

PS2621, PS2622, PS2621L, PS2622L

HIGH ISOLATION VOLTAGE
LARGE FORWARD INPUT TYPE
6 PIN PHOTOCOUPLER

— NEPOC Series —

DESCRIPTION

PS2621, PS2622 and PS2621L, PS2622L are optically coupled isolators containing a GaAs light emitting diode and an NPN silicon phototransistor.

PS2621, PS2622 are in a plastic DIP (Dual In-line Package).

PS2621L, PS2622L are lead bending type (Gull-wing) for surface mount.

PS2621, PS2621L have base pin and PS2622, PS2622L have no base pin.

FEATURES

- High isolation voltage (BV: 5 kV_{r.m.s.} MIN.)
- Large forward input (current) (I_F: 150 mA MAX.)
- High collector to emitter voltage (V_{CEO}: 80 V MIN.)
- High speed switching (t_r = 3 μs, t_f = 5 μs TYP.)
- UL recognized [File No. E72422(S)]
- Taping product name (PS2621L-E3, E4, PS2622L-E3, E4)

APPLICATIONS

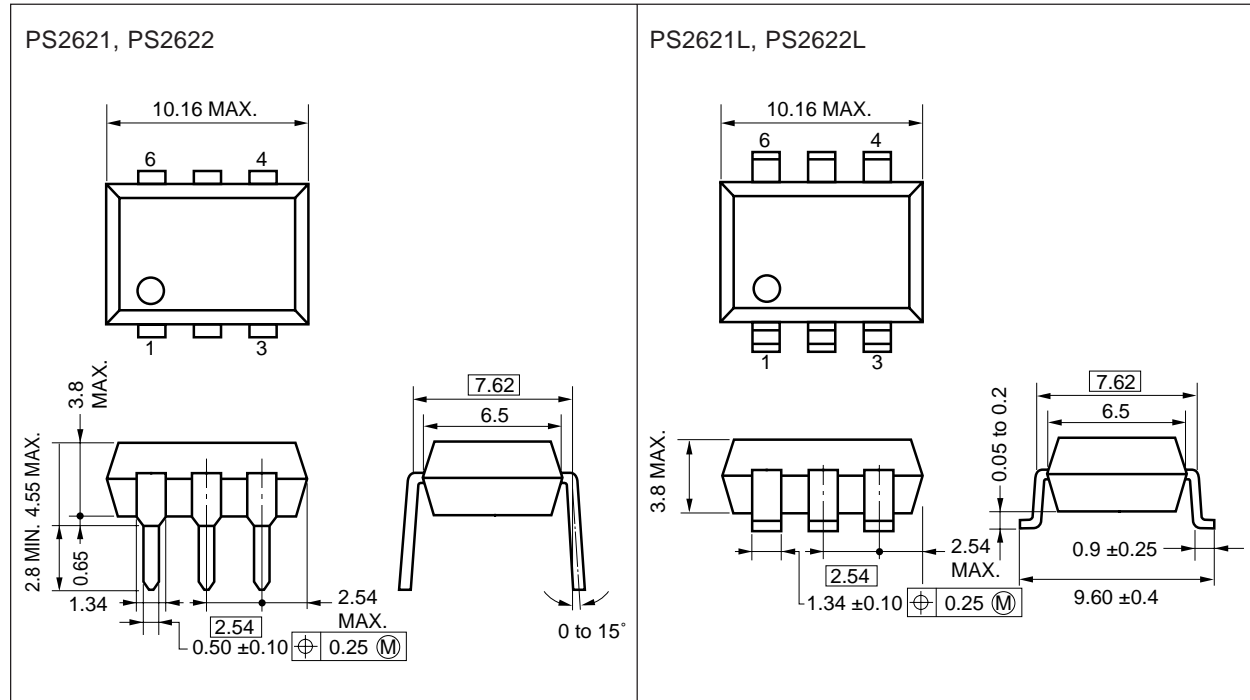
Interface circuit for various instrumentations, control equipments.

- AC Line/Digital Logic Isolate high voltage transient
- Digital Logic/Digital Logic Eliminate spurious ground loops
- Twisted pair line receiver Eliminate ground loop pick-up
- Telephone/Telegraph line receiver Isolate high voltage transient
- High Frequency Power Supply Feedback Control Maintain floating ground

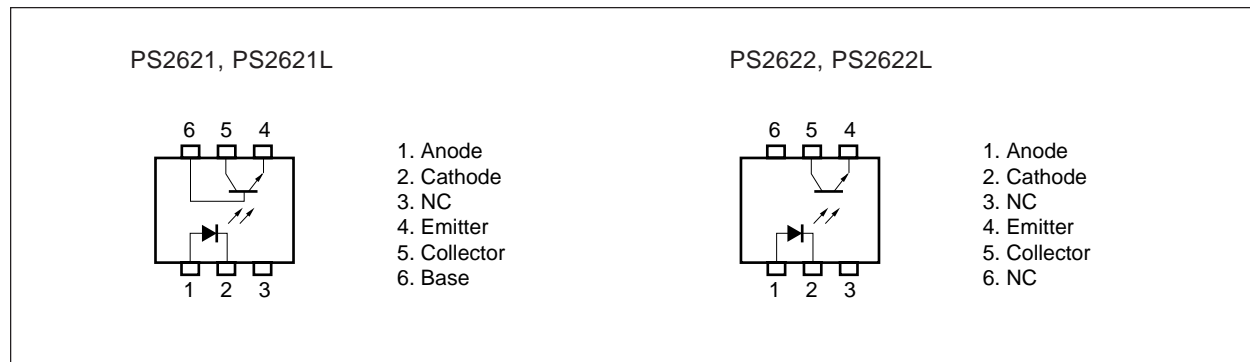
PACKAGE DIMENSIONS (Unit: mm)

DIP (Dual In-line Package)

Lead Bending type (Gull-wing)



PIN CONNECTION (Top View)



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

Diode

Reverse Voltage	V _R	6	V
Forward Current (DC)	I _F	150	mA
Power Dissipation Derating	ΔP _D /°C	2.0	mW/°C
Power Dissipation	P _D	200	mW
Peak Forward Current (PW = 100 μs, Duty Cycle 1 %)	I _{F(Peak)}	1	A

Transistor

Collector to Emitter Voltage	V _{CEO}	80	V
Emitter to Collector Voltage	V _{ECO}	7	V
Collector Current	I _C	50	mA
Power Dissipation Derating	ΔP _C /°C	1.5	mW/°C
Power Dissipation	P _C	150	mW

Coupled

Isolation Voltage *1)	BV	5 000	V _{r.m.s.}
Storage Temperature	T _{stg}	-55 to +150	°C
Operating Temperature	T _{opt}	-55 to +100	°C

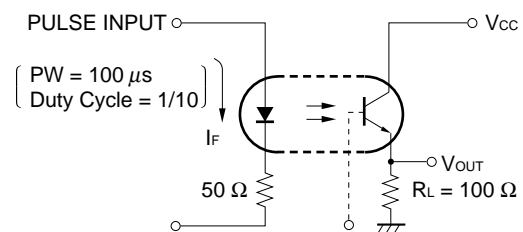
*1) AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input (Pin No. 1, 2, 3, Common) and output (Pin No. 4, 5, 6 Common).

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

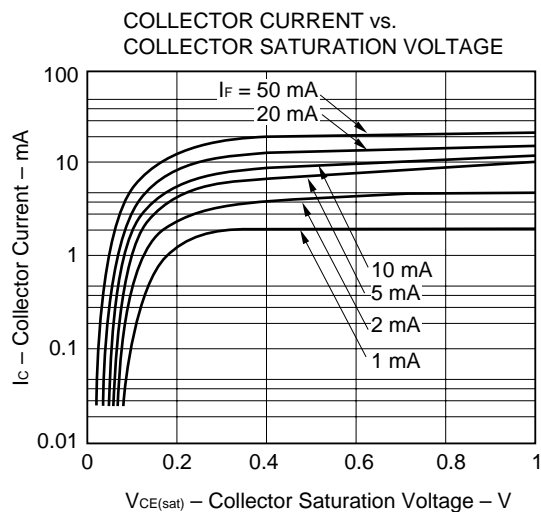
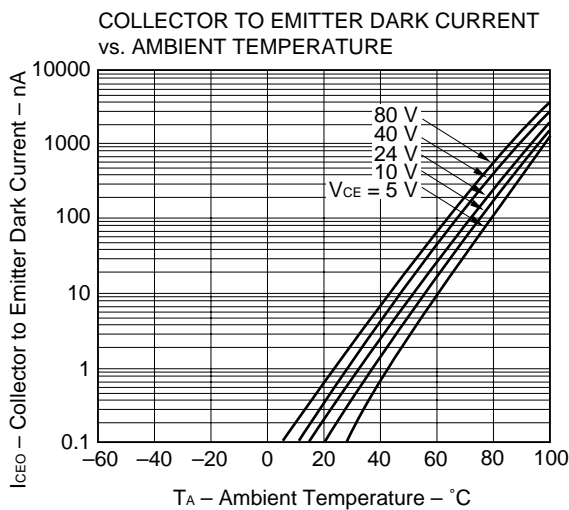
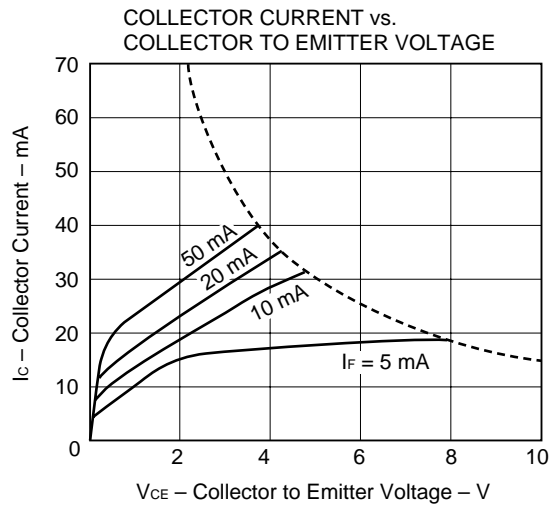
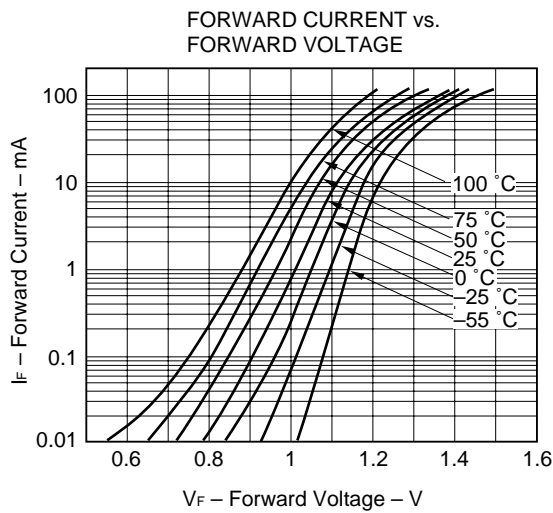
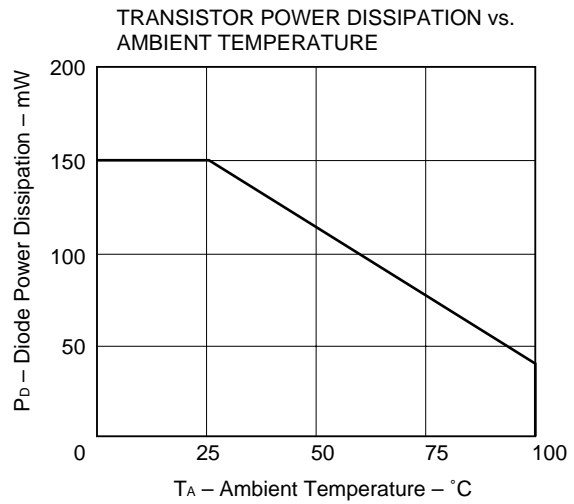
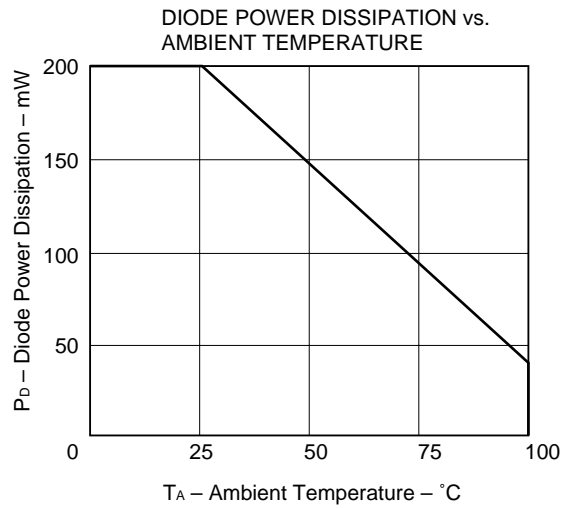
CHARACTERISTIC		SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Diode	Forward Voltage	V _F		1.3	1.7	V	I _F = 100 mA
	Reverse Current	I _R			5	μA	V _R = 5 V
	Junction Capacitance	C _t		70		pF	V = 0, f = 1.0 MHz
Transistor	Collector to Emitter Dark Current	I _{CEO}			100	nA	V _{CE} = 80 V, I _F = 0
	DC Current Gain*2)	h _{FE}		700			I _C = 2 mA, V _{CE} = 5 V
Coupled	Current Transfer Ratio	CTR	20		50	%	I _F = 100 mA, V _{CE} = 3 V
	Collector Saturation Voltage	V _{CE(sat)}			0.3	V	I _F = 100 mA, I _C = 4 mA
	Isolation Resistance	R ₁₋₂	10 ¹¹			Ω	V _{in-out} = 1.0 kV
	Isolation Capacitance	C ₁₋₂		0.6		pF	V = 0, f = 1.0 MHz
	Rise Time*3)	t _r		3		μs	V _{CC} = 5 V, I _C = 2 mA, R _L = 100 Ω
Fall Time*3)	t _f		5		μs	V _{CC} = 5 V, I _C = 2 mA, R _L = 100 Ω	

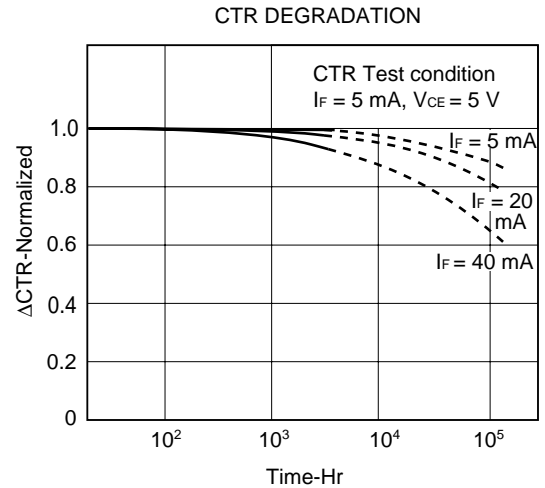
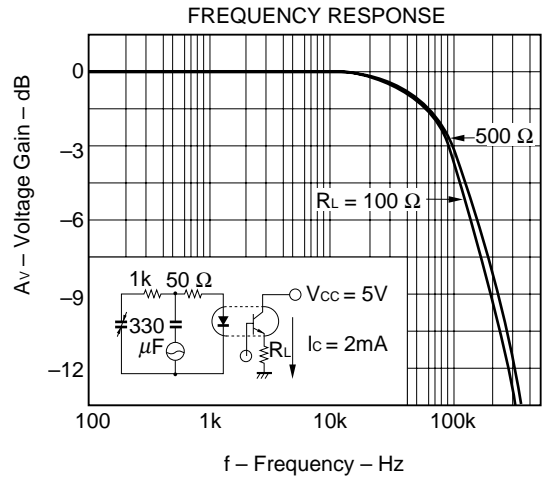
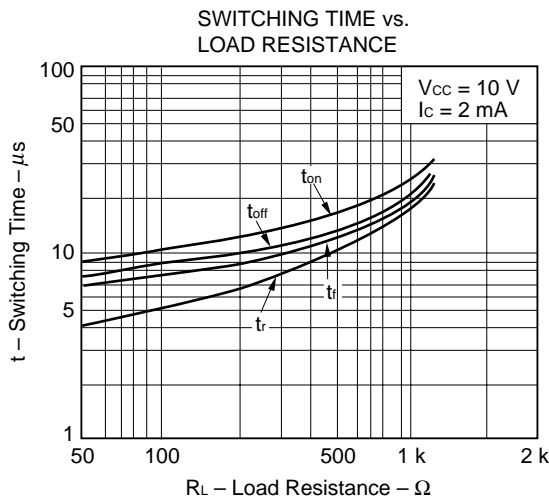
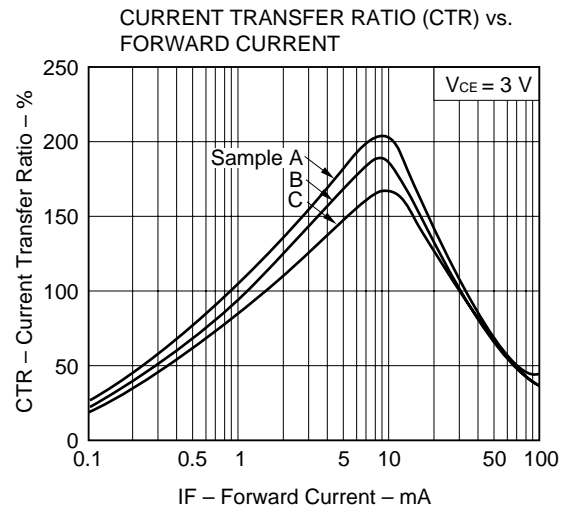
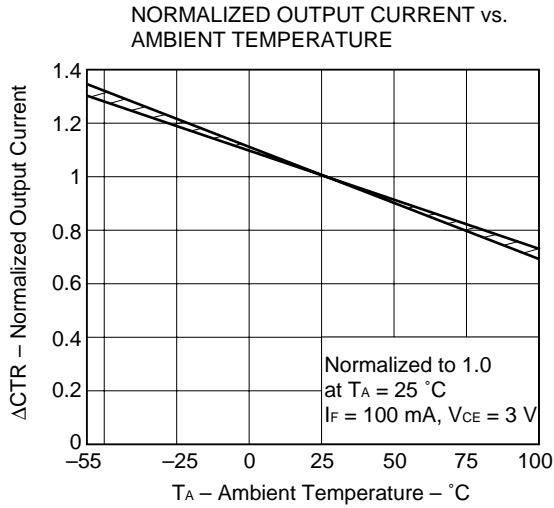
*2) PS2621, PS2621L only

*3) Test Circuit for Switching Time



TYPICAL CHARACTERISTICS (T_A = 25 °C)





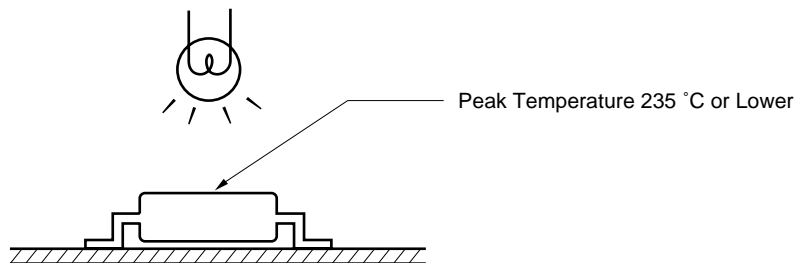
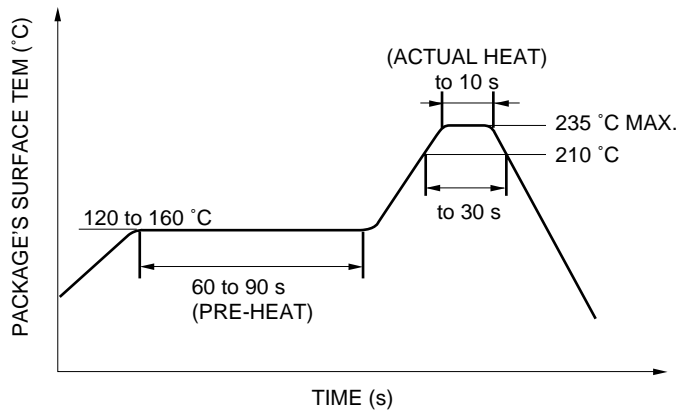
★ The measurement of TYPICAL CHARACTERISTICS are only for reference, not guaranteed.

SOLDERING PRECAUTION

(1) Infrared reflow soldering

- Peak reflow temperature : 235 °C or below (Plastic surface temperature)
- Reflow time : 30 seconds or less
(Time period during which the plastic surface temperature is 210 °C)
- Number of reflow processes : Three
- Flux : Rosin flux containing small amount of chlorine
(The flux with a maximum chlorine content of 0.2 Wt % is recommended.)

INFRARED RAY REFLOW TEMPERATURE PROFILE



(2) Dip soldering

- Peak temperature : 260 °C or lower
- Time : 10 s or less
- Flux : Rosin-base flux

[MEMO]

Caution

**The Great Care must be taken in dealing with the devices in this guide.
The reason is that the material of the devices is GaAs (Gallium Arsenide), which is
designated as harmful substance according to the law concerned.
Keep the law concerned and so on, especially in case of removal.**

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Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

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)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

The quality grade of NEC devices in “Standard” unless otherwise specified in NEC's Data Sheets or Data Books. If customers intend to use NEC devices for applications other than those specified for Standard quality grade, they should contact NEC Sales Representative in advance.

Anti-radioactive design is not implemented in this product.