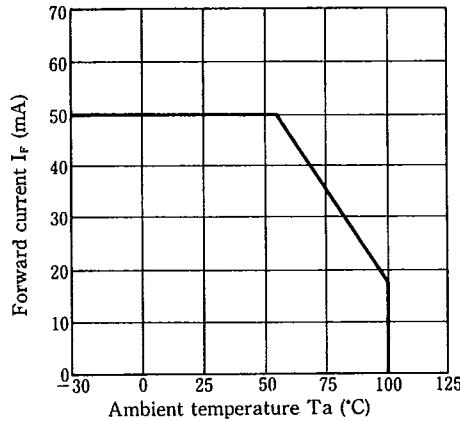
(Ta=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V <sub>F</sub> I <sub>F</sub> =20mA	—	1.2	1.4	V
	Reverse current	I <sub>R</sub> V <sub>R</sub> =4V	—	—	10	μA
	Terminal capacitance	C <sub>t</sub> V=0, f=1kHz	—	30	250	pF
Output	Collector dark current	I <sub>CEO</sub> I <sub>F</sub> =20V, I <sub>F</sub> =0	—	—	10 <sup>-7</sup>	A
	*4 Current transfer ratio	CTR I <sub>F</sub> =5mA, V <sub>CE</sub> =5V	50	100	600	%
Transfer characteristics	Collector-emitter saturation voltage	V <sub>CE(sat)</sub> I <sub>F</sub> =20mA, I <sub>c</sub> =1mA	—	0.1	0.2	V
	Isolation resistance	R <sub>iso</sub> DC500V, RH=40~60%	5×10 <sup>10</sup>	10 <sup>11</sup>	—	Ω
	Floating capacitance	C <sub>f</sub> V=0, f=1MHz	—	0.6	1.0	pF
	Response time (Rise)	t <sub>r</sub> V <sub>CE</sub> =2V, I <sub>c</sub> =2mA	—	4	18	μs
	Response time (Fall)	t <sub>f</sub> R <sub>L</sub> =100Ω	—	3	18	μs

\*4 Classification table of current transfer ratio is shown below.

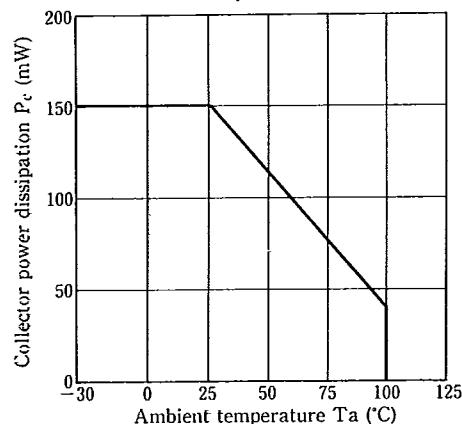
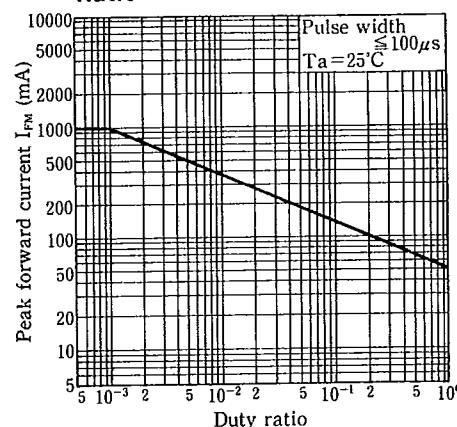
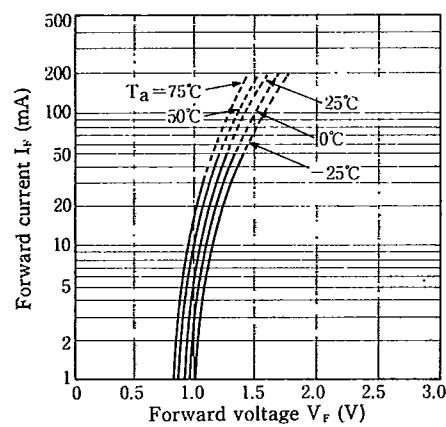
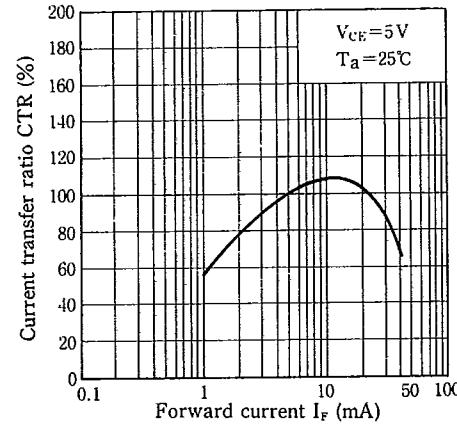
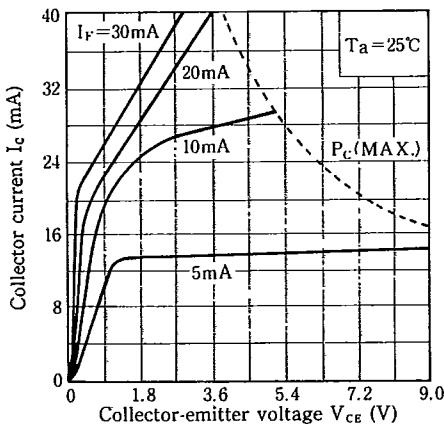
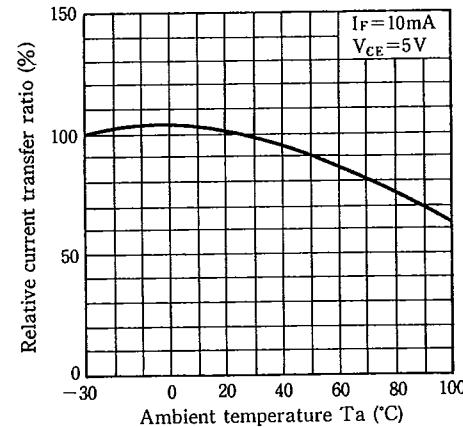
	CTR(%)
PC317A	80~160
PC317B	130~260
PC317C	200~400
PC317D	300~600
PC317AB	80~260
PC317BC	130~400
PC317CD	200~600
PC317AC	80~400
PC317BD	130~600
PC317AD	80~600
PC317	50~600

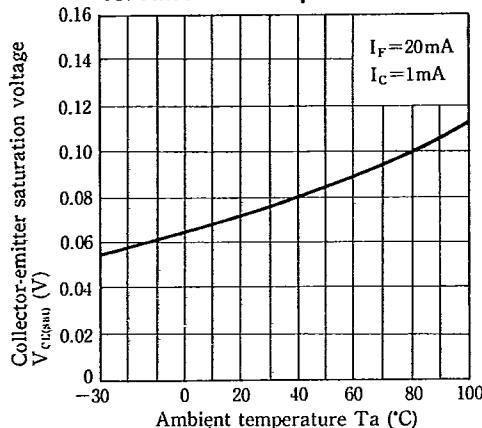
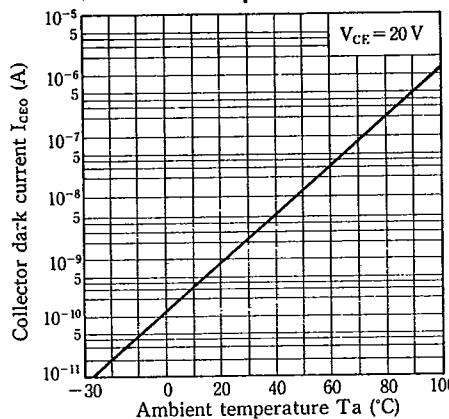
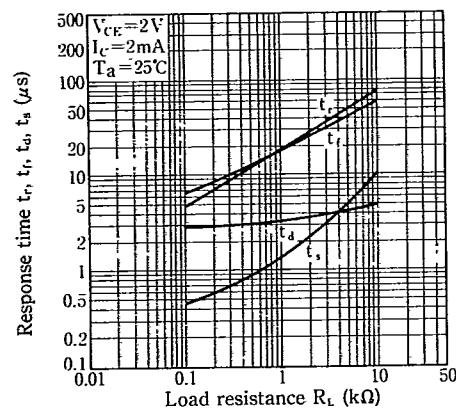
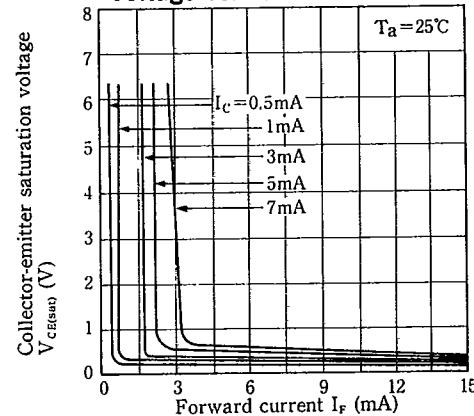
Fig. 1 Forward Current vs. Ambient Temperature



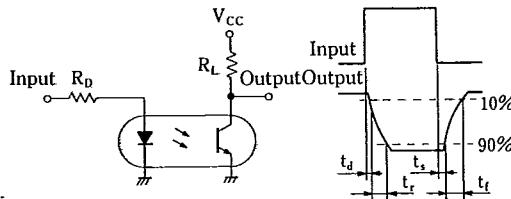
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**Fig. 2 Collector Power Dissipation vs. Ambient Temperature****Fig. 3 Peak Forward Current vs. Duty Ratio****Fig. 4 Forward Current vs. Forward Voltage****Fig. 5 Current Transfer Ratio vs. Forward Current****Fig. 6 Collector Current vs. Collector-emitter 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 Collector-emitter Saturation Voltage vs. Forward Current**

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**Test Circuit for Response Time****Package Specification of PC300 Series (1-ch type)**

Model No.	Sales Unit	Package Specifications	Diameter of Reel	Tape Width
PC3 * * Z	1 pc.	Sleeve package (Net: 125 pcs.)	—	—
PC3 * *	3,000 pcs.	Taping package (Net: 3,000 pcs.)	$\phi 370\text{mm}$	12mm
PC3 * * T	750 pcs.	Taping package (Net: 750 pcs.)	$\phi 178\text{mm}$	12mm