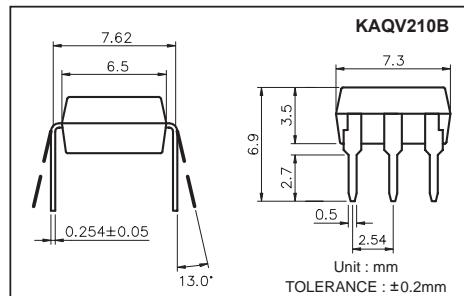


High Voltage, Photo Mos Relay KAQV210B/210AB

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

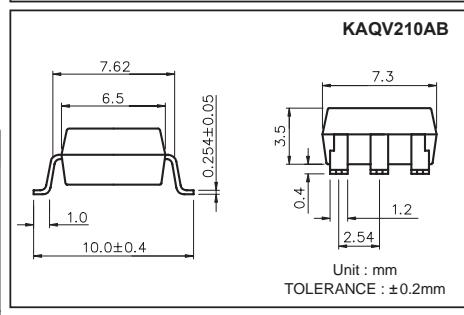
Features

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, 3750VACrms



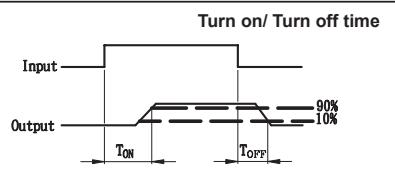
Absolute Maximum Ratings

(Ta=25°C)	
Emitter (Input)	Detector (Output)
Reverse Voltage.....	5.0V
Continuous Forward Current	50mA
Peak Forward Current	1A
Power Dissipation	100mW
Derate Linearly from 25°C	1.3mW/°C
General Characteristics	
Isolation Test Voltage	3750VACrms
Isolation Resistance	Storage Temperature Range ... -40°C to +125°C
Vio=500V, Ta=25°C	≥10 ¹⁰ Ω
Total Power Dissipation	550mW
Derate Linearly from 25°C	2.5mW/°C
Detector (Output)	
Output Breakdown Voltage	VB
Output Off-State Leakage	I _{TOFF}
I/O Capacitance	C _{IISO}
ON Resistance	R _{ON}
Turn-On Time	T _{ON}
Turn-Off Time	T _{OFF}



Electro-optical Characteristics

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 _{FOR}	V _L =±20V, I _L =100mA, t=10ms		5		mA	
Recovery Input Current	I _{FOFF}	V _L =±20V, I _L ≤5μA	0.05			mA	
Detector (Output)							
Output Breakdown Voltage	V _B	I _B =50μA	350			V	
Output Off-State Leakage	I _{TOFF}	V _T =100V, I _F =0mA	0.2	2		μA	
I/O Capacitance	C _{IISO}	I _F =0, f=1MHz	6			pF	
ON Resistance	Connection	R _{ON}	I _L =100mA, I _F =10mA	28	35		
				14	18	Ω	
				7	9		
Turn-On Time		T _{ON}	I _F =10mA, V _L =±20V t=10ms, I _L =±100mA	0.1	0.5	ms	
Turn-Off Time		T _{OFF}		0.3	0.5	ms	



Mos Relay Schematic and Wiring Diagrams

Type	Schematic	Output configuration	Load	Connection	Wiring Diagrams
KAQV210B & KAQV210AB	1a	AC/DC	A		
				DC	
				DC	

KAQV210B/210AB

Data Curve

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

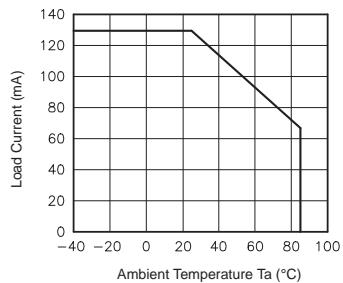


Fig.2 On resistance vs. ambient temperature
Across terminals 4 and 6 pin
LED current: 5mA
Continuous load current: 130mA(DC)

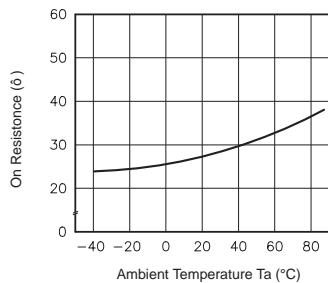


Fig.3 Turn on time vs. ambient temperature
Load voltage 350V(DC)
LED current: 5mA
Continuous load current: 130mA(DC)

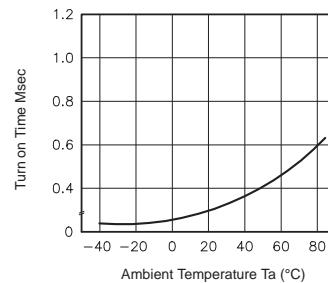


Fig.4 Turn off time vs. ambient temperature
LED current: 5mA; Load voltage:
350V(DC)
Continuous load current: 130mA(DC)

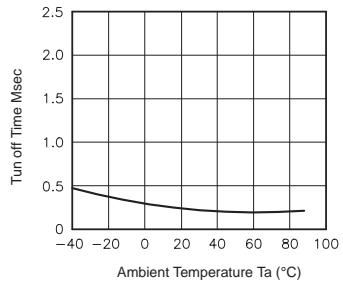


Fig.5 LED operate vs. ambient temperature
Load voltage 350V(DC)
Continuous load current: 130mA(DC)

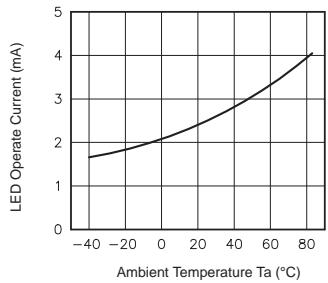


Fig.6 LED turn off current vs. ambient temperature
Load voltage 350V(DC)
Continuous load current: 130mA(DC)

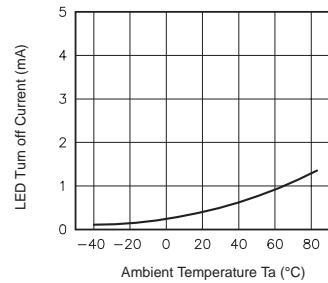


Fig.7 LED dropout voltage vs. ambient temperature
LED current: 5 to 50mA

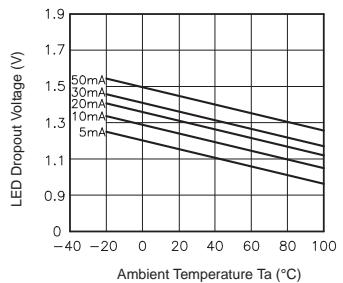


Fig.8 Voltage vs. current characteristics of output at MOS FET portion
Measured portion: across terminals 4 and 6 pin
Ambient temperature: 25°C

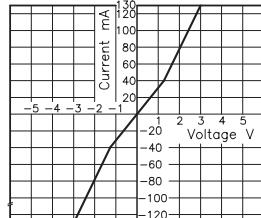


Fig.9 Off state leakage current
Across terminals 4 and 6 pin
Ambient temperature: 25°C

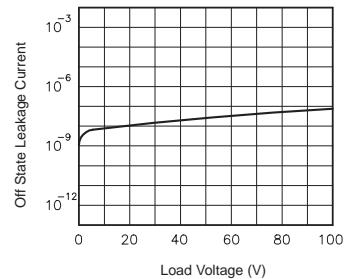


Fig.10 LED forward current vs. turn on time
Across terminals 4 and 6 pin;
Load voltage: 350V (DC);
Continuous load current: 130mA (DC);
Ambient temperature: 25°C

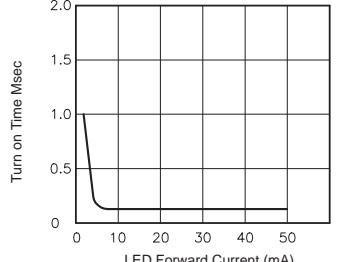


Fig.11 LED forward current vs. turn off time
Across terminals 4 and 6 pin;
Load voltage: 350V (DC);
Continuous load current: 130mA (DC);
Ambient temperature: 25°C

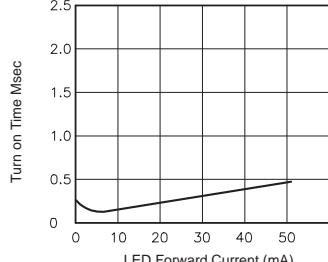


Fig.12 Applied voltage vs. output capacitance
Across terminals 4 and 6 pin
Frequency: 1MHz
Ambient temperature: 25°C

