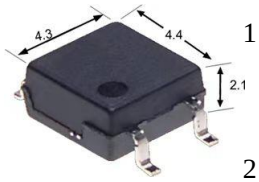
60V Normally Closed (1-Form-B) Solid State Relay

General Features

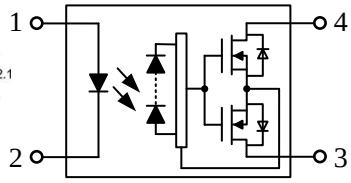
- Low-level off State Leakage Current
- No Moving Parts
- 1500 Vrms Input/Output Isolation
- Fast Switching Speed
- SOP Package 4 Pin Type in Miniature Design
- Highly Efficient GaAlAs Infrared LED and Reliability MOSFETs

V_{OFF}	I_{ON}	$R_{ON(TYP.)}$
60V	400mA	2Ω

SOP-4



(Unit: mm)



1. LED Anode
2. LED Cathode

3,4. Drain (MOSFET)

Applications

- Data Acquisition
- I/O Subsystems
- Industrial Control
- Sensor Circuitry
- Aerospace
- Electronic Switching

Ordering Information

Part Number	Package	Marking	Packing quantity
OPY412S	SOP-4	OPY412S	2000pcs/REEL

Absolute Maximum Ratings

T_a=25℃unless otherwise specified

Item		Symbol	Note	Value	Unit
Input	LED Forward Current	I_F	--	50	mA
	LED Pulse Forward Current	I_{FP}	f=100Hz, duty=1%	1000	mA
	LED Reverse Voltage	V_R	--	5	V
	Diode Power Dissipation	P_D	--	75	mW
	LED Junction Temperature	T_j	--	125	℃
Output	Load Voltage	V_{OFF}	AC Peak or DC	60	V
	On-state Current	I_{ON}	--	400	mA
	On-state Peak Current	I_{ONP}	100ms(1 pulse)	0.3	A
	Output Power Dissipation	P_O	--	300	mW
	Junction Temperature	T_j	--	125	℃
Total Power Dissipation		P_T	--	350	mW
Storage Temperature		T_{stg}	--	-40 to 100	℃
Operating Temperature		T_{opr}	--	-40 to 85	℃
Lead Soldering Temperature		T_{sol}	10 sec max.	260	℃
Isolation Voltage [1]		BV_{IO}	AC, RH≤60%, 60s	1500	Vrms

Caution: Stresses greater than those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device.

Electrical Characteristics

T_a=25℃ unless otherwise specified

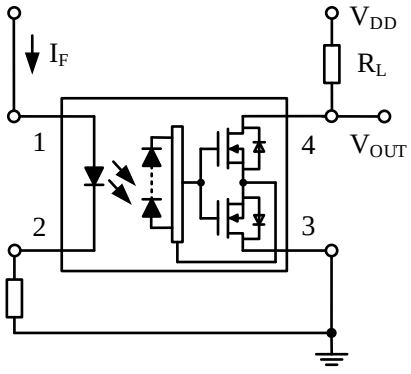
Item		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Input	LED Forward Voltage	V_F	--	1.3	1.5	V	I_F=10mA
	LED Reverse Current	I_R	--	--	5.0	μA	V_R=5V
	Trigger LED Current	I_{FC}	--	0.2	2.0	mA	I_{OFF}=100uA
	Return LED Current	I_{FT}	0.1	0.2	--	mA	I_{OFF}=200mA
	Return LED Voltage	V_{FC}	0.5	--	--	V	I_{OFF}=200uA
Output	On-Resistance [2]	R_{ON}	--	2	5	Ω	I_{ON}=200mA
	Off-State Leakage Current	I_{OFF}	--	--	1.0	μA	V_{OFF}=60V, I_F=5mA
	Output Capacitance	C_{OUT}	--	45	--	pF	V_{OFF}=0V, f=1MHz I_F=5mA
Transmission	Turn-on Time [3]	T_{ON}	--	--	0.5	ms	I_F=5mA, I_{ON}=200mA
	Turn-off Time [3]	T_{OFF}	--	--	0.5	ms	
Coupled	Capacitance Input to Output	C_{IO}	--	0.6	--	pF	V_{IO}=0V, f=1MHz
	Isolation Resistance	R_{IO}	10^{10}	--	--	Ω	DC=500V
	Isolation Voltage	BV_{IO}	1500	--	--	V	AC, 60s

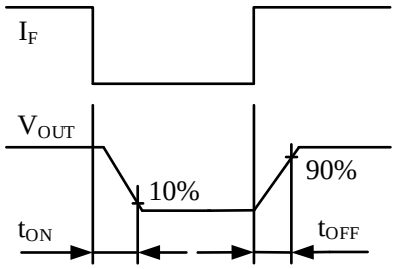
NOTE：

[1] LED pins are shorted together. Detector pins are also shorted together.

[2] Measurement Taken within 1 Second of On-time.

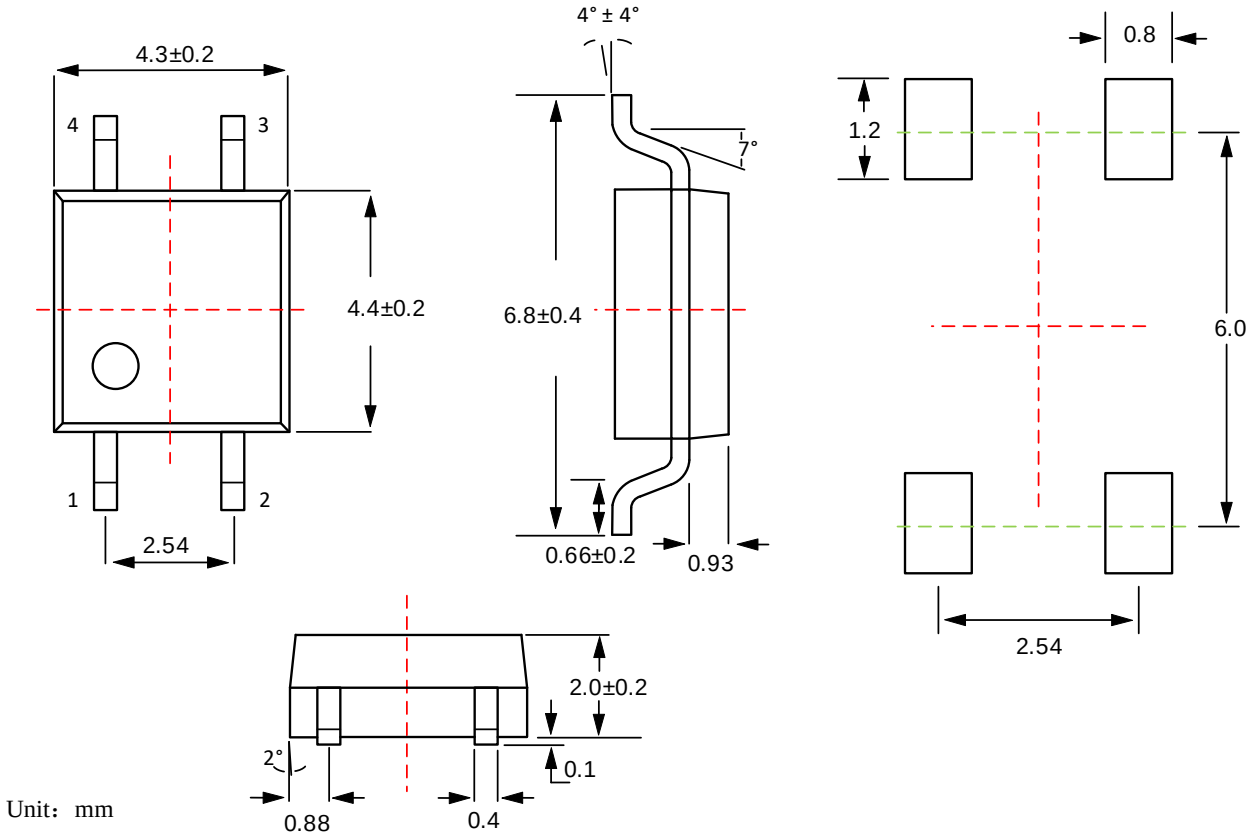
[3] Switching Time Test Circuit.





Package Dimensions

SOP -4



Unit：mm

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