

# PC419K

## Compact Surface Mounted, Bi-directional Linear Output Type Photocoupler

### ■ Features

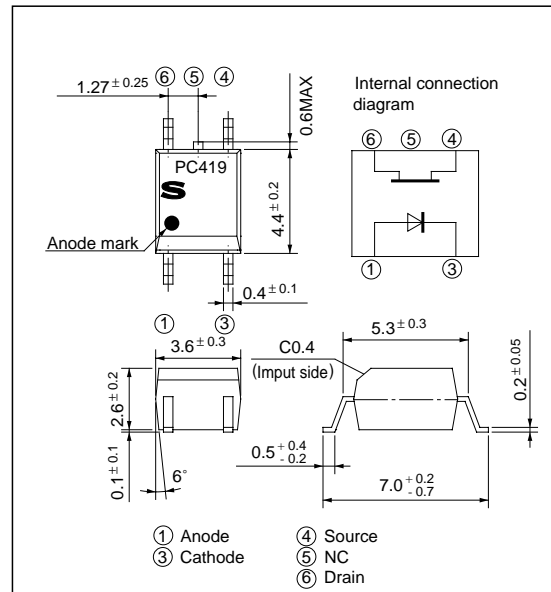
1. Bi-directional linear output
2. High breakdown voltage  
( $V_{BR}$  : 120V)
3. Low collector dark current  
( $I_d$  : MAX. 10nA )
4. High isolation voltage between input and output ( $V_{iso}$  : 3 750V<sub>rms</sub>)

### ■ Applications

1. Board testers
2. Programmable controllers
3. Analog switch
4. Hybrid substrates which require high density mounting

### ■ Outline Dimensions

(Unit : mm)



### ■ Package Specifications

Model No.	Package specifications	Diameter of reel	Tape width
PC419K	Taping package (Net : 3 000pcs. )	φ 370mm	12mm
PC419KT	Taping package (Net : 750pcs. )	φ 178mm	12mm
PC419KZ	Sleeve package (Net : 100pcs. )	-	-

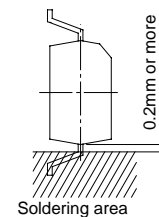
### ■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	6	V
	*1 Power dissipation	$P$	70	mW
Output	Output current	$I_O$	10	mA
	Breakdown voltage	$V_{BR}$	120	V
	*1 Power dissipation	$P_O$	100	mW
Total power dissipation		$P_{tot}$	120	mW
*1 Isolation voltage		$V_{iso}$	3 750	V <sub>rms</sub>
Operating temperature		$T_{opr}$	- 25 to + 100	°C
Storage temperature		$T_{stg}$	- 40 to + 125	°C
*2 Soldering 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	$V_F$	$I_F = 16\text{mA}$	-	1.2	1.4	V
	Reverse current	$I_R$	$V_R = 6\text{V}$	-	-	10	$\mu\text{A}$
	Terminal capacitance	$C_{t1}$	$V = 0, f = 1\text{kHz}$	-	50	250	pF
Output	*3Breakdown voltage	$V_{BR}$	$I_{46} = 100 \mu\text{A}, I_F = 0$	120	-	-	V
	*3Collector dark current	$I_d$	$V_{46} = 100\text{V}, I_F = 0$	-	-	10	nA
	*3OFF-state resistance	$R_{OFF}$	$V_{46} = 100\text{V}, I_F = 0$	$10^{10}$	-	-	$\Omega$
	Terminal capacitance	$C_{t2}$	$V_{46} = 0, f = 1\text{MHz}$	-	-	25	pF
Transfer characteristics	*3ON-state resistance	$R_{ON}$	$I_F = 16\text{mA}, I_{46} = 100 \mu\text{A}$	-	-	200	$\Omega$
	Isolation resistance	$R_{ISO}$	DC500V, 40 to 60% RH	$5 \times 10^{10}$	$10^{11}$	-	$\Omega$
	Floating capacitance	$C_f$	$V = 0, f = 1\text{MHz}$	-	-	2.5	pF
	Turn-on time	$t_{on}$	$I_F = 16\text{mA}, V_{46} = 5\text{V}$	-	-	65	$\mu\text{s}$
	Turn-off time	$t_{off}$		$R_L = 50\Omega$	-	-	

\*3 Applies to forward and reverse directions between terminals 4 and 6.

Fig. 1 Forward Current vs. Ambient Temperature

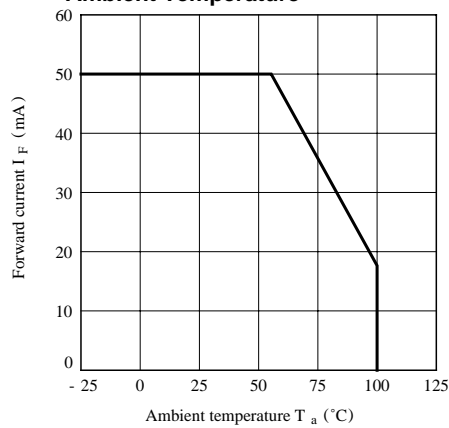
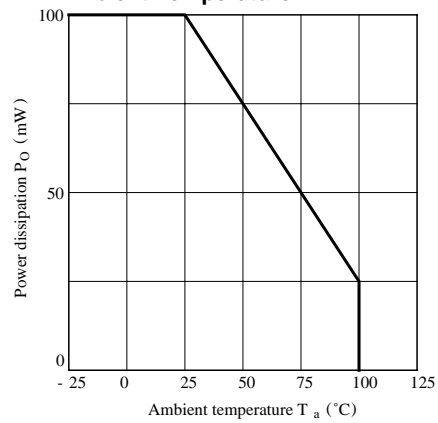
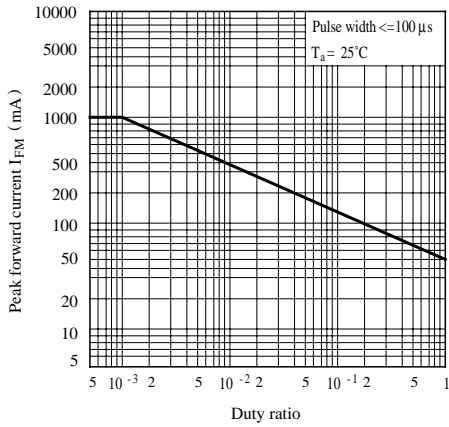


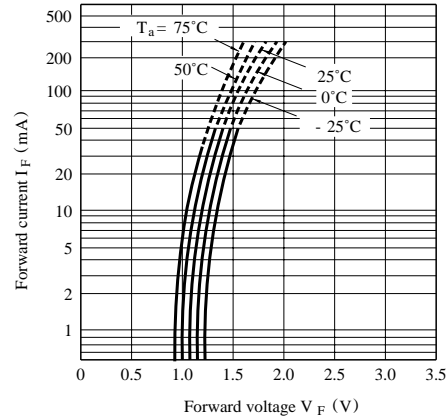
Fig. 2 Power Dissipation vs. Ambient Temperature



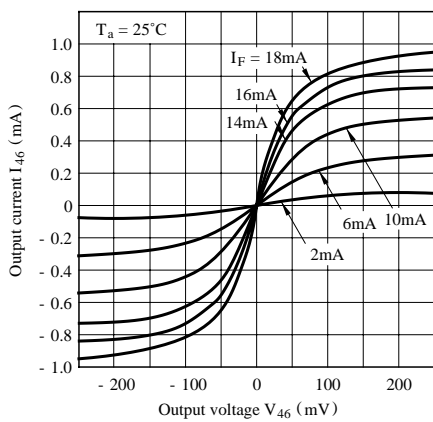
**Fig. 3 Peak Forward Current vs. Duty Ratio**



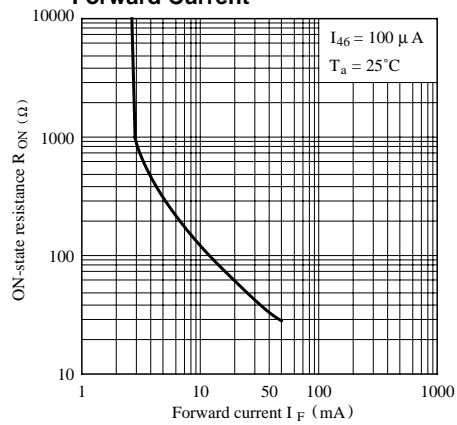
**Fig. 4 Forward Current vs. Forward Voltage**



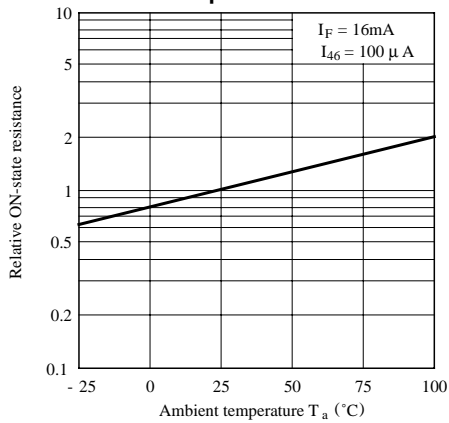
**Fig. 5 Output Current vs. Output Voltage**



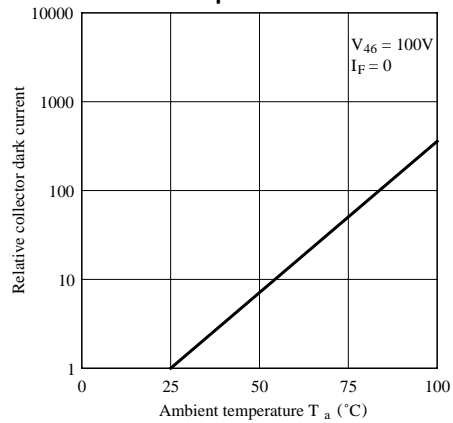
**Fig. 6 ON-state Resistance vs. Forward Current**



**Fig. 7 Relative ON-state Resistance vs. Ambient Temperature**



**Fig. 8 Relative Collector Dark Current vs. Ambient Temperature**



●Please refer to the chapter “Precautions for Use”.