

# PRODUCT SPECIFICATION

DATE : 02/02/2012

<b>cosmo</b> ELECTRONICS CORPORATION	Photocoupler : <b>KMOC3012S</b>	NO.61P48001	REV.
		SHEET 1 OF 6	3

## Zero Crossing Optoisolators TRIAC Driver Output (600V Volts Peak)

### ● Features

1. Pb free and RoHS Compliant.
2. Compact surface mount type package.
3. 600V peak blocking voltage.
4. Isolation voltage between input and output (Viso : 5300Vrms).
5. Safety Approval :  
UL approved : No.E169586  
CUL approved : No.E169586  
VDE approved : No.101347

### ● For 115/240 Vac(rms) Application :

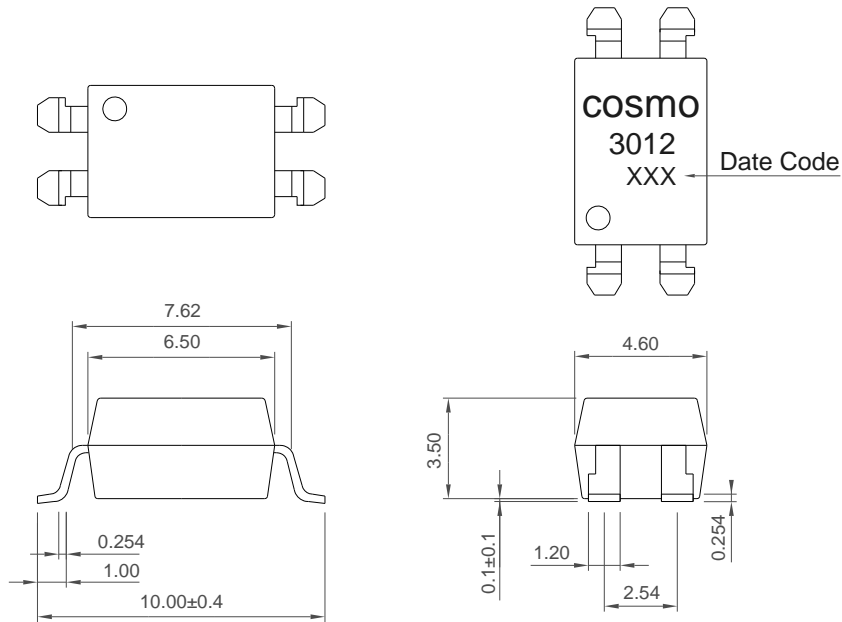
1. Solenoid/Valve Controls.
2. Lighting Controls.
3. Static Power Switches.
4. AC Motor Drives.
5. Temperature Controls.
6. E.M. Contactors.
7. AC Motor Starters.
8. Solid State Relays.
9. Programmable controllers.

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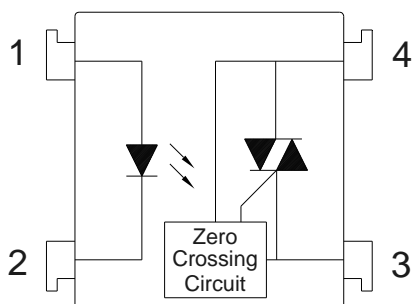
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## 1. OUTSIDE DIMENSION : UNIT (mm)



TOLERANCE : ±0.2mm

## 2. SCHEMATIC : TOP VIEW



1. Anode
2. Cathode
3. Main Terminal
4. Main Terminal

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## ● Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Input	Forward current	I <sub>F</sub>	50	mA
	Peak forward current	I <sub>FM</sub>	1	A
	Reverse voltage	V <sub>R</sub>	6	V
	Power dissipation	P <sub>D</sub>	70	mW
Output	Off-State Output Terminal voltage	V <sub>DRM</sub>	600	V <sub>PEAK</sub>
	On-State R.M.S. Current	I <sub>T(RMS)</sub>	100	mA
	Peak Repetitive Surge Current (PW=10ms.DC 10%)	I <sub>TSM</sub>	1	A
	Power dissipation	P <sub>D</sub>	300	mW
Total power dissipation		P <sub>tot</sub>	330	mW
Isolation voltage 1 minute		V <sub>iso</sub>	5300	V <sub>rms</sub>
Operating temperature		T <sub>opr</sub>	-40 to +100	°C
Storage temperature		T <sub>stg</sub>	-55 to +125	°C
Soldering temperature 10 second		T <sub>sol</sub>	260	°C

## ● Electro-optical Characteristics

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> =10mA	-	1.2	1.4	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> =6V	-	-	10	uA
Output	Peak Blocking Current	I <sub>DRM</sub>	V <sub>DRM</sub> =600V	-	-	500	nA
	ON-State Voltage	V <sub>TM</sub>	I <sub>TM</sub> =100mA	-	1.6	3	V
Transfer characteristics	Holding Current	I <sub>H</sub>		-	0.1	-	mA
	Critical rate of rise of OFF-state voltage	dV/dt	V <sub>DRM</sub> =(1/√2)*Rated	600	-	-	V/uS
	Inhibit Voltage (MT1-MT2 Voltage above which device not trigger.)	V <sub>INH</sub>	I <sub>F</sub> =10mA	-	10	20	V
	Leakage in Inhibited State	I <sub>DRM2</sub>	I <sub>F</sub> =Rated I <sub>FT</sub> , Rated V <sub>DRM</sub> , Off State	-	-	500	uA
	Isolation resistance	R <sub>iso</sub>	DC500V	5x10 <sup>10</sup>	10 <sup>11</sup>	-	Ohm
Minimum trigger current		I <sub>FT</sub>	Main Terminal Voltage=3V	-	-	10	mA

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Fig.1 Forward Current vs. Ambient Temperature

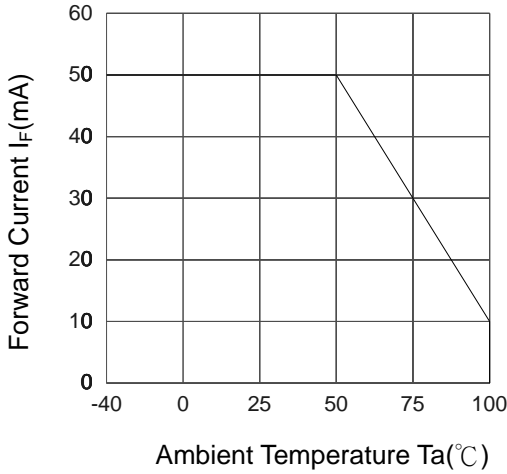


Fig.2 On-State Voltage vs. Ambient Temperature

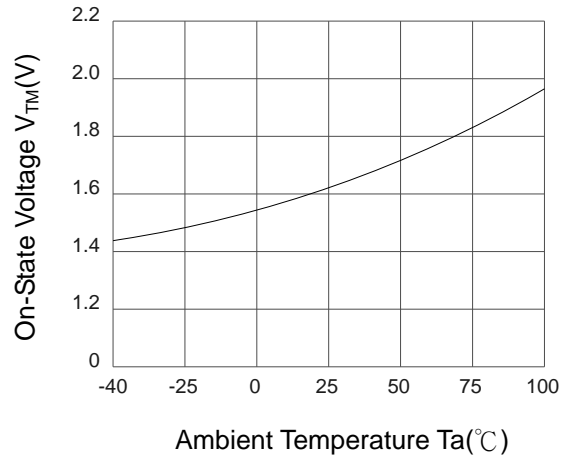


Fig.3 On-State R.M.S. Current vs. Ambient Temperature

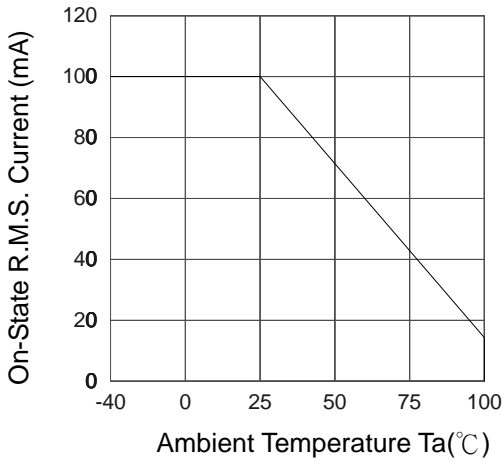


Fig.4 Holding Current vs. Ambient Temperature

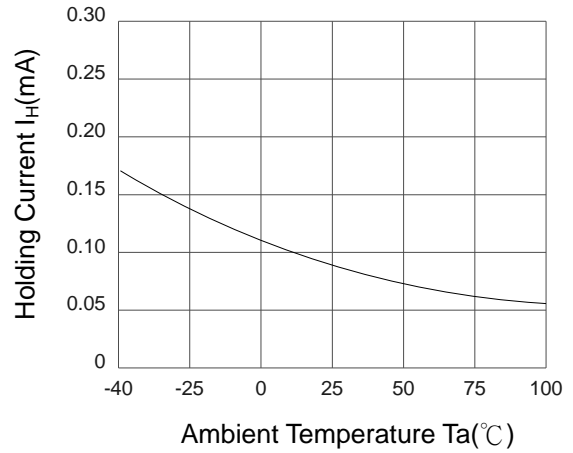


Fig.5 Peak Forward Current vs. Duty Ratio

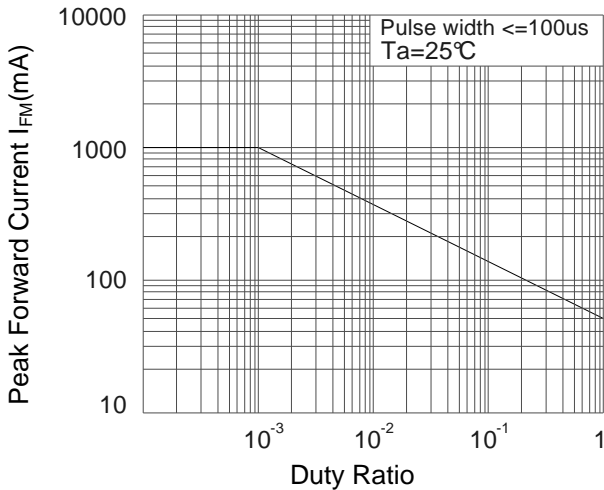
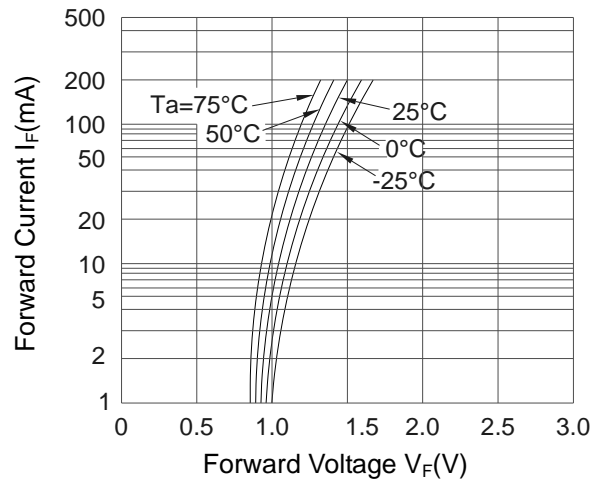


Fig.6 Forward Current vs. Forward Voltage



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Fig.7 Trigger Current vs. Ambient Temperature

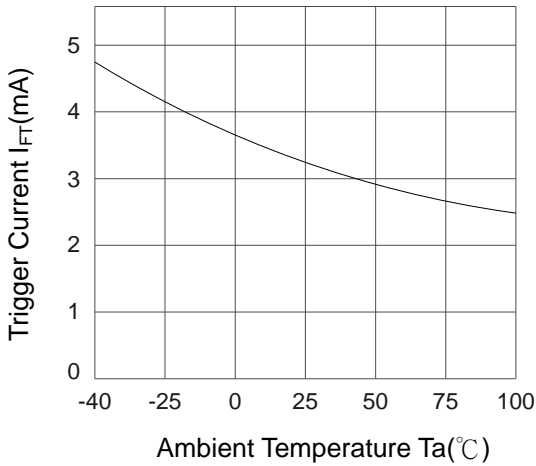


Fig.8 Inhibit Voltage vs. Ambient Temperature

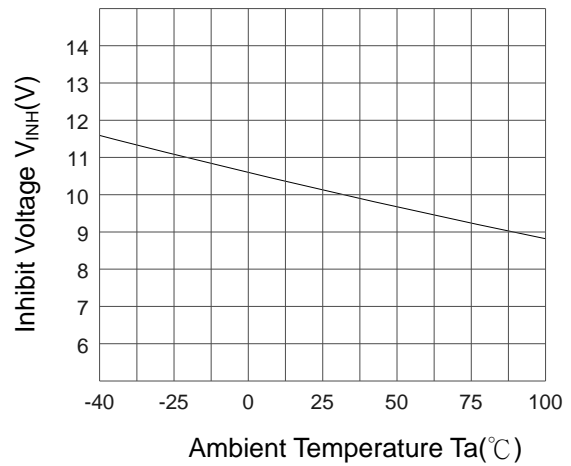


Fig.9 Leakage with LED off vs. Ambient Temperature

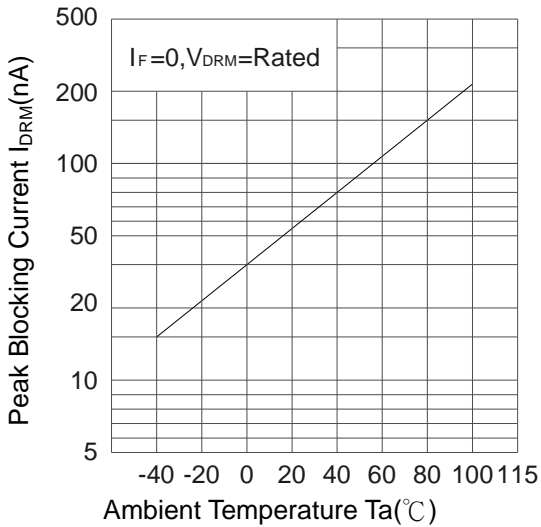
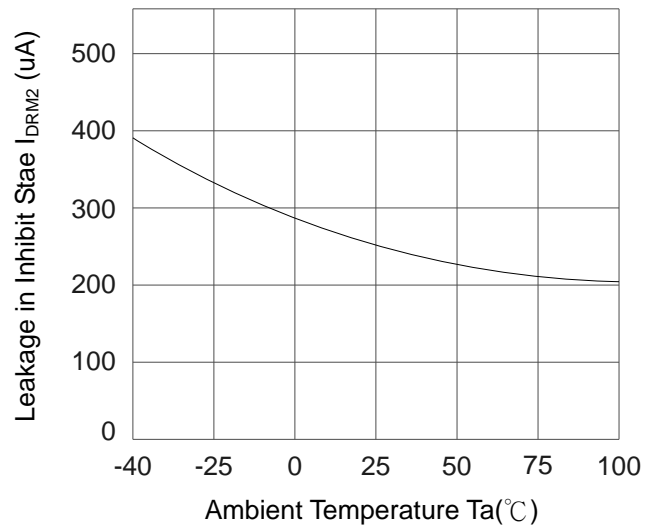


Fig.10 I<sub>DRM2</sub>, Leakage in Inhibit State vs. Ambient Temperature



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