

**FOR OPTICAL DAA, HIGH LINEAR  
16-PIN SOP PHOTOCOUPLER**

-NEPOC™ Series-

**DESCRIPTION**

The PS8741 is an optically coupled isolator containing a GaAs LED on the light emitting side (input side) and two photodiodes on the output side.

It is suitable for analog control applications such as PCMCIA card, modem, voice telephony and fax machines.

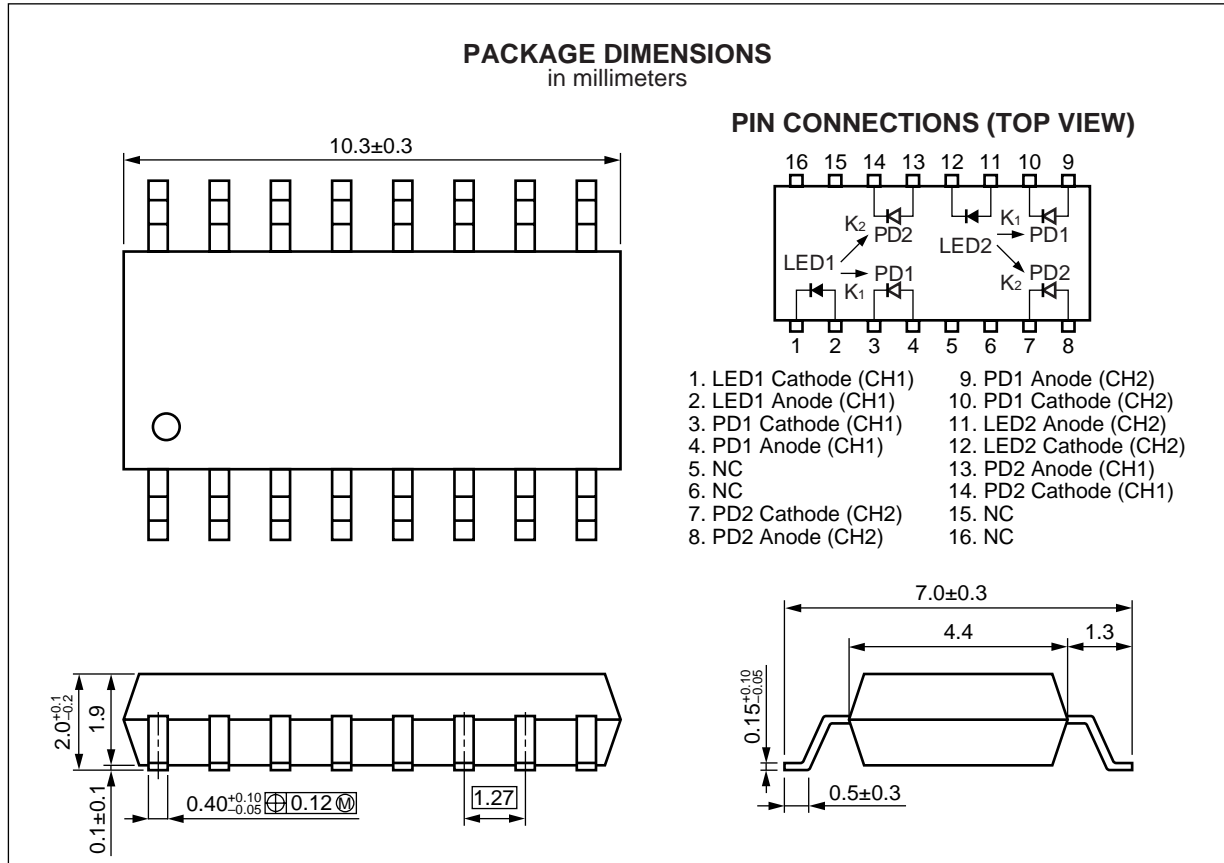
**FEATURES**

- For PCMCIA
- Small and thin package (16-pin SOP: 255 mil, Pin pitch = 1.27 mm, Height = 2.1 mm)
- High transfer gain linearity ( $\Delta K_3 = 1 \% \text{ MAX.}$ )
- High isolation voltage (BV = 1 500 Vr.m.s.)
- Ordering number of taping product: PS8741-F3, F4

**APPLICATIONS**

- PCMCIA card
- Notebook PC, PDA
- Modem
- Telephone, FAX

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Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.



**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C, unless otherwise specified)**

Parameter		Symbol	Ratings	Unit
Diode	Forward Current (DC)	I <sub>F</sub>	50	mA
	Reverse Voltage	V <sub>R</sub>	3	V
	Power Dissipation	P <sub>D</sub>	80	mW/ch
	Peak Forward Current <sup>*1</sup>	I <sub>FP</sub>	0.5	A
Detector	Reverse Voltage	V <sub>R</sub>	20	V
	Power Dissipation	P <sub>C</sub>	50	mW/ch
Isolation Voltage <sup>*2</sup>		BV	1 500	Vr.m.s.
Total Power Dissipation		P <sub>T</sub>	180	mW
Operating Ambient Temperature		T <sub>A</sub>	-40 to +85	°C
Storage Temperature		T <sub>stg</sub>	-40 to +100	°C

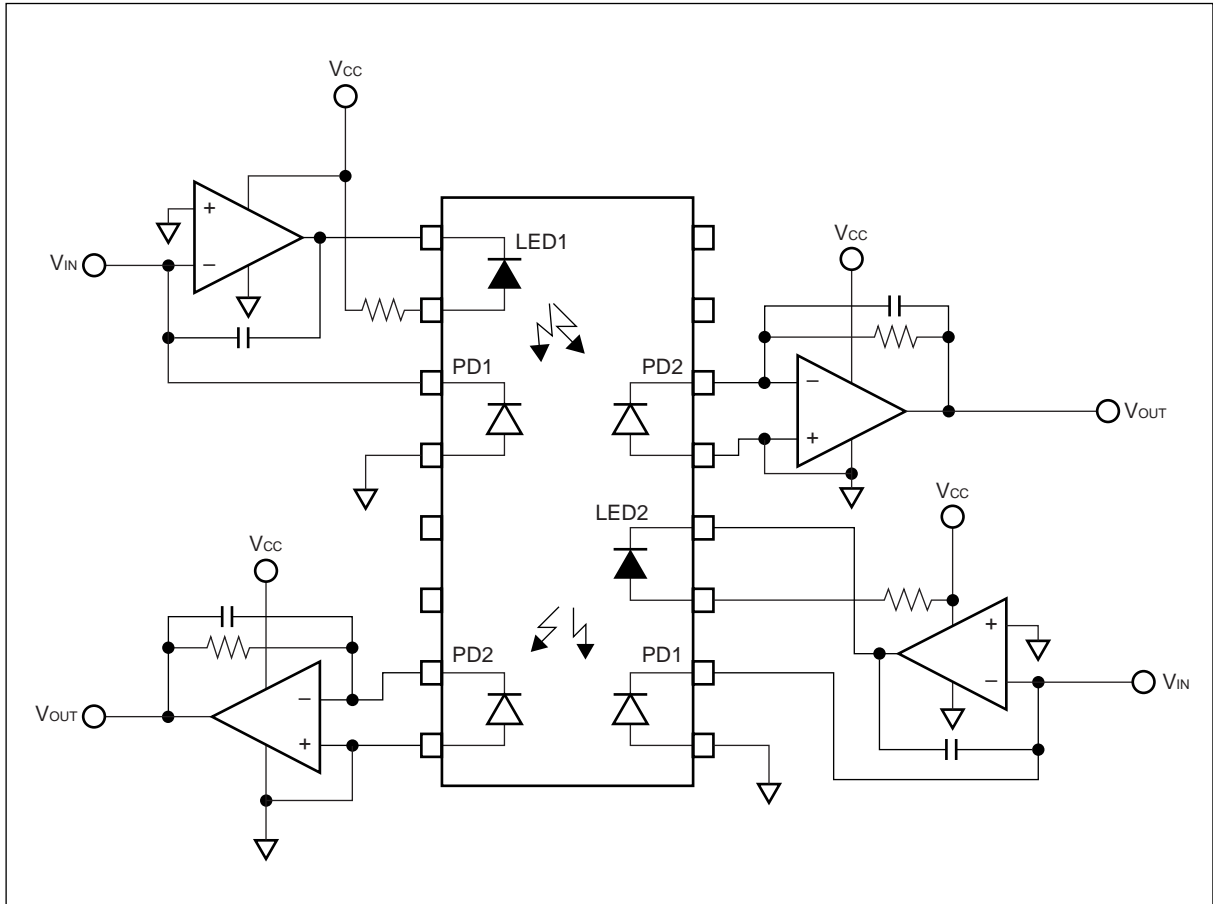
\*1 PW = 100 μs, Duty Cycle = 1 %

\*2 AC voltage for 1 minute at T<sub>A</sub> = 25 °C, RH = 60 % between input and output

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Diode	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 5 mA		1.1	1.4	V
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 3 V			10	μA
	Terminal Capacitance	C <sub>t</sub>	V = 0 V, f = 1 MHz		30		pF
Detector	Dark Current	I <sub>D</sub>	V <sub>CC</sub> = 5 V, I <sub>F</sub> = 0 mA		1	25	nA
Coupled	Servo Gain (I <sub>PD1</sub> /I <sub>F</sub> )	K <sub>1</sub>	V <sub>CC</sub> = 5 V, I <sub>F</sub> = 2 mA	0.3	1.0	1.8	%
	Forward Gain (I <sub>PD2</sub> /I <sub>F</sub> )	K <sub>2</sub>		0.3	1.0	1.8	
	Transfer Gain (K <sub>2</sub> /K <sub>1</sub> )	K <sub>3</sub>	V <sub>CC</sub> = 5 V, I <sub>F</sub> = 2 mA	0.75	1.0	1.25	
	Transfer Gain Linearity	ΔK <sub>3</sub>	V <sub>CC</sub> = 5 V, I <sub>F</sub> = 2 to 10 mA		0.3	1	%
	K <sub>3</sub> Temperature Coefficient	ΔK <sub>3</sub> /ΔT	V <sub>CC</sub> = 5 V, I <sub>F</sub> = 2 to 10 mA		0.005		%/°C

APPLICATION EXAMPLES



**USAGE CAUTIONS**

1. Since this product is sensitive to electro-static discharge, take anti-ESD measures, such as using a wrist strap, while handling it.
2. Recommended Soldering Conditions
  - (1) Handling (Soldering iron)
    - Temperature      260 °C or below
    - Time                5 seconds or less
    - Leave more than 1.0 mm from the lead roof
    - Flux                Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt % is recommended.)
  - (2) Infrared reflow soldering
    - Peak reflow temperature                      235 °C (Package surface temperature)
    - Time of temperature higher than 210 °C    30 seconds or less
    - Preheating conditions                        120 to 160 °C (Package surface temperature),  
60 to 90 seconds
    - Number of reflows                              One
    - Flux                Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt % is recommended.)
3. Fluxes
 

Avoid removing the residual flux with freon-based and chlorine-based cleaning solvent.

[MEMO]

[MEMO]

## CAUTION

**Within this device there exists GaAs (Gallium Arsenide) material which is a harmful substance if ingested. Please do not under any circumstances break the hermetic seal.**

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