

FEATURES

- **HIGH ISOLATION VOLTAGE:**
BV: 1500 V_{r.m.s.}
- **HIGH TRASFER GAIN LINEARITY:**
 $\Delta K_3 = 1\% \text{ MAX}$
- **SMALL THIN PACKAGE:**
16 pin SOP: 225 mil,
Pin pitch: 1.27 mm, Height = 2.1 mm
- **AVAILABLE IN TAPE AND REEL:**
PS8741-F3, F4: 2500 pcs/reel

DESCRIPTION

NEC's PS8741 is an optically coupled isolator containing a GaAs LED on the light emitting diode (input) side and two photodiodes on the output side. This device is suitable for analog control applications such as PCMCIA card, MODEM Voice telephony and FAX machines.

APPLICATIONS

- PCMCIA Card
- Notebook PC/PDA
- MODEM
- FAX/ Telephone

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

		PART NUMBER	PS8741			
	SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V _F	Forward Voltage, I _F = 5 mA	V		1.1	1.4
	I _R	Reverse Current, V _R = 3 V	μA			10
	C _t	Terminal Capacitance, V = 0, f = 1 MHz	pF		30	
Detector	I _D	Dark Current, V _{CC} = 5 V, I _F = 0 mA	nA		1	25
Coupler	K ₁	Servo Gain (I _{PD1} /I _F), V _{CC} = 5 V, I _F = 2 mA	%	0.3	1.0	1.8
	K ₂	Forward Gain (I _{PD2} /I _F), V _{CC} = 5 V, I _F = 2 mA	%	0.3	1.0	1.8
	K ₃	Transfer Gain (K ₂ /K ₁), V _{CC} = 5 V, I _F = 2 mA		0.75	1	1.25
	ΔK ₃	Transfer Gain Linearity, V _{CC} = 5 V, I _F = 2 to 10 mA	%		0.3	1
	ΔK ₃ /ΔT	K ₃ Temperature Coefficient, V _{CC} = 5 V, I _F = 2 to 10 mA	%/°C		0.005	

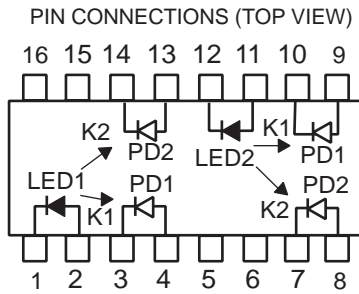
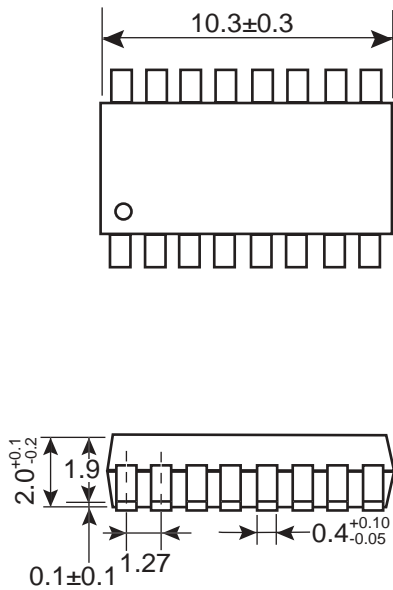
ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
Diode			
I _F	Forward Current	mA	50
V _R	Reverse Voltage	V	3
P _D	Power Dissipation	mW/ch	80
I _{FP}	Peak Forward Current ²	A	0.5
Detector			
V _R	Reverse Voltage	V	20
P _C	Power Dissipation	mW/ch	50
Coupled			
P _T	Total Power Dissipation	mW	180
BV	Isolation Voltage ³	V _{r.m.s.}	1500
T _A	Operating Temperature	°C	-40 to +85
T _{STG}	Storage Temperature	°C	-40 to +100

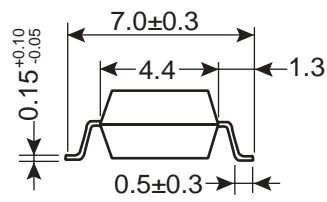
Notes:

1. Operation in excess of any one of these parameters may result in permanent damage.
2. P_W = 100 μs, Duty Cycle = 1%.
3. AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and output.

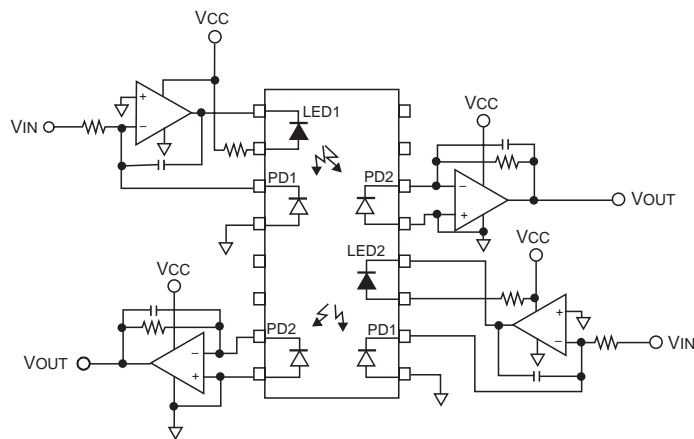
OUTLINE DIMENSIONS (Units in mm)



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



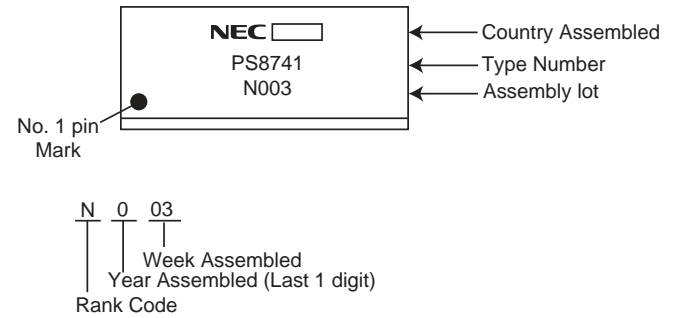
APPLICATION EXAMPLE



ORDERING INFORMATION

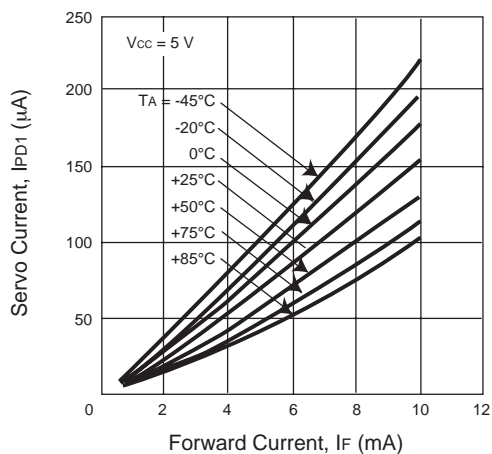
PART NUMBER	PACKING STYLE
PS8741	Magazine case 45 pcs
PS8741-F3	Embossed Tape 2500 pcs/reel
PS8741-F4	

MARKING



TYPICAL PERFORMANCE CURVES (TA = 25°C)

SERVO CURRENT vs. FORWARD CURRENT



SERVO GAIN vs. FORWARD CURRENT

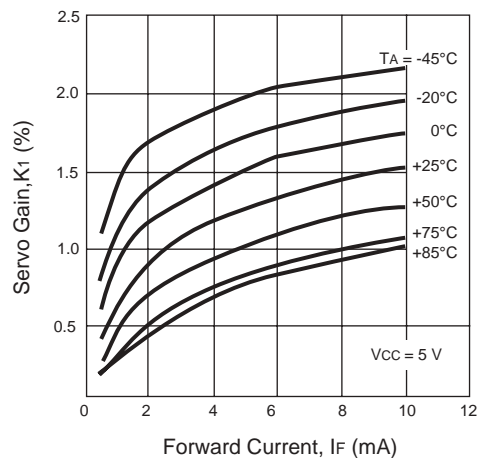
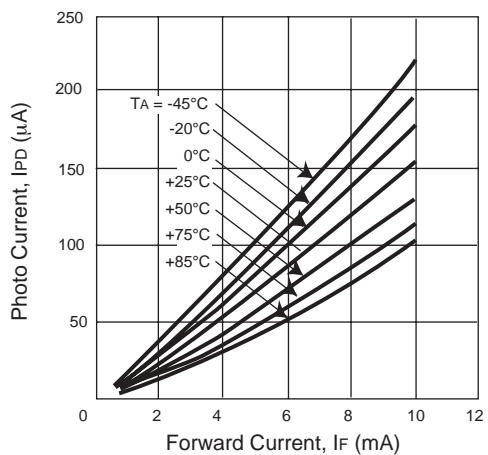
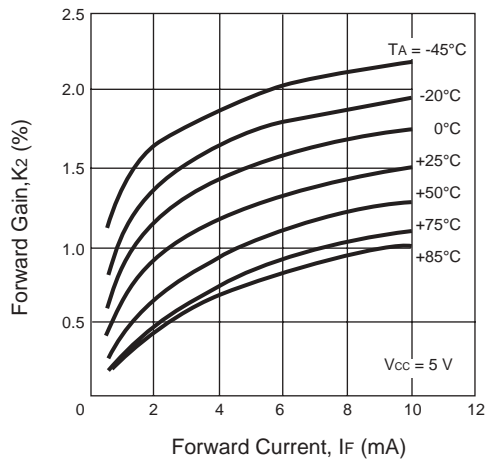


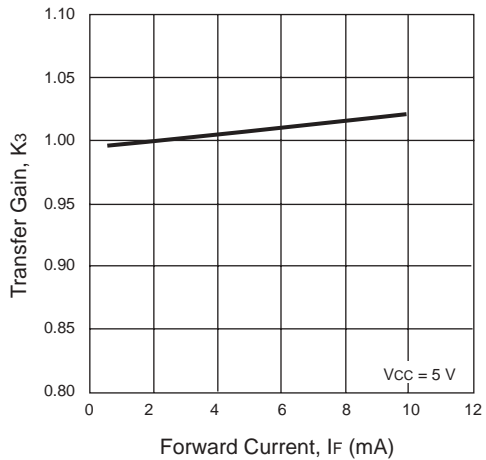
PHOTO CURRENT vs. FORWARD CURRENT



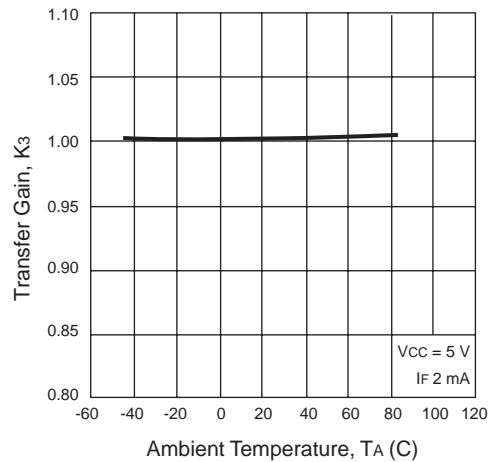
FORWARD GAIN vs. FORWARD CURRENT



TRANSFER GAIN vs. FORWARD CURRENT

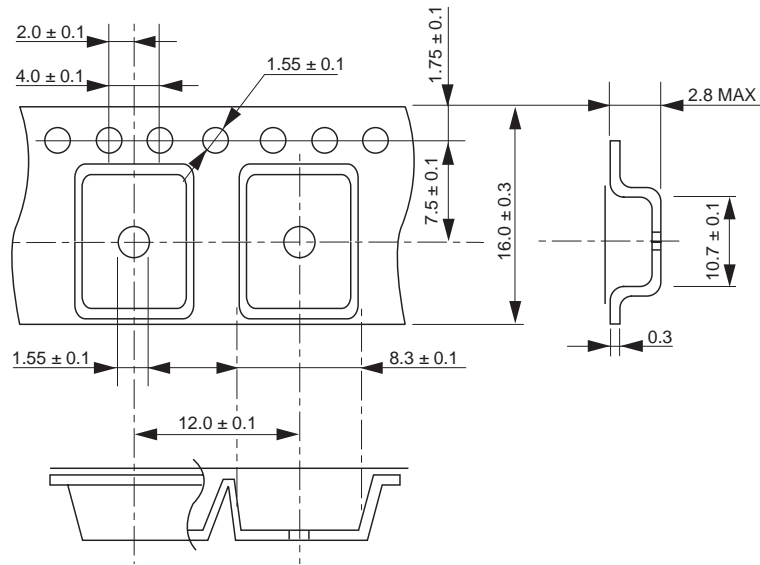


TRANSFER GAIN vs. AMBIENT TEMPERATURE

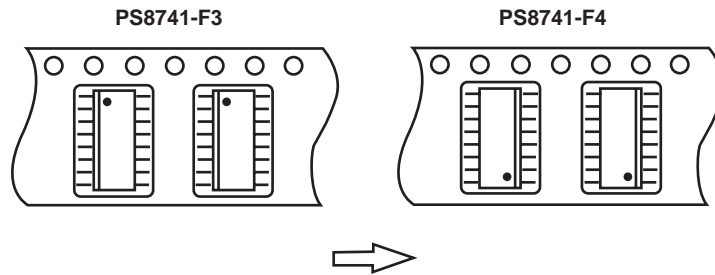


TAPING SPECIFICATIONS (Units in mm)

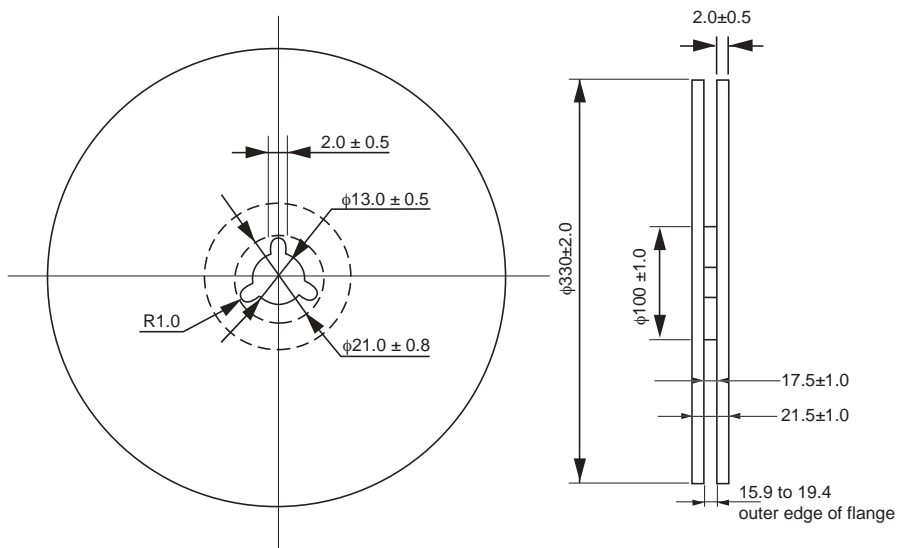
Tape Outline and Dimensions



Tape Direction



Reel Outline and Dimensions



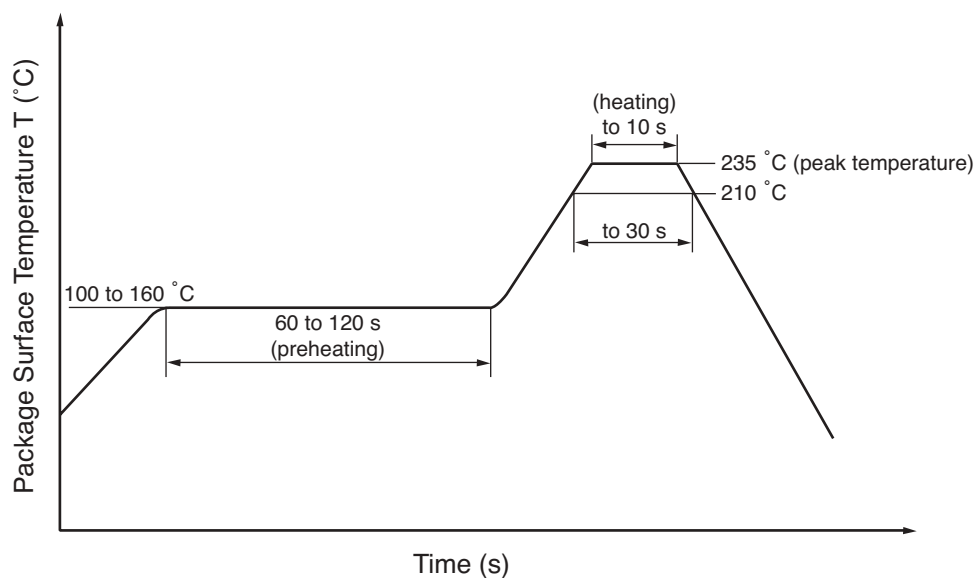
RECOMMENDED SOLDERING CONDITIONS

(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 120 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) Cautions

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

Life Support Applications

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

CEL California Eastern Laboratories, Your source for NEC RF, Microwave, Optoelectronic, and Fiber Optic Semiconductor Devices.

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