

# V214/V214A

## HIGH VOLTAGE, PHOTO MOS RELAY

COSMO

### FEATURES

- Normally Open, Single Pole Single Throw
- Control 400VAC or DC Voltage
- Switch 130mA Loads
- LED control Current, 5mA
- Low ON-Resistance
- $dv/dt$ , >500V/ms
- Isolation Test Voltage, 3750VACrms

### Absolute Maximum Ratings( $T_a=25^\circ\text{C}$ )

#### Emitter(Input)

Reverse Voltage .....	5.0V
Continuous Forward Current .....	50mA
Peak Forward Current .....	1A
Power Dissipation .....	100mW
Derate Linearly from $25^\circ\text{C}$ .....	1.3mW/ $^\circ\text{C}$

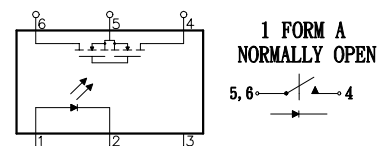
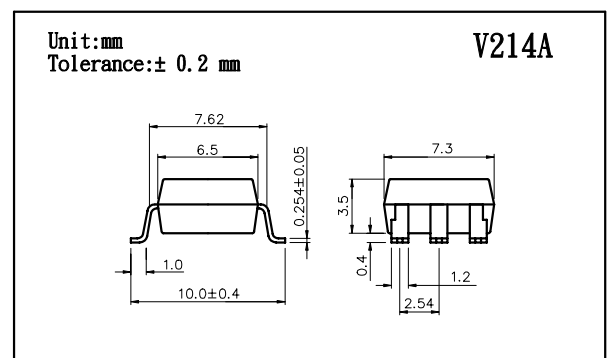
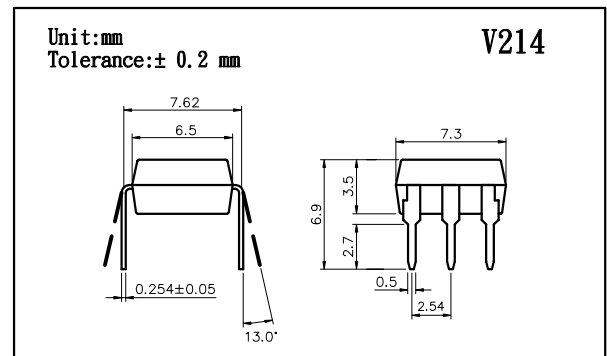
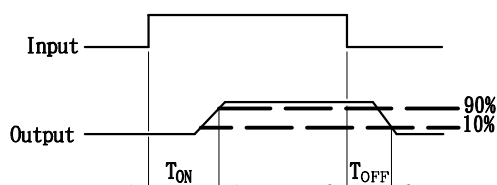
#### Detector(Output)

Output Breakdown Voltage .....	$\pm 400\text{V}$
Continuous Load Current .....	$\pm 130\text{mA}$
Power Dissipation .....	500mW

#### General Characteristics

Isolation Test Voltage .....	3750VACrms
Isolation Resistance $V_{io}=500\text{V}$ , $T_a=25^\circ\text{C}$ .....	$\geq 10^{10}\Omega$
Total Power Dissipation .....	550mW
Derate Linearly from $25^\circ\text{C}$ .....	2.5mW/ $^\circ\text{C}$
Storage Temperature Range .....	$-40^\circ\text{C}$ to $+125^\circ\text{C}$
Operating Temperature Range .....	$-30^\circ\text{C}$ to $+85^\circ\text{C}$
Junction Temperature .....	$100^\circ\text{C}$
Soldering Temperature, 2mm from case, 10 sec .....	$260^\circ\text{C}$

- Turn on/Turn off time



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### Characterisitcs

(Ta=25°C)

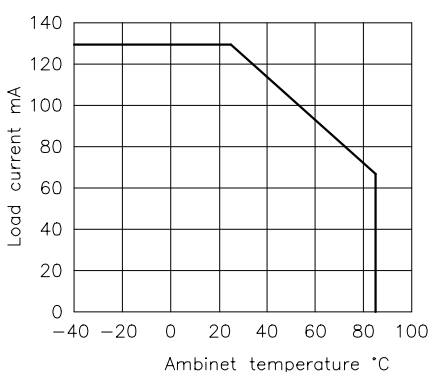
Description	Symbol	Min.	Typ.	Max.	Unit	Test Condition
<b>Emitter(Input)</b>						
Forward Voltage	VF		1.2	1.5	V	IF=10mA
Operation Input Current	IFON			5	mA	VL=± 20V, IL=100mA t=10mS
Recovery Input Current	IFOFF	0.2			mA	VL=± 20V, IL<=5uA
<b>Detector (output)</b>						
Output Breakdown Voltage	VB	400			V	IB=50uA
Output Off-State Leakage	IT(OFF)		0.2	1	uA	VT=100V, IF=0mA
I/O Capacitance	CISO		6		pF	IF=0, f=1MHz
ON Resistance	Con- nection	A		20	30	Ω IL=100mA, IF=10mA
		B	RON	10	15	
		C		5	7.5	
Turn-on Time	TON		0.3	1.0	ms	IF=10mA, VL=± 20V
Turn-off Time	TOFF		0.7	1.5	ms	t=10ms, IL=± 100mA

### Mos Relay Schematic and Wiring Diagrams

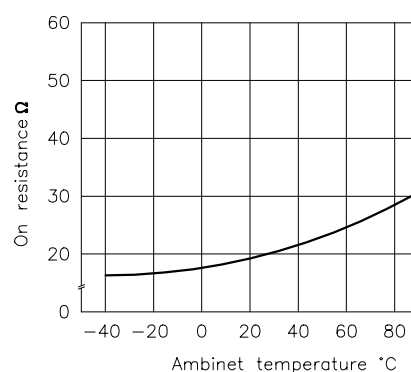
Type	Schematic	Output configur- ation	Load	Con- nection	Wiring Diagrams
V214 & V214A		1a	AC/DC	A	
			DC	B	
			DC	C	

### DATA CURVE

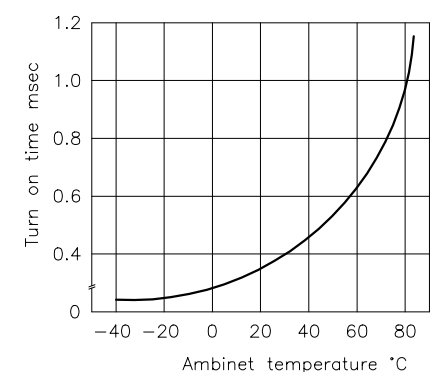
Load current vs. ambient temperature  
Allowable ambient temperature:  
-40°C to +85°C



On resistance vs. ambient temperature  
Across terminals 4 and 6 pin  
LED current: 5mA  
Continuouse load current: 130mA(DC)



Trun on time vs. ambient temperature  
Load voltage 400V(DC)  
LED current: 5mA  
Continuouse load current: 130mA(DC)

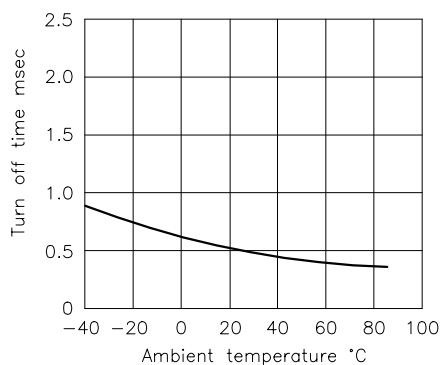


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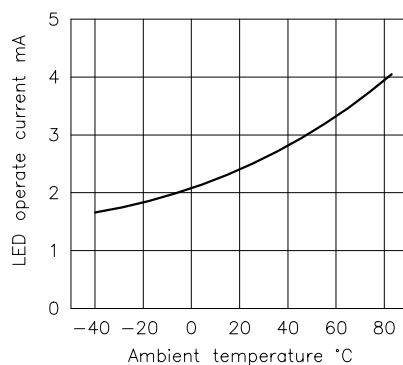
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### V214/V214A

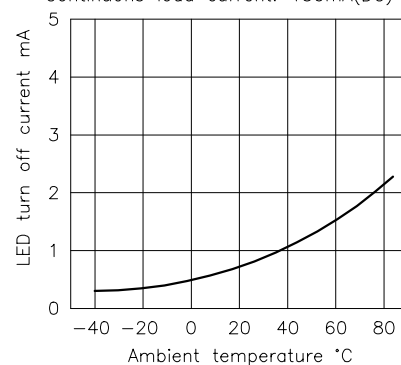
Turn off time vs. ambient temperature  
LED current: 5mA; Load voltage: 400V(DC)  
Continuous load current: 130mA(DC)



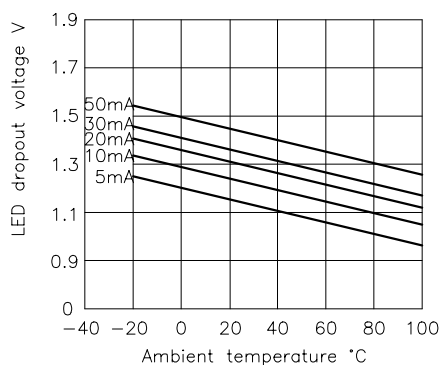
LED operate vs. ambient temperature  
Load voltage: 400V(DC)  
Continuous load current: 130mA(DC)



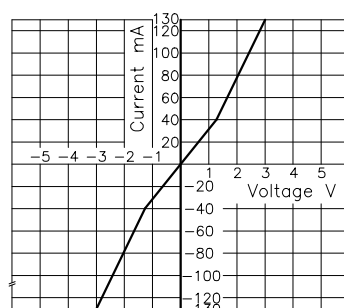
LED turn off current vs. ambient temperature  
Load voltage: 400V(DC)  
Continuous load current: 130mA(DC)



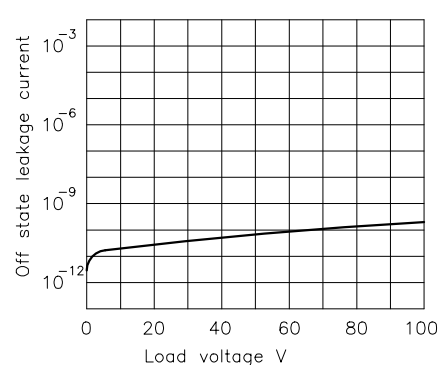
LED dropout voltage vs. ambient temperature  
LED current: 5 to 50mA



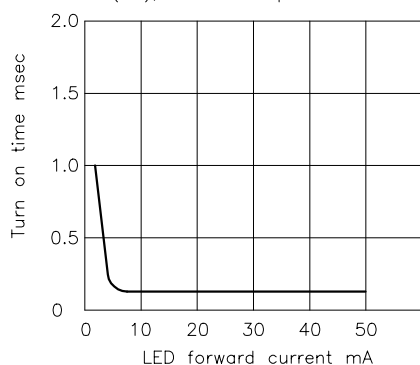
Voltage vs. current characteristics of output at MOS FET portion  
Measured portion: across terminals 4 and 6 pin  
Ambient temperature: 25°C



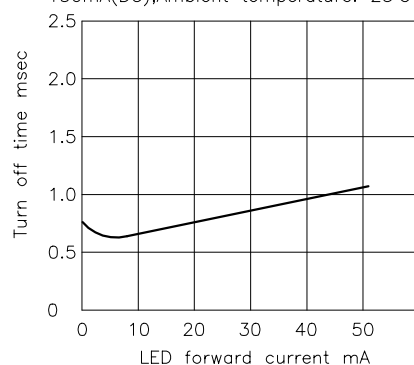
Off state leakage current  
Across terminals 4 and 6 pin  
Ambient temperature: 25°C



LED forward current vs. turn on time  
Across terminals 4 and 6 pin; Load voltage: 400V(DC); Continuous load current: 130mA(DC); Ambient temperature: 25°C



LED forward current vs. turn off time  
Across terminals 4 and 6 pin; Load voltage: 400V(DC); Continuous load current: 130mA(DC); Ambient temperature: 25°C



Applied voltage vs. output capacitance  
Across terminals 4 and 6 pin  
Frequency: 1MHz; Ambient temperature: 25°C

