

PRODUCT SPECIFICATION

DATE:12/20/2012

cosmo ELECTRONICS CORPORATION	Photocoupler: KT101Z	No. 61P04158	REV
		SHEET 1 OF 8	1

4Pin Phototransistor Output ,Low Input Current , Long Creepage Mini-Flat Package.

● Features

1. Halogen Free.
2. Pb free and RoHS compliant.
3. Temperature range -55℃ to 115℃.
4. High isolation voltage 5000Vrms.
5. Opaque type,SMD low profile 4 lead package.
6. Current transfer ratio.

(CTR : MIN.50% at IF=0.1mA VCE=5V)

7. 8mm outer creepage distance.
8. Low coupling capacitance.
9. Agency Approvals

- UL UL1577 / CUL C22.2 No.1 & NTC No.5
File No. E169586
- VDE EN 60747 , File No.40031267
- FMKO EN 60065 , EN 60950
File No.FI26204 M1
- CQC GB4943 / GB8898-2011
File No. CQC11001057770,CQC11001057771
File No. CQC11001057773,CQC11001057775

●Applications

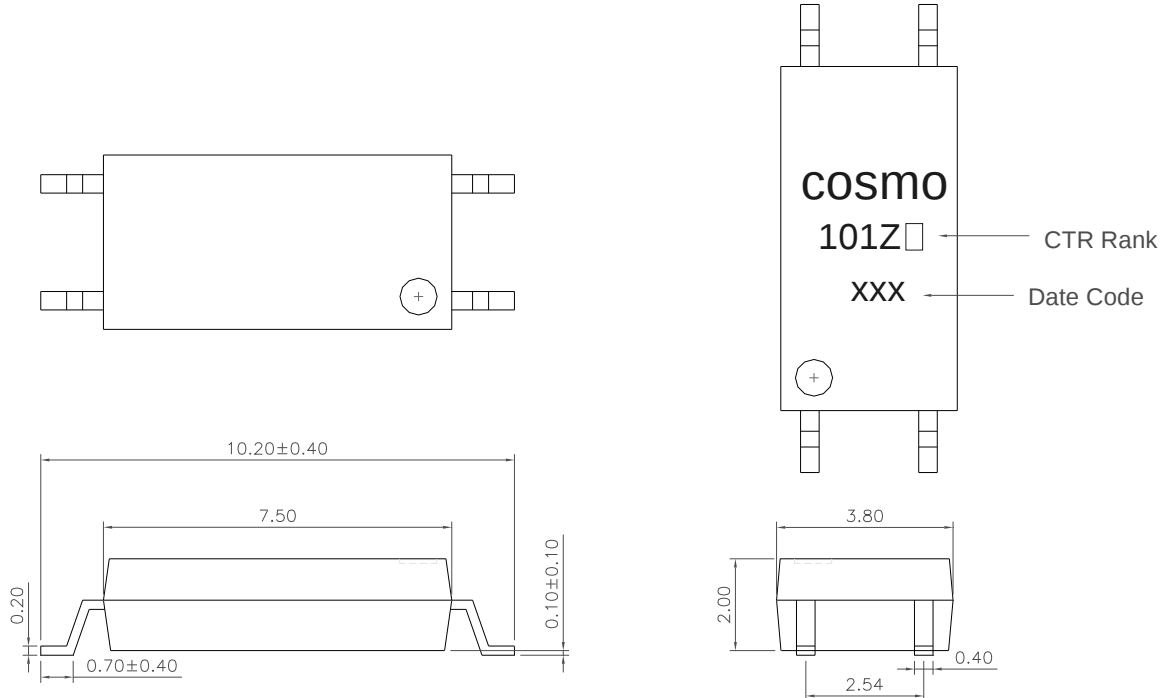
1. Industrial controls.
2. Programmable controllers.
3. Switchmode power supplies,Battery equipment.
4. Office machine.

PRODUCT SPECIFICATION

DATE:12/20/2012

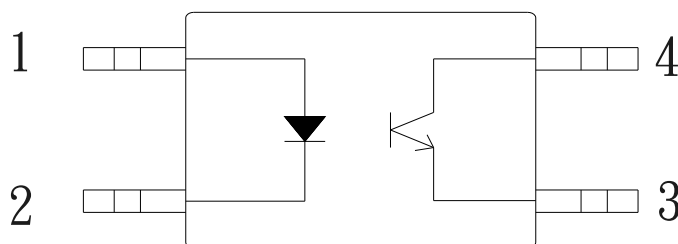
cosmo ELECTRONICS CORPORATION	Photocoupler: KT101Z	No. 61P04158	REV
		SHEET 2 OF 8	1

1. OUTSIDE DIMENSION : UNIT (mm)



TOLERANCE : ± 0.2 mm

2. SCHEMATIC : TOP VIEW



1. Anode
2. Cathode
3. Emitter
4. Collector

PRODUCT SPECIFICATION

DATE:12/20/2012

cosmo ELECTRONICS CORPORATION	Photocoupler: KT101Z	No. 61P04158	REV 1
		SHEET 3 OF 8	

●Absolute Maximum Ratings(TA=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	Peak forward current	IFP	1	A
	Reverse voltage	VR	6	V
	Power dissipation	PD	100	mW
Output	Collector-emitter voltage	VCEO	80	V
	Emitter-collector voltage	VECO	7	V
	Collector current	IC	50	mA
	Collector power dissipation	PC	150	mW
	Total power dissipation	Ptot	250	mW
	Isolation voltage 1 minute	Viso	5000	Vrms
	Operating temperature	Topr	-55 to +115	°C
	Storage temperature	Tstg	-55 to +125	°C
	Soldering temperature 10 second	Tsol	260	°C

●Electro-optical Characteristics(TA=25°C)

	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	VF	IF=10mA	-	1.2	1.8	V
	Reverse current	IR	VR=4V	-	-	10	uA
	Terminal capacitance	Ct	V=0, f=1kHz	-	30	250	pF
Output	Collector dark current	ICEO	VCE=20V, IF=0	-	-	0.1	uA
	Collector-emitter breakdown voltage	BVCEO	IC=0.1mA, IF=0	80	-	-	V
	Emitter-collector breakdown voltage	BVECO	IE=0.1mA, IF=0	7	-	-	V
Transfer characteristics	Current transfer ratio	CTR	IF=0.1mA, VCE=5V	50	-	600	%
	Collector-emitter saturation voltage	VCE(sat)	IF=10mA, IC=1mA	-	0.1	0.3	V
	Isolation resistance	Riso	DC500V, 40 to 60%RH	5x10 ¹⁰	10 ¹¹	-	ohm
	Floating capacitance	Cf	V=0, f=1MHz	-	0.6	1.0	pF
	Rise time	tr	Vcc=2V, IC=2mA, RL=100ohm	-	11	-	us
	Fall time	tf	Vcc=2V, IC=2mA, RL=100ohm	-	11	-	us

●Classification table of current transfer ratio is shown below.

CTR RANK	CTR(%)
KT101ZA	63 TO 125
KT101ZB	100 TO 200

PRODUCT SPECIFICATION

DATE:12/20/2012

cosmo

ELECTRONICS CORPORATION

Photocoupler:

KT101Z

No. 61P04158

SHEET 4 OF 8

REV

1

Fig.1 Relative Current Transfer Ratio
vs. Ambient Temperature

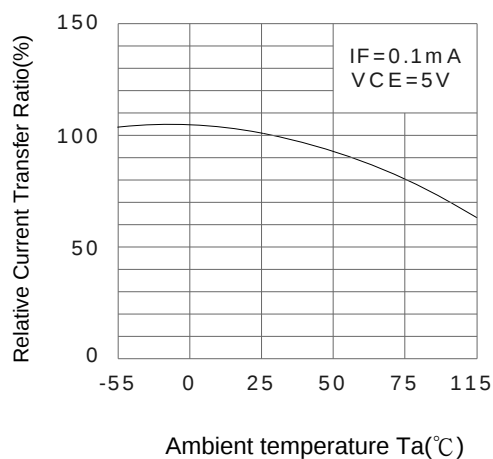


Fig.2 Diode Power Dissipation
vs. Ambient Temperature

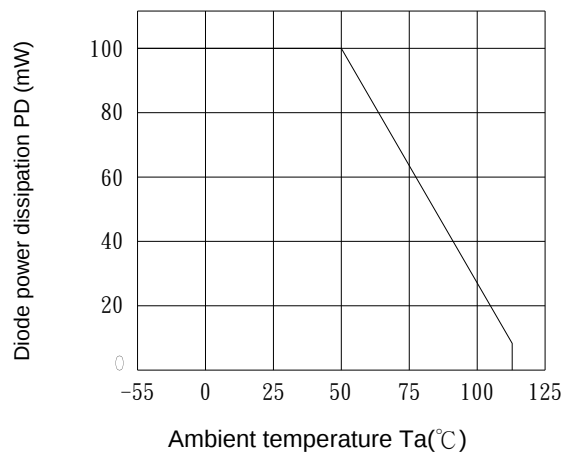


Fig.3 Collector Power Dissipation
vs. Ambient Temperature

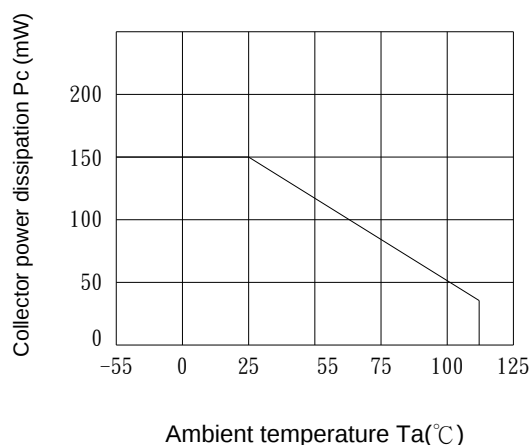


Fig.4 Total Power Dissipation vs.
Ambient Temperature

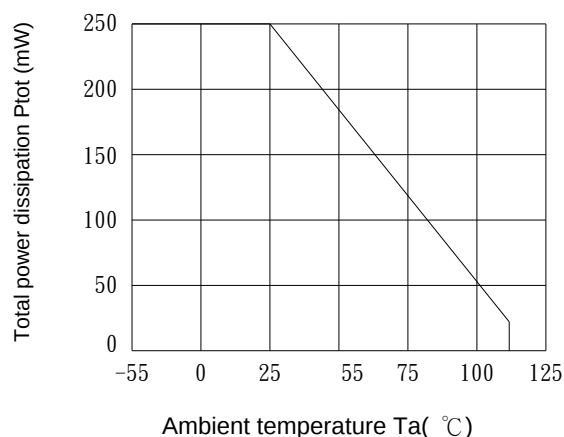


Fig.5 Current Transfer Ratio vs.
Forward Current

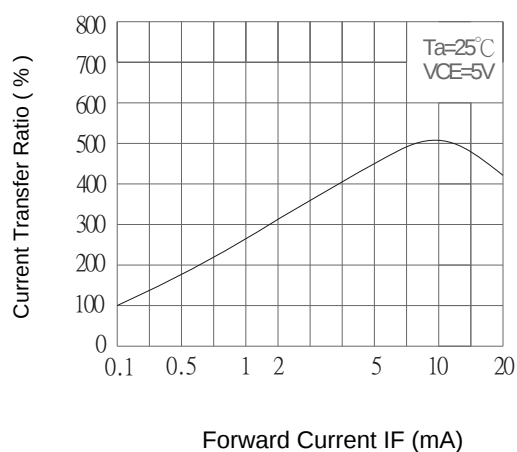
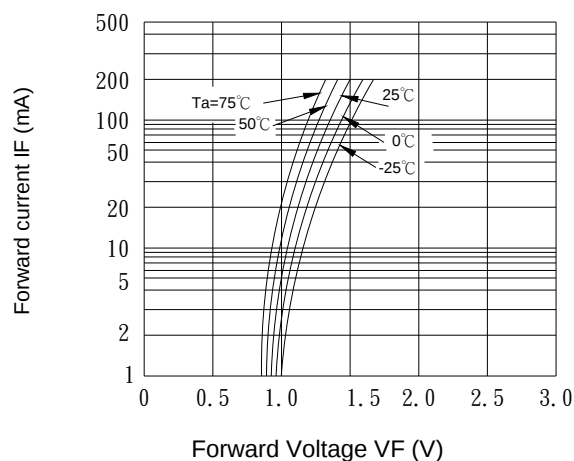


Fig.6 Forward Current vs. Forward Voltage



PRODUCT SPECIFICATION

DATE:12/20/2012

cosmo

ELECTRONICS CORPORATION

Photocoupler:

KT101Z

No. 61P04158

SHEET 5 OF 8

REV

1

Fig.7 Collector Dark Current vs.
Ambient Temperature

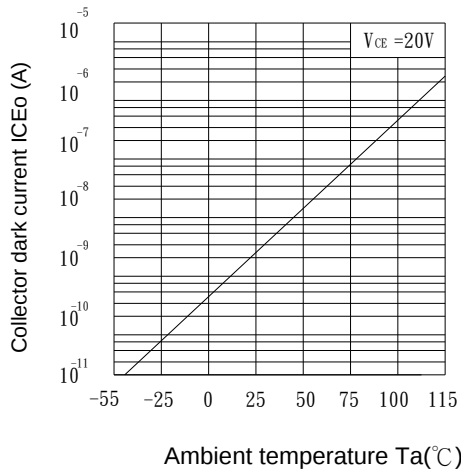


Fig.8 Collector Current vs.
Collector-Emitter Voltage

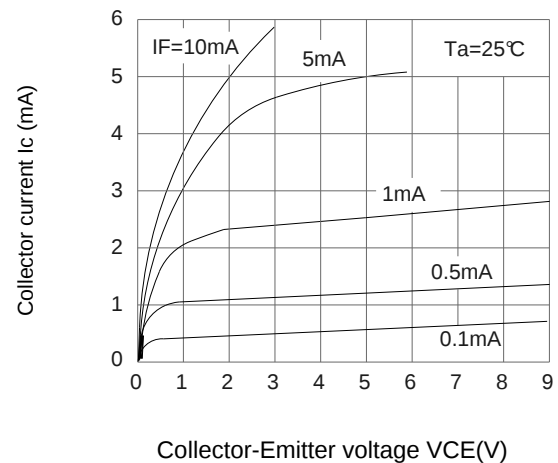


Fig.9 Response Time vs.
Load Resistance

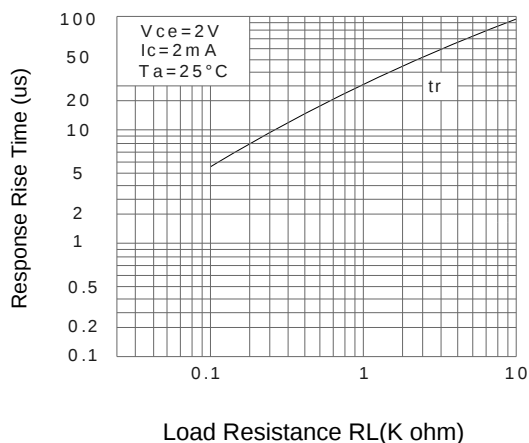


Fig.10 Response Time vs.
Load Resistance

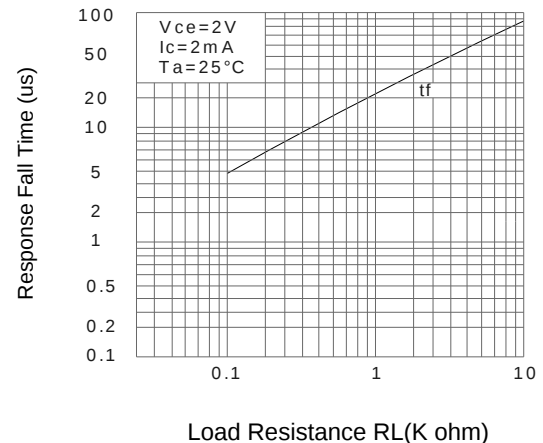
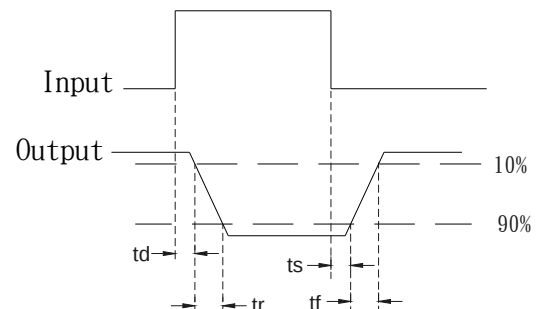
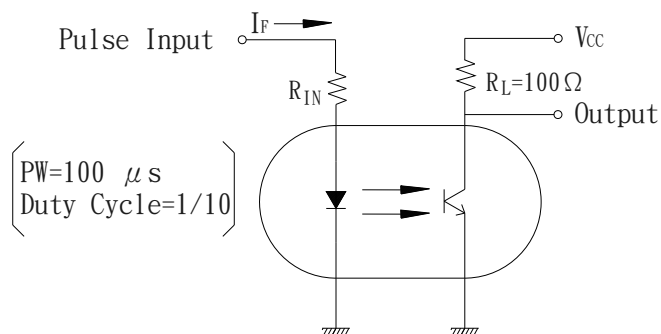


Fig.11 Test Circuit For Response Time

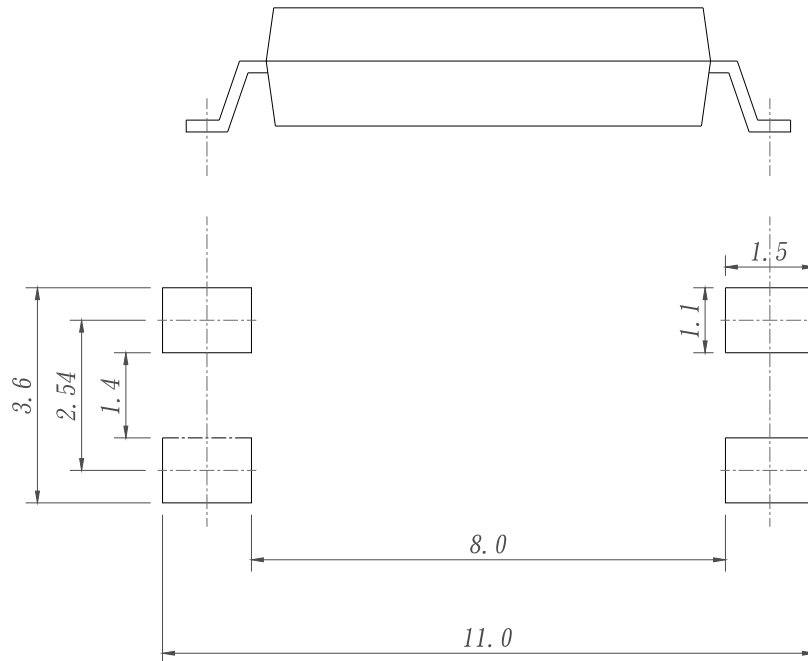


PRODUCT SPECIFICATION

DATE:12/20/2012

cosmo ELECTRONICS CORPORATION	Photocoupler: KT101Z	No. 61P04158	REV 1
		SHEET 6 OF 8	

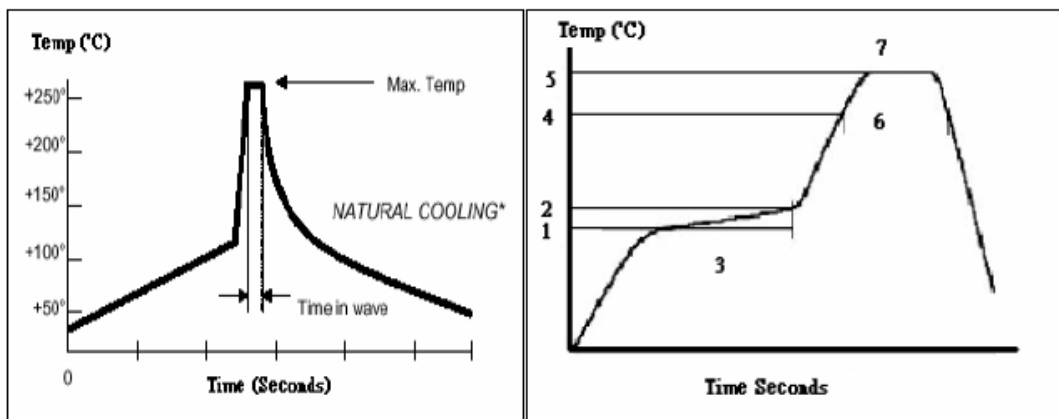
Fig.12 Recommended Mount Pad Dimensions



(Unit:mm)

Recommended Reflow / Wave Soldering Profile Conditions

	Recommended Profile Parameter	Wave Soldering	Infrared Red Reflow
1	Preheat start temperature, °C	N/A	150°C
2	Preheat finish temperature, °C	N/A	180°C
3	Preheat time, seconds	N/A	90 to 120 seconds
4	Melting temperature, °C	N/A	230°C
5	Peak temperature, °C	260°C	260°C
6	Time above melting, seconds	N/A	30 seconds
7	Peak temperature retained time, seconds	10 seconds	10 seconds



The recommended soldering conditions of Hand Soldering Test is Temperature=380±10°C, Duration=3+1 / -0 sec.

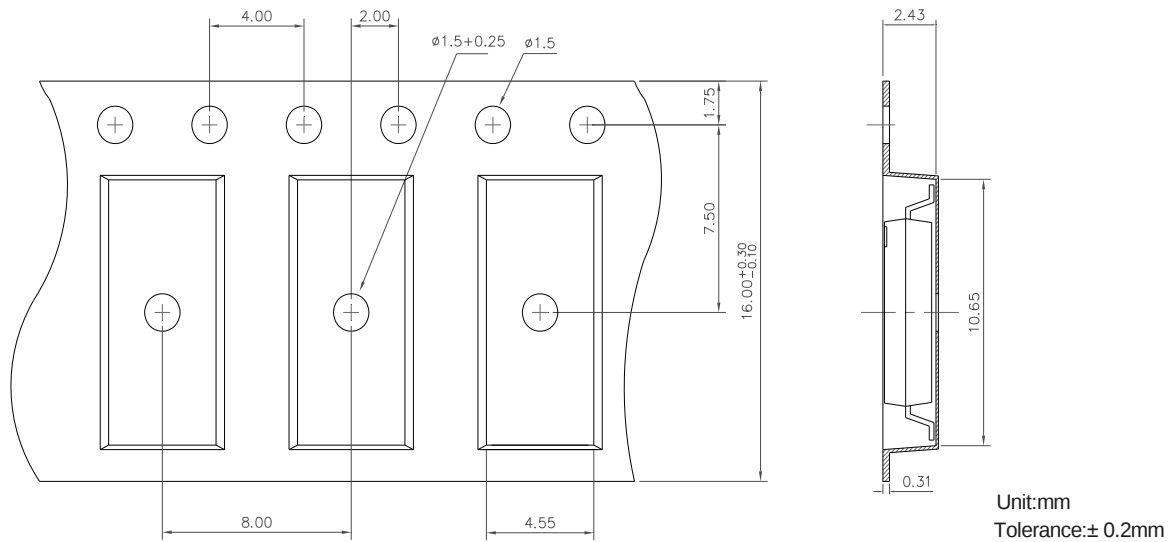
PRODUCT SPECIFICATION

DATE:12/20/2012

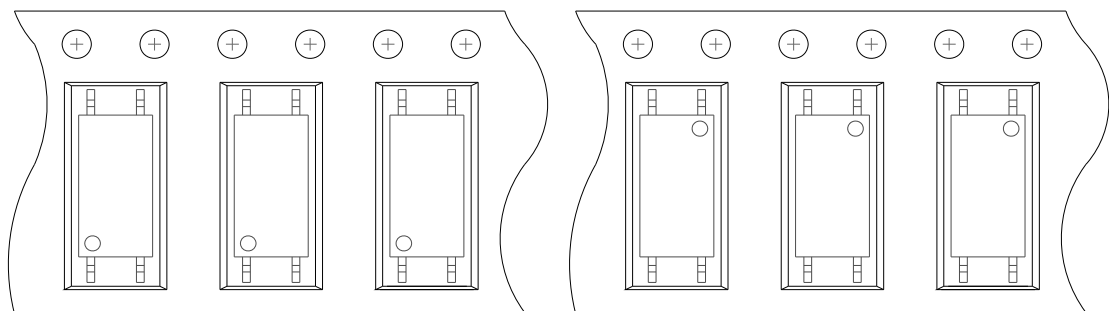
cosmo ELECTRONICS CORPORATION	Photocoupler: KT101Z	No. 61P04158	REV
		SHEET 7 OF 8	1

TAPING SPECIFICATIONS

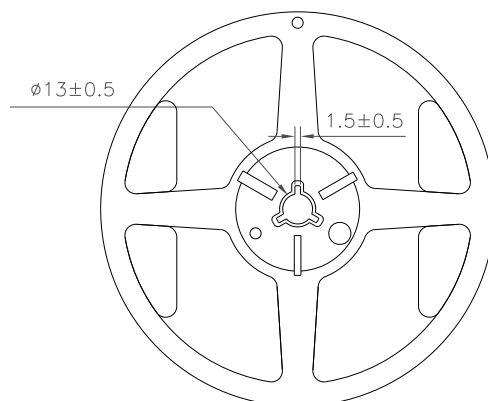
Tape



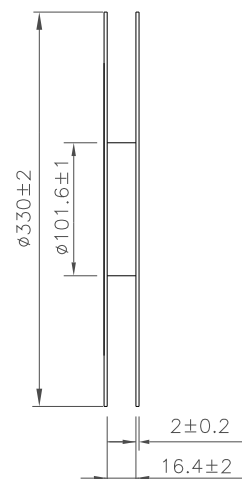
Direction



REEL



Scale 1:3



Packing:3000pcs/reel

PRODUCT SPECIFICATION

DATE:12/20/2012

cosmo ELECTRONICS CORPORATION	Photocoupler: KT101Z	No. 61P04158	REV
		SHEET 8 OF 8	1

NOTICE

The information contained in this document is a general product description and is subject to change without notice. Please contact cosmo in order to obtain the latest device data sheets before using any cosmo device. cosmo does not assume any responsibility for use of any circuitry described. No circuit patent licenses are implied. This publication is the property of cosmo. No part of this publication may be reproduced or copied in any form or by any means, or transferred to any third party without the prior written consent of cosmo Electronics Corporation.

The devices listed in this document are designed for general applications only in electronic equipment. No devices shall be deployed which require higher level of reliability such as:

- Medical and other life support equipments.
- Space application.
- Telecommunication equipment (trunk lines).
- Nuclear power control equipment.

Unless it received prior written approval from cosmo. cosmo takes no responsibility for damages arise form the improper usage of our device. Please contact cosmo for further information regarding the above notices.