

PRODUCT SPECIFICATION

DATE:01/10/2013

cosmo ELECTRONICS CORPORATION	Photocoupler: KT101T	No. 61P04125	REV
		SHEET 1 OF 8	3

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°C to 115°C.
4. High isolation voltage 5000Vrms.
5. Opaque type,SMD low profile 4 lead package.
6. Current transfer ratio.

(CTR : MIN.50% at IF=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
- FMIKO EN 60065 , EN 60950
File No.FI26204 M1
- CQC GB4943 / GB8898-2011
File No. CQC11001057770,CQC11001057771
File No. CQC11001057773,CQC11001057775

●Applications

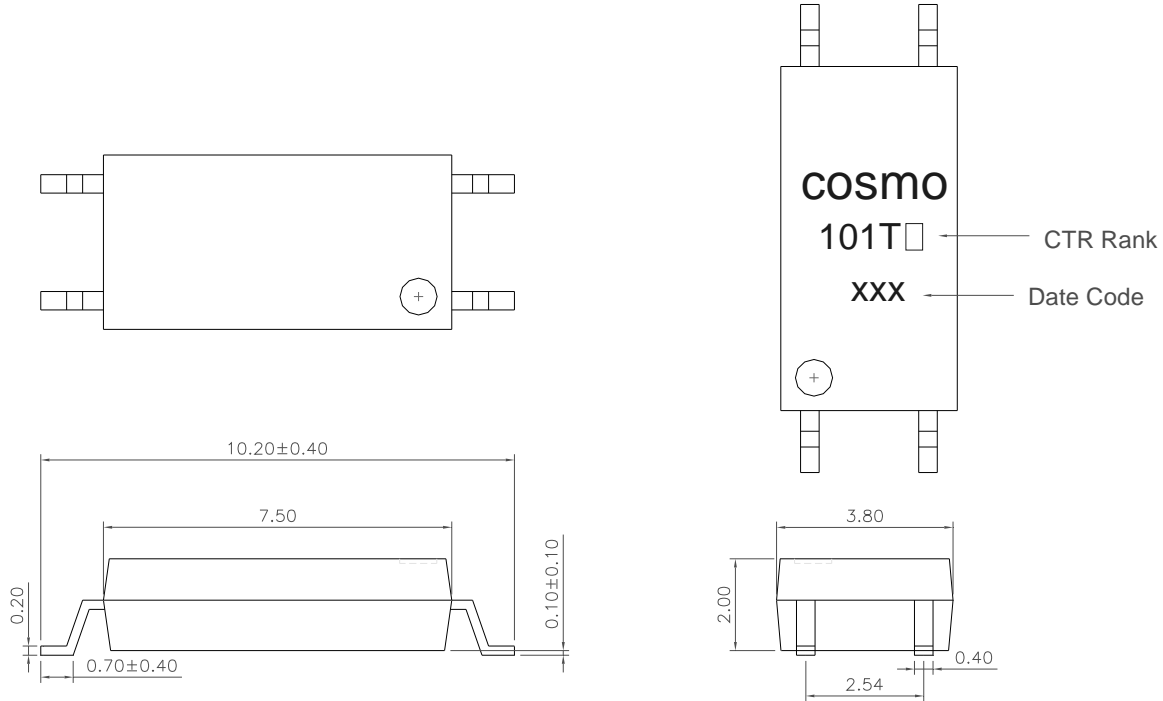
1. Industrial controls.
2. Programmable controllers.
3. Switchmode power supplies,Battery equipment.
4. Office machine.

PRODUCT SPECIFICATION

DATE:01/10/2013

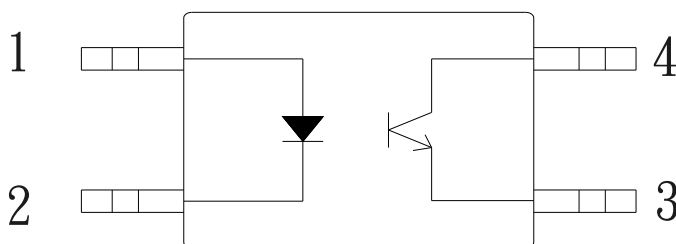
cosmo ELECTRONICS CORPORATION	Photocoupler: KT101T	No. 61P04125	REV
		SHEET 2 OF 8	3

1. OUTSIDE DIMENSION : UNIT (mm)



TOLERANCE : ± 0.2 mm


2. SCHEMATIC : TOP VIEW



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

PRODUCT SPECIFICATION

DATE:01/10/2013

	Photocoupler: <h2 style="text-align: center;">KT101T</h2>	No. 61P04125	REV
		SHEET 3 OF 8	3

●Absolute Maximum Ratings(T_A=25°C)

Parameter	Symbol	Rating	Unit
Input	Forward current	I _F	50
	Peak forward current	I _{FP}	1
	Reverse voltage	V _R	6
	Power dissipation	P _D	100
Output	Collector-emitter voltage	V _{CEO}	80
	Emitter-collector voltage	V _{ECO}	7
	Collector current	I _c	50
	Collector power dissipation	P _C	150
Total power dissipation	P _{tot}	250	mW
Isolation voltage 1 minute	V _{iso}	5000	V _{rms}
Operating temperature	T _{opr}	-55 to +115	°C
Storage temperature	T _{stg}	-55 to +125	°C
Soldering temperature 10 second	T _{sol}	260	°C

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage	V _F	I _F =10mA	-	1.2	1.4	V
	Reverse current	I _R	V _R =4V	-	-	10	uA
	Terminal capacitance	C _t	V=0, f=1kHz	-	30	250	pF
Output	Collector dark current	I _{CEO}	V _{CE} =20V, I _F =0	-	-	0.1	uA
	Collector-emitter breakdown voltage	BV _{CEO}	I _c =0.1mA, I _F =0	80	-	-	V
	Emitter-collector breakdown voltage	BV _{ECO}	I _E =0.1mA, I _F =0	7	-	-	V
Transfer characteristics	Current transfer ratio	CTR	I _F =1mA, V _{CE} =5V	50	-	600	%
	Collector-emitter saturation voltage	V _{CE(sat)}	I _F =10mA, I _c =1mA	-	0.1	0.2	V
	Isolation resistance	R _{iso}	DC500V, 40 to 60%RH	5x10 ¹⁰	10 ¹¹	-	ohm
	Floating capacitance	C _f	V=0, f=1MHz	-	0.6	1.0	pF
	Rise time	t _r	V _{cc} =2V, I _c =2mA, R _L =100ohm	-	4	-	us
	Fall time	t _f		-	3	-	us

●Classification table of current transfer ratio is shown below.

CTR RANK	CTR(%)
KT101TA	63 TO 125
KT101TB	100 TO 200

PRODUCT SPECIFICATION

DATE:01/10/2013

cosmo ELECTRONICS CORPORATION	Photocoupler:	No. 61P04125	REV
	KT101T	SHEET 4 OF 8	3

Fig.1 Relative Current Transfer Ratio vs. Ambient Temperature

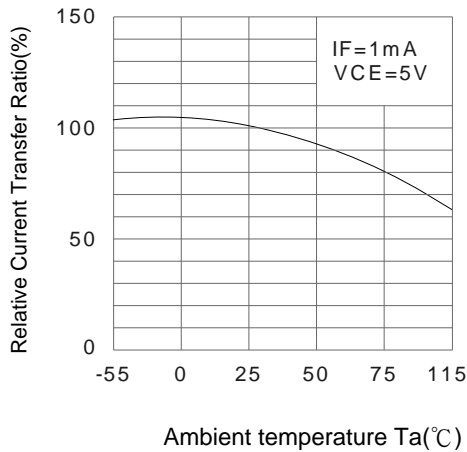


Fig.2 Diode Power Dissipation vs. Ambient Temperature

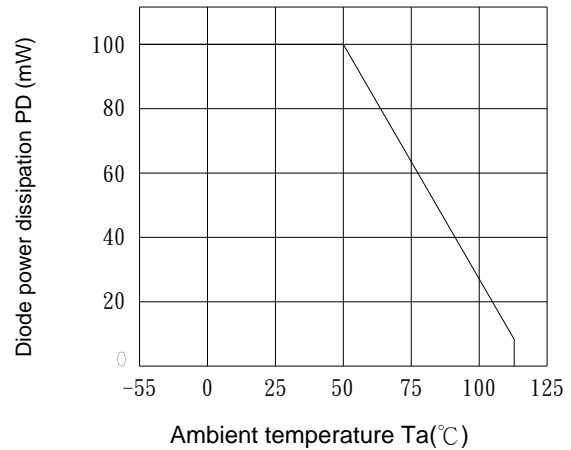


Fig.3 Collector Power Dissipation vs. Ambient Temperature

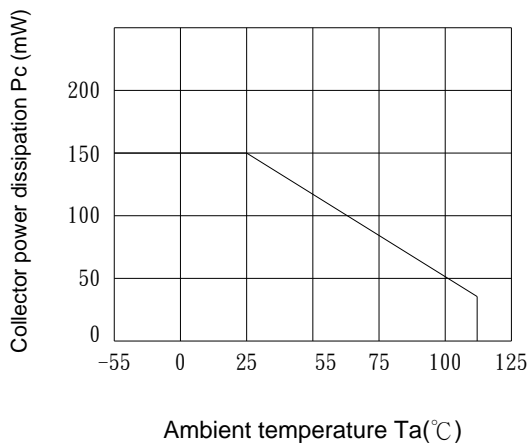


Fig.4 Total Power Dissipation vs. Ambient Temperature

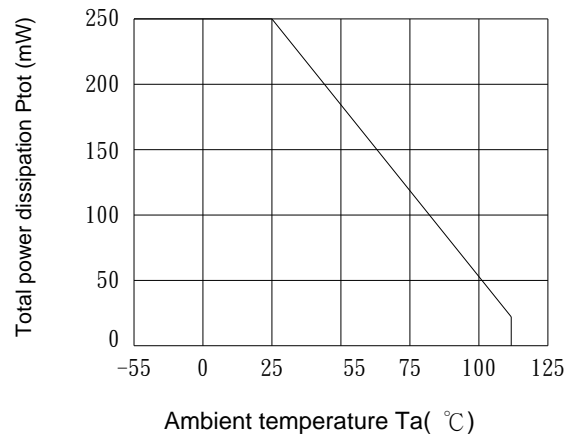


Fig.5 Current Transfer Ratio vs. Forward Current

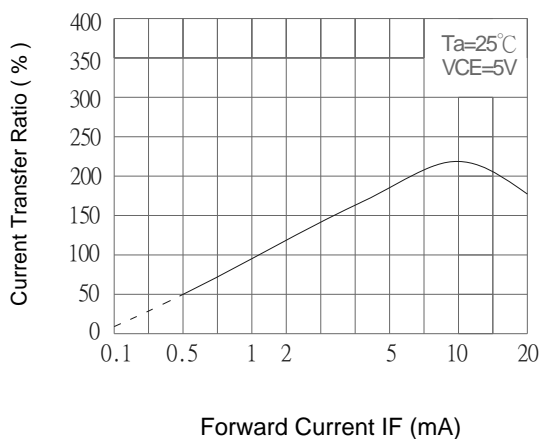
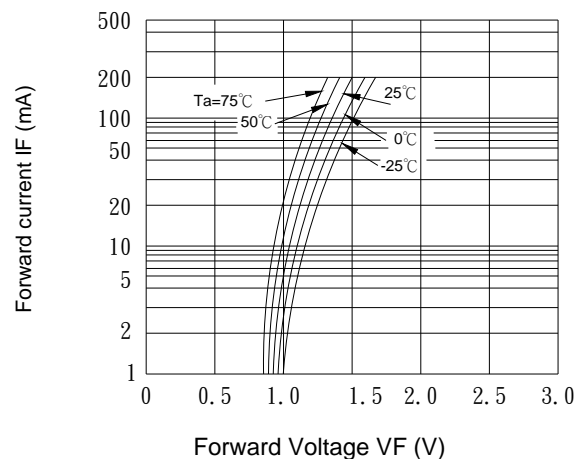


Fig.6 Forward Current vs. Forward Voltage



PRODUCT SPECIFICATION

DATE:01/10/2013

cosmo ELECTRONICS CORPORATION	Photocoupler: KT101T	No. 61P04125	REV
		SHEET 5 OF 8	3

Fig.7 Collector Dark Current vs. Ambient Temperature

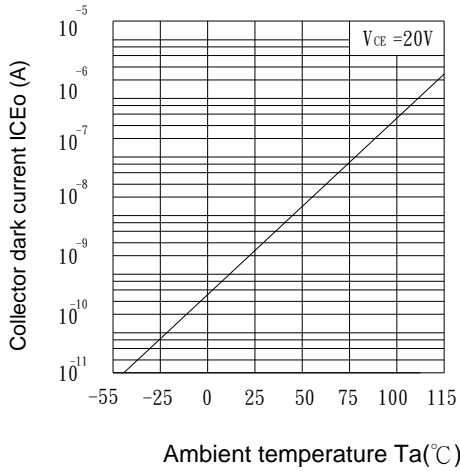


Fig.8 Collector Current vs. Collector-Emitter Voltage

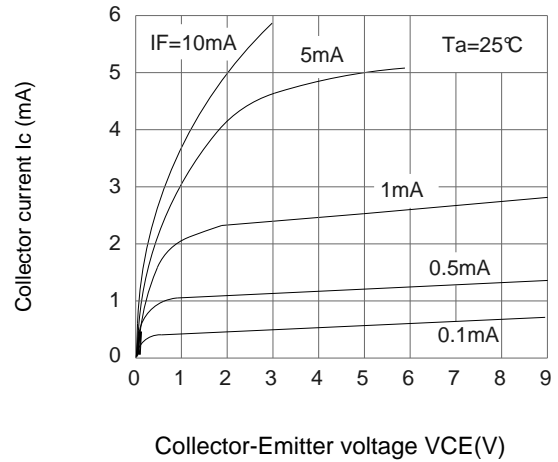


Fig.9 Response Time vs. Load Resistance

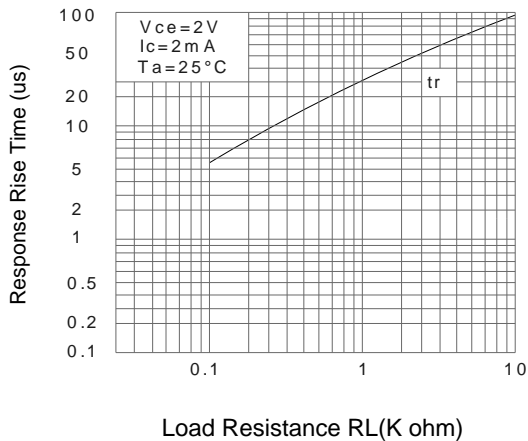


Fig.10 Response Time vs. Load Resistance

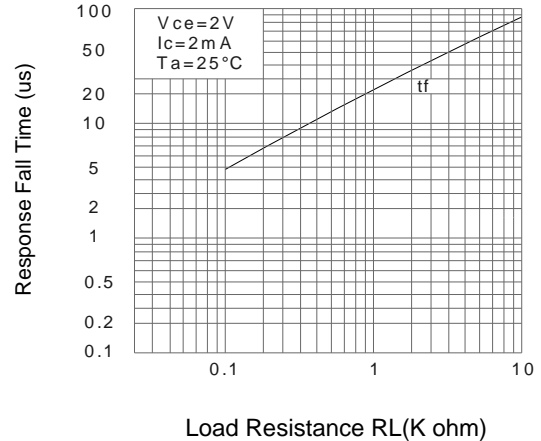
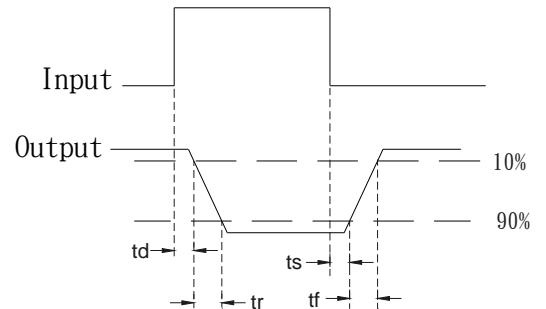
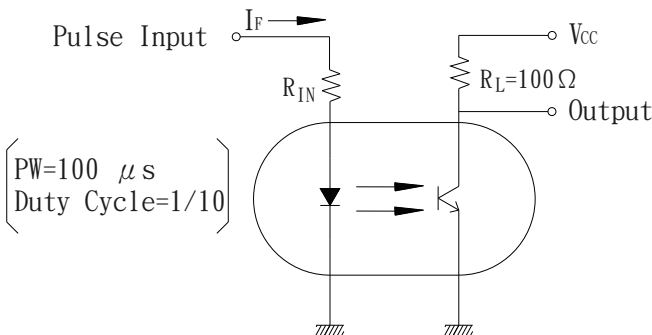


Fig.11 Test Circuit For Response Time

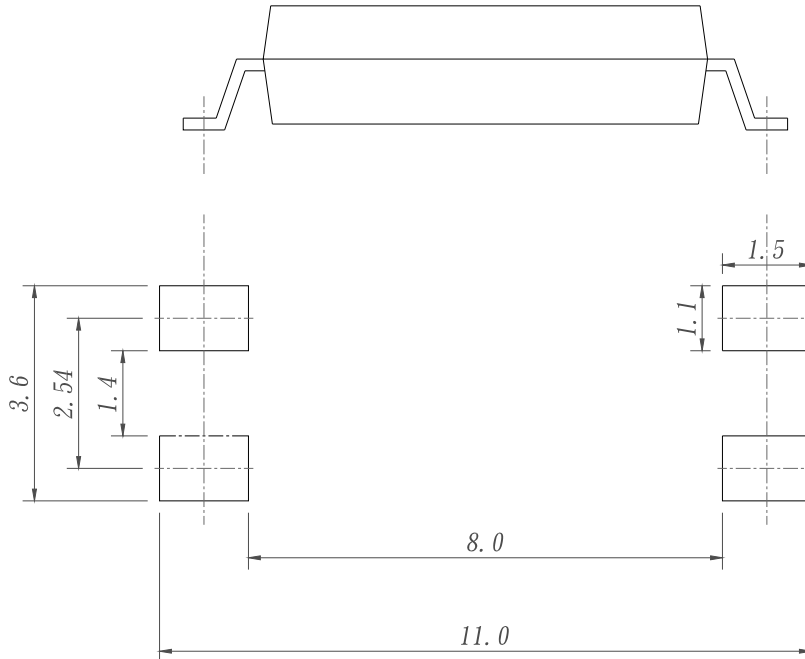


PRODUCT SPECIFICATION

DATE:01/10/2013

cosmo ELECTRONICS CORPORATION	Photocoupler: <h2 style="text-align: center;">KT101T</h2>	No. 61P04125	REV
		SHEET 6 OF 8	3

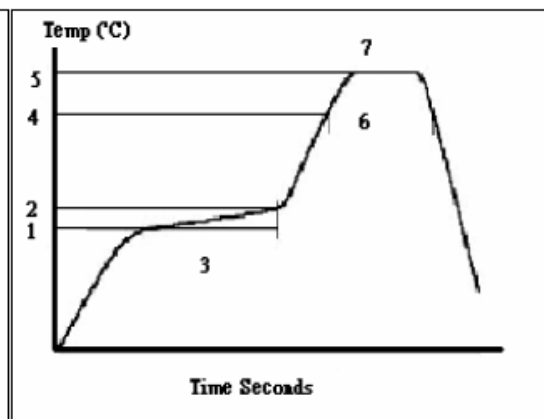
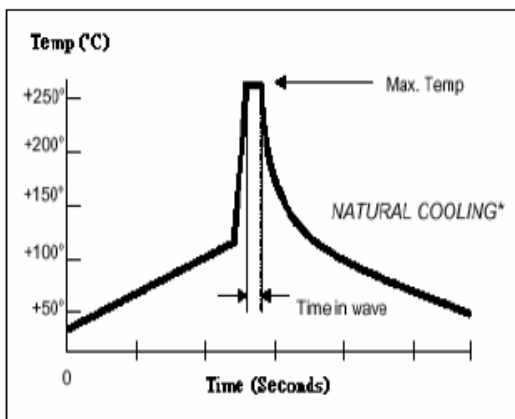
Fig.12 Recommended Mount Pad Dimensions



(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.

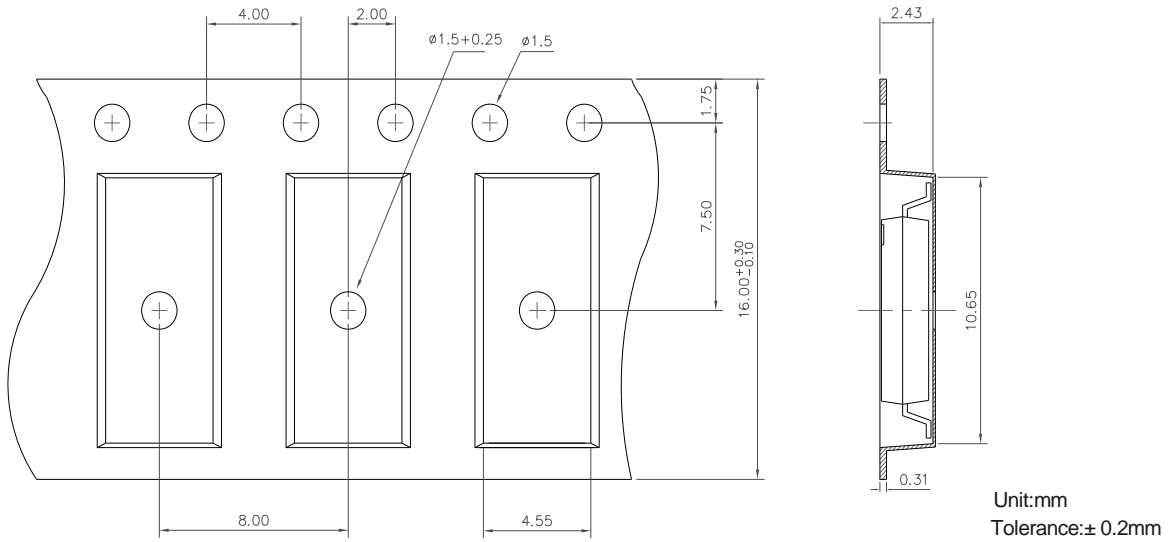
PRODUCT SPECIFICATION

DATE:01/10/2013

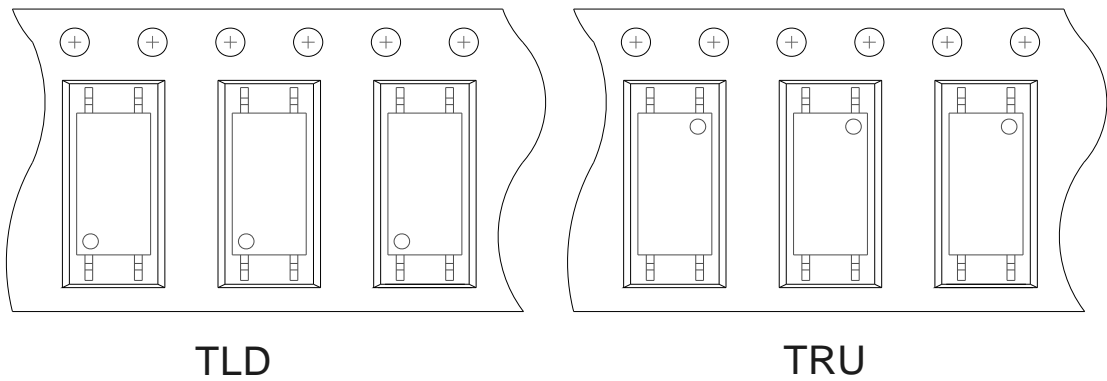
cosmo ELECTRONICS CORPORATION	Photocoupler: KT101T	No. 61P04125	REV
		SHEET 7 OF 8	3

TAPING SPECIFICATIONS

Tape



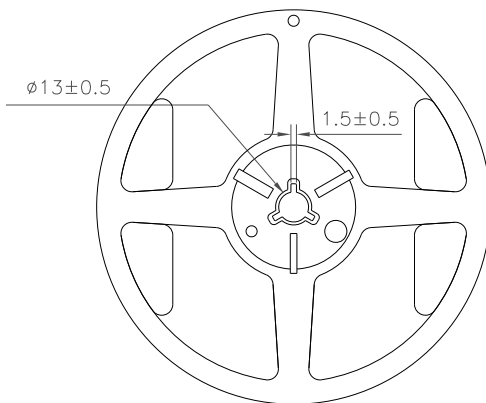
Direction



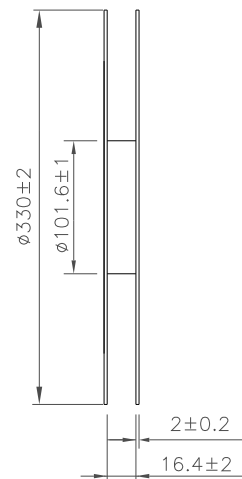
TLD

TRU

REEL



Scale 1:3



Packing:3000pcs/reel

PRODUCT SPECIFICATION

DATE:01/10/2013

cosmo ELECTRONICS CORPORATION	Photocoupler: KT101T	No. 61P04125	REV
		SHEET 8 OF 8	3

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.