

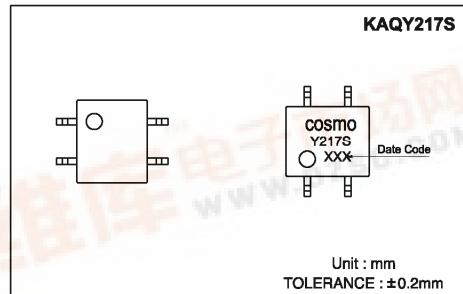
cosmo

High Voltage, Solid State Relay-MOSFET Output KAQY217S

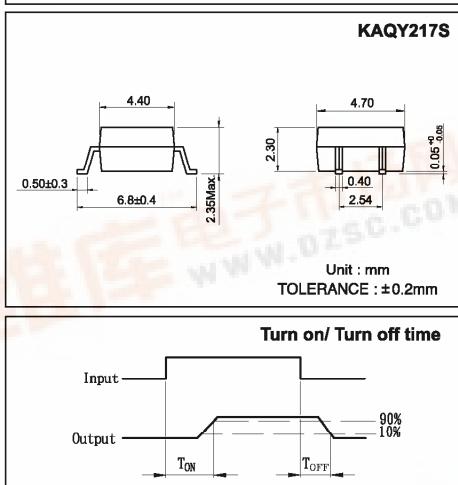
UL 1577/ UL 508 (File No.E108430), FI EN60950 (File No.FI13698)

**Features**

1. Normally Open, Single Pole Single Throw
2. Control 200VAC or DC Voltage
3. Switch 180mA 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
Continuous Forward Current.....	50mA
Peak Forward Current.....	1A
Power Dissipation.....	75mW
Derate Linearly from 25°C.....	1.3mW/°C
General Characteristics	
Isolation Test Voltage.....	1500VACrms
Isolation Resistance	Storage Temperature Range.... -40°C to +150°C
Vio=500V, Ta=25°C.....	Operating Temperature Range.... -40°C to +85°C
Total Power Dissipation.....	Junction Temperature..... 100°C
Derate Linearly from 25°C.....	Soldering Temperature, 2mm from case, 10 sec..... 260°C

**Electro-optical Characteristics**

(Ta=25°C)

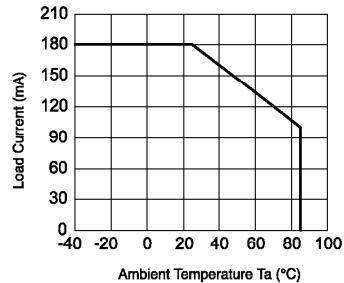
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Emitter (Input)						
Forward Voltage	VF	IF =10mA		1.2	1.5	V
Operation Input Current	IFON	VL =±20V, IL =100mA, t =10ms		1.5	5	mA
Recovery Input Current	IFOFF	VL =±20V, IL ≤5μA	0.2			mA
Detector (Output)						
Output Breakdown Voltage	VB	IB =50μA	200			V
Output Off-State Leakage	ITOFF	VT =100V, IF =0mA	0.2	1		μA
I/O Capacitance	CISO	IF =0, f =1MHz	6			p F
ON Resistance	RON	IL =100mA, IF =10mA	6	15		Ω
Turn-On Time	TON	IF =10mA, VL =±20V	0.4	1.0		ms
Turn-Off Time	TOFF	t =10ms, IL =±100mA	0.3	1.0		ms

**Schematic and Wiring Diagrams**

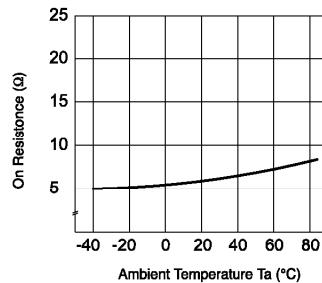
Type	Schematic	Output configuration	Load	Connection	Wiring Diagrams
KAQY217S		1a	AC/DC	—	

**Data Curve**

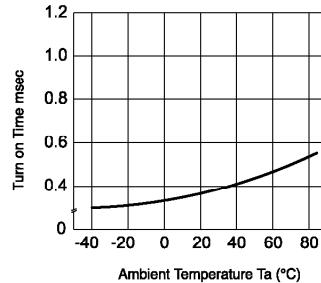
**Fig.1** Load current vs. ambient temperature  
Allowable ambient temperature:  
-40°C to +85°C



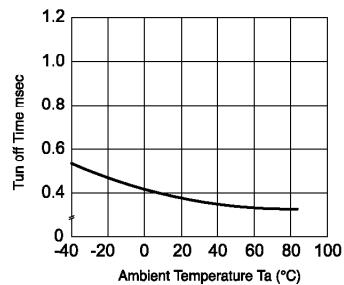
**Fig.2** On resistance vs. ambient temperature  
Across terminals 3 and 4 pin  
LED current: 5mA  
Continuous load current: 180mA(DC)



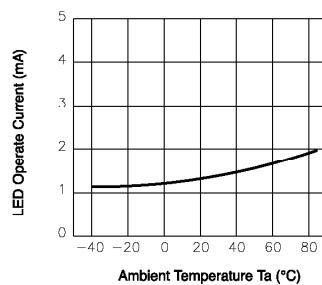
**Fig.3** Turn on time vs. ambient temperature  
Load voltage 200V(DC)  
LED current: 5mA  
Continuous load current: 180mA(DC)



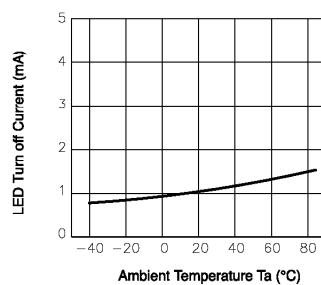
**Fig.4** Turn off time vs. ambient temperature  
LED current: 5mA; Load voltage:  
200V(DC)  
Continuous load current: 180mA(DC)



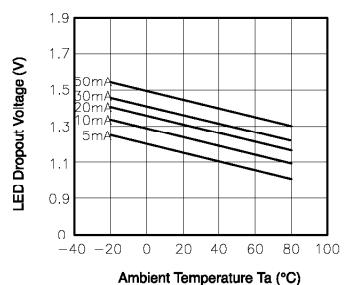
**Fig.5** LED operate vs. ambient temperature  
Load voltage 200V(DC)  
Continuous load current: 180mA(DC)



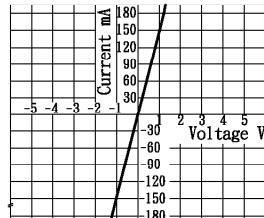
**Fig.6** LED turn off current vs. ambient temperature  
Load voltage 200V(DC)  
Continuous load current: 180mA(DC)



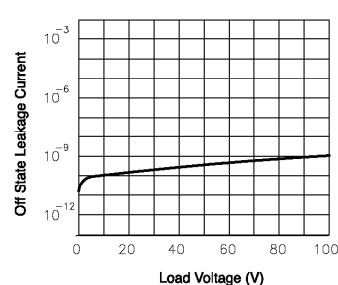
**Fig.7** LED dropout voltage vs. ambient temperature  
LED current: 5 to 50mA



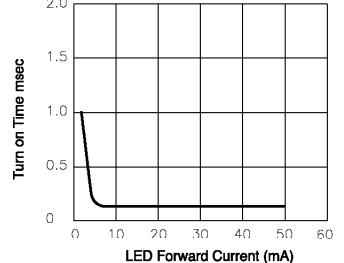
**Fig.8** Voltage vs. current characteristics of output at MOS FET portion  
Measured portion: across terminals 3 and 4 pin  
Ambient temperature: 25°C



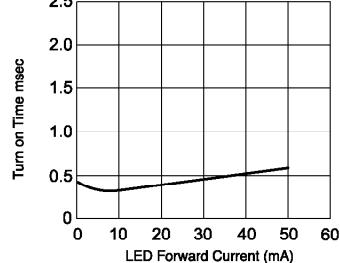
**Fig.9** Off state leakage current  
Across terminals 3 and 4 pin  
Ambient temperature: 25°C



**Fig.10** LED forward current vs. turn on time  
Across terminals 3 and 4 pin;  
Load voltage: 200V (DC);  
Continuous load current: 180mA (DC);  
Ambient temperature: 25°C



**Fig.11** LED forward current vs. turn off time  
Across terminals 3 and 4 pin;  
Load voltage: 200V (DC);  
Continuous load current: 180mA (DC);  
Ambient temperature: 25°C



**Fig.12** Applied voltage vs. output capacitance  
Across terminals 3 and 4 pin  
Frequency: 1MHz  
Ambient temperature: 25°C

