

V414/V414A

HIGH VOLTAGE, PHOTO MOS RELAY

COSMO

FEATURES

- Normally Close, 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°C	1.3mW/ $^\circ\text{C}$

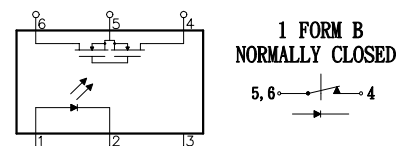
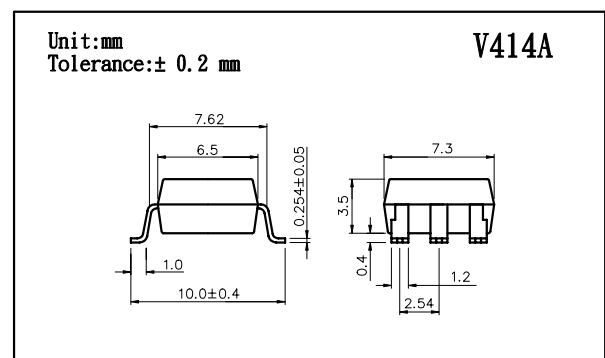
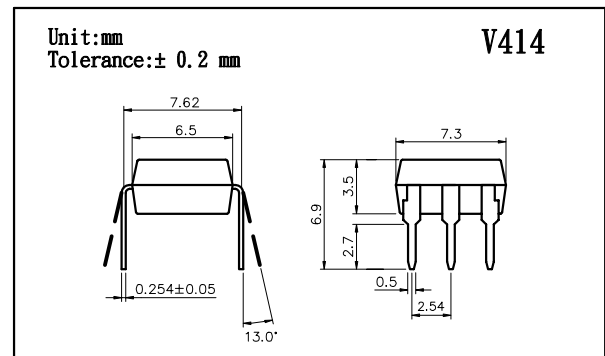
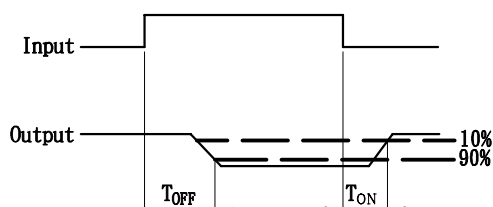
Detector(Output)

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°C	2.5mW/ $^\circ\text{C}$
Storage Temperature Range	-40°C to $+125^\circ\text{C}$
Operating Temperature Range	-30°C to $+85^\circ\text{C}$
Junction Temperature	100°C
Soldering Temperature, 2mm from case, 10 sec	260°C

- Operate/Reverse time



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Characterisitcs

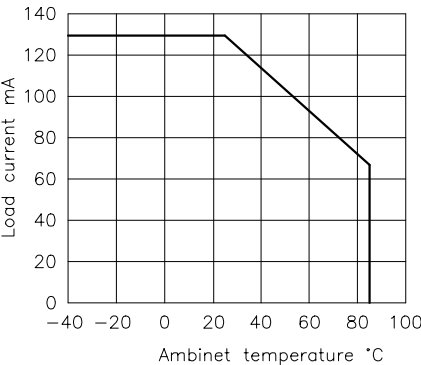
(Ta=25°C)

Description	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Emitter(Input)						
Forward Voltage	VF		1.8	2.0	V	IF=10mA
Operation Input Current	I _{OFF}			5	mA	V _L =± 20V, I _L ≤5uA
Recovery Input Current	I _{ON}	0.2			mA	V _L =± 20V, I _L =100mA t=10mS
Detector (output)						
Output Breakdown Voltage	VB	400			V	I _B =50uA
Output Off-State Leakage	I _{T(OFF)}		0.2	2	uA	V _T =100V, I _F =10mA
I/O Capacitance	C _{ISO}		6		pF	I _F =0, f=1MHz
ON Resistance	Con- nection	A		40	50	Ω I _L =100mA, I _F =0mA
		B	R _{ON}	20	25	
		C		10	12.5	
Reverse(ON) Time	T _{ON}		0.6	1.5	ms	I _F =10mA, V _L =± 20V
Operate(OFF) Time	T _{OFF}		0.3	1.0	ms	t=10ms, I _L =± 100mA

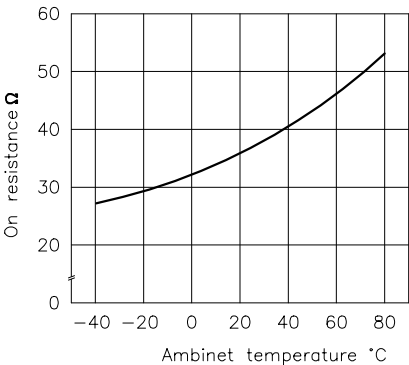
Mos Relay Schematic and Wiring Diagrams						
Type	Schematic	Output configur- -ation	Load	Con- nection	Wiring Diagrams	
V414 & V414A		1a	AC/DC	A		
			DC	B		
			DC	C		

DATA CURVE

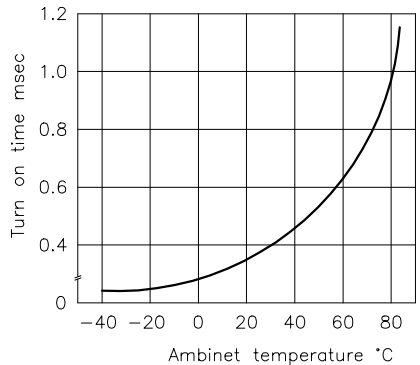
Load current vs. ambient temperature
Allowable ambient temperature:
-40°C to +85°C



On resistance vs. ambient temperature
Across terminals 4 and 6 pin
LED current: 0mA
Continuouse load current: 130mA(DC)



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

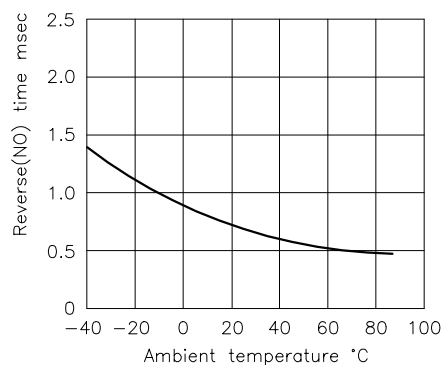


V414/V414A

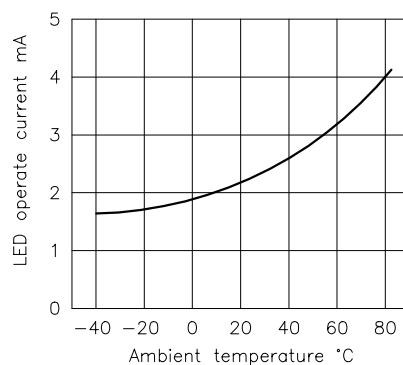
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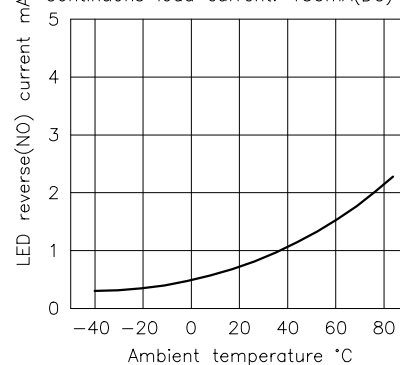
Reverse(NO) time vs. ambient temperature
LED current: 5mA; Load voltage: 400V(DC)
Continuous load current: 130mA(DC)



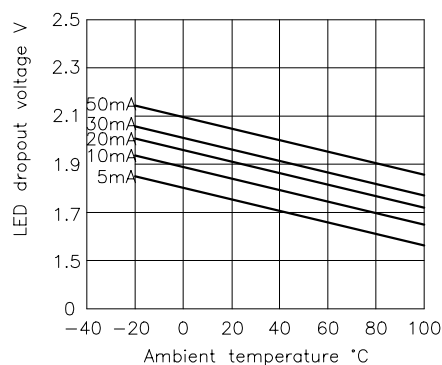
LED operate(OFF) vs. ambient temperature
Load voltage: 400V(DC)
Continuous load current: 130mA(DC)



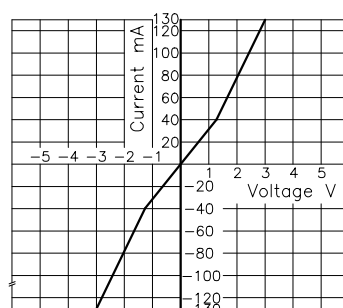
LED reverse(NO) current vs. ambient temperature
Load voltage: 400V(DC)
Continuous load current: 130mA(DC)



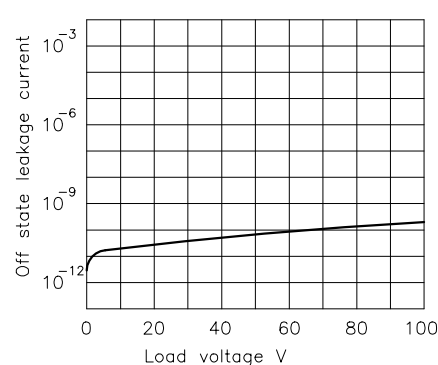
LED dropout voltage vs. ambient temperature
LED current: 5 to 50mA



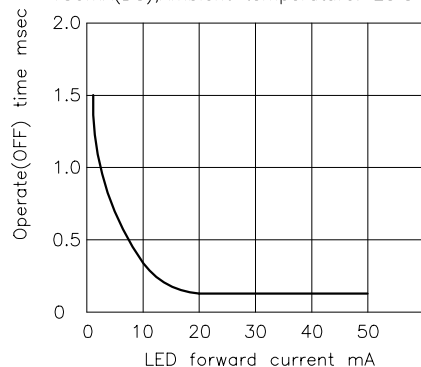
Voltage vs. current characteristics of output at MOS FET portion
Measured portion: across terminals 4 and 6 pin
Ambient temperature: 25°C



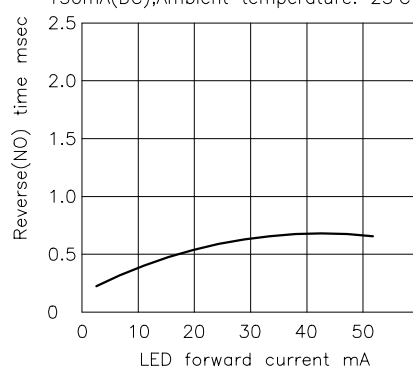
Off state leakage current
Across terminals 4 and 6 pin
Ambient temperature: 25°C



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



LED forward current vs. reverse(NO) 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

