

**4-PIN SOP HIGH ISOLATION VOTAGE 3 750 Vr.m.s.
(1-ch Optical Coupled MOS FET)**

DESCRIPTION

The PS7241H-1A is a solid state relay containing GaAs LEDs on the light emitting side (input side) and MOS FETs on the output side.

It is suitable for analog signal control because of its low offset and high linearity.

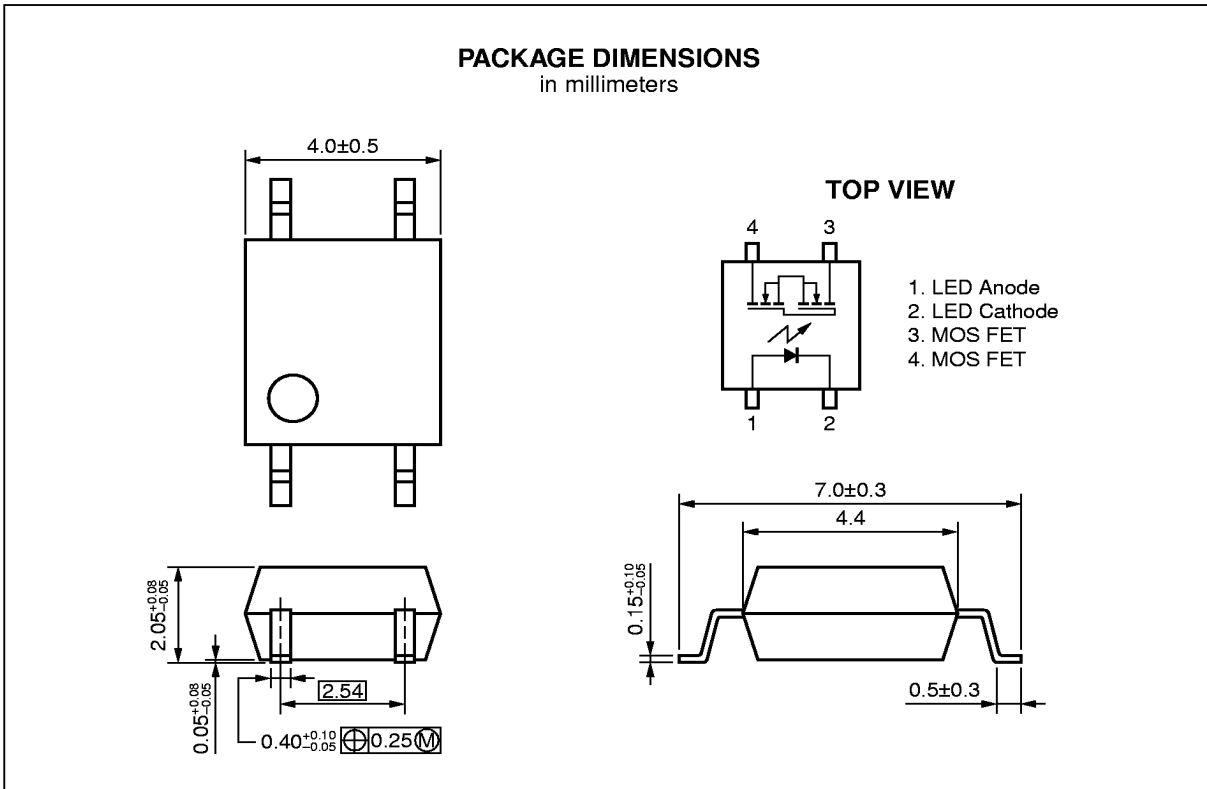
FEATURES

- High isolation voltage ($BV = 3\,750\text{ Vr.m.s.}$)
- Small and thin package (4-pin SOP, Height = 2.1 mm)
- 1 channel type (1 a output)
- Low LED operating current ($I_F = 2\text{ mA}$)
- Designed for AC/DC switching line changer
- Low offset voltage
- Ordering number of taping product: PS7241H-1A-E3, E4, F3, F4

APPLICATIONS

- Laptop PC, PDA
- Modem card
- Telephone, FAX
- 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 ($T_A = 25\text{ }^{\circ}\text{C}$, 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	400	V
	Continuous Load Current	I_L	120	mA
	Power Dissipation	P_D	300	mW
Isolation Voltage *2		BV	3 750	Vr.m.s.
Total Power Dissipation		P_T	350	mW
Operating Ambient Temperature		T_A	-40 to +80	$^{\circ}\text{C}$
Storage Temperature		T_{stg}	-40 to +100	$^{\circ}\text{C}$

*1 PW = 100 μs , Duty Cycle = 1 %

*2 AC voltage for 1 minute at $T_A = 25\text{ }^{\circ}\text{C}$, RH = 60 % between input and output

RECOMMENDED OPERATING CONDITIONS ($T_A = 25\text{ }^{\circ}\text{C}$)

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 ($T_A = 25\text{ }^{\circ}\text{C}$)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Diode	Forward Voltage	V_F	$I_F = 10\text{ mA}$		1.2	1.4	V
	Reverse Current	I_R	$V_R = 5\text{ V}$			5.0	μA
MOS FET	Off-state Leakage Current	I_{Loff}	$V_D = 400\text{ V}$			1.0	μA
	Output Capacitance	C_{out}	$V_D = 0\text{ V}$, $f = 1\text{ MHz}$		54		pF
Coupled	LED On-state Current	I_{Fon}	$I_L = 120\text{ mA}$			2.0	mA
	On-state Resistance	R_{on1}	$I_F = 10\text{ mA}$, $I_L = 10\text{ mA}$		18	30	Ω
		R_{on2}	$I_F = 10\text{ mA}$, $I_L = 120\text{ mA}$		15	25	
	Turn-on Time	t_{on}	$I_F = 10\text{ mA}$, $V_D = 5\text{ V}$, $PW \geq 10\text{ ms}$			3.0	ms
	Turn-off Time	t_{off}				0.2	
	Isolation Resistance	R_{I-O}	$V_{I-O} = 1.0\text{ kVDC}$	10^9			Ω
	Isolation Capacitance	C_{I-O}	$V = 0\text{ V}$, $f = 1\text{ MHz}$		0.5		pF