

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

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

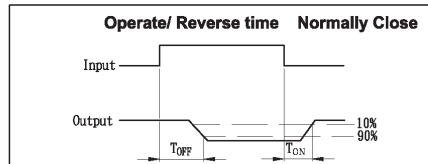
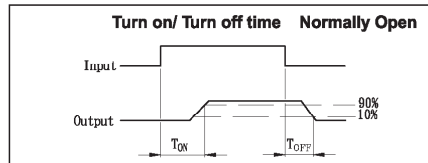
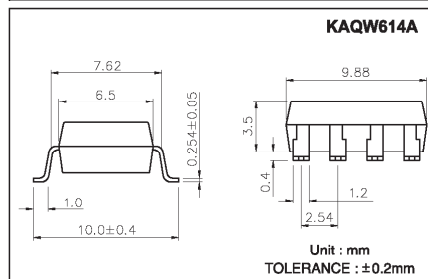
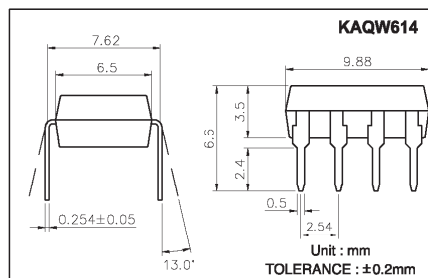
Features

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 $V_{io}=500V, T_a=25^\circ\text{C}$ | $\geq 10^{10} \Omega$ |
| 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 |
|-------------------------|---|--|------|------|------|------|
| Emitter (Input) | | | | | | |
| Forward Voltage | V _F | I _F = 10mA | | 1.2 | 1.5 | V |
| Operation Input Current | I _{FON(N.O)} I _{FOFF(N.C)} | V _L = ±20V, I _L = 100mA (N.O) V _L = ±20V, I _L ≤ 5µA (N.C) t = 10mS | | | 5 | mA |
| Recovery Input Current | I _{FOFF(N.O)} I _{FON(N.C)} | V _L = ±20V, I _L ≤ 5µA (N.O) V _L = ±20V, I _L = 100mA (N.C) t = 10mS | 0.2 | | | mA |

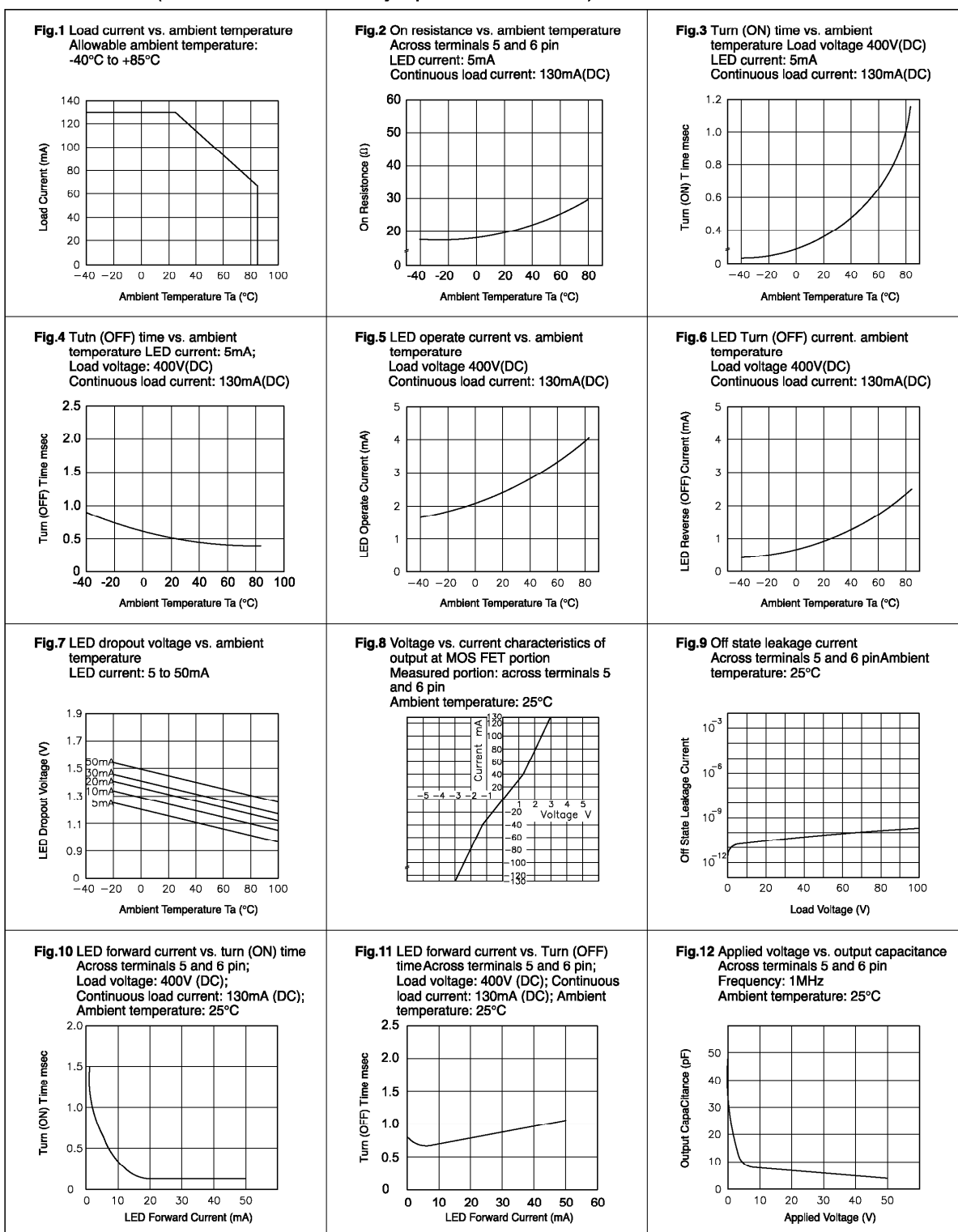
| | | | | | | |
|--|-------------------|---|-----|-----|-----|----|
| Detector (Output) normally open | | | | | | |
| Output Breakdown Voltage | V _B | I _B = 50µA | 400 | | | V |
| Output Off-State Leakage | I _{TOFF} | V _T = 100V, I _F = 0mA | | 0.2 | 1 | µA |
| I/O Capacitance | C _{ISO} | I _F = 0, f = 1MHz | | 6 | | pF |
| ON Resistance | R _{ON} | I _L = 100mA, I _F = 10mA | | 20 | 30 | Ω |
| Turn-On Time | T _{ON} | I _F = 10mA, V _L = ±20V | | 0.3 | 1.0 | ms |
| Turn-Off Time | T _{OFF} | t = 10ms, I _L = ±100mA | | 0.7 | 1.5 | ms |

| | | | | | | |
|---|-------------------|--|-----|-----|-----|----|
| Detector (Output) normally close | | | | | | |
| Output Breakdown Voltage | V _B | I _B = 50µA | 400 | | | V |
| Output Off-State Leakage | I _{TOFF} | V _T = 100V, I _F = 10mA | | 0.2 | 2 | µA |
| I/O Capacitance | C _{ISO} | I _F = 0, f = 1MHz | | 6 | | pF |
| ON Resistance | R _{ON} | I _L = 100mA, I _F = 0mA | | 40 | 50 | Ω |
| Reverse (ON) Time | T _{ON} | I _F = 10mA, V _L = ±20V | | 0.6 | 1.5 | ms |
| Operate (OFF) Time | T _{OFF} | t = 10ms, I _L = ±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 & 1 Form B use</p> <p>(2) 1 Form A & 1 Form B use</p> |

Data Curve (KAQW614/614A Normally Open Characteristics)



Data Curve (KAQW614/614A Normally Close Characteristics)

