

**4-PIN SOP, 2.4 Ω LOW ON-STATE RESISTANCE
1-ch Optical Coupled MOS FET****DESCRIPTION**

The PS7200N-1A is a low on-state capacitance solid state relay containing GaAs LEDs on the light emitting side (input side) and MOS FETs on the output side.

It is suitable for high-frequency signal control, due to its low $C \times R$, low on-state resistance, and low off-state leakage current.

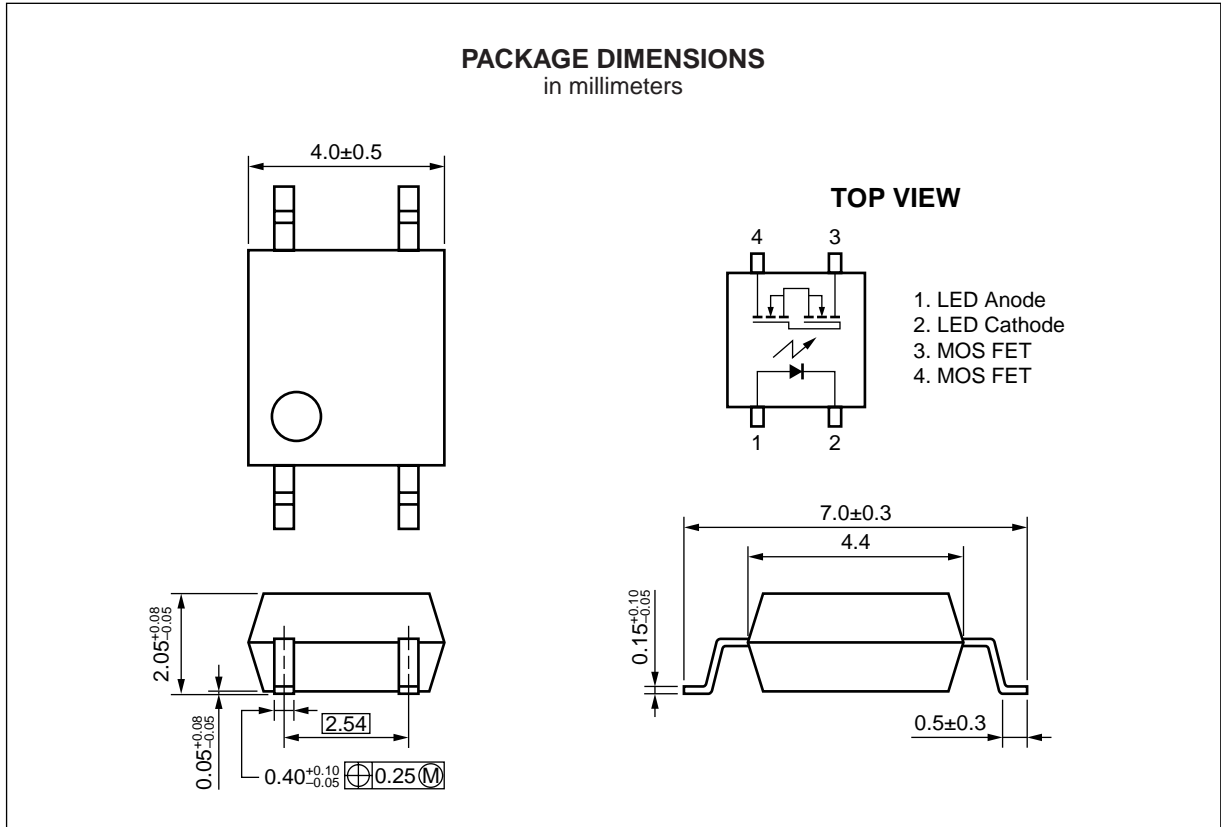
FEATURES

- Low $C \times R$ ($C \times R = 16.8 \text{ pF} \cdot \Omega$)
- Low on-state resistance ($R_{\text{on}} = 2.4 \Omega$ TYP.)
- Low off-state leakage current ($I_{\text{Loff}} = 0.03 \text{ nA}$ TYP.)
- High-speed turn-on time ($t_{\text{on}} = 0.06 \text{ ms}$ TYP.)
- 1 channel type (1 a output)
- Designed for AC/DC switching line changer
- Small and thin package (4-pin SOP, Height = 2.1 mm)
- High isolation voltage ($BV = 1\,500 \text{ Vr.m.s.}$)
- Low offset voltage
- Ordering number of taping product: PS7200N-1A-E3, E4, F3, F4

APPLICATIONS

- Measurement equipment

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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_A = 25 °C, unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Diode	Forward Current (DC)	I _F	50	mA
	Reverse Voltage	V _R	5.0	V
	Power Dissipation	P _D	50	mW
	Peak Forward Current ^{*1}	I _{FP}	1	A
MOS FET	Break Down Voltage	V _L	40	V
	Continuous Load Current	I _L	160	mA
	Pulse Load Current ^{*2} (AC/DC Connection)	I _{LP}	320	mA
	Power Dissipation	P _D	100	mW
Isolation Voltage ^{*3}		BV	1 500	Vr.m.s.
Total Power Dissipation		P _T	150	mW
Operating Ambient Temperature		T _A	-40 to +80	°C
Storage Temperature		T _{stg}	-40 to +100	°C

*1 PW = 100 μs, Duty Cycle = 1 %

*2 PW = 100 ms, 1 shot

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

RECOMMENDED OPERATING CONDITIONS (T_A = 25 °C)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
LED Operating Current	I _F	2	10	20	mA
LED Off Voltage	V _F	0		0.5	V

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Diode	Forward Voltage	V _F	I _F = 10 mA		1.2	1.4	V
	Reverse Current	I _R	V _R = 5 V			5.0	μA
MOS FET	Off-state Leakage Current	I _{loff}	V _D = 40 V		0.03	1.0	nA
	Output Capacitance	C _{out}	V _D = 0 V, f = 1 MHz		7.0		pF
Coupled	LED On-state Current	I _{Fon}	I _L = 160 mA			2.0	mA
	On-state Resistance	R _{on1}	I _F = 10 mA, I _L = 10 mA		2.4	3.5	Ω
		R _{on2}	I _F = 10 mA, I _L = 160 mA, t ≤ 10 ms		2.7	3.5	
	Turn-on Time	t _{on}	I _F = 10 mA, V _O = 5 V, PW ≥ 10 ms		0.06	1.0	ms
	Turn-off Time	t _{off}			0.07	1.0	
	Isolation Resistance	R _{I-O}	V _{I-O} = 1.0 kV _{DC}	10 ⁹			Ω
	Isolation Capacitance	C _{I-O}	V = 0 V, f = 1 MHz		0.4		pF

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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