NEC

Solid State Relay
OCMOS FET

PS7213-1A

4-PIN SOP, 2.0 Ω LOW ON-STATE RESISTANCE
1-ch Optical Coupled MOS FET

DESCRIPTION

The PS7213-1A is a low on-state resistance solid state relay containing GaAs LEDs on the light emitting side (input side) and MOS FETs on the output side.

It is suitable for PLC, etc. because of its large continuous load current and low on-state resistance.

FEATURES

- Low on-state resistance (R_{on} = 2.0 Ω TYP.)
- Large continuous load current (I_L = 300 mA)
- 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 Vr.m.s.)
- Low offset voltage
- Ordering number of taping product: PS7213-1A-E3, E4, F3, F4

APPLICATIONS

- Measurement equipment
- FA equipment

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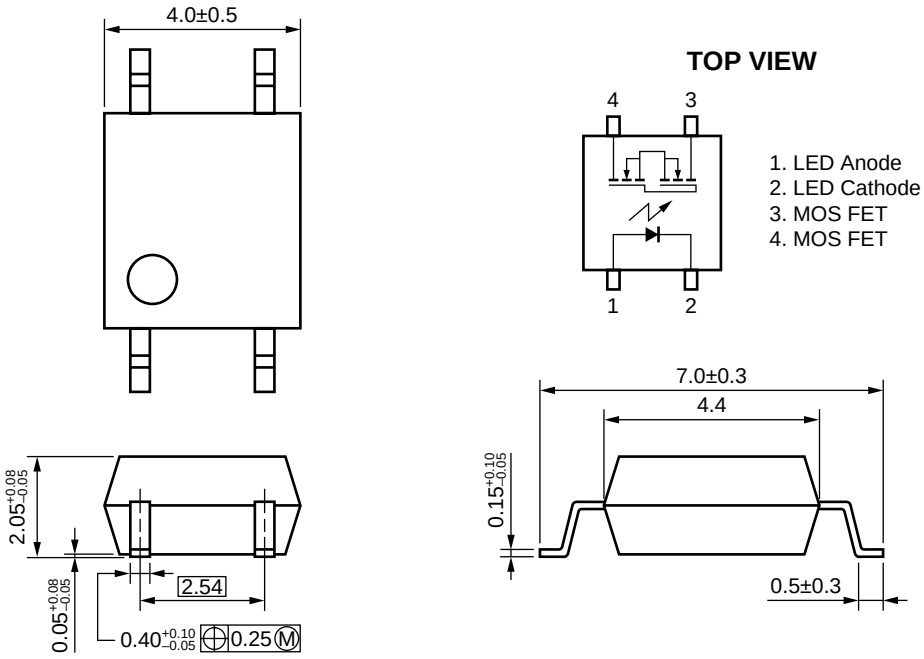
PACKAGE DIMENSIONS
in millimeters



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	100	V
	Continuous Load Current	I_L	300	mA
	Pulse Load Current *2 (AC/DC Connection)	I_{LP}	0.6	A
	Power Dissipation	P_D	300	mW
Isolation Voltage *3		BV	1 500	Vr.m.s.
Total Power Dissipation		P_T	350	mW
Operating Ambient Temperature		T_A	–40 to +85	°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 = 60 V			1.0	μA
Coupled	LED On-state Current	I_{Fon}	I_L = 300 mA			2.0	mA
	On-state Resistance	R_{on1}	I_F = 10 mA, I_L = 10 mA		2.0	3.0	Ω
		R_{on2}	I_F = 10 mA, I_L = 300 mA, t ≤ 10 ms				
	Turn-on Time	t_{on}	I_F = 10 mA, V_O = 5 V, PW ≥ 10 ms		0.6	2.0	ms
	Turn-off Time	t_{off}			0.03	0.2	
	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		0.5		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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