PRELIMINARY DATA SHEET

NEC

PHTOCOUPLER
PS8741

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 (ΔK_3 = 1 % 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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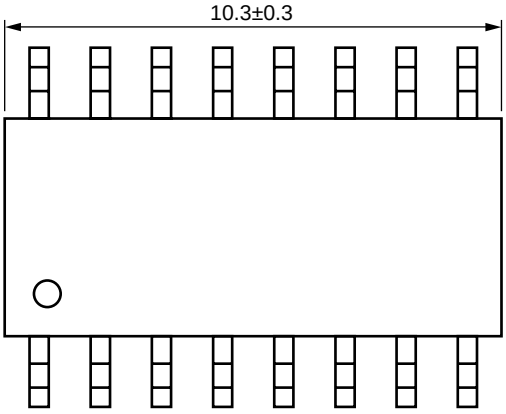
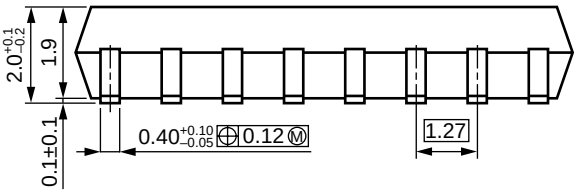
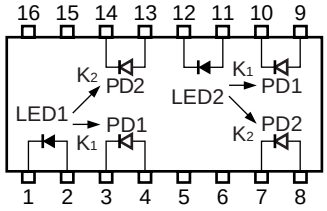
PACKAGE DIMENSIONS
in millimeters

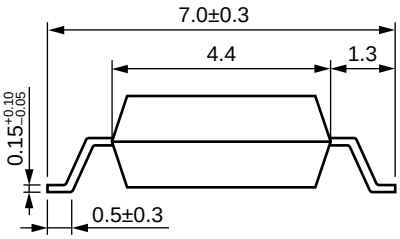




PIN CONNECTIONS (TOP VIEW)



1. LED1 Cathode (CH1)
2. LED1 Anode (CH1)
3. PD1 Cathode (CH1)
4. PD1 Anode (CH1)
5. NC
6. NC
7. PD2 Cathode (CH2)
8. PD2 Anode (CH2)
9. PD1 Anode (CH2)
10. PD1 Cathode (CH2)
11. LED2 Anode (CH2)
12. LED2 Cathode (CH2)
13. PD2 Anode (CH1)
14. PD2 Cathode (CH1)
15. NC
16. NC



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Diode	Forward Current (DC)	I_F	50	mA
	Reverse Voltage	V_R	3	V
	Power Dissipation	P_D	80	mW/ch
	Peak Forward Current *1	I_{FP}	0.5	A
Detector	Reverse Voltage	V_R	20	V
	Power Dissipation	P_C	50	mW/ch
Isolation Voltage *2		BV	1 500	Vr.m.s.
Total Power Dissipation		P_T	180	mW
Operating Ambient Temperature		T_A	–40 to +85	°C
Storage Temperature		T_{stg}	–40 to +100	°C

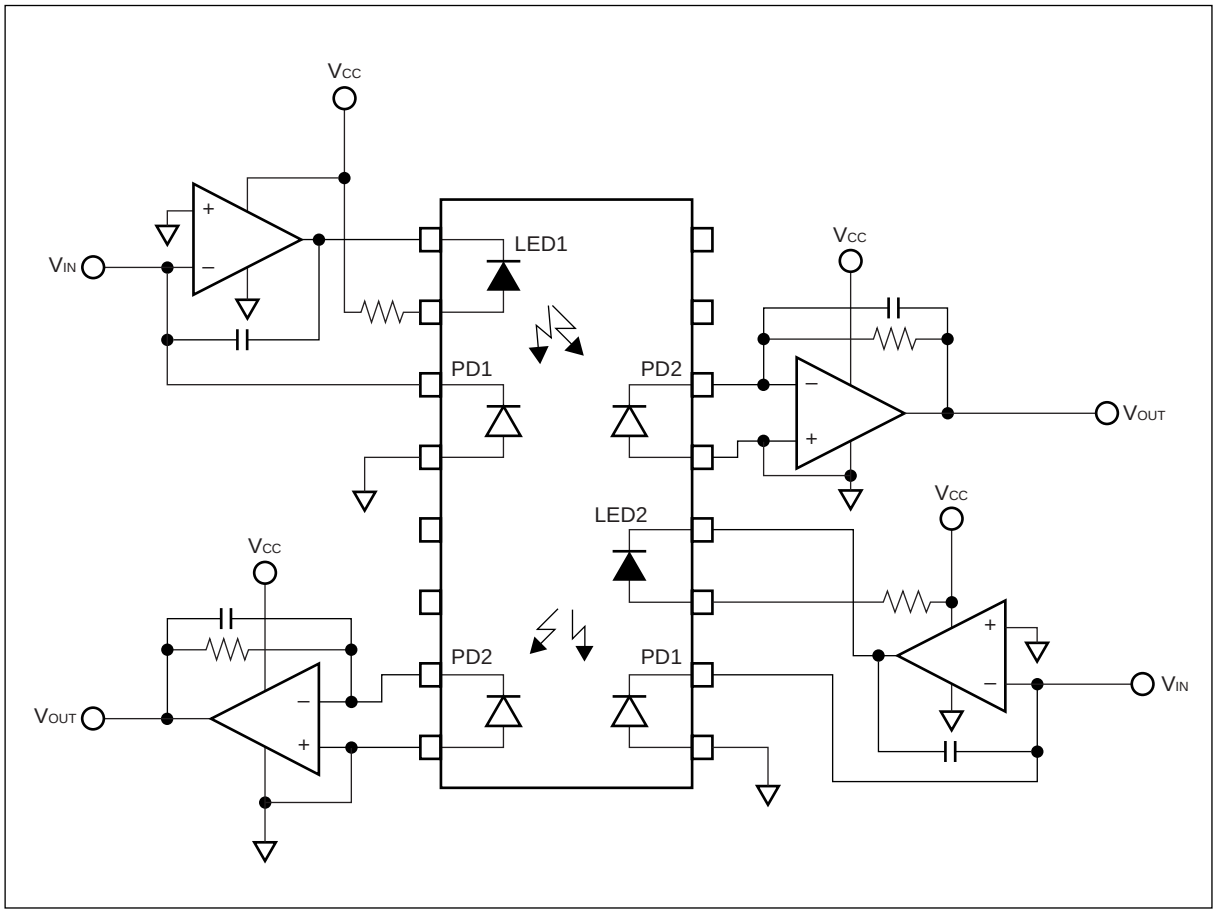
***1** PW = 100 μs, Duty Cycle = 1 %

***2** AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and output

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Diode	Forward Voltage	V_F	I_F = 5 mA		1.1	1.4	V
	Reverse Current	I_R	V_R = 3 V			10	μA
	Terminal Capacitance	C_t	V = 0 V, f = 1 MHz		30		pF
Detector	Dark Current	I_D	V_{CC} = 5 V, I_F = 0 mA		1	25	nA
Coupled	Servo Gain (I_{PD1}/I_F)	K_1	V_{CC} = 5 V, I_F = 2 mA	0.3	1.0	1.8	%
	Forward Gain (I_{PD2}/I_F)	K_2		0.3	1.0	1.8	
	Transfer Gain (K_2/K_1)	K_3	V_{CC} = 5 V, I_F = 2 mA	0.75	1.0	1.25	
	Transfer Gain Linearity	ΔK_3	V_{CC} = 5 V, I_F = 2 to 10 mA		0.3	1	%
	K_3 Temperature Coefficient	$\Delta K_3/\Delta T$	V_{CC} = 5 V, I_F = 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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  - Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)
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