

# PC219 Mini-Flat Package, Bi-Directional Linear Output Type Photocoupler

T-41-83

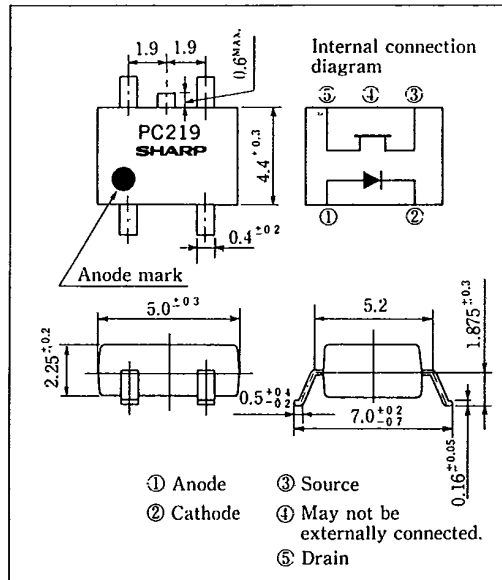
## ■ Features

1. Bi-directional linear output
2. High output reverse voltage ( $V_{BR}$ : MIN. 120V)
3. Low collector dark current ( $I_d$ : MAX. 10nA)
4. Mini-flat package type

## ■ Applications

1. Programmable controllers
2. Analog switches
3. Audio equipment such as VCRs, radio-cassette tape recorders and stereo components, etc.
4. Signal transmission between circuits of differential potentials and impedances

## ■ Outline Dimensions (Unit : mm)



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## ■ Absolute Maximum Ratings

( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Rating	Unit
Input	Forward current	$I_F$	50 mA
	*1 Peak Forward current	$I_{FM}$	1 A
	Reverse voltage	$V_R$	6 V
	Power dissipation	$P$	70 mW
Output	Output current	$I_o$	10 mA
	Reverse voltage	$V_{BR}$	120 V
	Power dissipation	$P_o$	100 mW
	Total power dissipation	$P_{tot}$	120 mW
*2 Isolation voltage	$V_{iso}$	2,000	Vrms
Operating temperature	$T_{opr}$	-25 ~ +100	°C
Storage temperature	$T_{stg}$	-40 ~ +125	°C
*3 Soldering temperature	$T_{sol}$	260	°C

\*1 Pulse width  $\leq 100\mu\text{s}$ , Duty ratio = 0.001

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

\*3 For 10 seconds

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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	$\mu A$
	Terminal capacitance	$C_{11}$ $V=0, f=1kHz$	—	50	250	pF
Output	Terminal capacitance	$C_{12}$ $V_{35}=0, f=1MHz$	—	—	25	pF
	**Reverse voltage	$V_{BR}$ $I_{35}=100\mu A, I_F=0$	120	—	—	V
	**Collector dark current	$I_d$ $V_{35}=100V, I_F=0$	—	—	10	nA
	**Off-state resistance	$R_{OFF}$ $V_{35}=100V, I_F=0$	$10^{10}$	—	—	$\Omega$
	**On-state resistance	$R_{ON}$ $I_F=16mA, I_{35}=100\mu A$	—	—	200	$\Omega$
Transfer characteristics	Isolation resistance	$R_{ISO}$ $DC500V, RH=40\sim60\%$	$5 \times 10^{10}$	$10^{11}$	—	$\Omega$
	Floating capacitance	$C_f$ $V=0, f=1MHz$	—	—	2.5	pF
	Turn-on time	$I_F=16mA, V_{35}=5V, R_L=50\Omega$	—	—	50	$\mu s$
	Turn-off time		$t_{off}$	—	—	50

\*4 Applies to forward and reverse directions between terminals 3 and 5.  
(Note) Measurement of each characteristics shall be carried out in opaque condition.

Fig. 1 Forward Current vs. Ambient Temperature

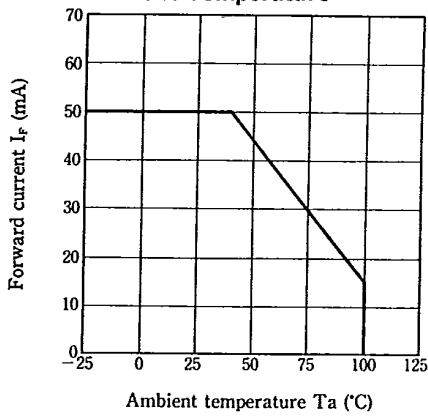
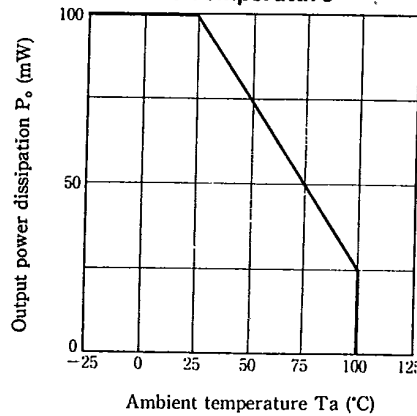
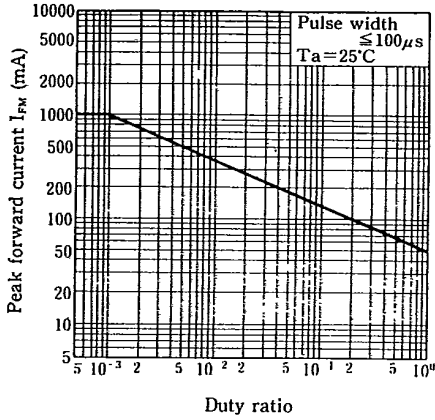


Fig. 2 Output Power Dissipation vs. Ambient Temperature

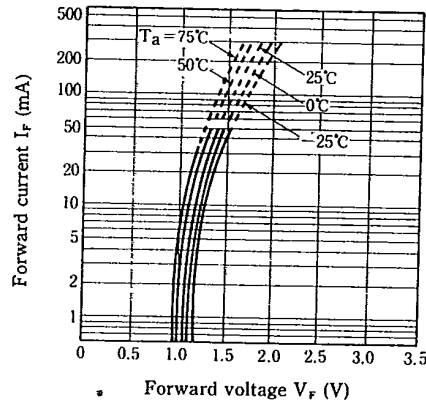


**Fig. 3 Peak Forward Current vs. Duty Ratio**

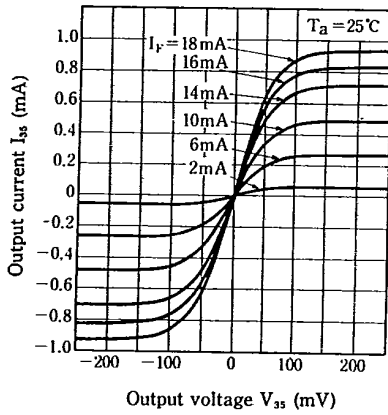


**Fig. 4 Forward Current vs. Forward Voltage**

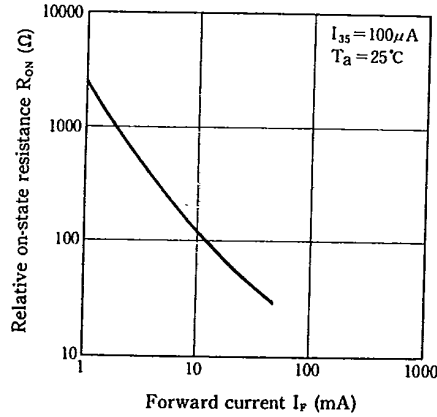
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**Fig. 5 Output Current vs. Output Voltage**

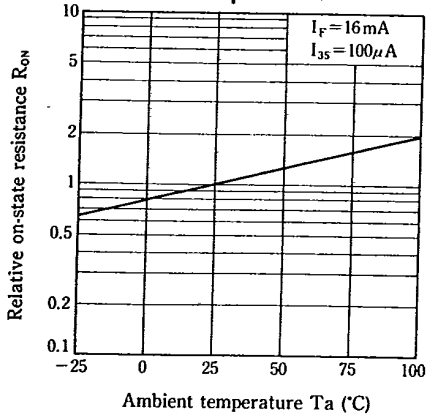


**Fig. 6 Relative On-state Resistance vs. Forward Current**



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



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

