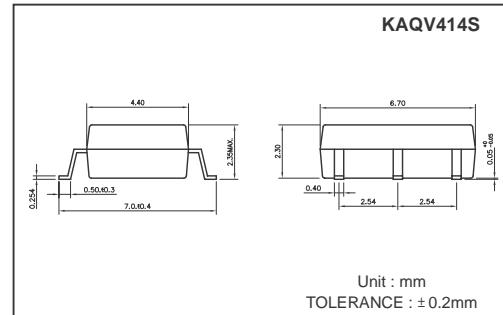


## Features

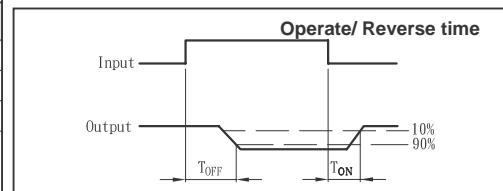
1. Normally Close, Single Pole Single Throw
2. Control 400VAC or DC Voltage
3. Switch 130mA Loads
4. LED control Current, 5mA
5. Low ON-Resistance
6. dv/dt, >500V/ms
7. Isolation Test Voltage, 1500VACrms



## Absolute Maximum Ratings

(Ta=25°C)

Emitter ( Input )	Detector ( Output )
Reverse Voltage.....5.0V	Output Breakdown Voltage .....±400V
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
Vio=500V, Ta=25°C .....≥10 <sup>10</sup> Ω	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

(Ta=25°C)

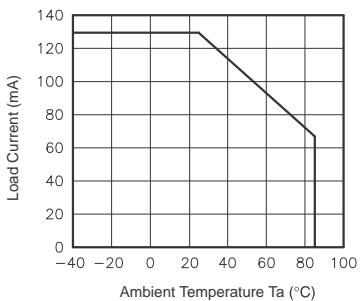
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit		
Emitter (Input)								
Forward Voltage	VF	IF =10mA		1.2	1.5	V		
Operation Input Current	I <sub>OFF</sub>	VL =±20V, IL ≤5uA			5	mA		
Recovery Input Current	I <sub>ON</sub>	VL =±20V, IL =100mA, t =10mS	0.2			mA		
Detector (Output)								
Output Breakdown Voltage	V <sub>B</sub>	IB=50uA	400			V		
Output Off-State Leakage	I <sub>OFF</sub>	VT =100V, IF =0mA		0.2	2	uA		
I/O Capacitance	C <sub>ISO</sub>	IF =0, f =1MHz		6		pF		
ON Resistance	Connection	RON	IL =100mA, IF =10mA	40	50	Ω		
				20	25			
				10	12.5			
Reverse (NO) Time			IF =10mA, VL =±20V		0.6	ms		
Operate (OFF) Time			t =10ms, IL =±100mA		0.3	ms		

## Schematic and Wiring Diagrams

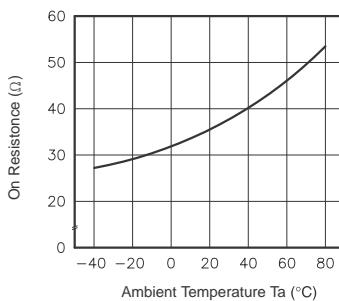
Type	Schematic	Output configuration	Load	Connection	Wiring Diagrams
KAQV414S		1b	AC/DC	A	
				DC	
			DC	C	

## Data Curve

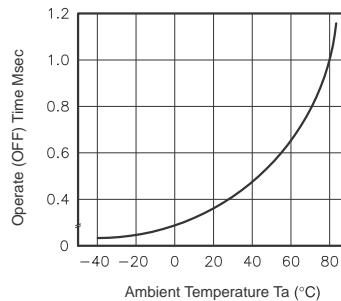
**Fig.1** Load current vs. ambient temperature  
Allowable ambient temperature:  
-40°C to +85°C



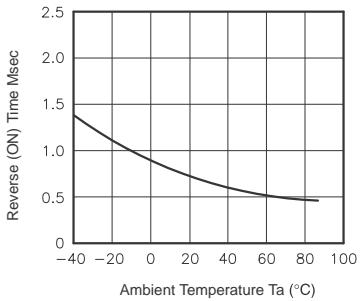
**Fig.2** On resistance vs. ambient temperature  
Across terminals 4 and 6 pin  
LED current: 0mA  
Continuous load current: 130mA(DC)



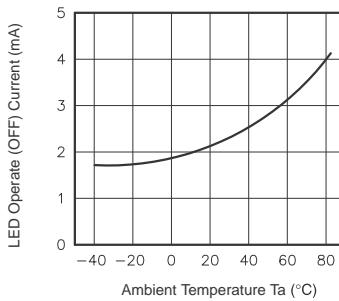
**Fig.3** Operate (OFF) time vs. ambient temperature Load voltage 400V(DC)  
LED current: 5mA  
Continuous load current: 130mA(DC)



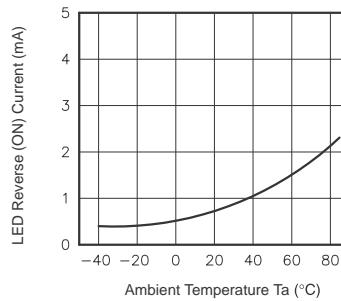
**Fig.4** Reverse (ON) time vs. ambient temperature LED current: 5mA; Load voltage: 400V(DC)  
Continuous load current: 130mA(DC)



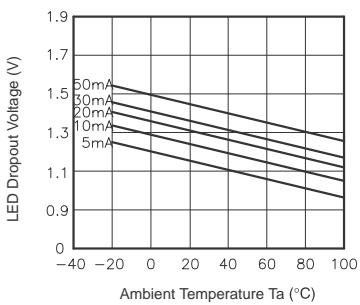
**Fig.5** LED operate (OFF) vs. ambient temperature  
Load voltage: 400V(DC)  
Continuous load current: 130mA(DC)



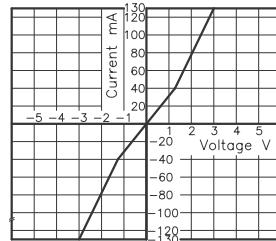
**Fig.6** LED reverse (ON) current vs. ambient temperature  
Load voltage: 400V(DC)  
Continuous load current: 130mA(DC)



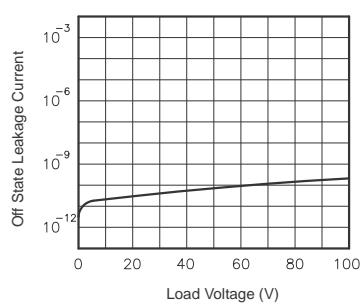
**Fig.7** LED dropout voltage vs. ambient temperature  
LED current: 5 to 50mA



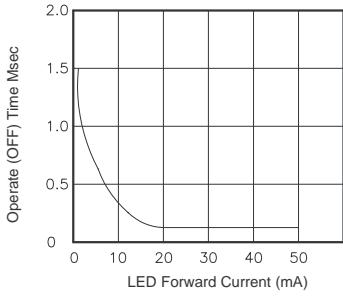
**Fig.8** Voltage vs. current characteristics of output at MOS FET portion  
Measured portion: across terminals 4 and 6 pin  
Ambient temperature: 25°C



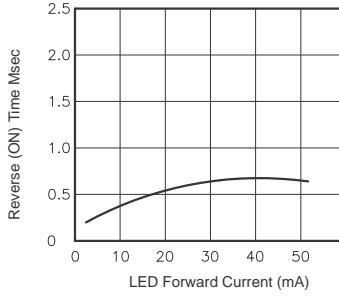
**Fig.9** Off state leakage current  
Across terminals 4 and 6 pin  
Ambient temperature: 25°C



**Fig.10** LED forward current vs. operate (OFF) time  
Across terminals 4 and 6 pin;  
Load voltage: 400V (DC);  
Continuous load current: 130mA (DC);  
Ambient temperature: 25°C



**Fig.11** LED forward current vs. reverse (ON) time  
Across terminals 4 and 6 pin;  
Load voltage: 400V (DC);  
Continuous load current: 130mA (DC);  
Ambient temperature: 25°C



**Fig.12** Applied voltage vs. output capacitance  
Across terminals 4 and 6 pin  
Frequency: 1MHz  
Ambient temperature: 25°C

