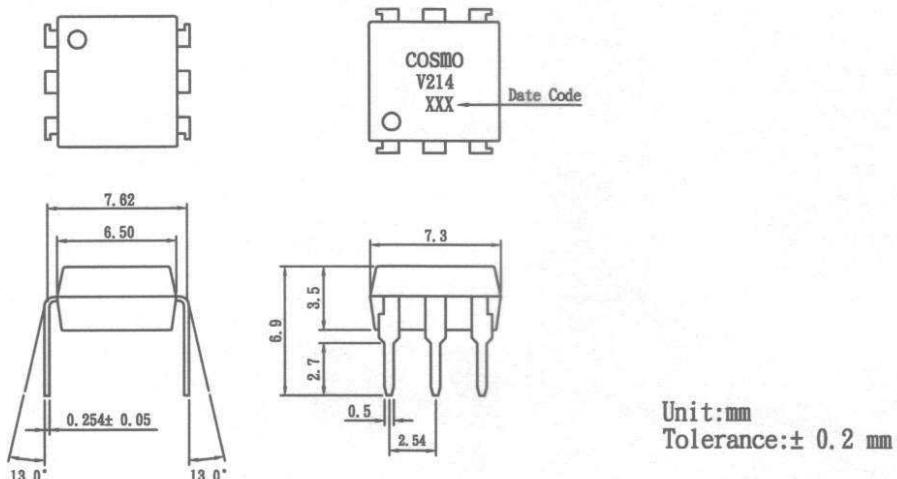


PRODUCT SPECIFICATION

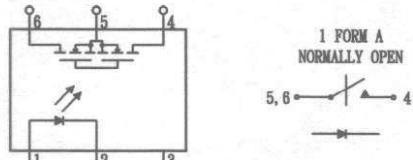
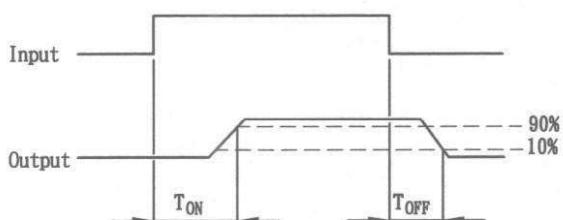
DATE: 10/07/2000

COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV214	NO. 60M10009 SHEET 1 OF 7	VER. 1
--------------------------------	-------------------------------------	------------------------------	-----------

- OUTSIDE DIMENSION :



- Turn on/Turn off time



Absolute Maximum Ratings ($T_A=25^\circ C$)

Emitter (Input)

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

Detector (Output)

Output Breakdown Voltage	± 400V
Continuous Load Current	± 130mA
Power Dissipation	500mW

General Characteristics

Isolation Test Voltage	3750VAC _{RMS}
Isolation Resistance	$\geq 10^{10} \Omega$
Total Power Dissipation	550mW

Derate Linearly from 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

ISSUE

Jan 10-07-00

CHECK

Vincent Thway 1007-00

APPROVED

Stan Hsu 1007-00

PRODUCT SPECIFICATION

DATE: 10/07/2000

COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV214	NO. 60M10009	VER. 1
		SHEET 2 OF 7	

Characteristics

($T_A = 25^\circ C$)

Description		Symbol	Min.	Typ.	Max.	Unit	Test Condition
Emitter (Input)							
Forward Voltage		V_F		1.2	1.5	V	$I_F = 10\text{mA}$
Operation Input Current		I_{FON}			5	mA	$V_L = \pm 20\text{V}$, $I_L = 100\text{mA}$, $t = 10\text{ ms}$
Recovery Input Current		I_{FOFF}	0.2			mA	$V_L = \pm 20\text{V}$, $I_L = < 5\mu\text{A}$
Detector (Output)							
Output Breakdown Voltage		V_B	400			V	$I_B = 50\mu\text{A}$
Output Off-State Leakage		$I_{T(OFF)}$		0.2	1	uA	$V_T = 100\text{V}$, $I_F = 0\text{mA}$
I/O Capacitance		C_{ISO}		6		pF	$I_F = 0$, $f = 1\text{MHz}$
ON Resistance	Connection	A		20	30		
		B	R_{ON}	10	15	Ω	$I_L = 100\text{mA}$, $I_F = 10\text{mA}$
		C		5	7.5		
Turn-on Time		T_{ON}		0.3	1.0	ms	$I_F = 10\text{mA}$, $V_L = \pm 20\text{V}$
Turn-off Time		T_{OFF}		0.7	1.5	ms	$t = 10\text{ms}$, $I_L = \pm 100\text{mA}$

Mos Relay Schematic and Wiring Diagrams

Type	Schematic	Output configuration	Load	Con-nection	Wiring diagram
KAQV214	 1a	AC/DC DC DC	A B C	Load Load Load	

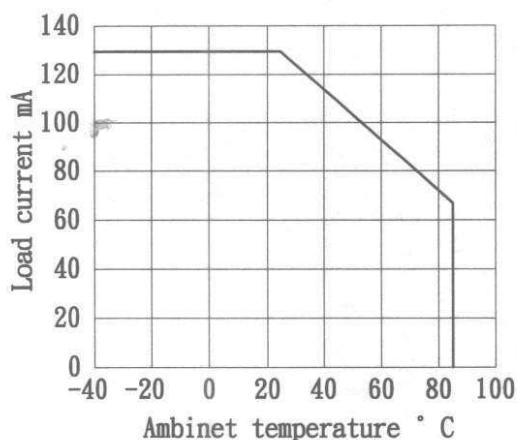
PRODUCT SPECIFICATION

DATE: 10/07/2000

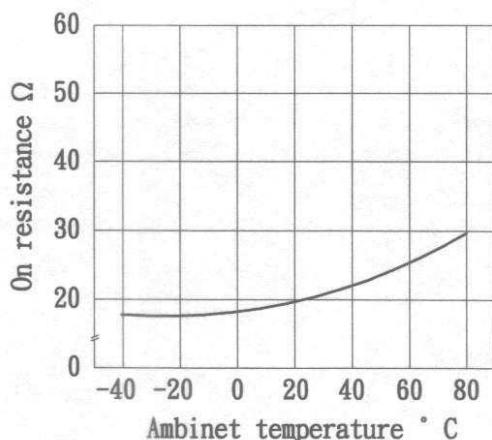
COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV214	NO. 60M10009	VER. 1
SHEET 3 OF 7			

DATA CURVE

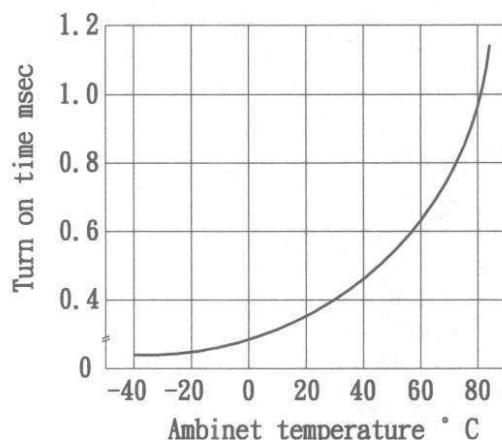
Load current vs. ambient temperature
Allowable ambient temperature:
-40°C to +85°C



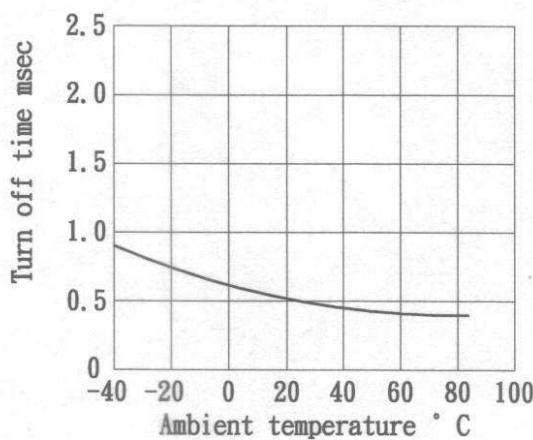
On resistance vs. ambient temperature
Across terminals 4 and 6 pin
LED current: 5mA
Continuous load current: 130 mA(DC)



Turn on time vs. ambient temperature
Load voltage 400 V(DC)
LED current :5mA
Continuous load current: 130mA(DC)



Turn off time vs. ambient temperature
LED current: 5mA; Load voltage: 400V(DC)
Continuous load current: 130mA(DC)



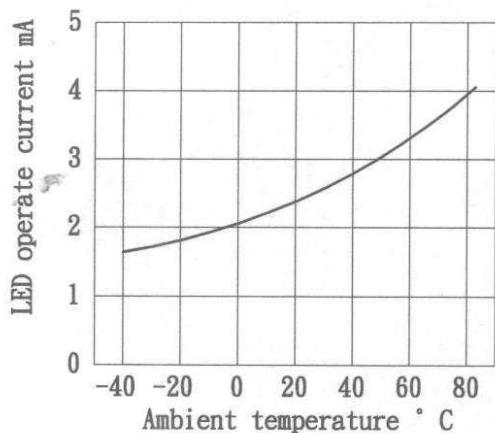
PRODUCT SPECIFICATION

DATE: 10/07/2000

COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV214	NO. 60M10009	VER. 1
SHEET 4 OF 7			

LED operate vs. ambient temperature
Load voltage: 400V(DC)

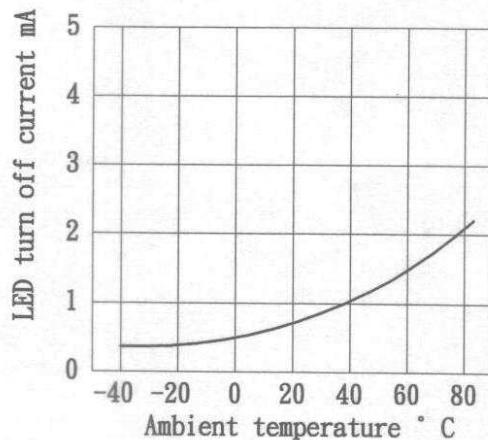
Continuous load current: 130mA(DC)



LED turn off current vs. ambient temperature

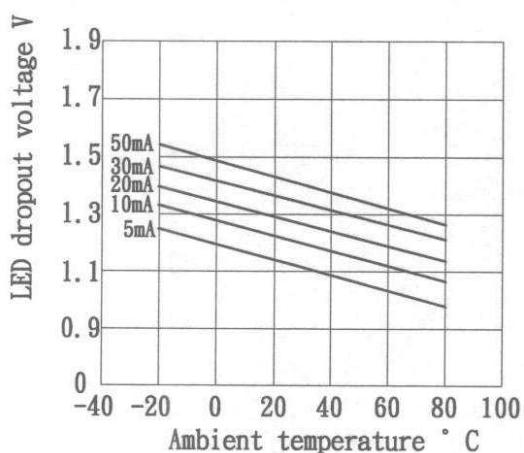
Load voltage: 400V(DC)

Continuous load current: 130mA(DC)



LED dropout voltage vs. ambient temperature

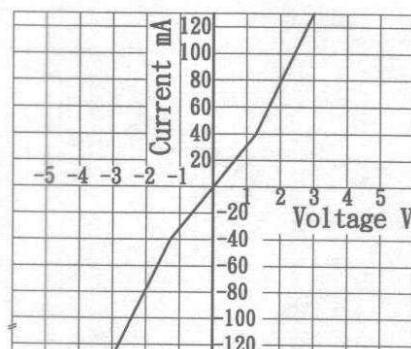
LED current: 5 to 50mA



Voltage vs. current characteristics of output at MOS FET portion

Measured portion: across terminals 4 and 6 pin

Ambient temperature: 25°C

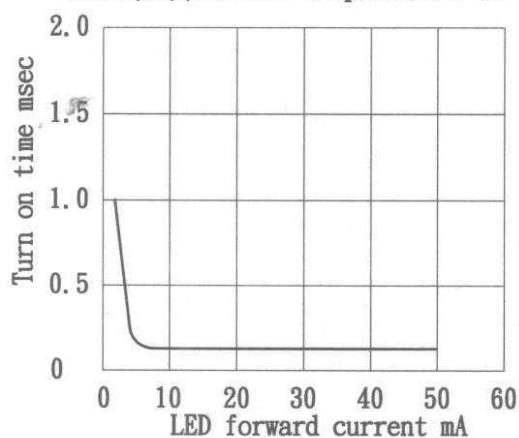


PRODUCT SPECIFICATION

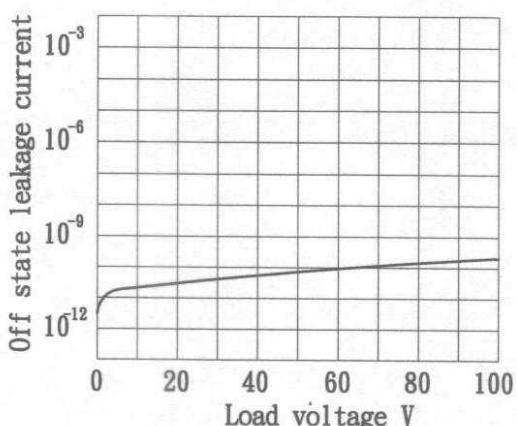
DATE:10/07/2000

COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV214	NO. 60M10009	VER. 1
SHEET 5 OF 7			

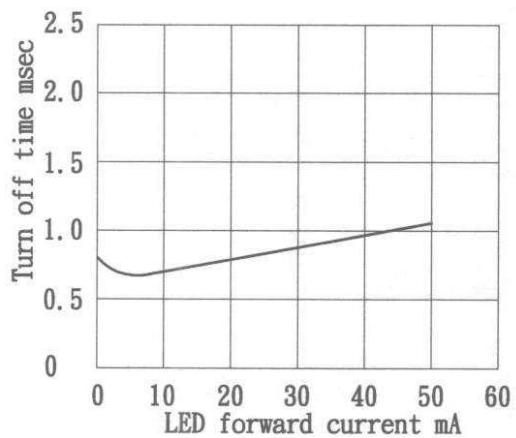
LED forward current vs. turn on time
Across terminals 4 and 6pin; Load voltage: 400V(DC); Continuous load current: 130mA(DC); Ambient temperature: 25° C



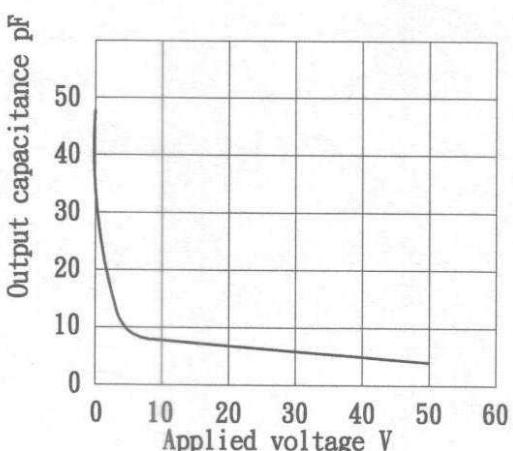
Off state leakage current
Across terminals 4 and 6pin
Ambient temperature: 25° C



LED forward current vs. turn off time
Across terminals 4 and 6pin; Load voltage: 400V(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



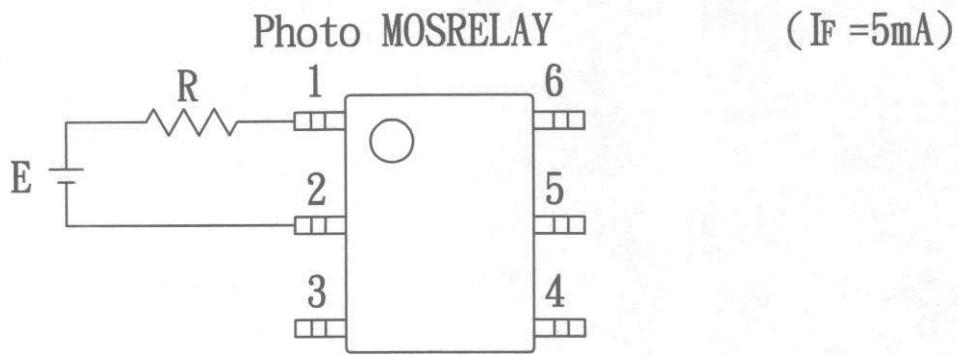
PRODUCT SPECIFICATION

DATE: 10/07/2000

COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV214	NO. 60M10009	VER.
		SHEET 6 OF 7	1

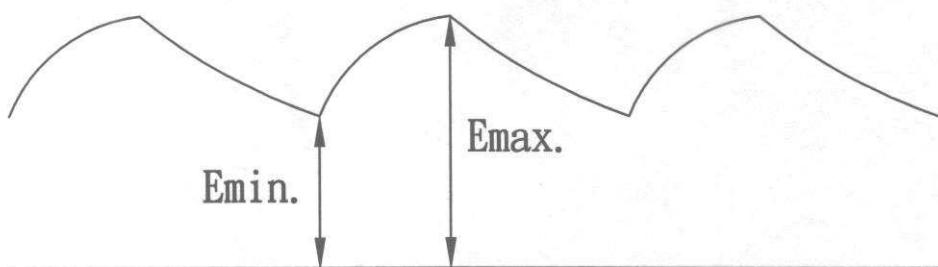
USING METHODS

Examples of resistance value to control LED forward current IF



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.



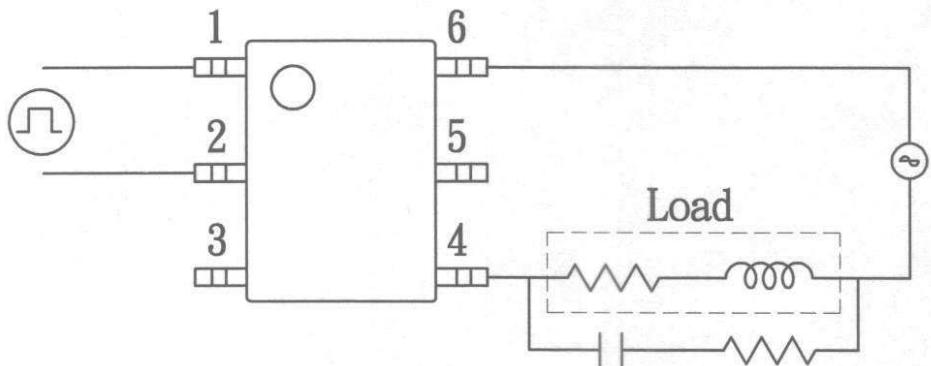
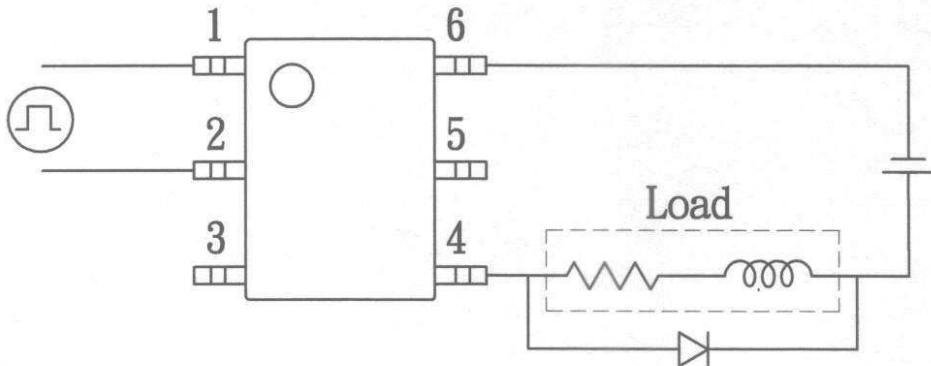
PRODUCT SPECIFICATION

DATE: 10/07/2000

COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV214	NO. 60M10009 SHEET 7 OF 7	VER. 1
--------------------------------	-------------------------------------	------------------------------	-----------

USING METHODS

Regulate the spike voltage generated on the inductive load as follows



R-C Snubber