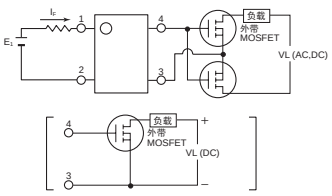
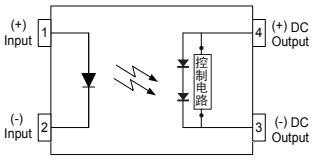
Parameter	Symbol	Rating	Units
Short circuit current	Isc	8	uA
Drop-out voltage	Voc	12	V
Turn-On Time	T_{on}	0.23	ms
I/O Breakdown Voltage	V/Io	2500	Vrms

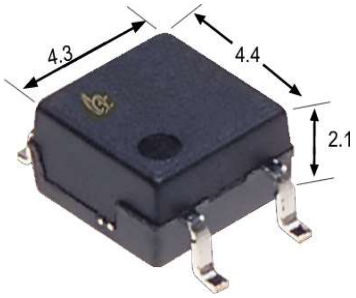
E534710





1. LED Anode
2. LED Cathode
3. Cathode
4. Anode

(Unit: mm)



Function

1. High-speed switching
Since release time is 0.1 ms, the MOSFET or other load can be turned off quickly in urgent situations.

2. Space saving
With a built-in control circuit, an external resistor is not needed. This contributes to making substrates more compact.

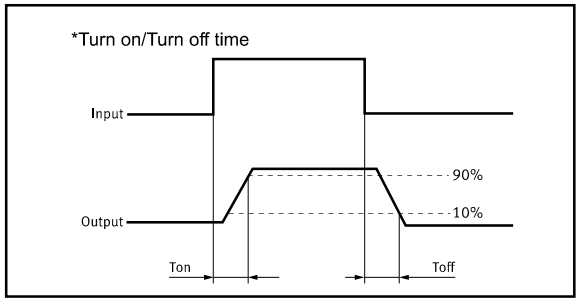
Applications

These advantages make APSEI Photorelays the ideal choice for:

MOSFET driver
Power supply (Vcc) for electronic circuits

TPYES

Category	Output Rating		Package	Part No.	Packing Quantity
	Drop-out voltage (Typ.)	Short circuit current (Typ.)			
Driver	12V	8uA	SOP-4	APV1123S	2000pcs /reel



Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Value	Units	Note
Input	Continuous LED Current	I_F	50	mA	
	Peak LED Current	I_{FP}	1000	mA	f=100Hz, duty=1%
	LED Reverse Voltage	V_R	5	V	
	Input Power Dissipation	P_{In}	75	mW	
I/O Breakdown Voltage		$V_{I/O}$	2500	Vrm	RH=60%, 1min
Operating Temperature		T_{Opr}	-40 to +85	℃	
Storage Temperature		T_{Stg}	-40 to +100	℃	

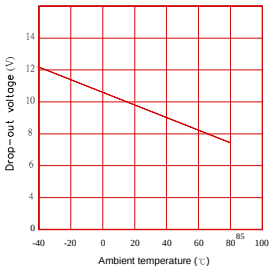
Electrical Characteristics (Ta = 25°C)

Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input	LED Forward Voltage	V_F		1.2	1.4	V	I_F=10mA
	Operation LED Current	$I_{F\ On}$		0.5	3.0	mA	Voc=5V
	Recovery LED Current	$I_{F\ Off}$		0.35	0.5	mA	Voc=1V
Output	Drop-out Voltage	Voc	10	12		V	I_F=10mA
	Short Circuit Current	Isc	1	8		uA	I_F=10mA
Transmission	Turn-On Time	T_{On}		0.23		ms	I_F=10mA
	Turn-Off Time	Toff		0.03		ms	C_L=1000pF
Coupled	I/O Isolation Resistance	$R_{I/O}$	10^{10}			Ω	DC500V
	I/O Capacitance	$C_{I/O}$		0.8	1.5	pF	f=1MHz

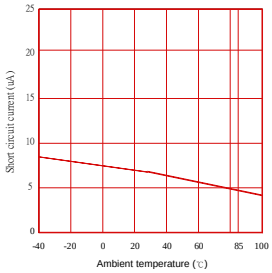
Please obey the following conditions to ensure proper device operation and resetting. Input LED current (Recommended value): IF ≥5mA and ≤30mA

Engineering Data

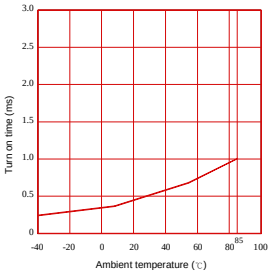
Drop-out voltage Vs. Ambient temperature



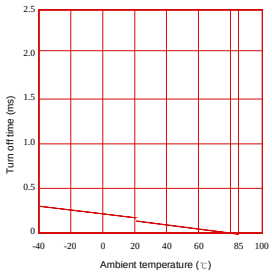
Shotr circuit current Vs. Ambient temperature



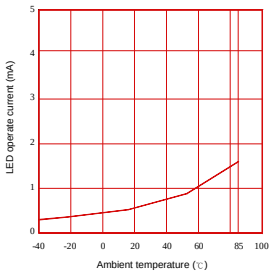
Turn on time Vs. Ambient temperature



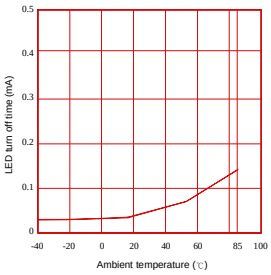
Turn off time Vs. Ambient temperature



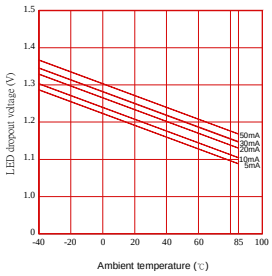
LED operate current Vs. Ambient temperature



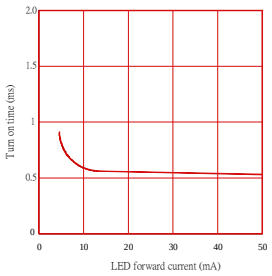
LED turn off current Vs. Ambient temperature



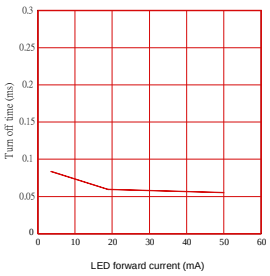
LED dropout voltage Vs. Ambient temperature



Turn on time Vs. Forward current characteristics

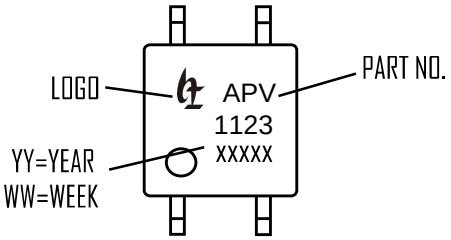


Turn off time Vs.LED forward current characteristics

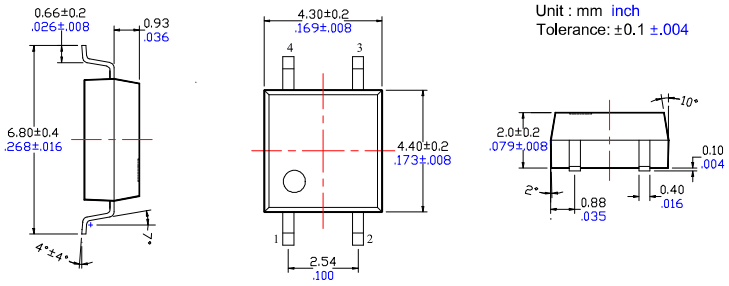


Dimensions and Package

Marking

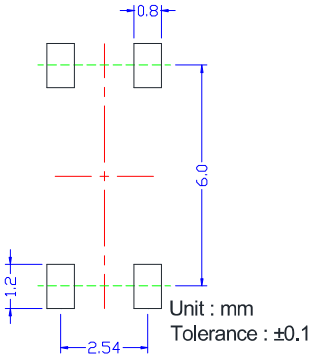


Surface mount terminal type

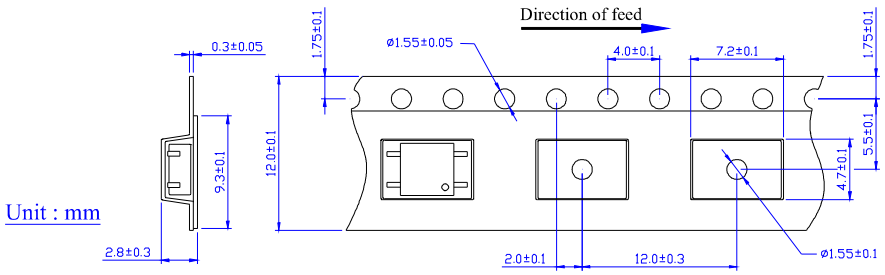


Lable

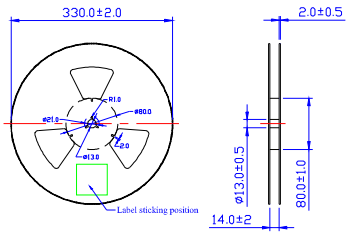
Recommended mounting pad (Top view)

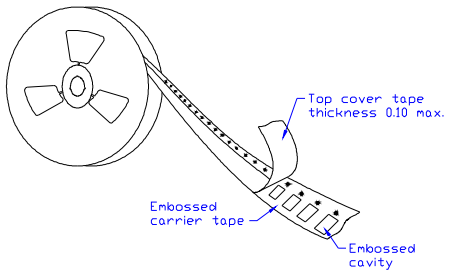


Tape dimensions



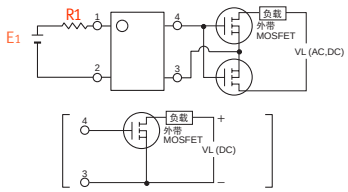
Dimensions of tape reel





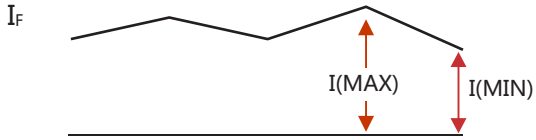
Using Methods

Examples of resistance value to control LED forward current (I_F=5mA)



E1	R1 (Approx)
3.3V	300 Ω
5.0V	600 Ω
12V	1.9KΩ
24V	4.1KΩ

LED forward current must be more than 5mA , at I(MIN) ,and less than 30mA , at I(MAX).



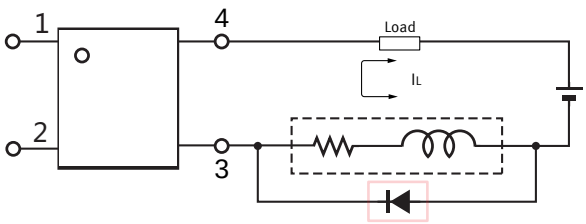
Recommended Operating Conditions

Please obey the following conditions to ensure proper device operation and resetting. Input LED current (Recommended value):

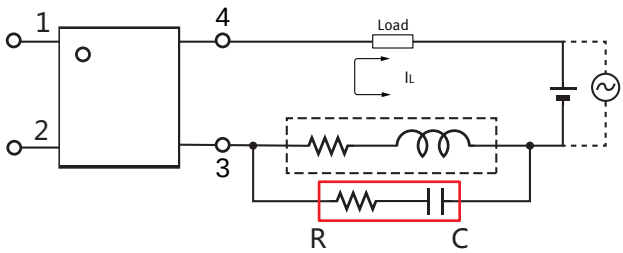
Characteristic	Symbol	Min	Typ.	Max	Unit
Forward current	I_F	5.0	7.0	30	mA

Protection Circuit

Clamp diode is connected in parallel with the load.
Absorb capacity with external diode.



CR Snubber is connected in parallel with the load.
Absorb capacity with buffer capacity.



When adding diodes, buffer circuits (C-R), and other protections, they need to be installed near the MOS RELAY to be effective.
Adding protection elements may result in a slow reset time, so adjust them according to the actual situation before use.

Note: When developing designs using this product, perform the expected performance of the equipment under the operating conditions recommended by the guidelines in this document. Continuous use under heavy loads (including, but not limited to, the application of high temperatures/current/voltage and significant changes in temperature, etc.) may result in deterioration of the reliability of this product.

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