PRODUCT SPECIFICATION

COSMO ELECTRONICS CORPORATION	Photocoupler : KTLP168J	NO. 61P44004 SHEET 1 OF 6	REV. 1

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

● Features

1. Opaque type, mini-flat package.

2. 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:2500Vrms).

● 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 Staters.

8. Solid State Relays.

9. Programmable controllers.

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DATE: 03/17/2003

cosmo ELECTRONICS CORPORATION	Photocoupler : KTLP168J	NO. 61P44004	REV.
		SHEET 2 OF 6	1

1. OUTSIDE DIMENSION : UNIT(mm)

cosmo
168J
XXX

Date Code

4. 40

0.50± 0.3

7.00± 0.4

2. 35Max.

3. 60

2. 30

0. 05 $^{+0}_{-0.05}$

0. 40

2. 54
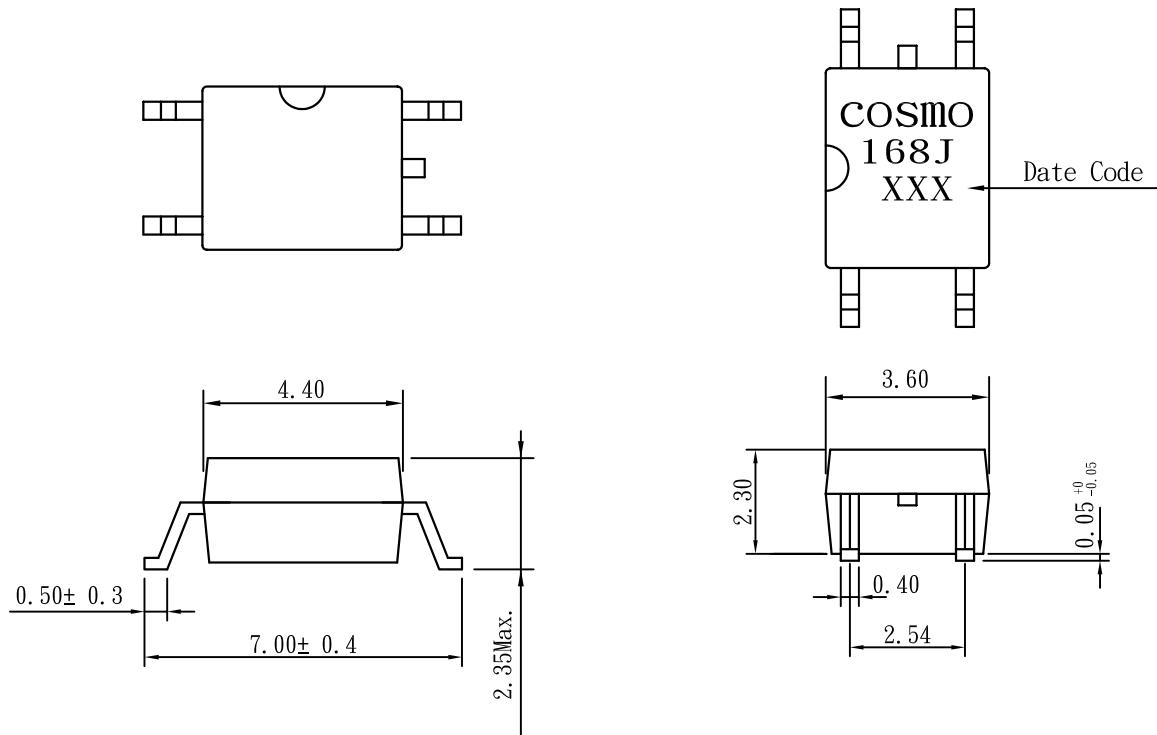
TOLERANCE : ± 0. 2mm

2. SCHEMATIC : TOP VIEW

1   6

3   ZC   4
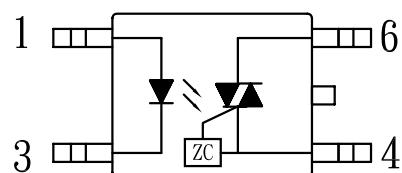
1. Anode
3. Cathode
4. MAIN TERMINAL
6. MAIN TERMINAL

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• Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Peak forward current(100us)	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P_D	70	mW
Output	Off-State Output Terminal voltage	V_{DRM}	600	Vpeak
	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	Viso	2500	Vrms
	Operating temperature	Topr	-40 to +100	°C
	Storage temperature	Tstg	-50 to +125	°C
	Soldering temperature 10 seconds	Tsol	260	°C

• Electro-optical Characteristics (Ta=25°C)

	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 Leakage Current	I_R	V_R=5V	–	–	10	uA
Output	Peak Blocking Current	I_{DRM}	V_{DRM}=600V	–	–	1.0	uA
	ON-State Voltage	V_{TM}	I_{TM}=70mA	–	1.6	2.8	V
Transfer charac-teristics	Holding Current	I_H		–	1.0	–	mA
	Critical rate of rise of OFF-state voltage	dV/dt	V_{DRM}=(1/$\sqrt{2}$)*Rated	100	500	–	V/uS
	Isolation resistance	Riso	DC500V	5×10^{10}	10^{11}	–	ohm
	Minimum trigger current	I_{FT}	Main Terminal Voltage=3V	–	–	3	mA
	Inhibit Voltage(MT1-MT2 Voltage above which device not trigger.)	V_{INH}	I_F=Rated I_{FT}	–	–	50	V
	Leakage in Inhibited State	I_{DRM2}	I_F=Rated I_{FT}, V_T=Rated V_{DRM}		200	600	uA

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Fig. 1 Forward Current vs. Ambient Temperature

Fig. 2 Diode Power Dissipation vs. Ambient Temperature
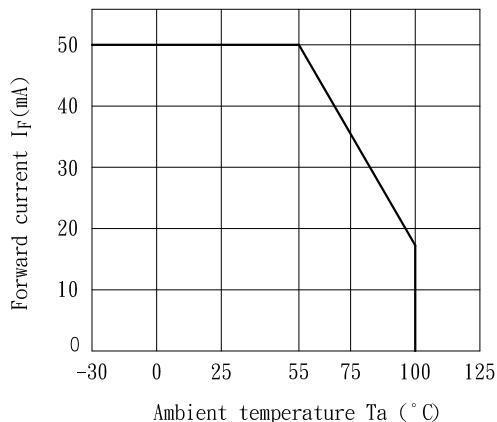

Fig. 3 On-State R.M.S. Current vs. Ambient Temperature

Fig. 4 Total Power Dissipation vs. Ambient Temperature
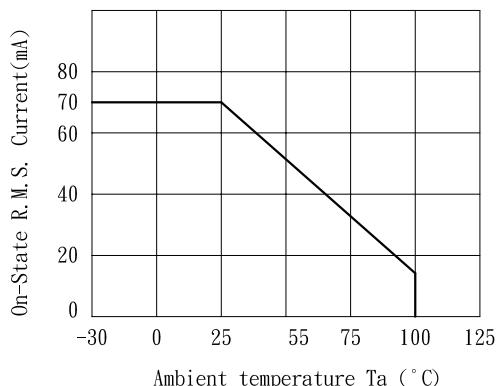
Fig. 5 Peak Forward Current vs. Duty Ratio
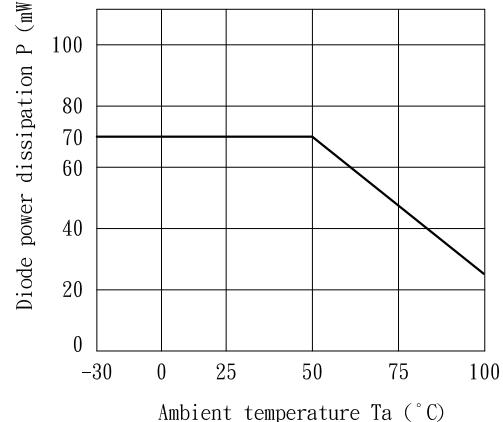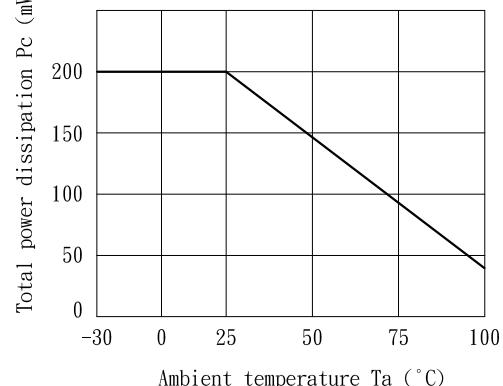
Fig. 6 Forward Current vs. Forward Voltage
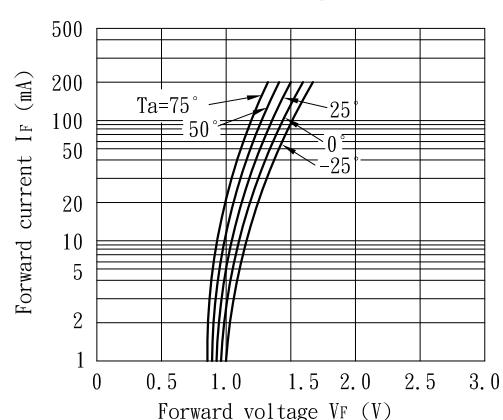
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Fig.7 On-State Characteristics

Output Pulse Width 80us
I_F =30mA, f=60Hz, Ta=25°C

On-State Current(mA) vs On-State Voltage(V)

Fig.8 Leakage with LED off vs. Ambient Temperature

I_F=0, V_{DRM}=Rated

Peak Blocking Current I_{DRM} (nA) vs Ambient temprature Ta (°C)
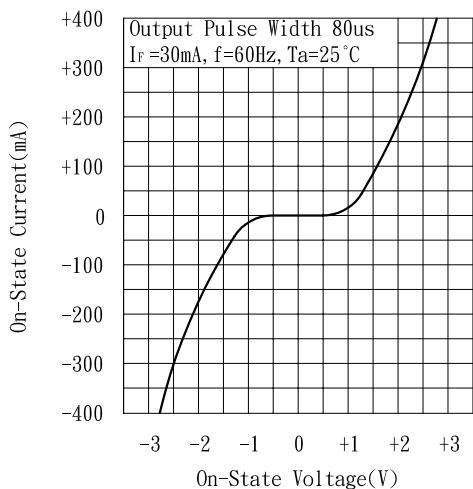
Fig.9 Trigger Current vs. Ambient Temperature

Normalized To Ta=25°C

I_{FT} ,Normalized vs Ambient temprature Ta (°C)
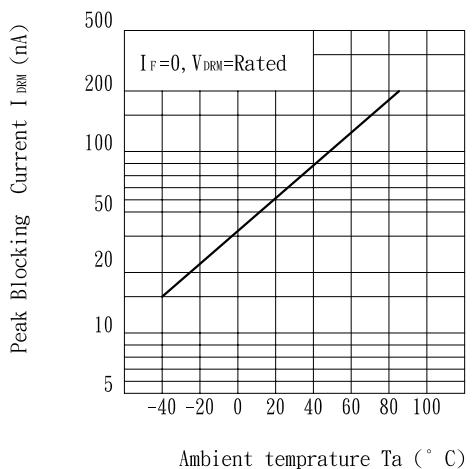
Fig.10 Inhibit Voltage vs. Ambient Temperature
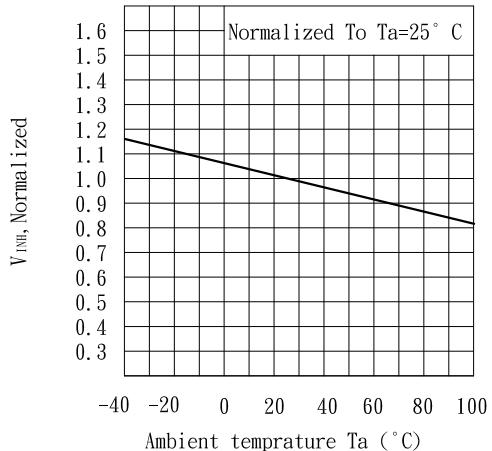
Normalized To Ta=25°C

V_{INH}, Normalized vs Ambient temprature Ta (°C)

Fig.11 I_{DRM2} ,Leakage in Inhibit vs. Ambient Temperature

IF=Rated IFT

I_{DRM2}, Normalized vs Ambient temprature Ta (°C)

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-- Medical and other life support equipments.

-- Space application.

-- Telecommunication equipment (trunk lines).

-- Nuclear power control equipment.

Unless it received prior written approval from cosmo.

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