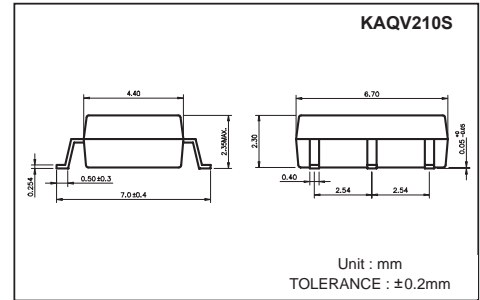


# High Voltage, Photo Mos Relay KAQV210S

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

## Features

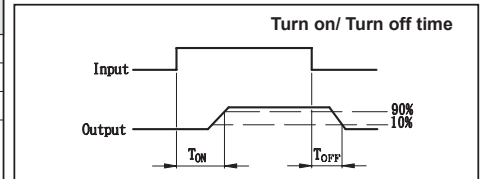
1. Normally Open, Single Pole Single Throw
2. Control 350VAC or DC Voltage
3. Switch 130mA Loads
4. LED control Current, 5mA
5. Low ON-Resistance
6.  $dv/dt$ , >500V/ms
7. Isolation Test Voltage, 1500VACrms



## Absolute Maximum Ratings

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

|  |   |
|--|---|
| Emitter ( Input )  | Detector ( Output )                           |
| Reverse Voltage.....5.0V                                       | Output Breakdown Voltage .....±350V           |
| Continuous Forward Current .....50mA                           | Continuous Load Current .....±130mA           |
| Peak Forward Current .....1A                                   | Power Dissipation .....500mW                  |
| Power Dissipation .....100mW                                   |   |
| Derate Linearly from 25°C .....1.3mW/°C                        |   |
| General Characteristics  |   |
| Isolation Test Voltage.....1500VACrms                          | Storage Temperature Range ....-40°C to +125°C |
| Isolation Resistance   | Operating Temperature Range...-30°C to +85°C  |
| $V_{io}=500V, T_a=25^\circ\text{C}$ ..... $\geq 10^{10}\Omega$ | Junction Temperature.....100°C                |
| Total Power Dissipation .....550mW                             | Soldering Temperature,                        |
| Derate Linearly from 25°C .....2.5mW/°C                        | 2mm from case, 10 sec .....260°C              |



## Electro-optical Characteristics

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

| Parameter                | Symbol     | Conditions                                     | Min.     | Typ.                                | Max. | Unit          |          |
|--------------------------|------------|--|----------|-------------------------------------|------|---------------|----------|
| Emitter (Input)          |            |  |          |                                     |      |               |          |
| Forward Voltage          | $V_F$      | $I_F=10\text{mA}$                              |          | 1.2                                 | 1.5  | V             |          |
| Operation Input Current  | $I_{FON}$  | $V_L=\pm 20V, I_L=100\text{mA}, t=10\text{ms}$ |          |                                     | 5    | mA            |          |
| Recovery Input Current   | $I_{FOFF}$ | $V_L=\pm 20V, I_L\leq 5\mu\text{A}$            | 0.2      |                                     |      | mA            |          |
| Detector (Output)        |            |  |          |                                     |      |               |          |
| Output Breakdown Voltage | $V_B$      | $I_B=50\mu\text{A}$                            | 350      |                                     |      | V             |          |
| Output Off-State Leakage | $I_{TOFF}$ | $V_T=100V, I_F=0\text{mA}$                     |          | 0.2                                 | 1    | $\mu\text{A}$ |          |
| I/O Capacitance          | $C_{ISO}$  | $I_F=0, f=1\text{MHz}$                         |          | 6                                   |      | pF            |          |
| ON Resistance            | Connection | A  | $R_{ON}$ | $I_L=100\text{mA}, I_F=10\text{mA}$ | 20   | 30            | $\Omega$ |
|                          |            | B  |          |                                     | 10   | 15            |          |
|                          |            | C  |          |                                     | 5    | 7.5           |          |
| Turn-On Time             | $T_{ON}$   | $I_F=10\text{mA}, V_L=\pm 20V$                 |          | 0.3                                 | 1.0  | ms            |          |
| Turn-Off Time            | $T_{OFF}$  | $t=10\text{ms}, I_L=\pm 100\text{mA}$          |          | 0.7                                 | 1.5  | ms            |          |

## Mos Relay Schematic and Wiring Diagrams

| Type     | Schematic | Output configuration | Load  | Connection | Wiring Diagrams |
|----------|-----------|----------------------|-------|------------|-----------------|
| KAQV210S |           | 1a                   | AC/DC | A          |                 |
|          |           |                      | DC    | B          |                 |
|          |           |                      | DC    | C          |                 |

## Data Curve

