

# PRODUCT SPECIFICATION

DATE : 01/04/2013

<b>cosmo</b> ELECTRONICS CORPORATION	Photocoupler : <b>KTLP168J</b>	NO. 61P44004	REV.
		SHEET 1 OF 6	4

## Mini-flat package Zero Crossing Optoisolators Triac Drive Output ( 600V Volts Peak )

### ● Features

1. Pb free and RoHS compliant.
2. Opaque type, mini-flat package.
3. Subminiature type  
(The volume is smaller than that of our conventional DIP type by as far as 30%).
4. Isolation voltage between input and output (Viso : 3750Vrms).
5. Safety Approval :  
UL approved : UL1577 , No.E169586  
CUL approved : C22.2 No.1 & NTC No.5 , No.E169586  
VDE approved : EN60747-5-2 , No.40009235  
CQC approved : GB8898 / GB4943  
CQC10001049555 、 CQC08001022986

### ● Application :

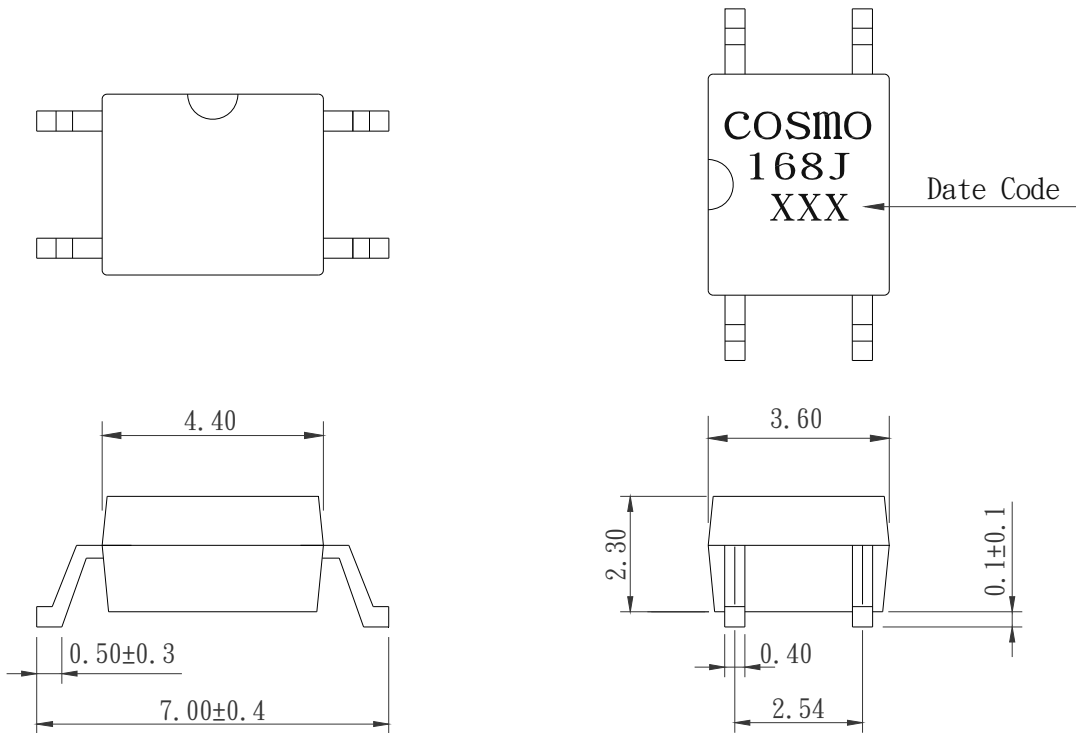
1. Solenoid/Valve Controls.
2. Lighting Controls.
3. Static Power Switches.
4. AC Motor Drives.
5. Temperature Controls.
6. E.M. Contactors.
7. AC Motor Staters.
8. Solid State Relays.
9. Programmable controllers.

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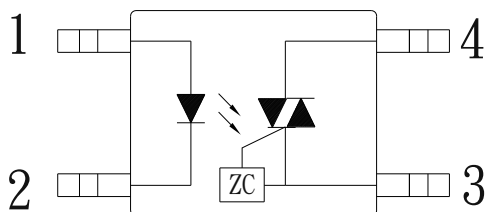
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## ● Outside dimension : Unit ( mm )



Tolerance : ±0.2mm

## ● 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	$I_F$	50	mA
	Peak forward current (100us)	$I_{FP}$	1	A
	Reverse voltage	$V_R$	6	V
	Power dissipation	$P_D$	70	mW
Output	Off-State Output Terminal voltage	$V_{DRM}$	600	V
	On-State R.M.S. Current	$I_{T(RMS)}$	70	mA
	Peak Repetitive Surget Current (PW=10ms.DC 10%)	$I_{TSM}$	1	A
	Power dissipation	$P_D$	150	mW
Total power dissipation		$P_{tot}$	200	mW
Isolation voltage 1 minute		$V_{iso}$	3750	$V_{rms}$
Operating temperature		$T_{opr}$	-40 to +115	°C
Storage temperature		$T_{stg}$	-50 to +125	°C
Soldering temperature 10 second		$T_{sol}$	260	°C

## ● Electro-optical Characteristics

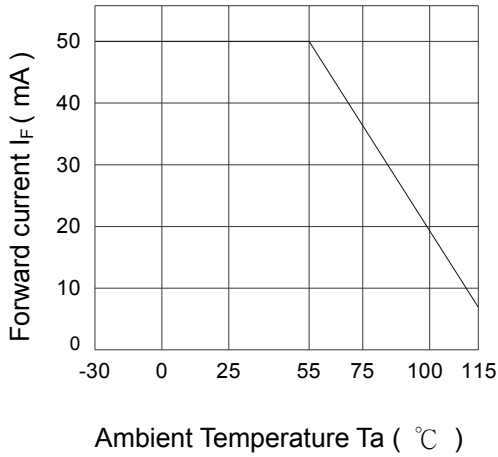
Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	$V_F$	$I_F = 10mA$	-	1.2	1.4	V
	Peak forward voltage	$V_{FM}$	$I_{FM} = 0.5A$	-	-	3.5	V
	Reverse current	$I_R$	$V_R = 5V$	-	-	10	$\mu A$
Output	Peak Blocking Current	$I_{DRM}$	$V_{DRM} = 600V$	-	-	1.0	$\mu A$
	On-State Voltage	$V_{TM}$	$I_{TM} = 70mA$	-	1.6	2.8	V
Transfer characteristics	Holding Current	$I_H$		-	1.0		mA
	Critical rate of rise of Off-state voltage	$dV/dt$	$V_{DRM} = (1/\sqrt{2}) \cdot \text{Rated}$	100	-	-	$V/\mu s$
	Isolation resistance	$R_{iso}$	DC500V	$5 \times 10^{10}$	$10^{11}$	-	$\Omega$
	Minimum trigger current	$I_{FT}$	Main Terminal Voltage=3V	-	5	10	mA
	Inhibit voltage ( MT1-MT2 Voltage above which device not trigger )	$V_{INH}$	$I_F = \text{Rated } I_{FT}$	-	-	50	V
Leakage in Inhibited State	$I_{DRM2}$	$I_F = \text{Rated } I_{FT}, \text{ Rated } V_{DRM}, \text{ Off State}$	-	-	600	$\mu A$	

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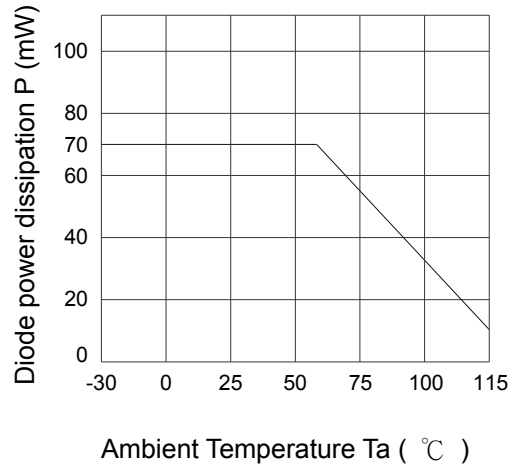
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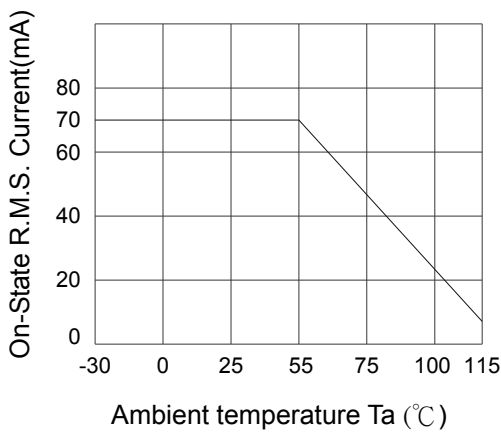
Forward Current vs. Ambient Temperature



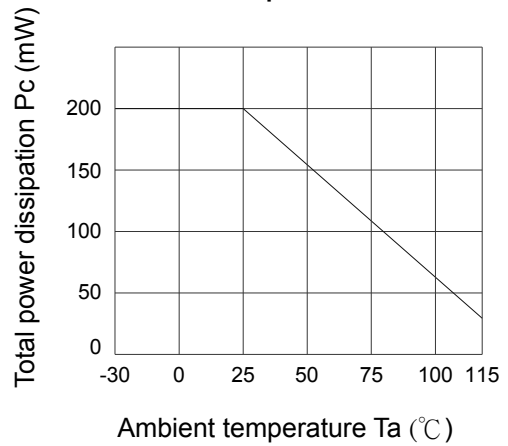
Diode Power Dissipation vs. Ambient Temperature



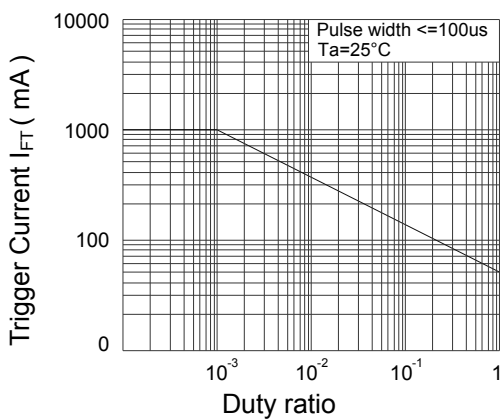
On-State R.M.S. Current vs. Ambient Temperature



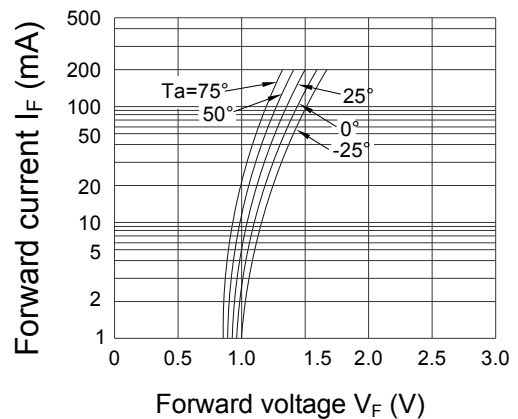
Total Power Dissipation vs. Ambient Temperature



Peak Forward Current vs. Duty Ratio



Forward Current vs. Forward Voltage

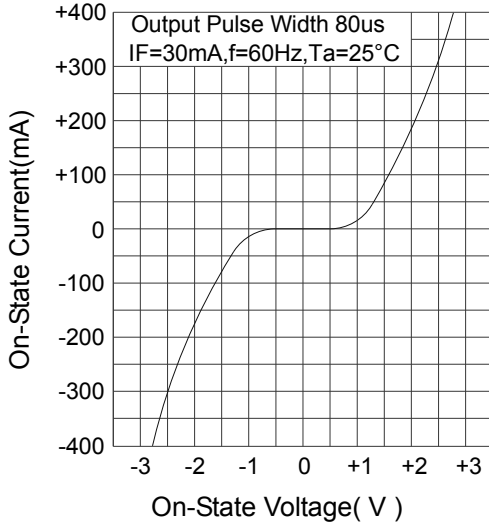


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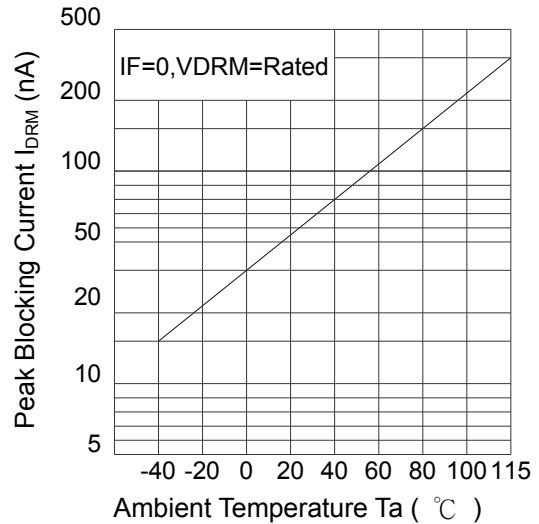
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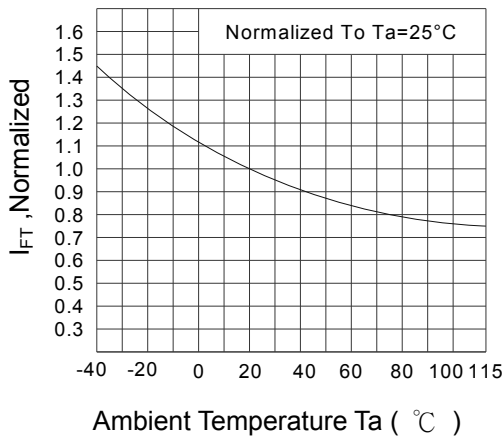
## On-State Characteristics



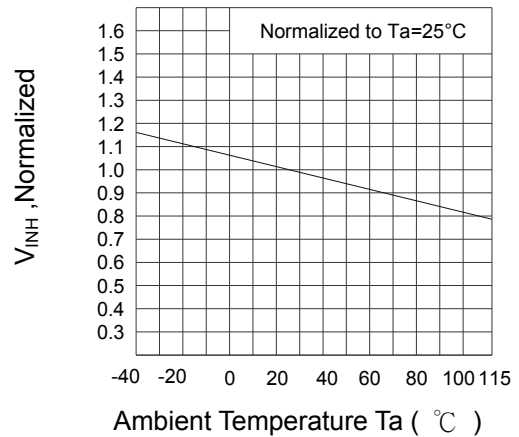
## Leakage with LED off vs. Ambient Temperature



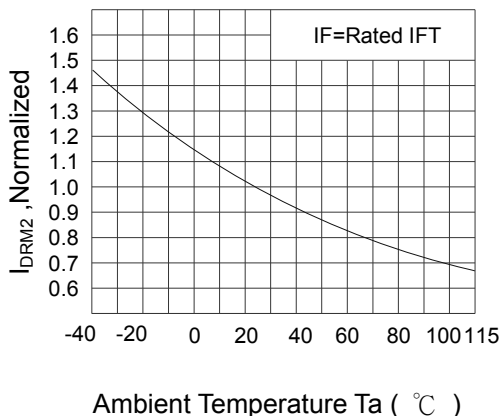
## Trigger Current vs. Ambient Temperature



## Inhibit Voltage vs. Ambient Temperature



## IDRM2 ,Leakage in Inhibit vs. Ambient Temperature



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