



### Description

The TD101X series combine an AlGaAs infrared emitting diode as the emitter which is optically coupled to a silicon planar phototransistor detector in a plastic LSOP4 package. With the robust coplanar double mold structure, TD101X series provide the most stable isolation feature.

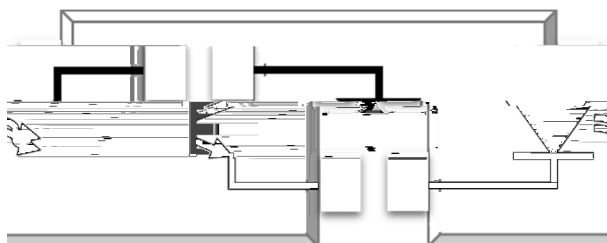
### Features

- High isolation (000) \* +S
- Temperature flexibility available see order information
- DC input with transistor output
- Operating temperature range: (-40°C, to 110°C)
- Output current: 10mA, RoHS compliance
- +SL class 1
- Regulatory Approvals
  - 2L : 2L1(33)
  - D1 : 1450313.(6)D10771.(8)
  - 9 , : G ; !< !=#1% G ; 77<7

### Applications

- Switch mode power supplies
- Programmable controllers
- Household appliances
- Office equipment

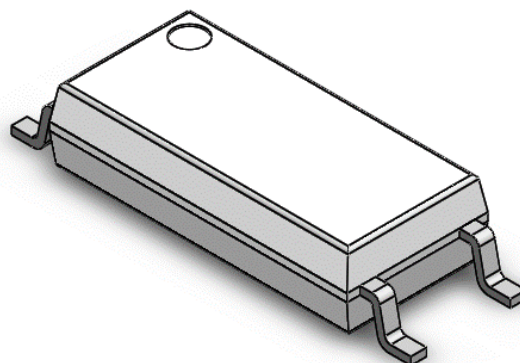
### SCHEMATIC



### PIN DEFINITION

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

### PAC A ! E O " T # I N E





LSOP4, DC Input, Photo Transistor Coupler

A ' SO# " TE MA (IM " M ) ATIN ! S				
A * A + 1 T1 *	S@+ ; OL	) AL21	24AT	4OT1
A4 2T				
Borward , urrent	A <sub>B</sub>	50	mA	
ea" Borward , urrent	A <sub>B</sub>	1	A	1
* e&erse ) oltage	) *	5	)	
Anput ower Dissipation	A	100	m\$	
O2T 2T				
, ollector . 1mitter ) oltage	) , 10	70	)	
1mitter . , ollector ) oltage	) 1 , 0	3	)	
, ollector , urrent	A,	(0	mA	
Output ower Dissipation	o	1(0	m\$	
, O+ +O4				
Total ower Dissipation	tot	?(0	m\$	
Asolation ) oltage	) iso	(000	) rms	?
Operating Temperature	Topr	. ( (C110	/ ,	
Storage Temperature	Tstg	. ( (C1?(	/ ,	
Soldering Temperature	Tsol	?50	/ ,	

Note 1. 100µs pulse, 100 ! "#e\$uenc%

Note 2. A& ' o# 1 ( ) nute, R. . \* +0 , -0.





**CHARACTERISTIC CURVES**

<p>Fig. 1 Forward Current vs. Ambient Temperature</p>	<p>Fig. 2 Collector Power Dissipation vs. Ambient Temperature</p>
<p>Fig. 3 Forward Current vs. Forward Voltage</p>	<p>Fig. 4 Collector Dark Current vs. Ambient Temperature</p>
<p>Fig. 5 Collector Current vs. Collector-Emitter Voltage</p>	<p>Fig. 6 Collector Current vs. Collector-Emitter Voltage</p>



CHARACTERISTICS - ES

Fig. 5 Normalized Current Transfer Ratio vs. Forward Current

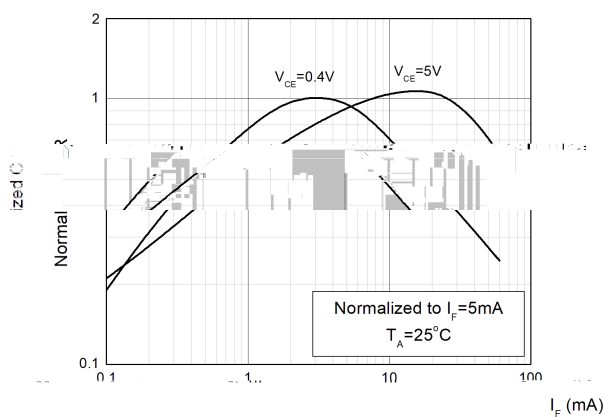


Fig. 8 Normalized Current Transfer Ratio vs. Ambient Temperature

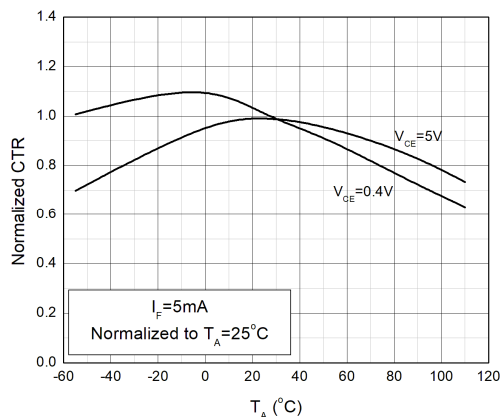


Fig. 9 Collector-Emitter Saturation Voltage vs. Ambient Temperature

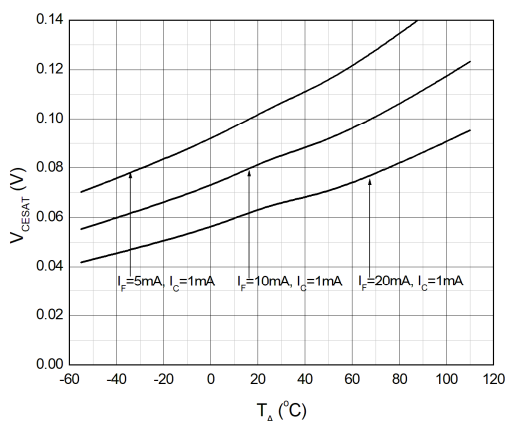


Fig. 10 Switching Time vs. Load Resistance

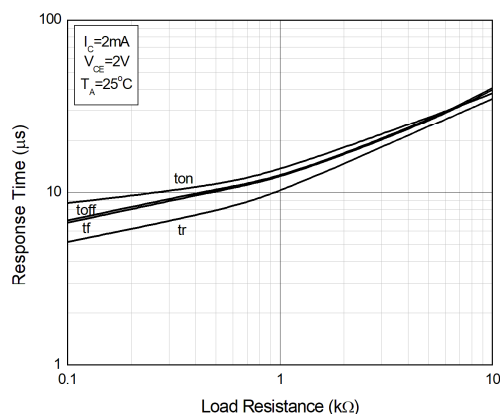
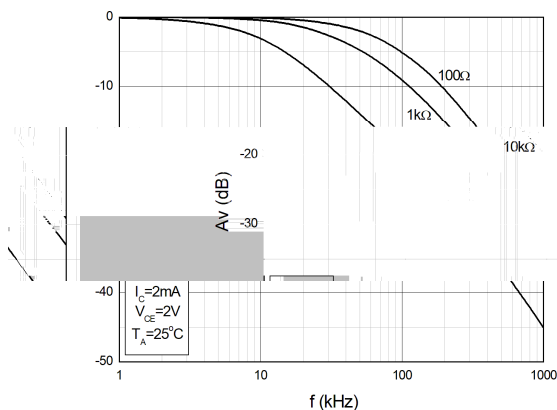


Fig. 11 Frequency Response





TEST CIRCUITS

Fig. 12 Test Circuit of Rise Time

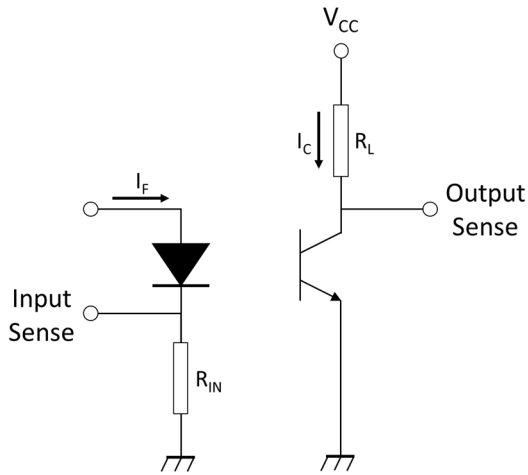


Fig. 13 Characteristic of Rise Time

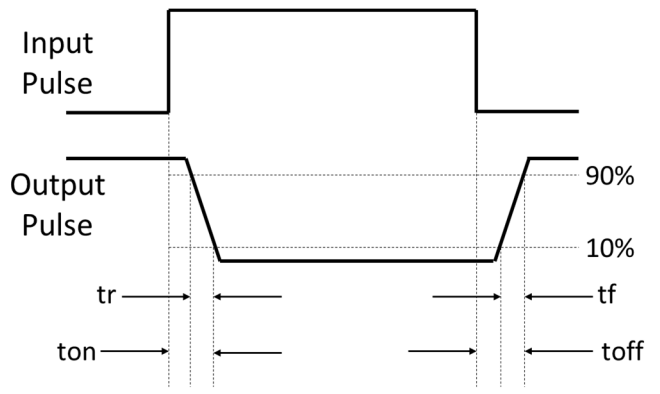
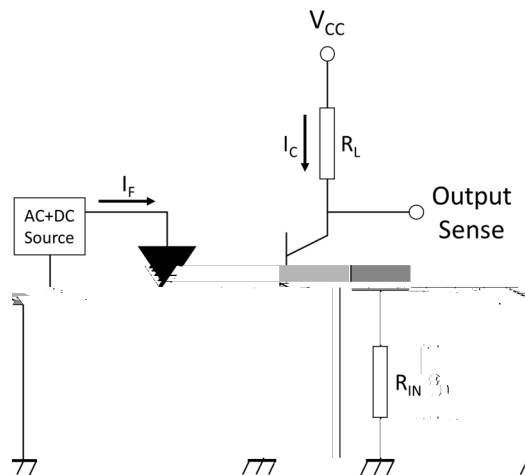
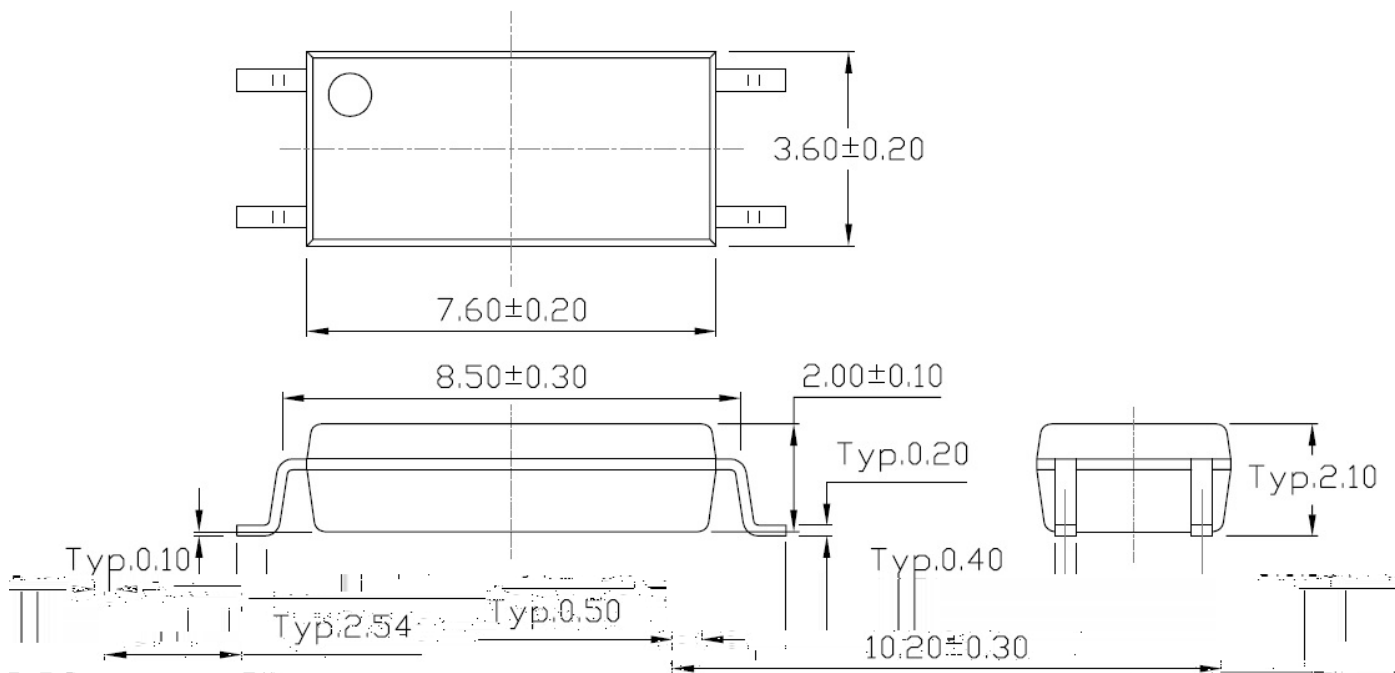


Fig. 14 Test Circuit of Frequency

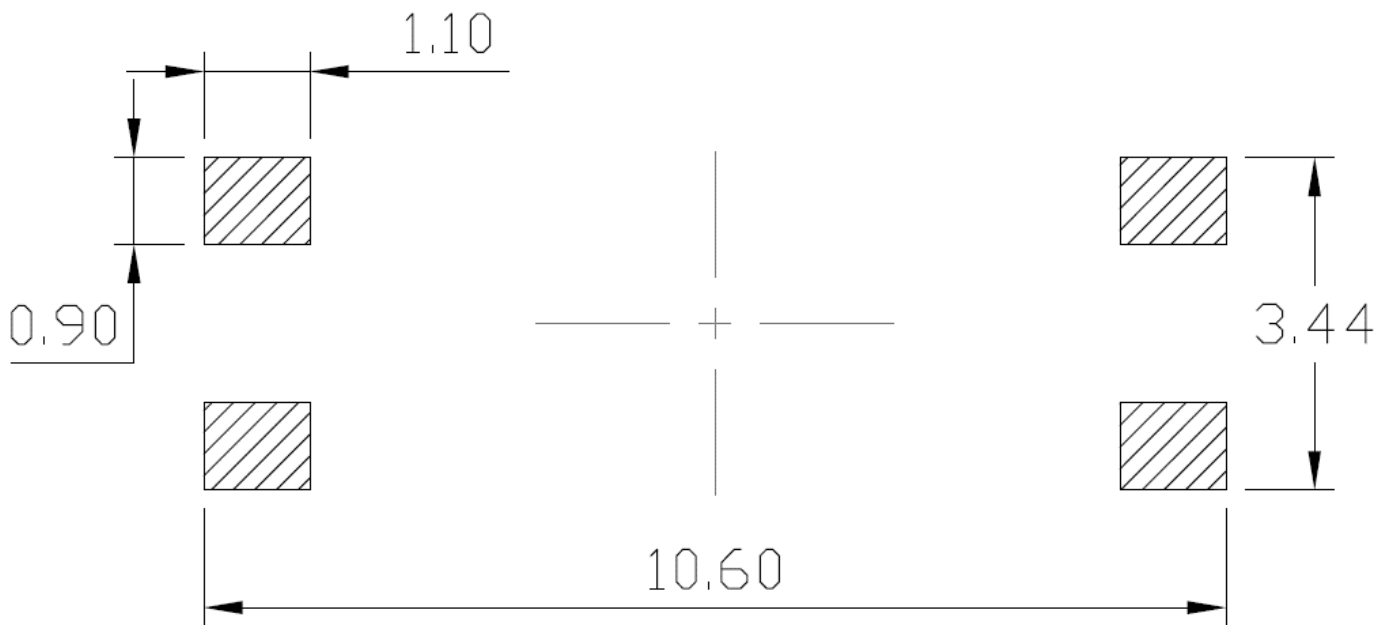




**PAC A E DIMENSIONS** Dimension\$ in mm &le\$\$ other / i\$e \$stated=



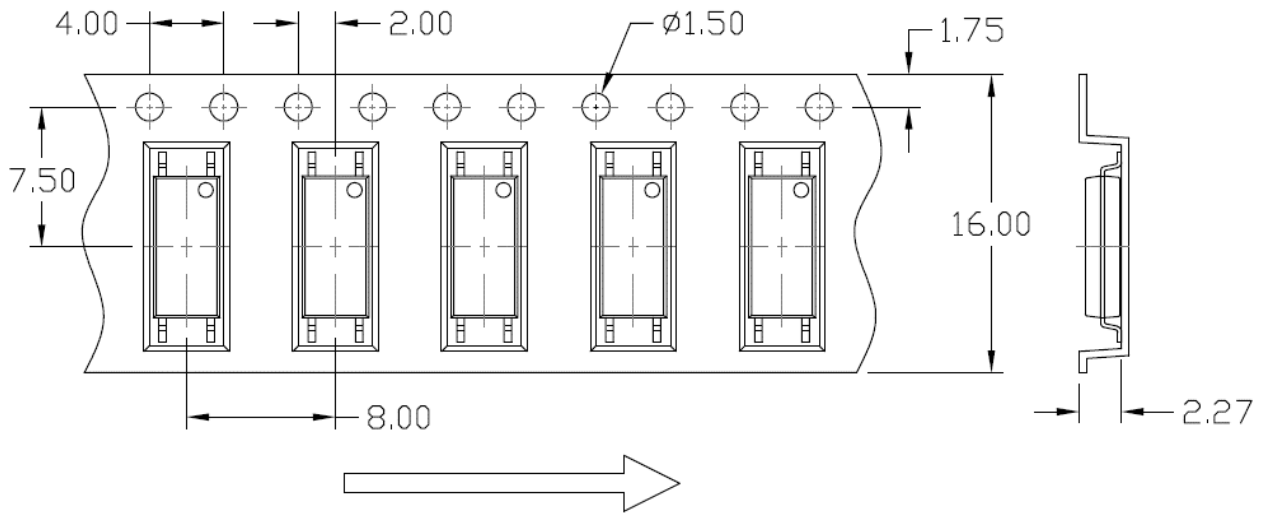
**RECOMMENDED SOLDER MASK** Dimension\$ in mm &le\$\$ other / i\$e \$stated=



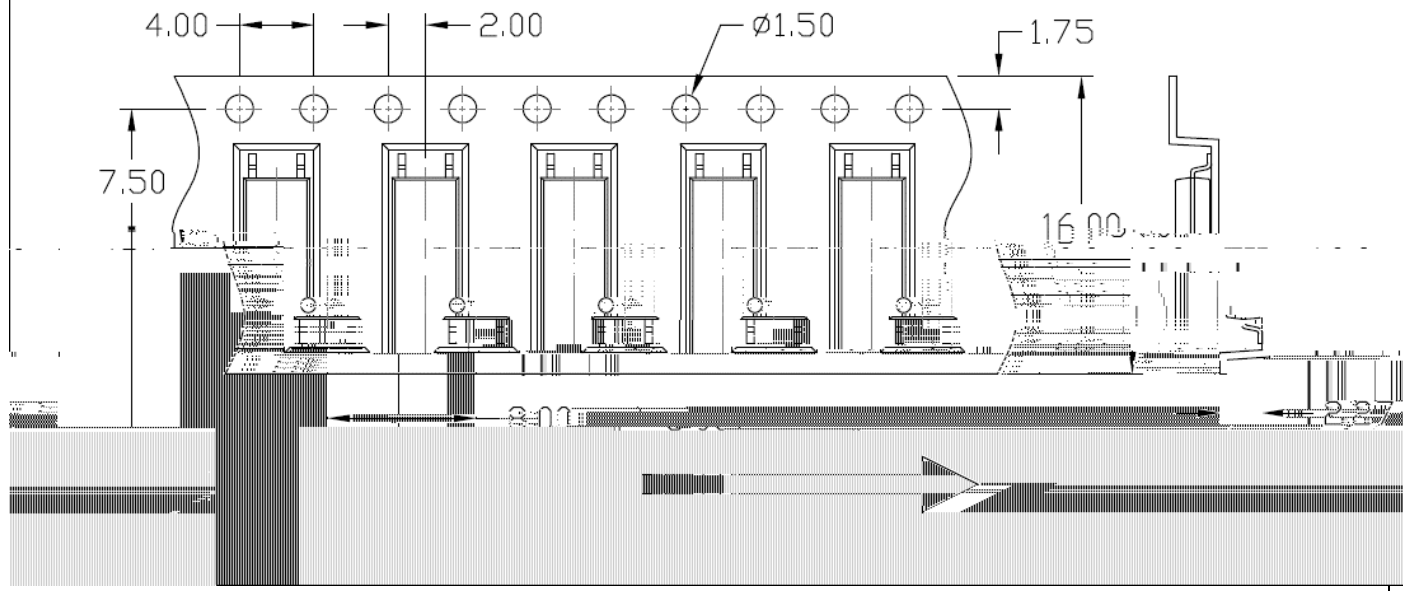


### CA) ) IE ) TAPE SPECIFICATIONS Dimension\$ in mm &nle\$\$ other / ise \$stated=

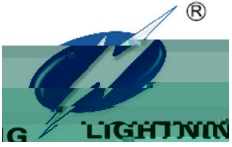
O%tion T1



O%tion T2

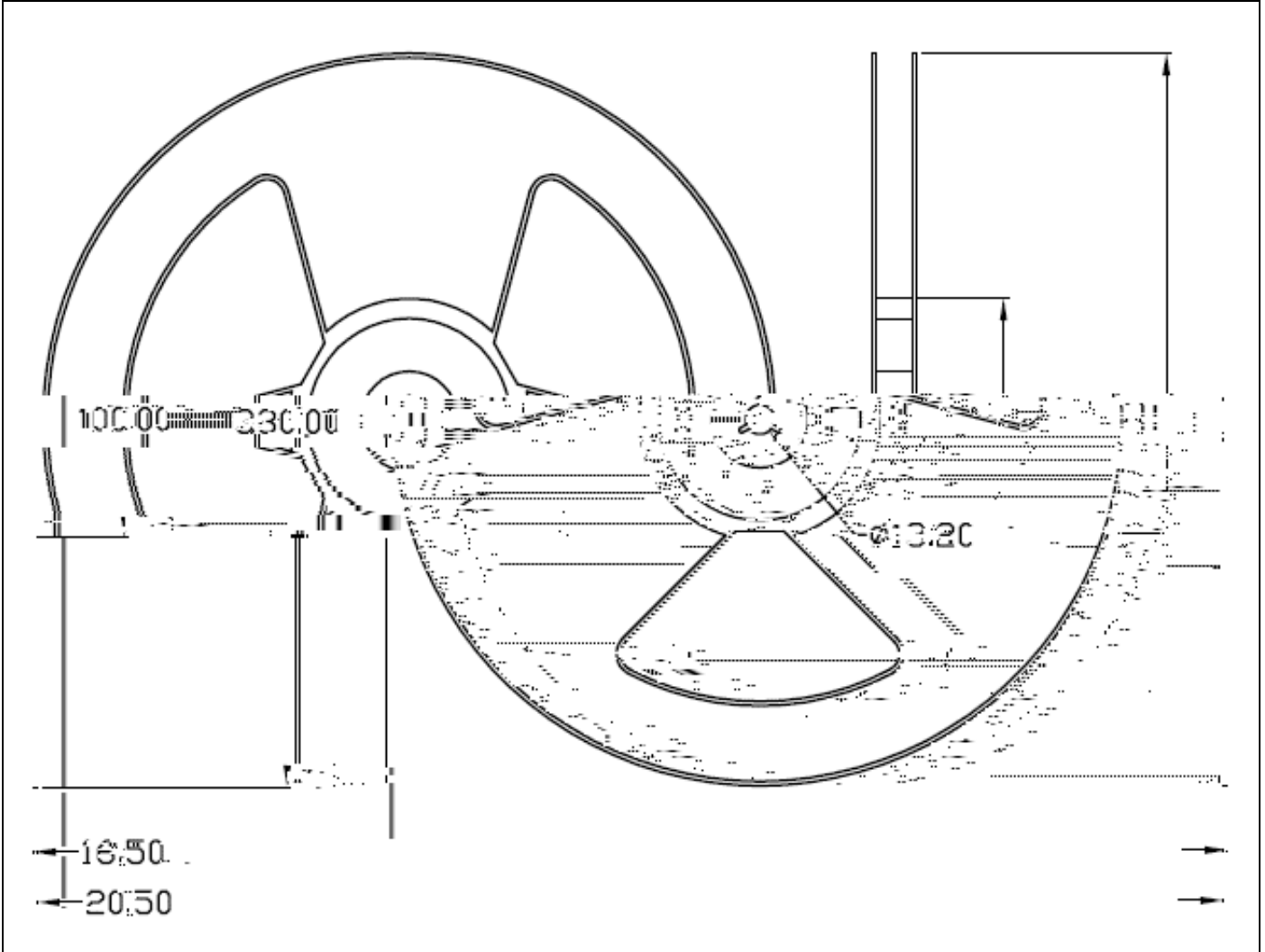






**MECHANICAL SPECIFICATIONS** Dimension in mm unless otherwise stated

Option T1 > T2





## LSOP4, DC Input, Photo Transistor Coupler

1. ELECTRICAL SPECIFICATIONS

Inner Pin

2.3W3 \* /-cm 3 /-cm 3 -.9cm



## LSOP4, DC Input, Photo Transistor Coupler

### OPTIONAL AND MAIN INFORMATION

#### MAIN INFORMATION



**TD**      @ Company Abbr.  
**1:1**     @ Part Number  
**-**        @ -DE Option  
**A**        @ Fiscal Year  
**A**        @ Manufacturing Code  
**BB**      @ B or B2

#### OPTIONAL INFORMATION

#### PACKAGE INFORMATION

**TD1:1 (CD=3! -**

**TD** : , company Abbr#  
**101X** : \*an" 60J1J?J=J!J(J5J3J7J<8  
**K** : Tape and \*eel Option 6T1JT?8  
**G** : Green  
**)** : )D1 Option 6) or 4one8

**福建天电光电有限公司**  
FUJIAN LIGHTNING OPTOELECTRONIC CO., LTD.

Part No : XXXXXXXXXXXX      Bin Code : X

Lot No : XXXXXXXXXXXX

Date Code : XXXX

Q'ty : XXXX pcs

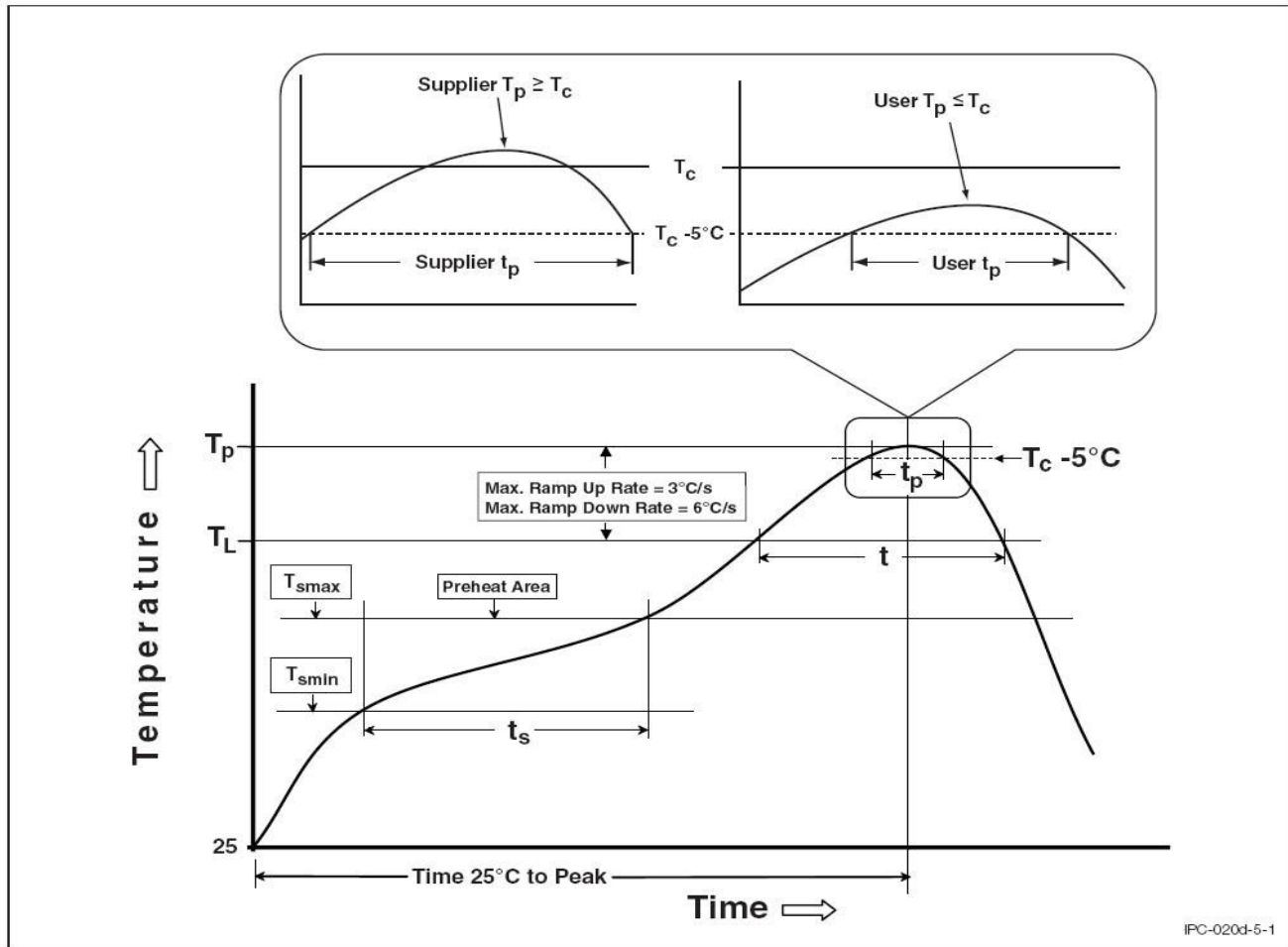
#### PACKAGE ANTIFLAG

Option	Antiflag	Antiflag Inner 1o?	Antiflag Outer 1o?
T1	=000 2nits! *eel	= *eels!Anner bo-	( Anner bo-JOuter bo- D ! (" 2nits
T?	=000 2nits! *eel	= *eels!Anner bo-	( Anner bo-JOuter bo- D ! (" 2nits



OPERATIONAL INFORMATION

OPERATIONAL INFORMATION



IPC-020d-5-1

Profile Feature	Sn3P1 Assembly Profile	P13Free Assembly Profile
Temperature +in# 6Tsmin8	100	1 (0/ ,
Temperature +a-# 6Tsma-8	1 (0	?00/ ,
Time 6ts8 from 6Tsmin to Tsma-8	50.1?0 seconds	50.1?0 seconds
* amp.up * ate 6tL to t 8	=/ , Jsecond ma-#	=/ , Jsecond ma-#
Liquidous Temperature 6TL8	17=/ ,	?13/ ,
Time 6tL8 + aintained Abo&e 6TL8	50 : 1 (0 seconds	50 : 1 (0 seconds
ea" ;ody ac"age Temperature	?=( / , L0/ , J.( / ,	?50/ , L0/ , J.( / ,
Time 6t 8 within ( / , of ?50/ ,	?0 seconds	=0 seconds
* amp.down * ate 6T to TL8	5/ , Jsecond ma-	5/ , Jsecond ma-
Time ?( / , to ea" Temperature	5 minutes ma-#	7 minutes ma-#



## LSOP4, DC Input, Photo Transistor Coupler

### DISC#AIME )

LAG ' T4A4G is continually improving the quality, reliability, function and design. LAG ' T4A4G reserves the right to make changes without further notices.

The characteristic curves shown in this datasheet are representing typical performance which are not guaranteed.

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This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or lifesaving applications or any other application which can result in human injury or death.

Please contact LAG ' T4A4G sales agent for special application request.

Immersion unit's body in solder paste is not recommended.

Parameters provided in datasheets may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated in each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify LAG ' T4A4G's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Discoloration might be occurred on the package surface after soldering, reflow or long time use. It neither impacts the performance nor reliability.