PC419K

Compact Surface Mounted, Bi-directional Linear Output Type Photocoupler

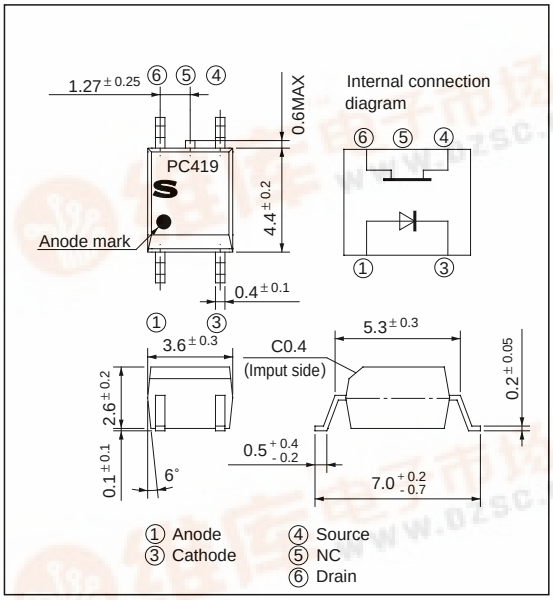
■ Features

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 $_{rms}$)

■ Applications

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

■ Outline Dimensions (Unit : mm)

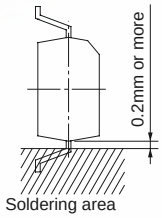


■ Package Specifications

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 Maximun Ratings (Ta= 25˚C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	*1Power dissipation	P	70	mW
Output	Output current	I_O	10	mA
	Breakdown voltage	V_{BR}	120	V
	*1Power dissipation	P_O	100	mW
Total power dissipation		P_{tot}	120	mW
*1Isolation voltage		V_{iso}	3 750	V_{rms}
Operating temperature		T_{opr}	- 25 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 = 16mA	-	1.2	1.4	V
	Reverse current	I_R	V_R = 6V	-	-	10	μA
	Terminal capacitance	C_{t1}	V = 0, f = 1kHz	-	50	250	pF
Output	*3Breakdown voltage	V_{BR}	I_{46} = 100 μA, I_F = 0	120	-	-	V
	*3Collector dark current	I_d	V_{46} = 100V, I_F = 0	-	-	10	nA
	*3OFF-state resistance	R_{OFF}	V_{46} = 100V, I_F = 0	10^{10}	-	-	Ω
	Terminal capacitance	C_{t2}	V_{46} = 0, f = 1MHz	-	-	25	pF
Transfer charac-teristics	*3ON-state resistance	R_{ON}	I_F = 16mA, I_{46} = 100 μA	-	-	200	Ω
	Isolation resistance	R_{ISO}	DC500V, 40 to 60% RH	5 x 10^{10}	10^{11}	-	Ω
	Floating capacitance	Cf	V = 0, f = 1MHz	-	-	2.5	pF
	Turn-on time	t_{on}	I_F = 16mA, V_{46} = 5V	-	-	65	μs
	Turn-off time	t_{off}	R_L = 50Ω	-	-	65	

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

Fig. 1 Forward Current vs. Ambient Temperature

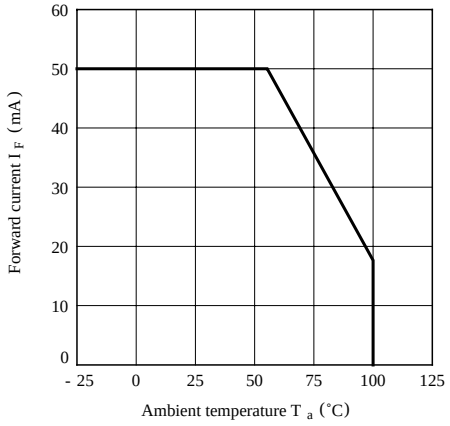


Fig. 2 Power Dissipation vs. Ambient Temperature

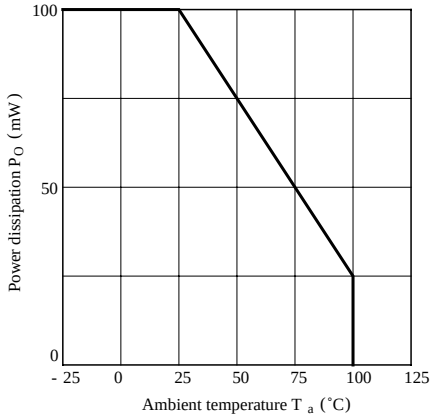


Fig. 3 Peak Forward Current vs. Duty Ratio

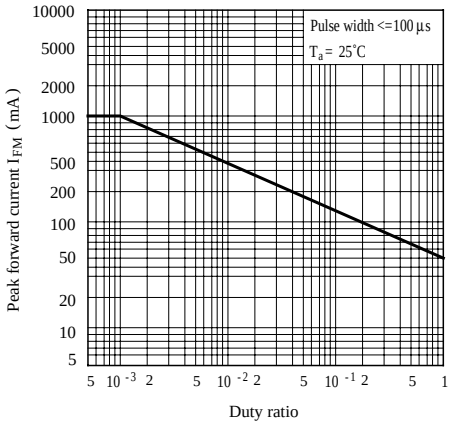


Fig. 4 Forward Current vs. Forward Voltage

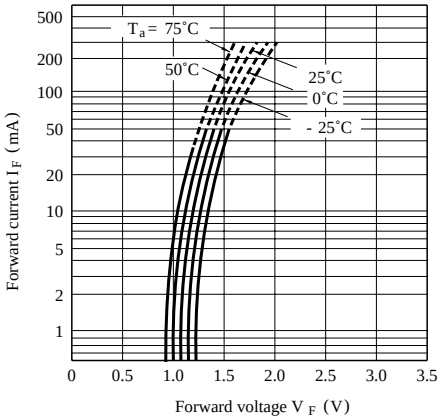


Fig. 5 Output Current vs. Output Voltage

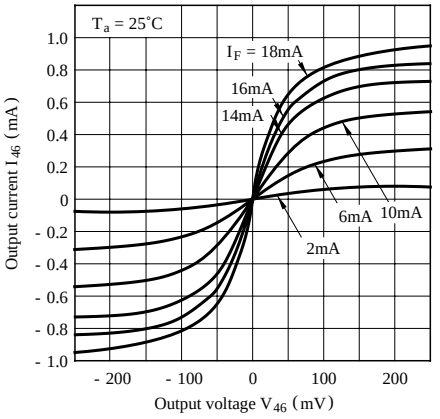


Fig. 6 ON-state Resistance vs. Forward Current

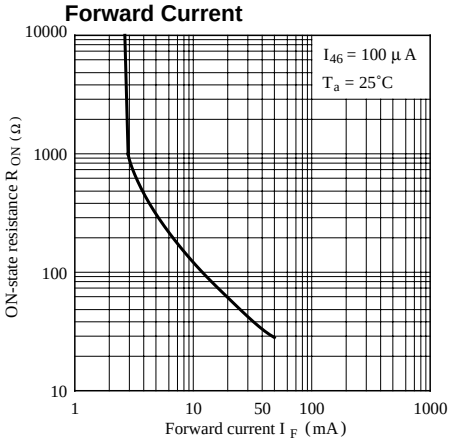


Fig. 7 Relative ON-state Resistance vs. Ambient Temperature

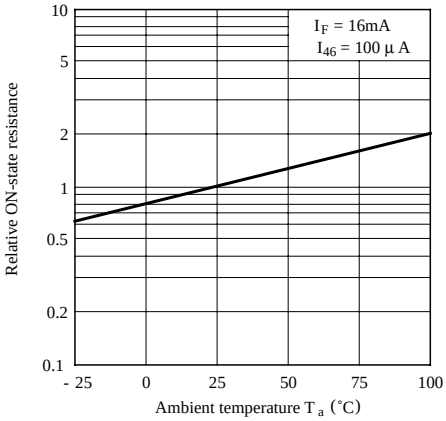
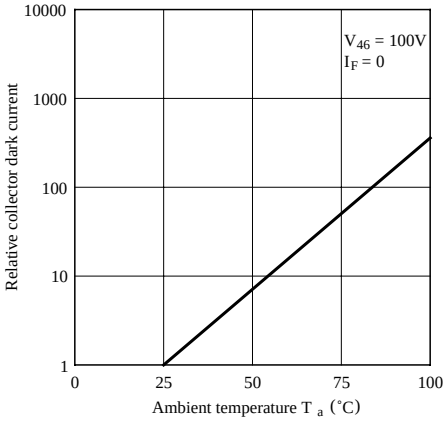


Fig. 8 Relative Collector Dark Current vs. Ambient Temperature



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