

**HIGH COLLECTOR TO EMITTER VOLTAGE TYPE  
4-PIN SOP PHOTOCOUPLER**

-NEPOC™ Series-

**DESCRIPTION**

The PS2763-1 is an optically coupled isolator containing a GaAs light emitting diode and an NPN silicon phototransistor.

This package is mounted in a plastic SOP (Small Outline Package) for high density applications.

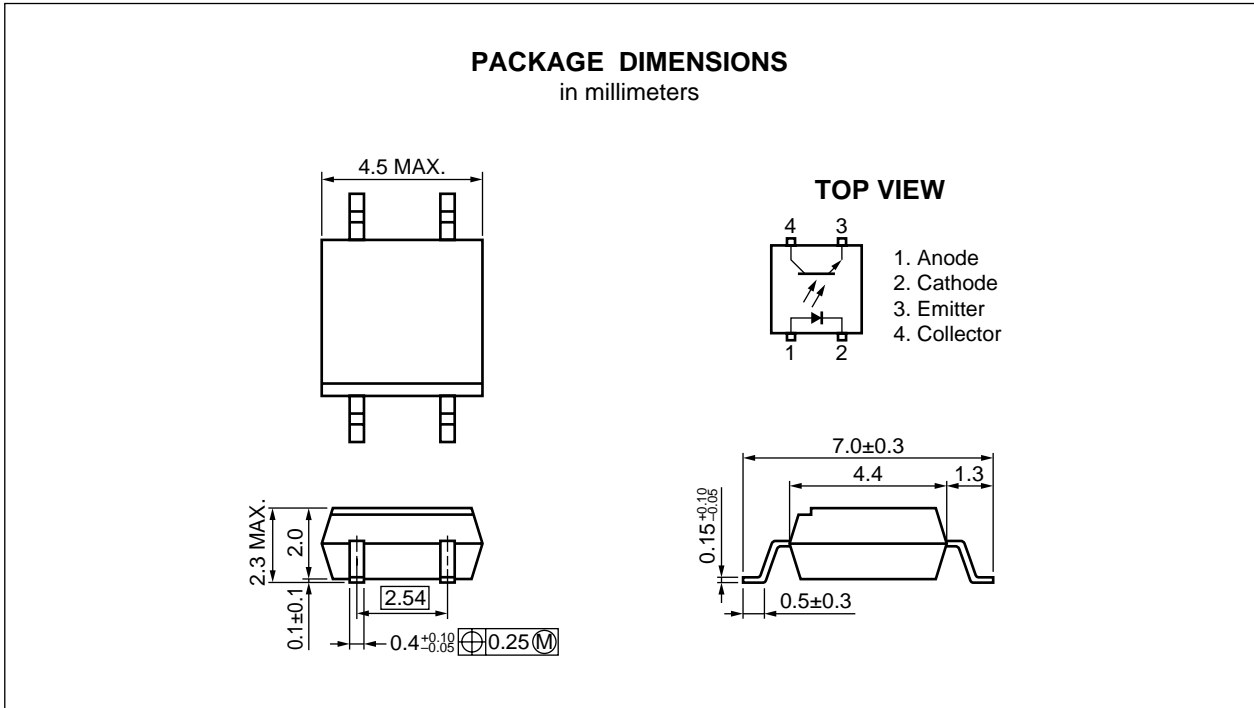
**FEATURES**

- High isolation thickness (0.4 mm MIN.)
- High isolation voltage (BV = 3 750 Vr.m.s.)
- High collector to emitter voltage ( $V_{CEO} = 120 V$ )
- SOP (Small Outline Package) type
- High-speed switching ( $t_r, t_f = 10 \mu s$  TYP.)
- Ordering number of taping product: PS2763-1-E3, E4, F3, F4

**APPLICATIONS**

- Hybrid IC
- Programmable logic controllers
- Power supply

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



**PHOTOCOUPLER CONSTRUCTION**

Parameter	Unit (MIN.)
Air Distance	5 mm
Outer Distance	5 mm
Inner Distance	2.5 mm
Isolation Thickness	0.4 mm

**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>	6	V
	Power Dissipation	P <sub>D</sub>	80	mW
	Peak Forward Current <sup>*1</sup>	I <sub>FP</sub>	1.0	A
Transistor	Collector to Emitter Voltage	V <sub>CEO</sub>	120	V
	Emitter to Collector Voltage	V <sub>ECO</sub>	6	V
	Collector Current	I <sub>C</sub>	30	mA
	Power Dissipation Derating	ΔP <sub>C</sub> /°C	1.5	mW/°C
	Power Dissipation	P <sub>C</sub>	150	mW
Isolation Voltage <sup>*2</sup>		BV	3 750	Vr.m.s.
Operating Ambient Temperature		T <sub>A</sub>	-40 to +100	°C
Storage Temperature		T <sub>stg</sub>	-55 to +150	°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> = 5 V			5	μA
	Terminal Capacitance	C <sub>t</sub>	V = 0 V, f = 1 MHz		30		pF
Transistor	Collector to Emitter Drak Current	I <sub>CEO</sub>	I <sub>F</sub> = 0 mA, V <sub>CE</sub> = 120 V			100	nA
Coupled	Current Transfer Ratio (I <sub>C</sub> /I <sub>F</sub> ) <sup>*1</sup>	CTR	I <sub>F</sub> = 5 mA, V <sub>CE</sub> = 5 V	50	150	400	%
			I <sub>F</sub> = 1 mA, V <sub>CE</sub> = 5 V	10			
	Collector Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> = 10 mA, I <sub>C</sub> = 2 mA			0.3	V
	Isolation Resistance	R <sub>I-O</sub>	V <sub>I-O</sub> = 1 kV <sub>DC</sub>	10 <sup>11</sup>			Ω
	Isolation Capacitance	C <sub>I-O</sub>	V = 0 V, f = 1 MHz		0.4		pF
	Rise Time	t <sub>r</sub>	V <sub>CC</sub> = 5 V, I <sub>C</sub> = 2 mA, R <sub>L</sub> = 1 kΩ		10		μs
	Fall Time	t <sub>f</sub>			10		

\*1 CTR rank

- K : 200 to 400 (%) (I<sub>F</sub> = 5 mA, V<sub>CE</sub> = 5 V)
- : 80 to     (%) (I<sub>F</sub> = 1 mA, V<sub>CE</sub> = 5 V)
- L : 100 to 300 (%) (I<sub>F</sub> = 5 mA, V<sub>CE</sub> = 5 V)
- : 25 to     (%) (I<sub>F</sub> = 1 mA, V<sub>CE</sub> = 5 V)
- M : 50 to 150 (%) (I<sub>F</sub> = 5 mA, V<sub>CE</sub> = 5 V)
- : 10 to     (%) (I<sub>F</sub> = 1 mA, V<sub>CE</sub> = 5 V)

## 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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