

# COSMO High Voltage, Solid State Relay-MOSFET Output KAQW614/614A

UL 1577/ UL 508 (File No.E108430), FI EN60950 (File No.FI13698)

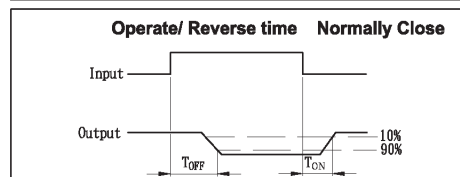
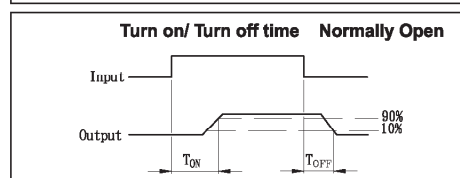
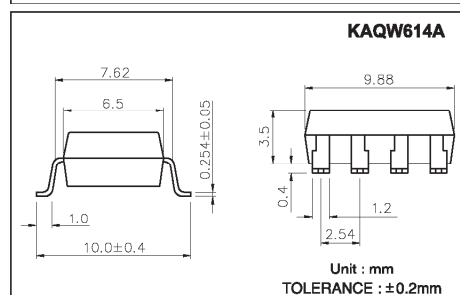
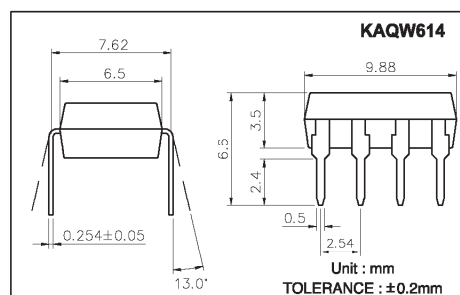
## Features

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

## Absolute Maximum Ratings

( $T_a=25^\circ\text{C}$ )

<b>Emitter ( Input )</b>	
Reverse Voltage .....	5.0V
Continuous Forward Current .....	50mA
Peak Forward Current .....	1A
Power Dissipation .....	100mW
Derate Linearly from 25°C .....	1.3mW/°C
<b>Detector ( Output )</b>	
Output Breakdown Voltage .....	±400V
Continuous Load Current .....	±130mA
Power Dissipation .....	500mW
<b>General Characteristics</b>	
Isolation Test Voltage .....	3750VACrms
Isolation Resistance $V_{io}=500V, T_a=25^\circ\text{C}$ .....	$\geq 10^{10} \Omega$
Total Power Dissipation.....	550mW
Derate Linearly from 25°C .....	2.5mW/°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



**Electro-optical Characteristics**

(Ta=25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>Emitter (Input)</b>						
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA		1.2	1.5	V
Operation Input Current	I <sub>FON(N.O)</sub>	V <sub>L</sub> = ±20V, I <sub>L</sub> = 100mA (N.O)			5	mA
	I <sub>FOFF(N.C)</sub>	V <sub>L</sub> = ±20V, I <sub>L</sub> ≤ 5µA (N.C) t = 10mS				
Recovery Input Current	I <sub>FOFF(N.O)</sub>	V <sub>L</sub> = ±20V, I <sub>L</sub> ≤ 5µA (N.O)	0.2			mA
	I <sub>FON(N.C)</sub>	V <sub>L</sub> = ±20V, I <sub>L</sub> = 100mA (N.C) t = 10mS				

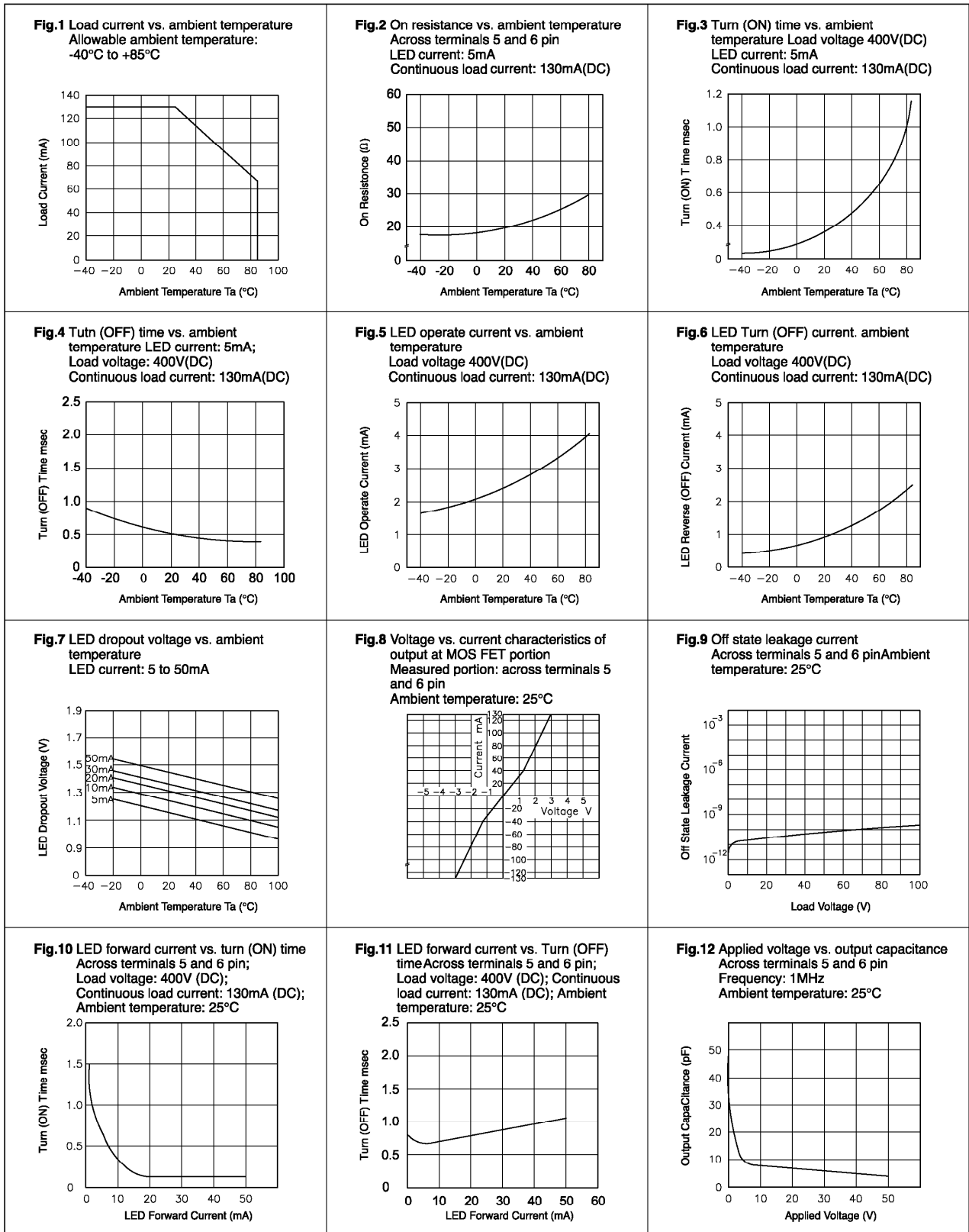
<b>Detector (Output) normally open</b>						
Output Breakdown Voltage	V <sub>B</sub>	I <sub>B</sub> = 50µA	400			V
Output Off-State Leakage	I <sub>TOFF</sub>	V <sub>T</sub> = 100V, I <sub>F</sub> = 0mA		0.2	1	µA
I/O Capacitance	C <sub>ISO</sub>	I <sub>F</sub> = 0, f = 1MHz		6		pF
ON Resistance	R <sub>ON</sub>	I <sub>L</sub> = 100mA, I <sub>F</sub> = 10mA		20	30	Ω
Turn-On Time	T <sub>ON</sub>	I <sub>F</sub> = 10mA, V <sub>L</sub> = ±20V		0.3	1.0	ms
Turn-Off Time	T <sub>OFF</sub>	t = 10ms, I <sub>L</sub> = ±100mA		0.7	1.5	ms

<b>Detector (Output) normally close</b>						
Output Breakdown Voltage	V <sub>B</sub>	I <sub>B</sub> = 50µA	400			V
Output Off-State Leakage	I <sub>TOFF</sub>	V <sub>T</sub> = 100V, I <sub>F</sub> = 10mA		0.2	2	µA
I/O Capacitance	C <sub>ISO</sub>	I <sub>F</sub> = 0, f = 1MHz		6		pF
ON Resistance	R <sub>ON</sub>	I <sub>L</sub> = 100mA, I <sub>F</sub> = 0mA		40	50	Ω
Reverse (ON) Time	T <sub>ON</sub>	I <sub>F</sub> = 10mA, V <sub>L</sub> = ±20V		0.6	1.5	ms
Operate (OFF) Time	T <sub>OFF</sub>	t = 10ms, I <sub>L</sub> = ±100mA		0.3	1.0	ms

**Schematic and Wiring Diagrams**

Type	Schematic	Output configuration	Load	Connection	Wiring Diagrams
KAQW614 & KAQW614A		1a1b	AC/DC	-	<p>(1) Two independent 1 Form A &amp; 1 Form B use</p> <p>(2) 1 Form A &amp; 1 Form B use</p>

Data Curve (KAQW614/614A Normally Open Characteristics)



**Data Curve (KAQW614/614A Normally Close Characteristics)**

