SHARP

Under development	
New product	●

PC957L0NSZ

Photocoupler

High Speed and High CMR *OPIC Photocoupler

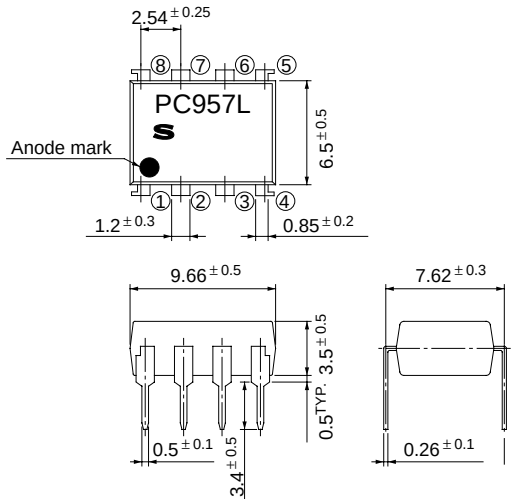
■ Features

(1) High instantaneous common mode rejection voltage (CMR:MIN. 15kV/μs)
(2) High speed response
(t_{PHL}:MAX. 0.8μs , t_{PLH}:MAX. 0.8μs)
(3) Isolation voltage(Viso(rms) : 5.0kV)
(4) 8-pin DIP package
(5) Flow soldering : 280˚C for 6s or less
(6) Recognized by UL (file No. E64380)
Under preparation for VDE standard

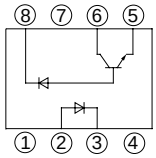
■ Applications

(1) Programmable controller
(2) Inverter

■ Outline Dimensions (Unit: mm)



Internal connection



① NC ⑤ GND
② Anode ⑥ Vo
③ Cathode ⑦ NC
④ NC ⑧ Vcc

* "OPIC" (Optical IC) is a trademark of the SHARP Corporation. An OPIC consists of a light-detecting element and signal-processing circuit integrated onto a single chip.

■ Absolute Maximum Ratings

(Ta=25˚C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	25	mA
	Reverse voltage	V_R	5	V
	Power dissipation	P	45	mW
Output	Supply voltage	V_{CC}	−0.5 to +30	V
	Output voltage	V_O	−0.5 to +20	V
	Output current	I_O	8	mA
	Power dissipation	P_O	100	mW
*1	Isolation voltage	V_{iso}(rms)	5.0	kV
	Operating temperature	T_{opr}	−55 to +100	˚C
	Storage temperature	T_{stg}	−55 to +125	˚C
*2	Soldering temperature	T_{sol}	270	˚C

*1 40 to 60% RH, for 1 minute
*2 For 10s at the portion of 0.2mm or more from the root of lead pins

■ Electro-optical Characteristics

(Ta=25˚C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	I_F=16mA	–	1.7	1.95	V
	Reverse current	I_R	V_R=5V	–	–	10	μA
	Terminal capacitance	C_t	V_F=0, f=1MHz	–	60	250	pF
Output	High level output current	$I_{OH(1)}$	I_F=0, V_{CC}=5.5V, V_O=5.5V	–	3	500	nA
		$I_{OH(2)}$	I_F=0, V_{CC}=15V, V_O=15V	–	0.01	1.0	μA
		$I_{OH(3)}$	I_F=0, V_{CC}=15V, V_O=15V *3	–	–	50	
	High level supply current	$I_{CCH(1)}$	I_F=0, V_{CC}=15V, V_O=OPEN	–	0.02	1.0	μA
		$I_{CCH(2)}$	I_F=0, V_{CC}=15V, V_O=OPEN *3	–	–	2.0	
	Low level supply current	I_{CCL}	I_F=16mA, V_{CC}=15V, V_O=OPEN	–	120	–	μA
	Low level output voltage	V_{OL}	I_F=16mA, V_{CC}=4.5V, I_O=2.4mA	–	0.1	0.4	V
Transfer characteristics	Current transfer ratio	CTR(1)	I_F=16mA, V_{CC}=4.5V, V_O=0.4V	19	–	50	%
		CTR(2)	I_F=16mA, V_{CC}=4.5V, V_O=0.4V *3	15	–		
	Isolation resistance	R_{ISO}	DC500V, 40 to 60%RH	5×10^{10}	10^{11}	–	Ω
	Floating capacitance	C_f	V=0V, f=1MHz	–	0.6	1.0	pF
	"High→Low" transfer time	t_{PHL}	I_F=16mA, V_{CC}=5V, R_L=1.9kΩ	–	0.2	0.8	μs
	"Low→High" transfer time	t_{PLH}		–	0.6	0.8	
	Instantaneous common mode rejection voltage "Output: High level"	CM_H	I_F=0mA, R_L=1.9kΩ, V_{CM}=1.0kV_{P-P}, V_{CC}=5V	15	30	–	kV/μs
	Instantaneous common mode rejection voltage "Output: Low level"	CM_L	I_F=16mA, R_L=1.9kΩ, V_{CM}=1.0kV_{P-P}, V_{CC}=5V	−15	−30	–	kV/μs

*3 Ta=0 to 70˚C