

PRODUCT SPECIFICATION

DATE : 01/04/2013

cosmo ELECTRONICS CORPORATION	Photocoupler : KTLP166J	NO. 61P44003	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 :**

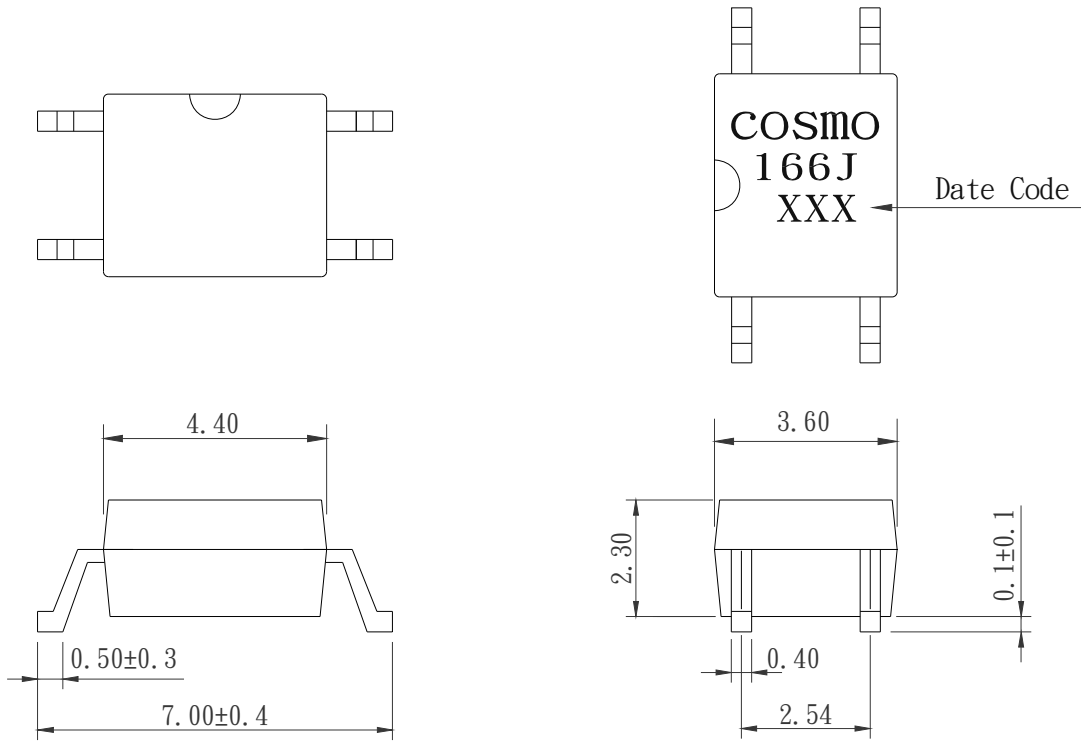
1. Solenoid/Valve Controls.
2. Lighting Controls.
3. Static Power Switches.
4. AC Motor Drives.
5. Temperature Controls.
6. E.M. Contactors.
7. AC Motor Staters.
8. Solid State Relays.
9. Programmable controllers.

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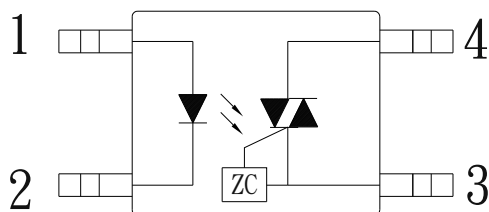
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● Outside dimension : Unit (mm)



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

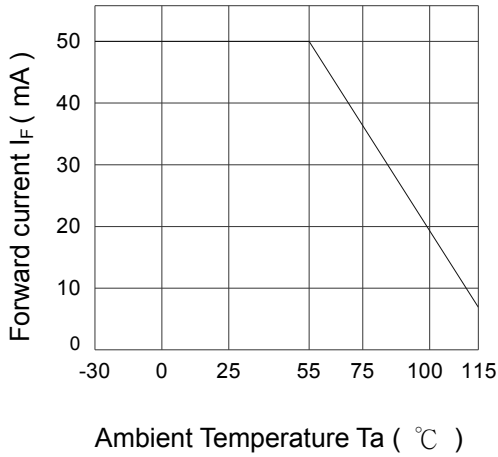
Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F = 10mA$	-	1.2	1.4	V
	Peak forward voltage	V_{FM}	$I_{FM} = 0.5A$	-	-	3.5	V
	Reverse current	I_R	$V_R = 5V$	-	-	10	μA
Output	Peak Blocking Current	I_{DRM}	$V_{DRM} = 600V$	-	-	1.0	μA
	On-State Voltage	V_{TM}	$I_{TM} = 70mA$	-	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	5×10^{10}	10^{11}	-	Ω
	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	μA	

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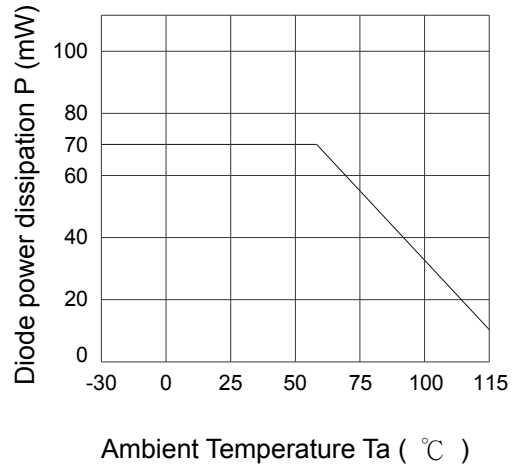
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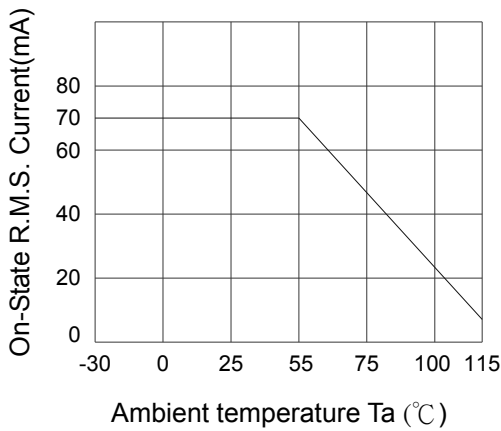
Forward Current vs. Ambient Temperature



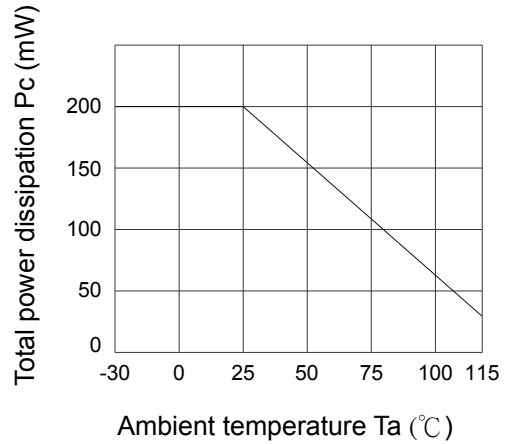
Diode Power Dissipation vs. Ambient Temperature



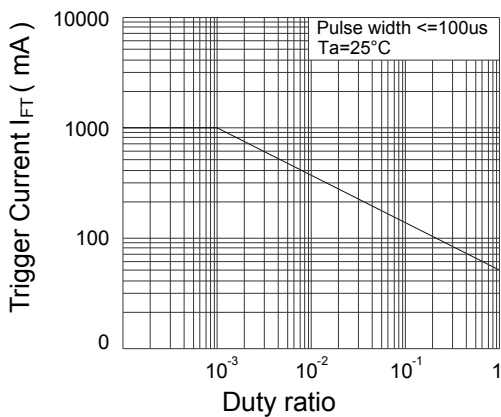
On-State R.M.S. Current vs. Ambient Temperature



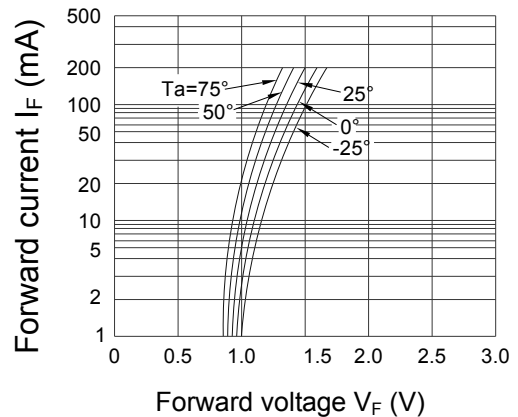
Total Power Dissipation vs. Ambient Temperature



Peak Forward Current vs. Duty Ratio



Forward Current vs. Forward Voltage

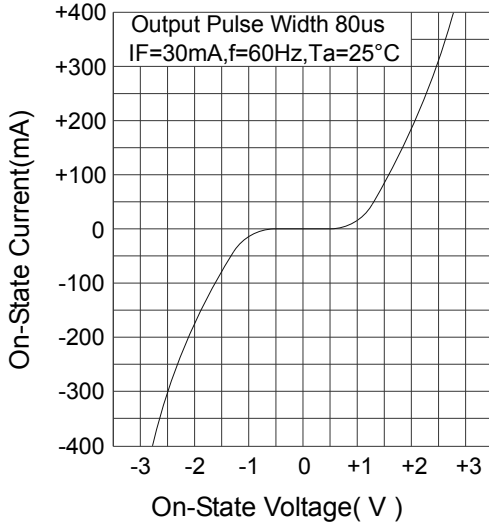


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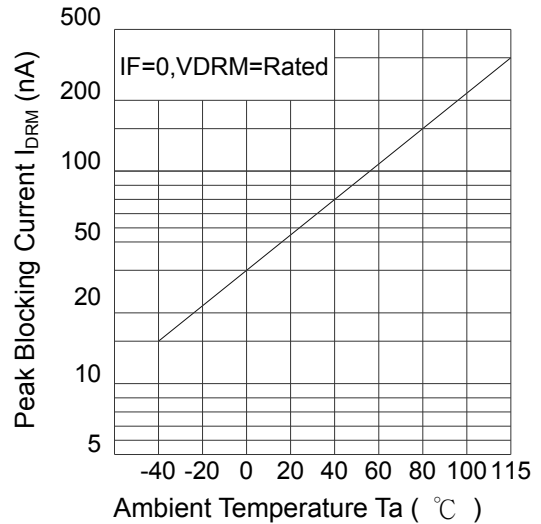
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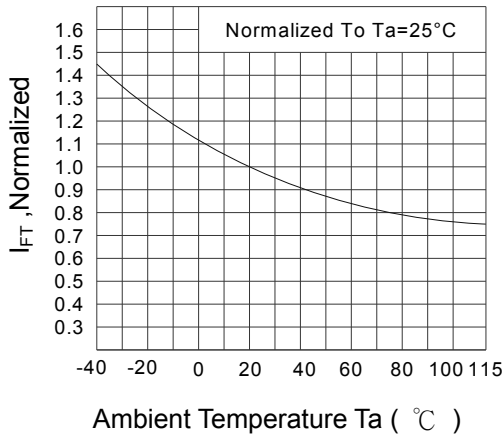
On-State Characteristics



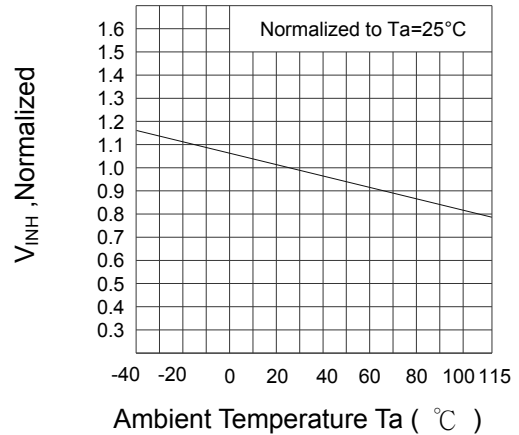
Leakage with LED off vs. Ambient Temperature



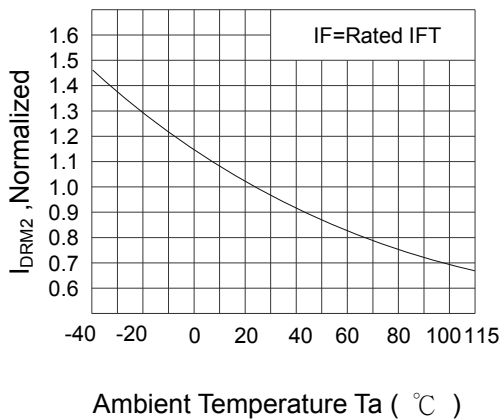
Trigger Current vs. Ambient Temperature



Inhibit Voltage vs. Ambient Temperature



IDRM2 ,Leakage in Inhibit vs. Ambient Temperature



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