

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

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

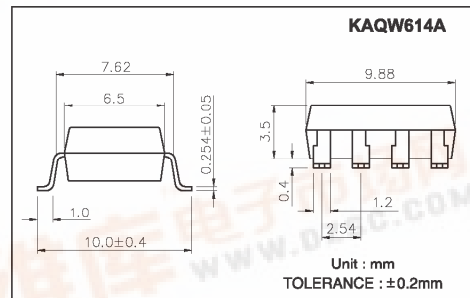
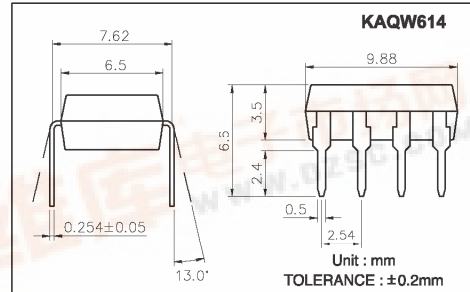
## Features

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

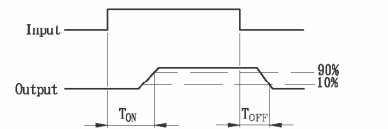
## Absolute Maximum Ratings

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

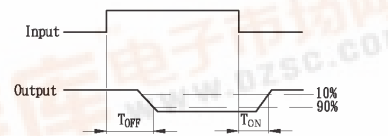
Emitter ( Input )	
Reverse Voltage .....	5.0V
Continuous Forward Current .....	50mA
Peak Forward Current .....	1A
Power Dissipation .....	100mW
Derate Linearly from 25°C .....	1.3mW/°C
Detector ( Output )	
Output Breakdown Voltage .....	±400V
Continuous Load Current .....	±130mA
Power Dissipation .....	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/°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 Normally Open



### Operate/ Reverse time Normally Close



**Electro-optical Characteristics**

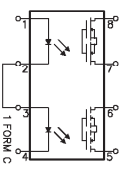
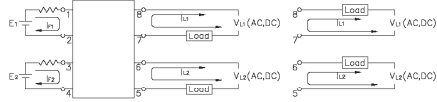

(Ta=25°C)

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> I <sub>FOFF(N.C)</sub>	V <sub>L</sub> =±20V, I <sub>L</sub> =100mA (N.O) V <sub>L</sub> =±20V, I <sub>L</sub> ≤5uA (N.C) t = 10mS			5	mA
Recovery Input Current	I <sub>FOFF(N.O)</sub> I <sub>FON(N.C)</sub>	V <sub>L</sub> =±20V, I <sub>L</sub> ≤5uA (N.O) V <sub>L</sub> =±20V, I <sub>L</sub> =100mA (N.C) t = 10mS	0.2			mA

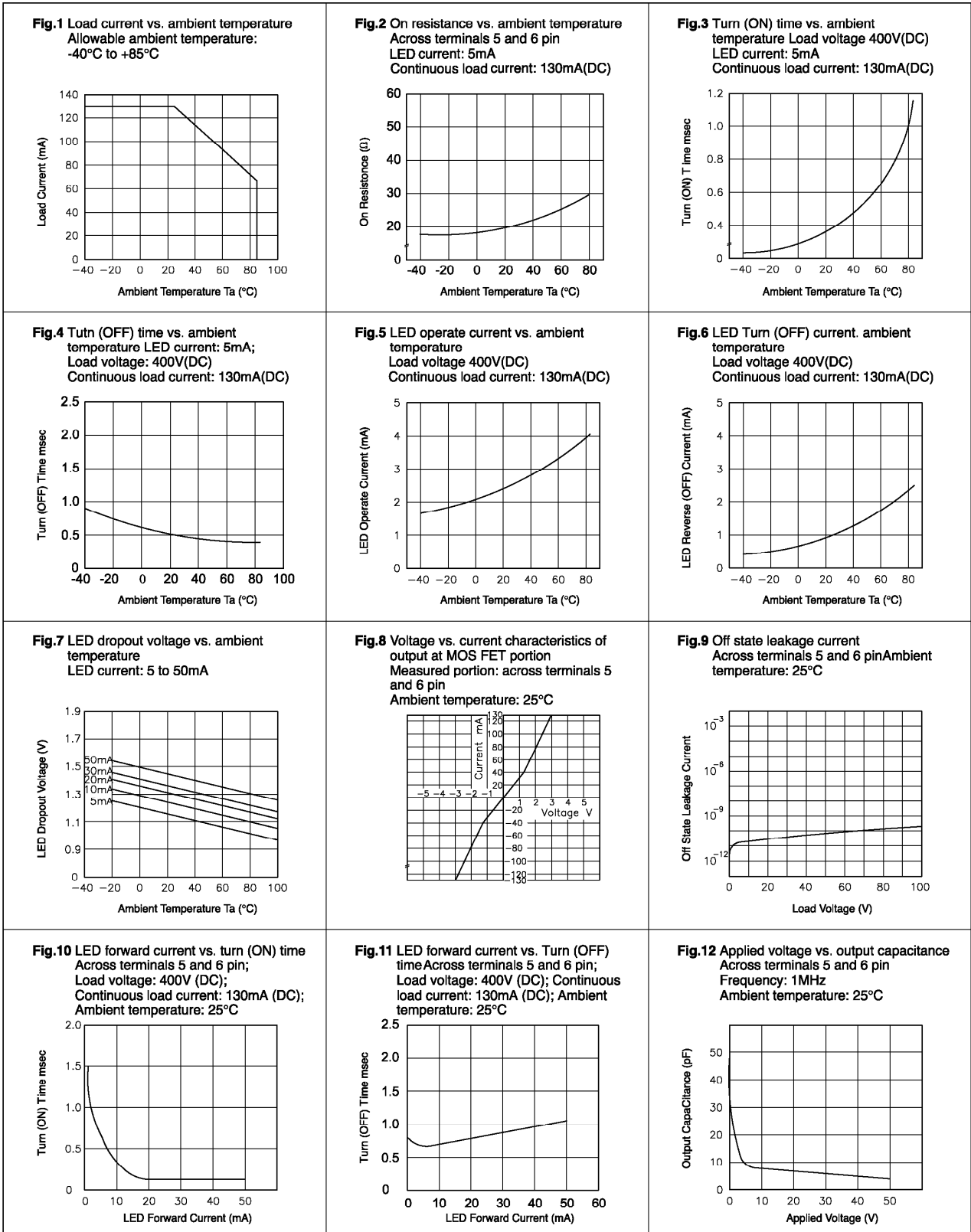
<b>Detector (Output) normally open</b>						
Output Breakdown Voltage	V <sub>B</sub>	I <sub>B</sub> =50uA	400			V
Output Off-State Leakage	I <sub>TOFF</sub>	V <sub>T</sub> =100V, I <sub>F</sub> =0mA		0.2	1	uA
I/O Capacitance	C <sub>ISO</sub>	I <sub>F</sub> =0, f =1MHz		6		pF
ON Resistance	R <sub>ON</sub>	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> =50uA	400			V
Output Off-State Leakage	I <sub>TOFF</sub>	V <sub>T</sub> =100V, I <sub>F</sub> =10mA		0.2	2	uA
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)

