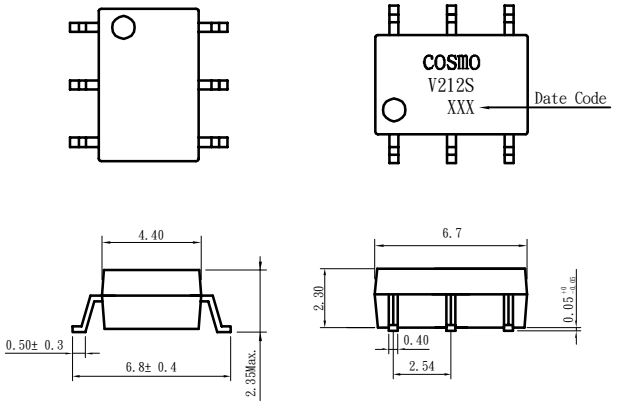
PRODUCT SPECIFICATION

DATE:11/18/2003

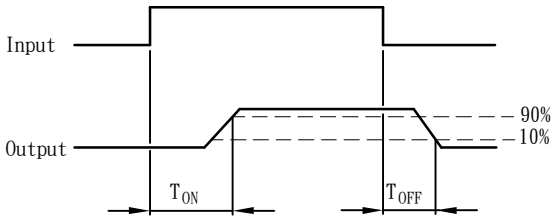
COSMO ELECTRONICS CORPORATION	SOLID STATE RELAY-MOSFET OUTPUT KAQV212S	NO. 62M10006 SHEET 1 OF 7	REV. 2

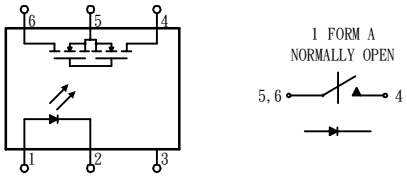
- OUTSIDE DIMENSION :



Unit:mm
Tolerance:± 0.2 mm

- Turn on/Turn off time





Absolute Maximum Ratings (T_A=25° C)

Emitter (Inpute)

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

Detector (Output)

Output Breakdown Voltage . . . . . ± 60V
Continous Load Current . . . . . ± 400mA
Power Dissipation 500mW

General Characteristics

Isolation Test Voltage. . . . . .1500VAC RMS
Isolation Resistance
V_{IO} =500V, T_A=25° C. . . . . $\geq 10^{10}\Omega$
Total Power Dissipation 550mW

Derate Linearly form 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

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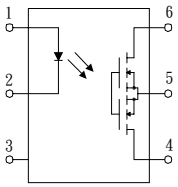
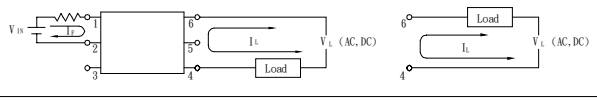
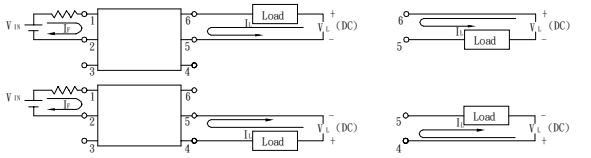
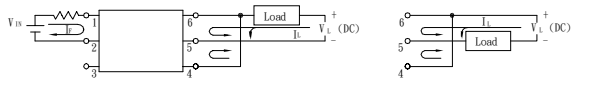
Characteristics (T_A=25° C)

Description			Symbol	Min.	Typ.	Max.	Unit	Test Condition
Emitter (Input)								
Forward Voltage			V_F		1.2	1.5	V	I_F =10mA
Operation Input Current			I_{FON}			5	mA	V_L=± 20V, I_L=100mA, t=10 ms
Recovery Input Current			I_{FOFF}	0.2			mA	V_L=± 20V, I_L=<5uA
Deterctor (Output)								
Output Breakdown Voltage			V_B	60			V	I_B=50uA
Output Off-State Leakage			$I_{T(OFF)}$		0.2	1	uA	V_T=60V, I_F=0mA
I/O Capacitance			C_{ISO}		0.8		pF	I_F=0, f=1MHz
ON Resistance	Connection	A	R_{ON}		0.83	2.50	Ω	I_L=100mA, I_F=10mA
		B			0.44	1.25		
		C			0.25	0.63		
Turn-on Time			T_{ON}		0.2	1.5	ms	I_F=10mA, V_L=± 20V
Turn-off Time			T_{OFF}		0.3	1.5	ms	t=10ms, I_L=± 100mA

Schematic and Wiring Diagrams

Type	Schematic	Output configur-ation	Load	Con-nection	Wiring diagram
KAQV212S		1a	AC/DC	A	
			DC	B	
			DC	C	

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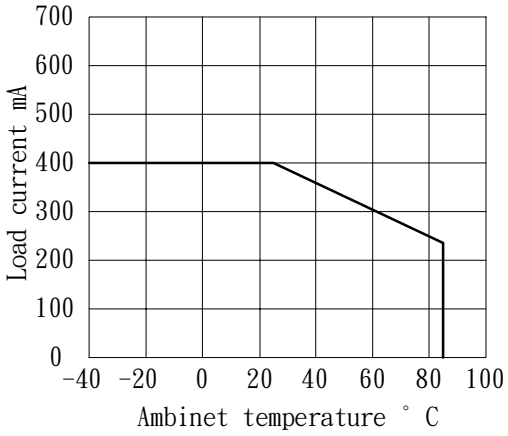
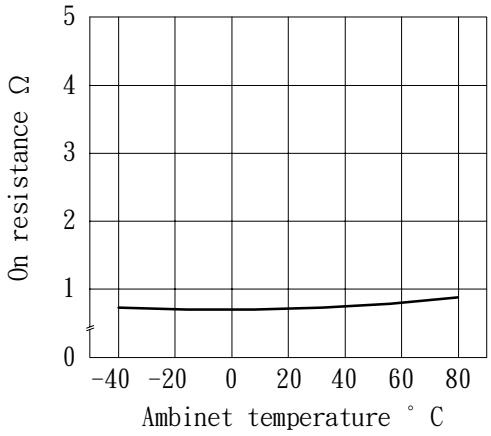
DATA CURVE

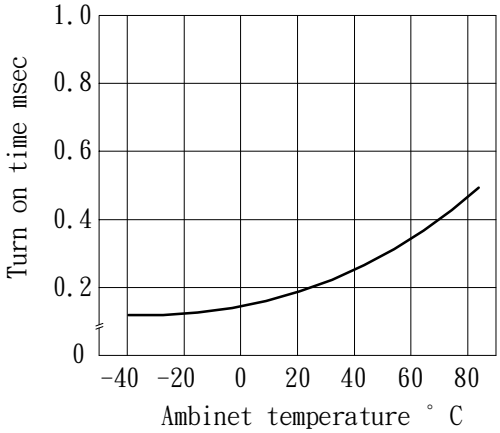
Load current vs. ambient temperature
Allowable ambient temperature:
-40°C to +85°C



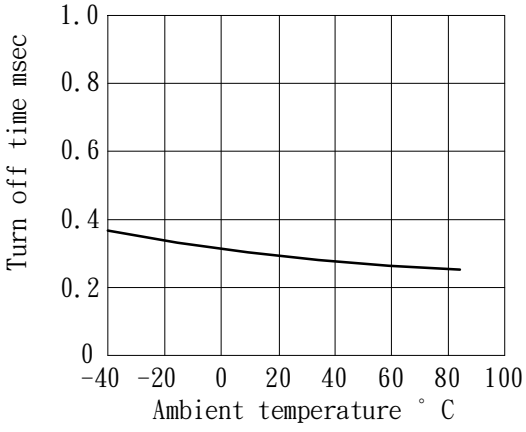
On resistance vs. ambient temperature
Across terminals 4 and 6 pin
LED current: 5mA
Continuous load current: 130 mA(DC)



Turn on time vs. ambient temperature
Load voltage 60 V(DC)
LED current :5mA
Continuous load current: 130mA(DC)



Turn off time vs. ambient temperature
LED current: 5mA;Load voltage: 60V(DC)
Continuous load current: 130mA(DC)



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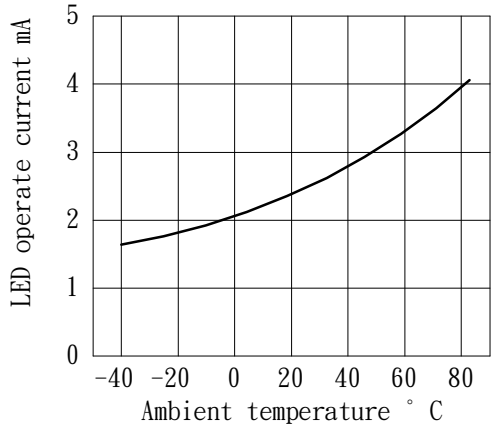
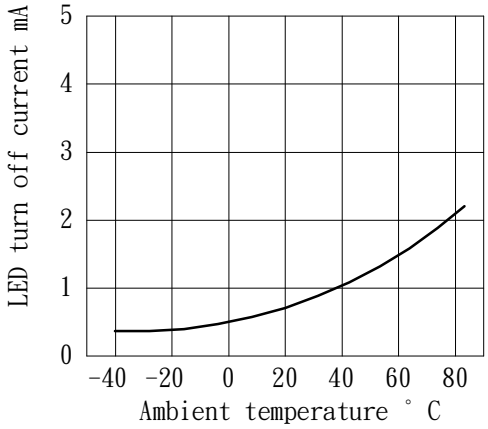
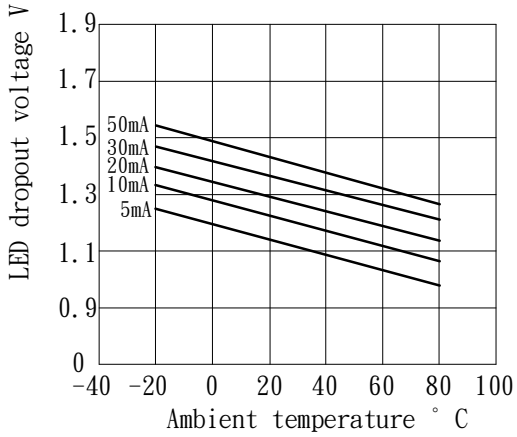
LED operate vs. ambient temperature
Load voltage: 60V(DC)
Continuous load current: 130mA(DC)



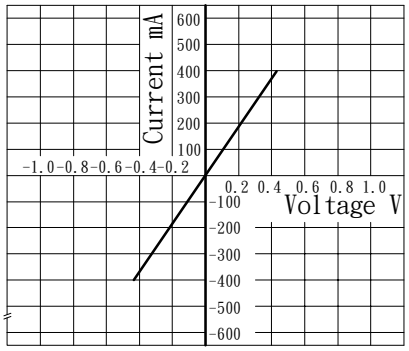
LED turn off current vs. ambient temperature
Load voltage: 60V(DC)
Continuons load current: 130mA(DC)



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



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



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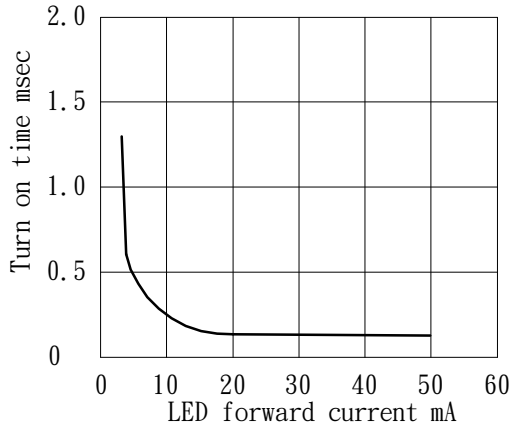
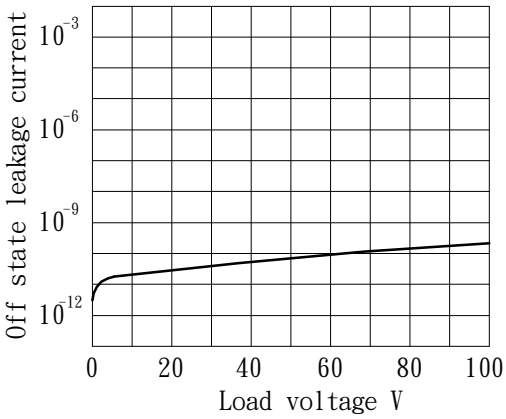
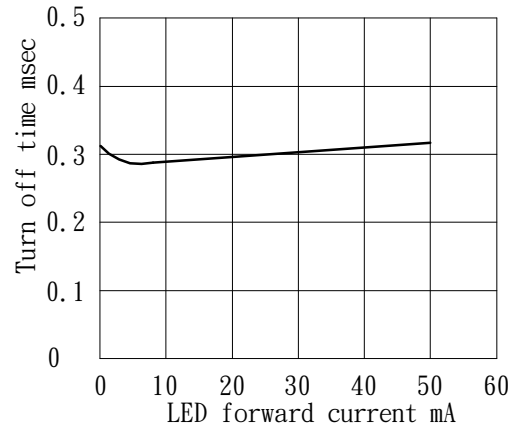
LED forward current vs. turn on time
Across terminals 4 and 6pin;Load voltage: 60V(DC);Continuous load current: 130mA(DC);Ambient temperature: 25° C



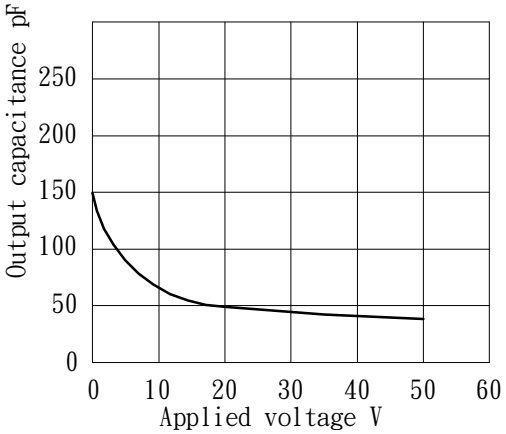
Off state leakage current
Across terminals 4 and 6pin
Ambient temperature: 25° C



LED forward current vs. turn off time
Across terminals 4 and 6pin;Load voltage: 60V(DC);Continuous load current: 130 mA(DC);Ambient temperature: 25° C



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



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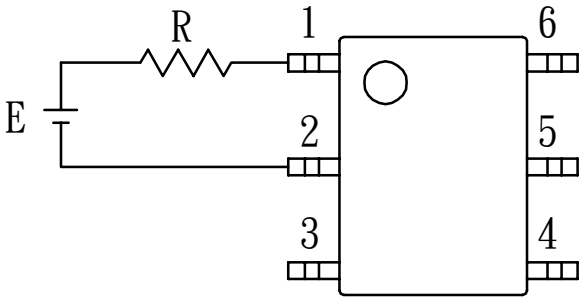
USING METHODS

Examples of resistance value to control LED forward current I_F

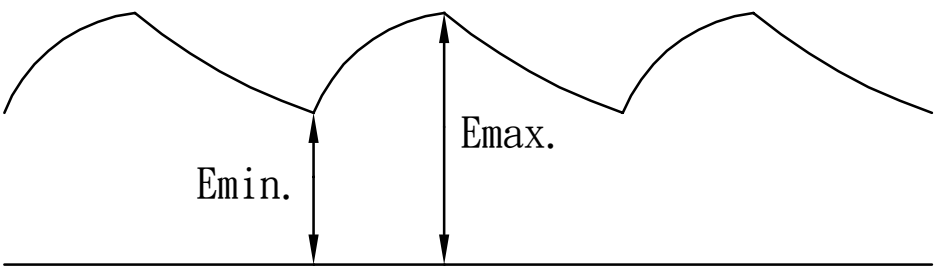
(I_F =5mA)



E	R
3.3V	Approx. 330 ohm
5V	Approx. 640 ohm
12V	Approx. 1.9K ohm
15V	Approx. 2.5K ohm
24V	Approx. 4.1K ohm

(1) LED forward current must be more than 5mA, at E min.

(2) LED forward current must be less than 50mA, at E max.



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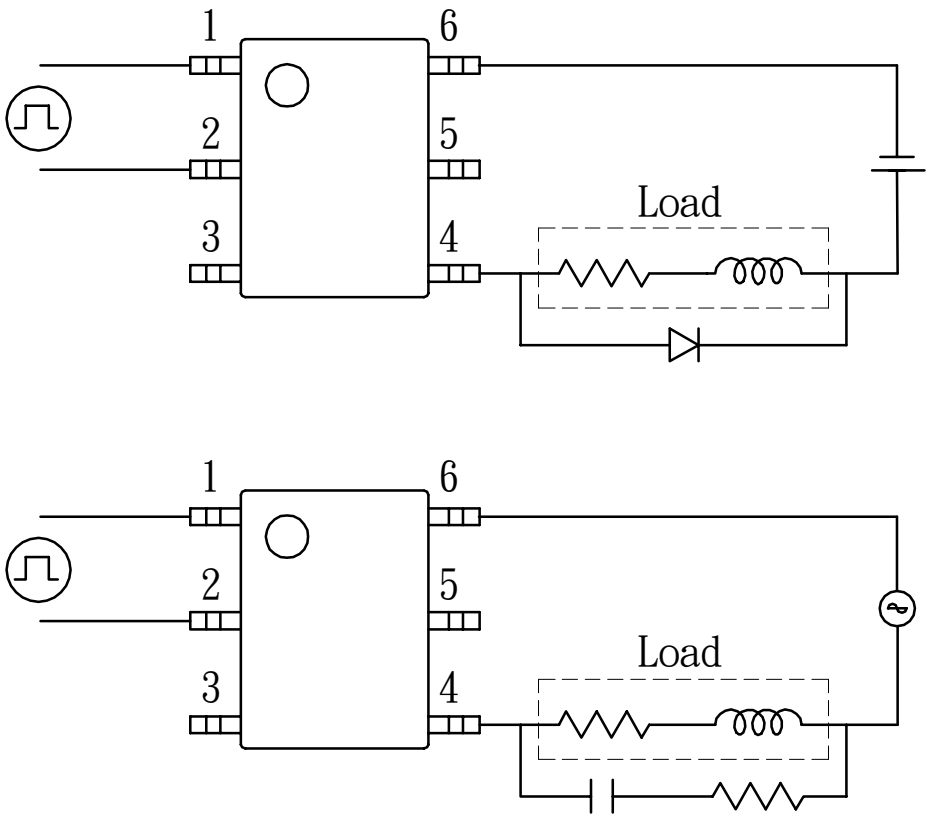
USING METHODS

Regulate the spike voltage generated on the inductive load as follows



R-C Snubber