

PC419

Compact Surface Mounted, Bi-directional Linear Output Type Photocoupler

■ Features

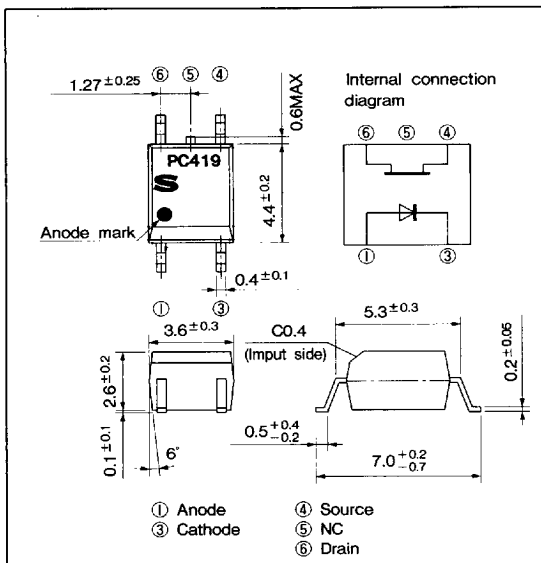
1. Bi-directional linear output
2. High breakdown voltage
($V_{BR} : 120V$)
3. Low collector dark current
($I_d : \text{MAX. } 10nA$)
4. High isolation voltage between input and output ($V_{iso} : 3\,750V_{rms}$)

■ 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
PC419	Taping package (Net : 3 000pcs.)	$\phi 370mm$	12mm
PC419T	Taping package (Net : 750pcs.)	$\phi 178mm$	12mm
PC419Z	Sleeve package (Net : 100pcs.)	—	—

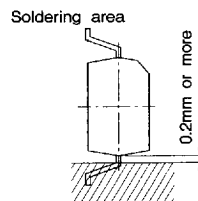
■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse volt	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.



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"In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device."

■ 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	μA
	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}	—	—	Ω
	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	Ω
	Isolation resistance	R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	10^{11}	—	Ω
	Floating capacitance	C_f	$V = 0, f = 1\text{MHz}$	—	—	2.5	pF
	Turn-on time	t_{on}	$I_F = 16\text{mA}, V_{46} = 5\text{V}$	—	—	50	μs
	Turn-off time	t_{off}		—	—	50	

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

Fig. 1 Forward Current vs. Ambient Temperature

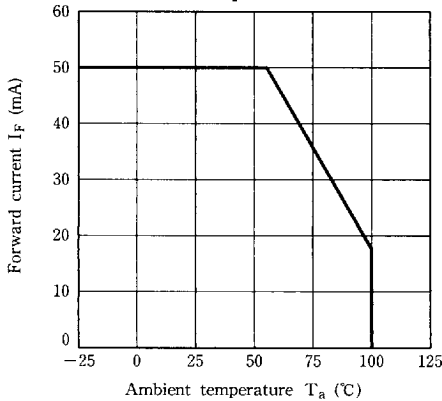


Fig. 2 Power Dissipation vs. Ambient Temperature

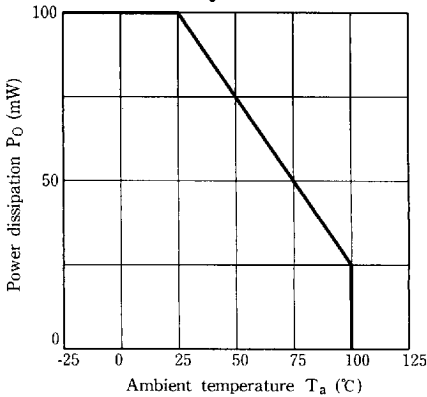
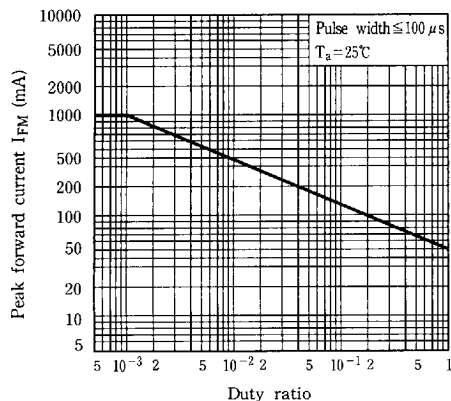
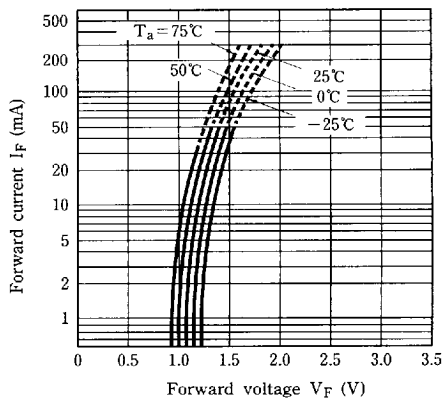
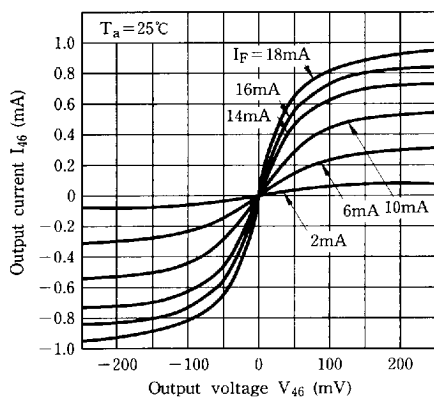
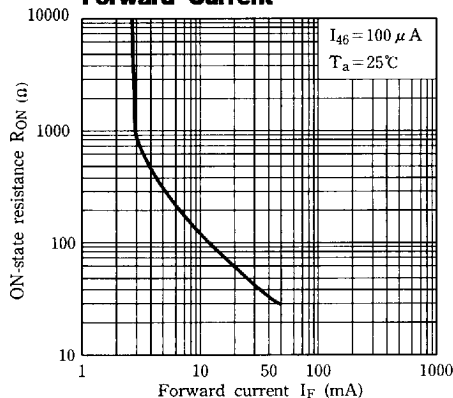
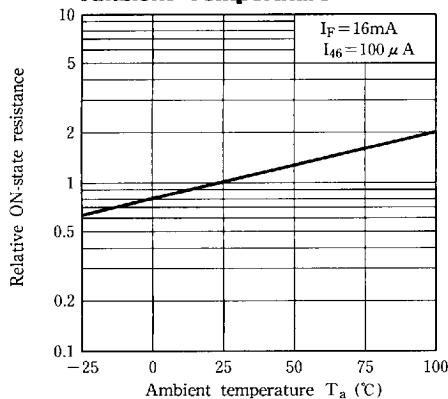
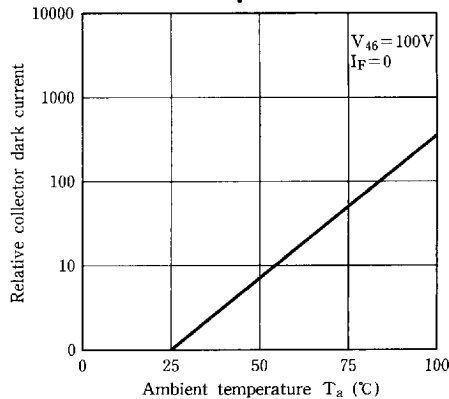


Fig. 3 Peak Forward Current vs. Duty Ratio**Fig. 4 Forward Current vs. Forward Voltage****Fig. 5 Output Current vs. Output Voltage****Fig. 6 ON-state Resistance vs. Forward Current****Fig. 7 Relative ON-state Resistance vs. Ambient Temperature****Fig. 8 Relative Collector Dark Current vs. Ambient Temperature**

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