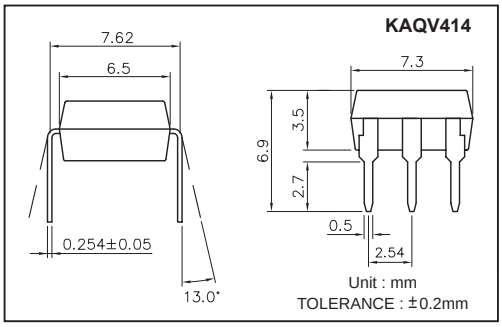
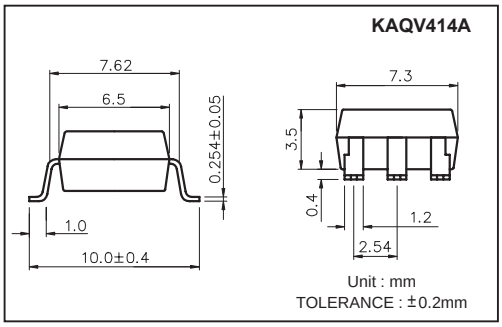
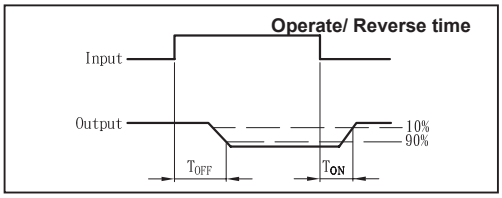
UL 1577/ UL 508 (File No.E108430), FI EN60950 (File No.FI13698)

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, 3750VACrms







Absolute Maximum Ratings

(Ta=25°C)

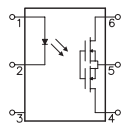
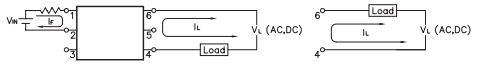
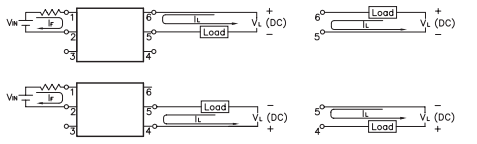
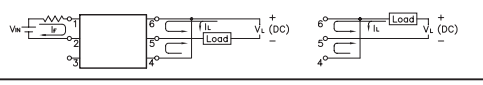
Emitter (Input)	Detector (Output)
Reverse Voltage……5.0V	Output Breakdown Voltage ……±400V
Continuous Forward Current……50mA	Continuous Load Current ……±130mA
Peak Forward Current ……1A	Power Dissipation ……500mW
Power Dissipation ……100mW	
Derate Linearly from 25°C ……1.3mW/°C	
General Characteristics	
Isolation Test Voltage……3750VACrms	Storage Temperature Range …-40°C to +125°C
Isolation Resistance	Operating Temperature Range…-30°C to +85°C
Vio=500V, Ta=25°C ……≥10^{10}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			IFOFF	VL =±20V, IL ≤5uA			5	mA
Recovery Input Current			IFON	VL =±20V, IL =100mA, t =10mS	0.2			mA
Detector (Output)								
Output Breakdown Voltage			VB	IB=50uA	400			V
Output Off-State Leakage			ITOFF	VT =100V, IF =10mA		0.2	2	uA
I/O Capacitance			CISO	IF =0, f =1MHz		6		pF
ON Resistance	Connection	A	RON	IL =100mA, IF =10mA		40	50	Ω
		B				20	25	
		C				10	12.5	
Reverse (ON) Time			TON	IF =10mA, VL =±20V		0.6	1.5	ms
Operate (OFF) Time			TOFF	t =10ms, IL =±100mA		0.3	1.0	ms

Mos Relay Schematic and Wiring Diagrams

Type	Schematic	Output configuration	Load	Connection	Wiring Diagrams
KAQV414 & KAQV414A		1a	AC/DC	A	
			DC	B	
			DC	C	

Data Curve

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

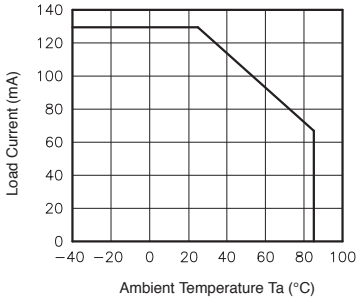


Fig.2 On resistance vs. ambient temperature
Across terminals 4 and 6 pin
LED current: 0mA
Continuous load current: 130mA(DC)

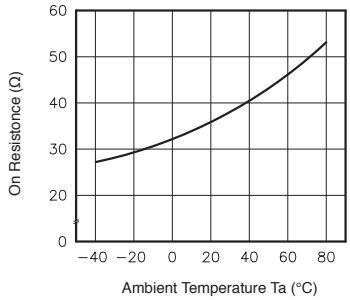


Fig.3 Operate (OFF) time vs. ambient temperature Load voltage 400V(DC)
LED current: 5mA
Continuous load current: 130mA(DC)

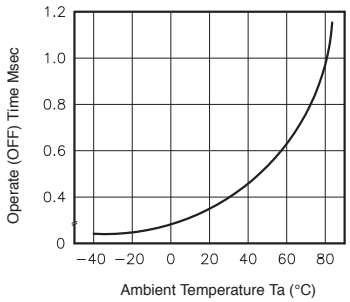


Fig.4 Reverse (NO) time vs. ambient temperature LED current: 5mA;
Load voltage: 400V(DC); Continuous load current: 130mA(DC)

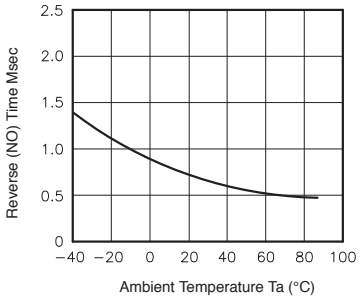


Fig.5 LED operate (OFF) vs. ambient temperature
Load voltage: 400V(DC); Continuous load current: 130mA(DC)

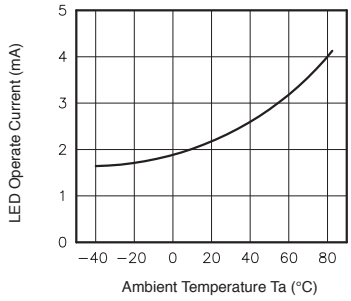


Fig.6 LED reverse (NO) current vs. ambient temperature
Load voltage: 400V(DC)
Continuous load current: 130mA(DC)

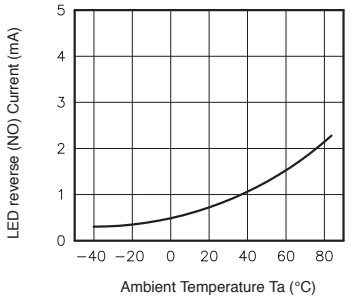


Fig.7 LED dropout voltage vs. ambient temperature
LED current: 5 to 50mA

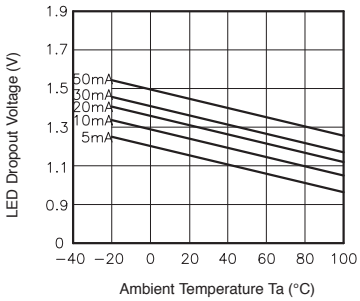


Fig.8 Voltage vs. current characteristics of output at MOS FET portion
Measured portion: across terminals 4 and 6 pin
Ambient temperature: 25°C

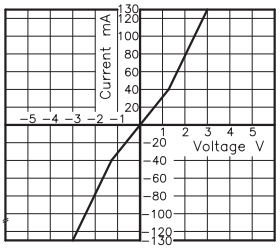


Fig.9 Off state leakage current
Across terminals 4 and 6 pin
Ambient temperature: 25°C

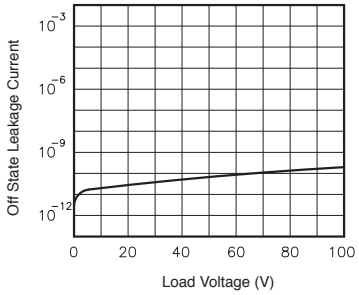


Fig.10 LED forward current vs. operate (OFF) time Across terminals 4 and 6 pin;
Load voltage: 400V (DC);
Continuous load current: 130mA (DC);
Ambient temperature: 25°C

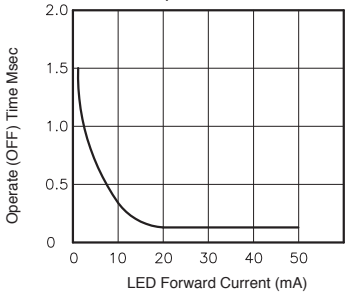


Fig.11 LED forward current vs. reverse (NO) time Across terminals 4 and 6 pin;
Load voltage: 400V (DC);
Continuous load current: 130mA (DC);
Ambient temperature: 25°C

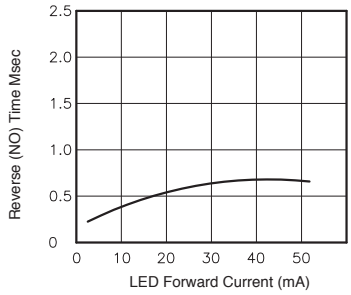


Fig.12 Applied voltage vs. output capacitance
Across terminals 4 and 6 pin
Frequency: 1MHz
Ambient temperature: 25°C