

# COSMO

## FEATURES

- Normally Open, Single Pole Single Throw
- Control 350VAC 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/ $^\circ\text{C}$

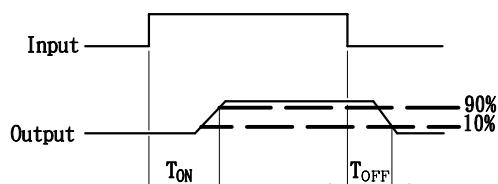
### Detector(Output)

Output Breakdown Voltage .....	$\pm 350\text{V}$
Continuous Load Current .....	$\pm 130\text{mA}$
Power Dissipation .....	500mW

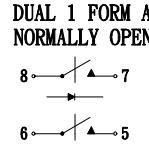
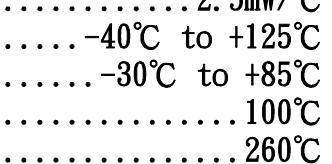
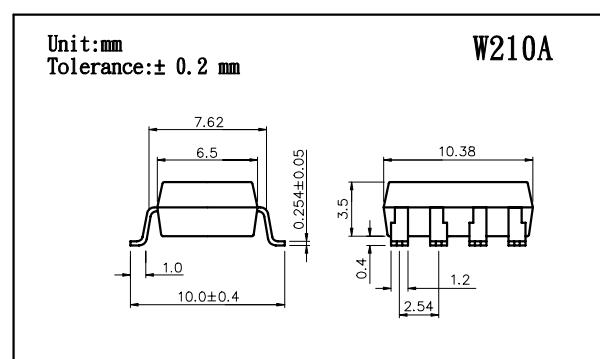
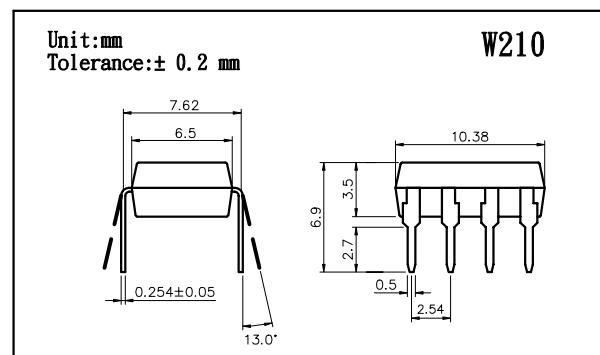
### General Characteristics

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°C to +125°C
Operating Temperature Range.....	-30°C to +85°C
Junction Temperature .....	100°C
Soldering Temperature, 2mm from case, 10 sec .....	260°C

#### ● Turn on/Turn off time



## W210/W210A HIGH VOLTAGE, PHOTO E-MOS RELAY



# W210/W210A

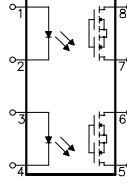
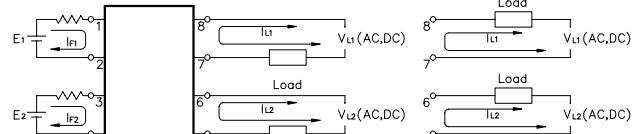
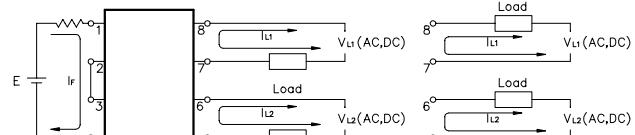
## HIGH VOLTAGE, PHOTO <sup>E</sup>MOS RELAY

### Characteristics

$(Ta=25^\circ C)$

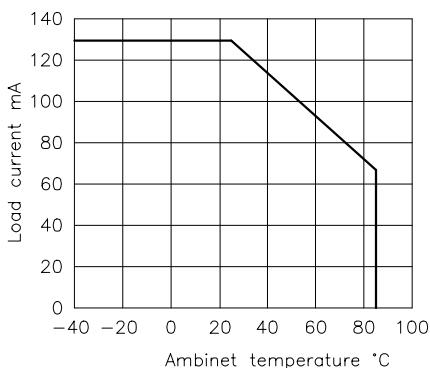
Description	Symbol	Min.	Typ.	Max.	Unit	Test Condition
<b>Emitter (Input)</b>						
Forward Voltage	VF		1.2	1.5	V	IF=10mA
Operation Input Current	IFON			5	mA	VL=± 20V, IL=100mA $t=10\mu s$
Recovery Input Current	IFOFF	0.2			mA	VL=± 20V, IL<=5uA
<b>Detector (output)</b>						
Output Breakdown Voltage	VB	350			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	RON		20	30	$\Omega$	IL=100mA, IF=10mA
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

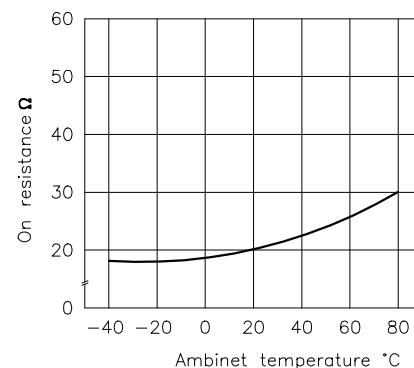
Type	Schematic	Output configuration	Load	Con-nection	Wiring Diagrams
W210 & W210A		2a	AC/DC	-	<p>(1) Two independent 1 Form A use</p>  <p>(2) 2 Form A use</p> 

### DATA CURVE

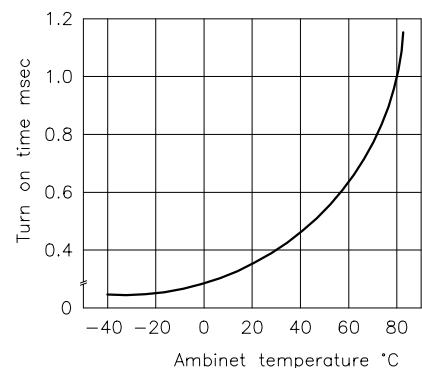
Load current vs. ambient temperature  
Allowable ambient temperature:  
-40°C to +85°C



On resistance vs. ambient temperature  
Across terminals 5, 7 and 6, 8 pin  
LED current: 5mA  
Continuous load current: 130mA(DC)



Turn on time vs. ambient temperature  
Load voltage 350V(DC)  
LED current: 5mA  
Continuous load current: 130mA(DC)

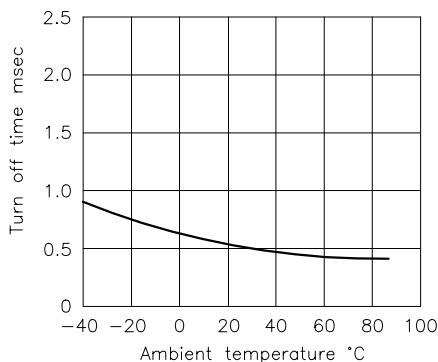


# W210/W210A

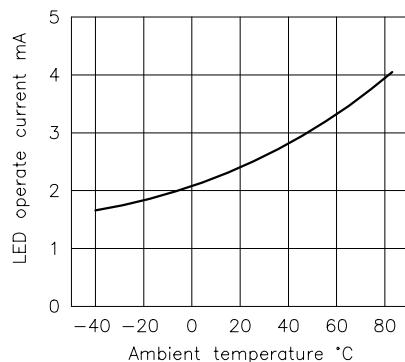
## HIGH VOLTAGE, PHOTO E-MOS RELAY

### W210/W210A

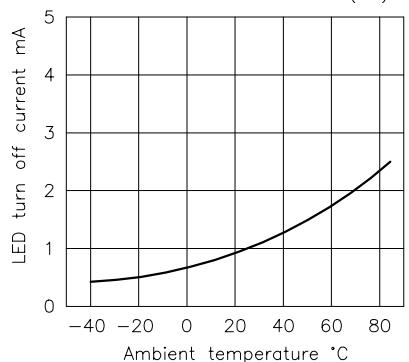
Turn off time vs. ambient temperature  
LED current: 5mA; Load voltage: 350V(DC)  
Continuous load current: 130mA(DC)



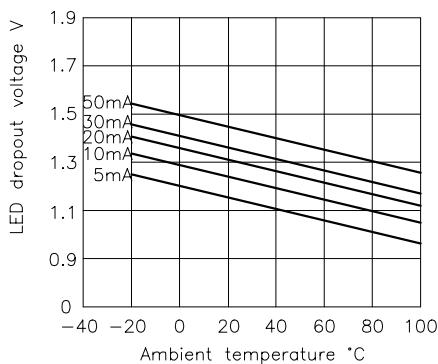
LED operate vs. ambient temperature  
Load voltage: 350V(DC)  
Continuous load current: 130mA(DC)



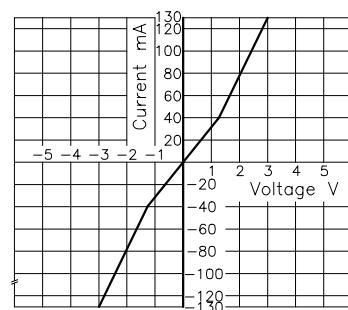
LED turn off current vs. ambient temperature  
Load voltage: 350V(DC)  
Continuous load current: 130mA(DC)



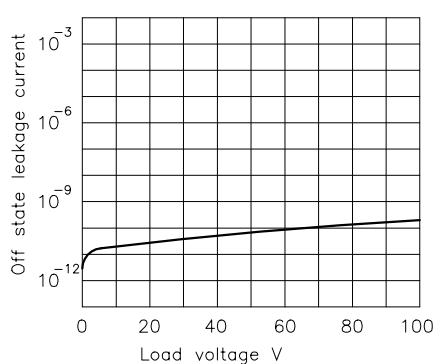
LED dropout voltage vs. ambient temperature  
LED current: 5 to 50mA



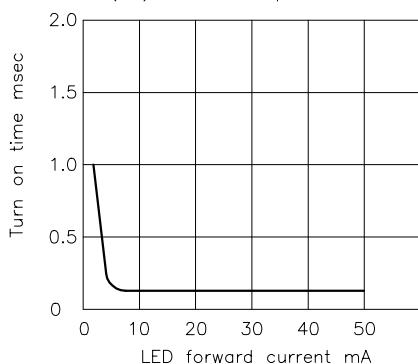
Voltage vs. current characteristics of output at MOS FET portion  
Measured portion: across terminals 5,7 and 6,8 pin  
Ambient temperature: 25°C



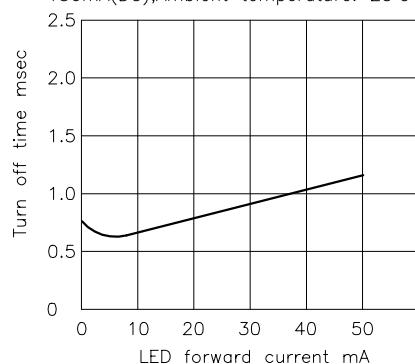
Off state leakage current  
Across terminals 5,7 and 6,8 pin  
Ambient temperature: 25°C



LED forward current vs. turn on time  
Across terminals 5,7 and 6,8 pin; Load voltage: 350V(DC); Continuous load current: 130mA(DC); Ambient temperature: 25°C



LED forward current vs. turn off time  
Across terminals 5,7 and 6,8 pin; Load voltage: 350V(DC); Continuous load current: 130mA(DC); Ambient temperature: 25°C



Applied voltage vs. output capacitance  
Across terminals 5,7 and 6,8 pin  
Frequency: 1MHz; Ambient temperature: 25°C

