

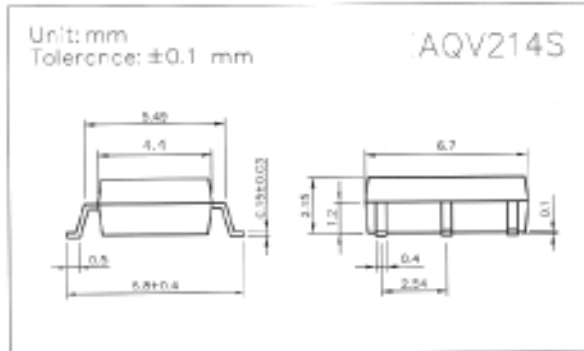
FEATURES

- Normally Open, Single Pole Single Throw
- Control 400 VAC or DC Voltage
- Switch 130 mA Loads
- LED Control Current, 2mA
- Low ON-Resistance
- dv/dt , >500 V/ms
- Isolation Test Voltage, 1500 VAC_{RMS}
- UL, CSA, FCC compatible
- Applications
 - Telecommunications
 - Telecom Switching
 - Tip/Ring Circuits
 - Modem Switching (Laptop, Notebook, Pocket Size)
 - Hookswitch
 - Dial Pulsing
 - Ground Start
 - Ringer Injection
 - Instrumentation
 - Multiplexers
 - Data Acquisition
 - Electronic Switching
 - I/O Subsystems
 - Meters (Watt-Hour, Water, Gas)
 - Medical Equipment
 - High Voltage Test Equipment
 - TRIAC Driver
 - Motor Control
 - Security
 - Aerospace
 - Industrial Controls

DESCRIPTION

The AQV214S is a single pole single throw (SPST), normally open (NO), Mos Relay. The relay can control AC or DC loads currents up to 130 mA, with a supply voltage up to 400 V. The device is packaged in a six pin SO package. This package offers an insulation dielectric withstand of 1500 VAC_{RMS}.

The coupler consists of a AlGaAs LED that is optically coupled to a dielectrically isolated photodiode array which drives two series connected high voltage MOS transistors. The typical ON-Resistance is 20 Ω at 25 mA and is linear up to 50mA. The incremental resistance drops to less than 20 Ω beyond 50 mA while reducing internal power dissipation at high load currents.



Absolute Maximum Ratings (T_A = 25°C)

Emitter (Input)

Reverse Voltage.....	5.0V
Continuous Forward Current.....	50mA
Peak Forward Current (1s).....	1A
Power Dissipation.....	100mW
Derate Linearly from 25°C.....	1.3mW/°C

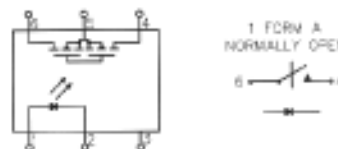
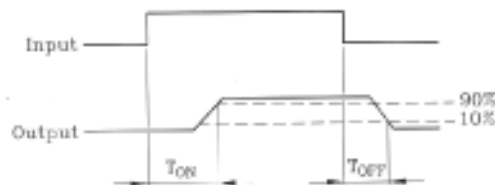
Detector (Output)

Output Breakdown Voltage.....	±400V
Continuous Load Current.....	±130mA
Power Dissipation.....	500mW

General Characteristics

Isolation Test Voltage.....	1500VAC _{RMS}
Isolation Resistance	
V _{IO} = 500V, T _A = 25°C.....	≥10 ¹⁰ Ω
Total Power Dissipation.....	550mW
Derate Linearly from 25°C.....	2.5mW/°C
Storage Temperature Range.....	-40 to +150°C
Operating Temperature Range.....	-40 to +85°C
Junction Temperature.....	100°C
Soldering Temperature, 2mm from case, 10 sec...	260°C

● Turn on/Turn off time



Characteristics

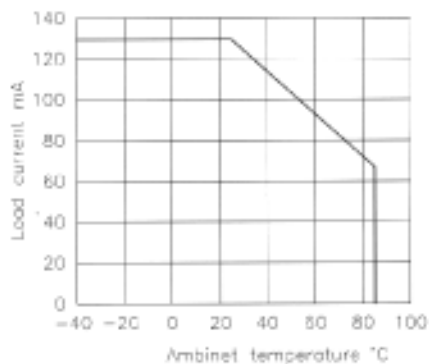
($T_A = 25^\circ\text{C}$)

Description	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Emitter (Input)							
Forward Voltage	V_F		1.8	2.0	V	$I_F = 10\text{ mA}$	
Operation Input Current	I_{FON}			5	mA	$V_L = \pm 20\text{ V}$, $I_L = 100\text{ mA}$, $t = 10\text{ ms}$	
Recovery Input Current	I_{FOFF}	0.2			mA	$V_L = \pm 20\text{ V}$, $I_L = < 5\text{ }\mu\text{A}$	
Detector (output)							
Output Breakdown Voltage	V_B	400			V	$I_B = 50\text{ }\mu\text{A}$	
Output Off-State Leakage	$I_{T(OFF)}$		0.2	1	μA	$V_T = 100\text{ V}$, $I_F = 0\text{ mA}$	
I/O Capacitance	C_{ISO}		6		pF	$I_F = 0$, $f = 1\text{ MHz}$	
ON Resistance	Con- nection	A	R_{ON}	20	30	Ω	$I_L = 100\text{ mA}$, $I_F = 10\text{ mA}$
		B		10	15		
		C		5	7.5		
Turn-on Time	T_{ON}		0.3	1.0	ms	$I_F = 10\text{ mA}$, $V_L = \pm 20\text{ V}$	
Turn-off Time	T_{OFF}		0.7	1.5	ms	$t = 10\text{ ms}$, $I_L = \pm 100\text{ mA}$	

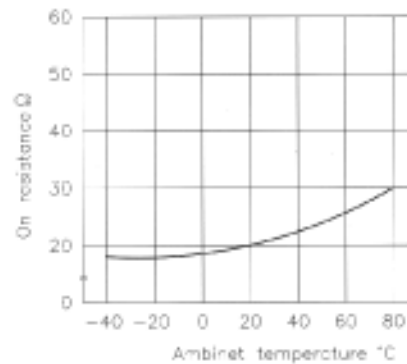
Mos Relay Schematic and Wiring Diagrams					
Type	Schematic	Output configuration	Load	Con- nection	Wiring diagram
AQV214S		1a	AC/DC	A	
			DC	B	
DC	C				

DATA CURVE

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



On resistance vs. ambient temperature
Across terminals 4 and 6 pin
LED current: 5 mA
Continuous load current: 130 mA(DC)



Turn on time vs. ambient temperature
Load voltage 400 V(DC)
LED current : 5 mA
Continuous load current: 130 mA(DC)

