www.tdled.com

## De$cri%tion

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 LSO ! pac"age#
$ ith the robust coplanar double mold structure% TD101X series pro&ide the most stable isolation feature#

## Feat&re$

' igh isolation (000 ) * + S

, T * fle-ibility a&ailable see order information

D , input with transistor output

Operating temperature range . ( ( / , to 110 / ,

* o ' S 0 * 1A , ' , ompliance

+ SL class 1

* egulatory Appro&als

2L . 2L1(33

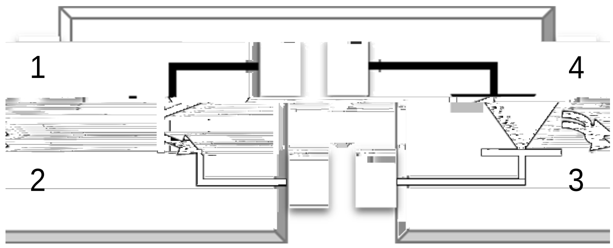
) D1 . 14503!3.(.(6) D1077!.(8

, 9 , : G ; !<!=#1% G ; 77<7

## A%%lication$

- Switch mode power supplies
- rogrammable controllers
- ' ousehold appliances
- Office e>uipment

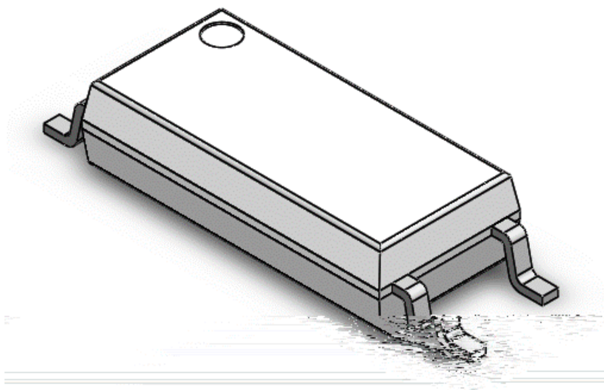
## SCHEMATIC




## PIN DEFINITION

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

## PAC A ! E O " T#INE



| A'SO#"TE MA(IM"M )ATIN!S | | | | |
|---|---|---|---|---|
| A*A+1T1* | S@+;OL | )AL21 | 24AT | 4OT1 |
| A4 2T | | | | |
| Borward ,urrent | AB | 50 | mA | |
| ea" Borward ,urrent | AB | 1 | A | 1 |
| *e&erse )oltage | )* | 5 | ) | |
| Anput ower Dissipation | A | 100 | m$ | |
| O2T 2T | | | | |
| ,ollector . 1mitter )oltage | ),1O | 70 | ) | |
| 1mitter . ,ollector )oltage | )1,O | 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, 100Hz frequency

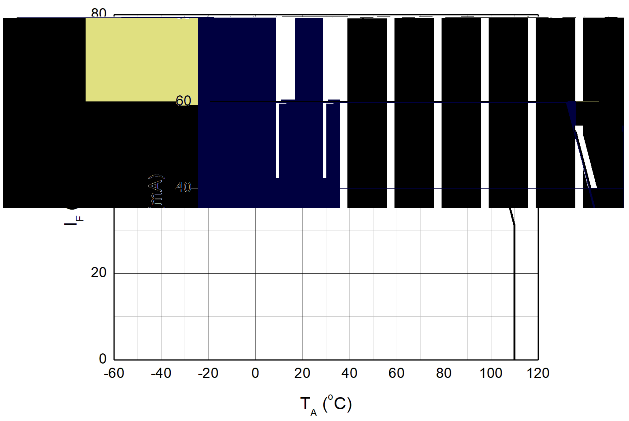
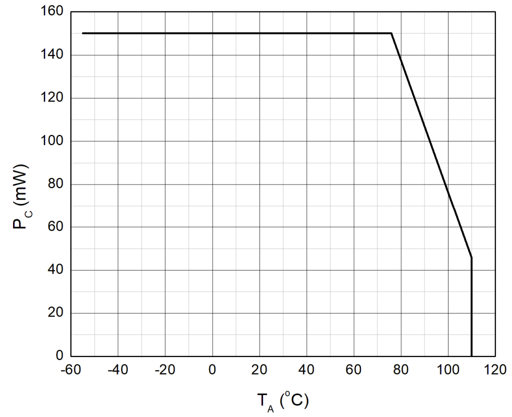
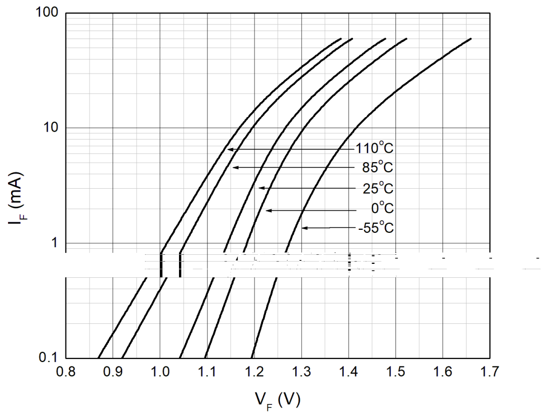
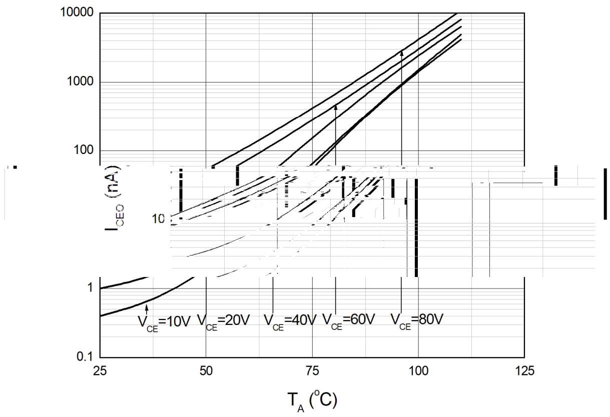
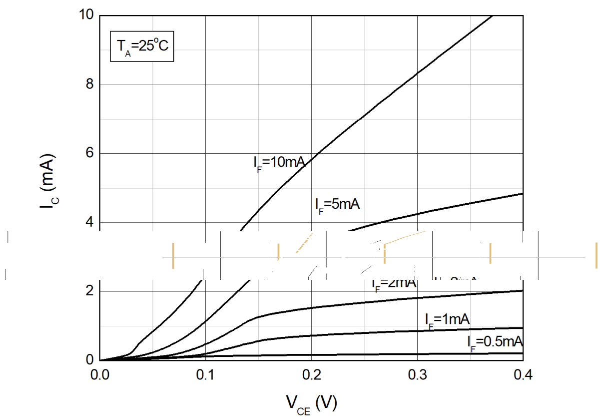
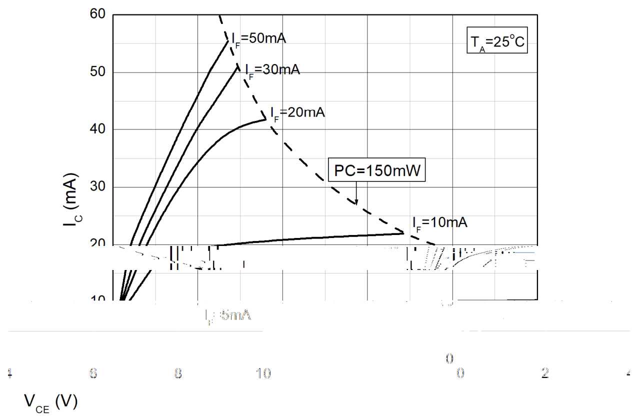
Note 2. AC For 1 Minute, R.H. = 40 ~ 60%

| E#ECT)ICA# OPTICA# CHA)ACTE)ISTICS at Ta*2+,C | | | | | | | |
|---|---|---|---|---|---|---|---|
| A*A+1T1* | S@+;OL | +A4# | T@ # | +AX# | 24AT | T1ST ,O4DATAO4 | 4OT1 |
| A4 2T | | | | | | | |
| Borward ) oltage | )B | . | 1#!( | 1#5 | ) | ABD(0mA | |
| *e&erse ,urrent | A* | . | . | 10 | EA | )*D5) | |
| Anput ,apacitance | ,in | . | =0 | ?(0 | pB | )D0% fD1" ' F | |
| O2T 2T | | | | | | | |
| ,ollector Dar" ,urrent | A,1O | . | . | 100 | nA | ),1D?0)% ABD0 | |
| ,ollector.1mitter ;rea"down )oltage | ;),1O | 70 | . | . | ) | A,D0#1mA% ABD0 | |
| 1mitter. ,ollector ;rea"down )oltage | ;)1,O | 3 | . | . | ) | A1D0#1mA% ABD0 | |
| T*A4SB1* ,'A*A,T1*ASTA,S | | | | | | | |
| ,urrent Transfer *atio TD1010 | ,T* | =00 | . | 500 | G | ABD(mA% ),1D() | |
| TD101( | | (0 | . | 1(0 | | | |
| TD1015 | | 100 | . | =00 | | | |
| TD1013 | | 70 | . | 150 | | | |
| TD1017 | | 1=0 | . | ?50 | | | |
| TD101< | | ?00 | . | !00 | | | |
| TD1011 | | 50 | . | =00 | | ABD10mA% ),1D() | |
| TD101? | | 5= | . | 1?( | | | |
| TD101= | | 100 | . | ?00 | | | |
| TD101! | | 150 | . | =?0 | | | |
| TD101? | | ?? | . | . | | ABD1mA% ),1D() | |
| TD101= | | =! | . | . | | | |
| TD101! | | (5 | . | . | | | |
| ,ollector.1mitter Saturation )oltage | ),16sat8 | . | 0#1 | 0#= | ) | ABD10mA% A,D1mA | |
| Asolation *esistance | *ASO | 10H1? | 10H1! | . | I | D,(00)% !0 C 50G *#'# | |
| Bloating ,apacitance | ,AO | . | 0#! | 1 | pB | )D0% fD1+ ' F | |
| ,ut.off Bre>uency | Bc | . | 70 | . | " ' F | ),1D?)% A,D?mA *LD100 I %.=d; | = |
| *esponse Time 6*ise8 | Tr | . | ( | 17 | Es | ),1D?)% A,D?mA *LD100 I | ! |
| *esponse Time 6Ball8 | Tf | . | 5 | 17 | Es | | ! |

Note 3. Fig.12&13

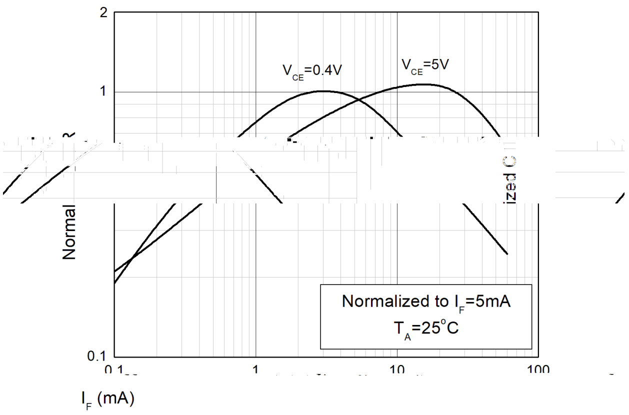
Note 4. Fig.14

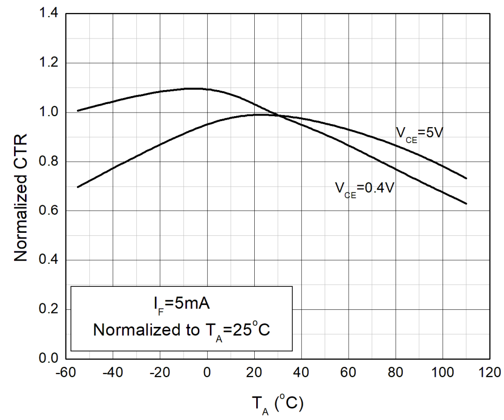
# CHA ) ACTE ) ISTIC C " ) - ES

| Fi . .1 For / ard C&rrent<br>0$. Am1ient Tem%erat&re | Fi . .2 Collector Po / er Di$$i%ation<br>0$. Am1ient Tem%erat&re |
|---|---|
|  |  |
| Fi . .3 For / ard C&rrent<br>0$. For / ard - olta . e | Fi . .4 Collector Dar2 C&rrent<br>0$. Am1ient Tem%erat&re |
|  |  |
| Fi . .+ Collector C&rrent<br>0$. Collector3emitter - olta . e | Fi . .4 Collector C&rrent<br>0$. Collector3emitter - olta . e |
|  |  |

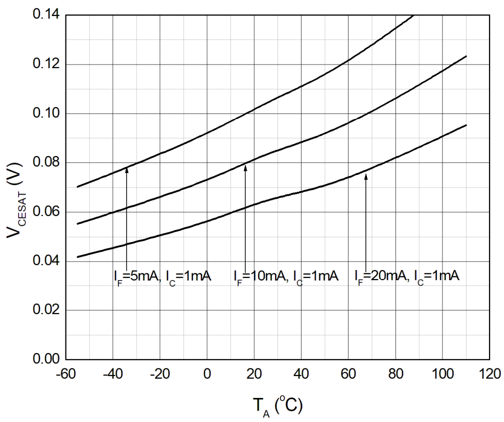
# CHA)ACTE)ISTIC C")-ES

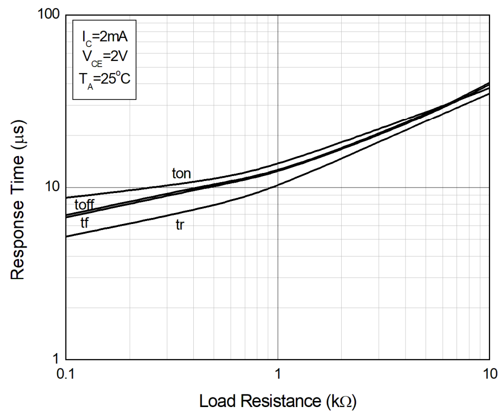
| Fi..5 Normali6ed C&rrent Tran$7er )atio 0$. For/ard C&rrent | Fi..8 Normali6ed C&rrent Tran$7er )atio 0$. Am1ient Tem%erat&re |
|---|---|



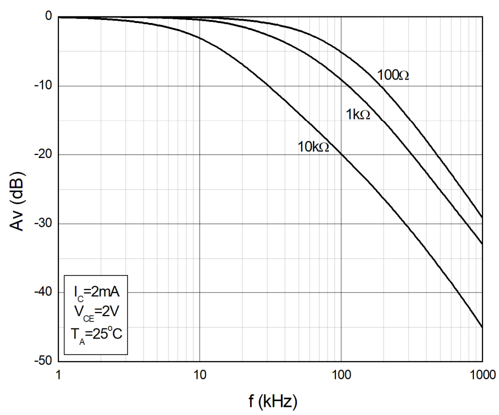



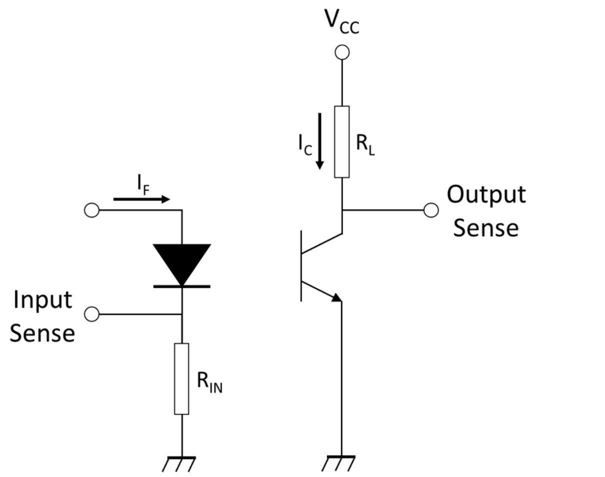
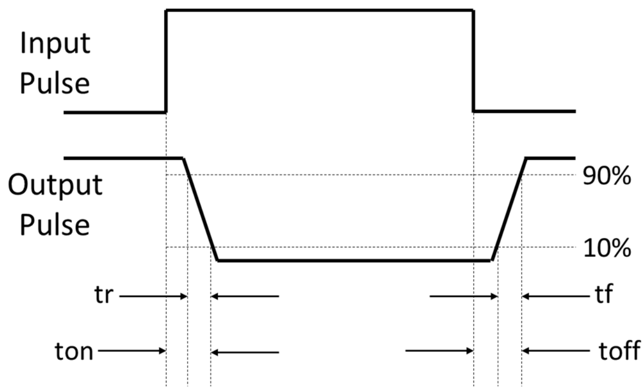
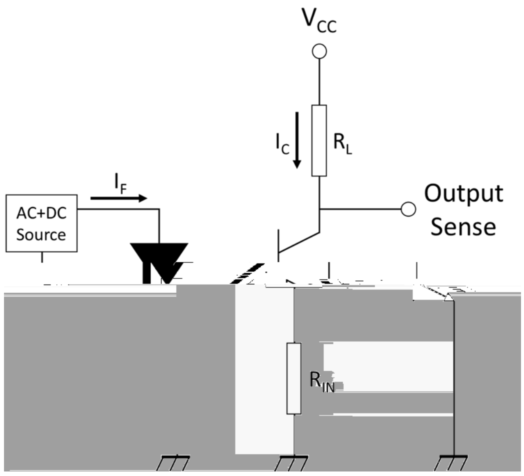

| Fi..9 Collector3emitter Sat&ration -olta.e 0$. Am1ient Tem%erat&re | Fi..1: S/itchin. Time 0$. #oad )e$i$tance |
|---|---|



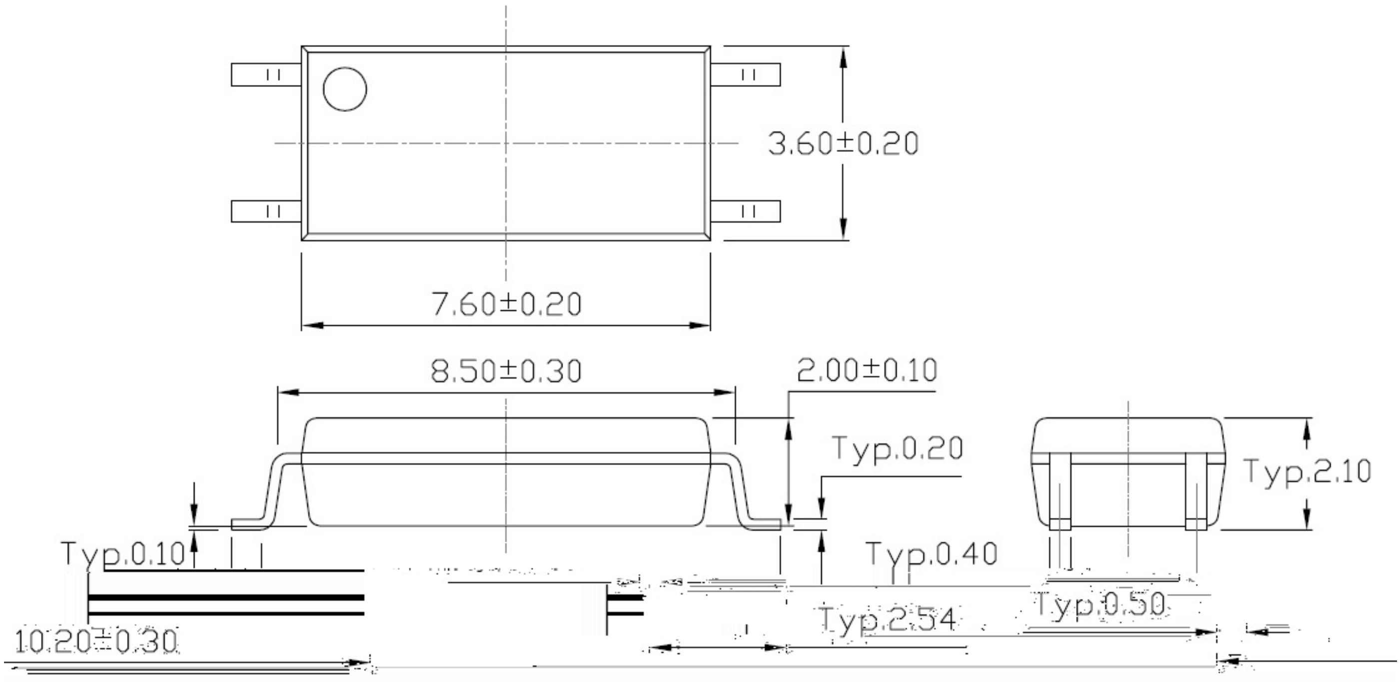




## Fi..11 Fre;&enc< )e$%on$e

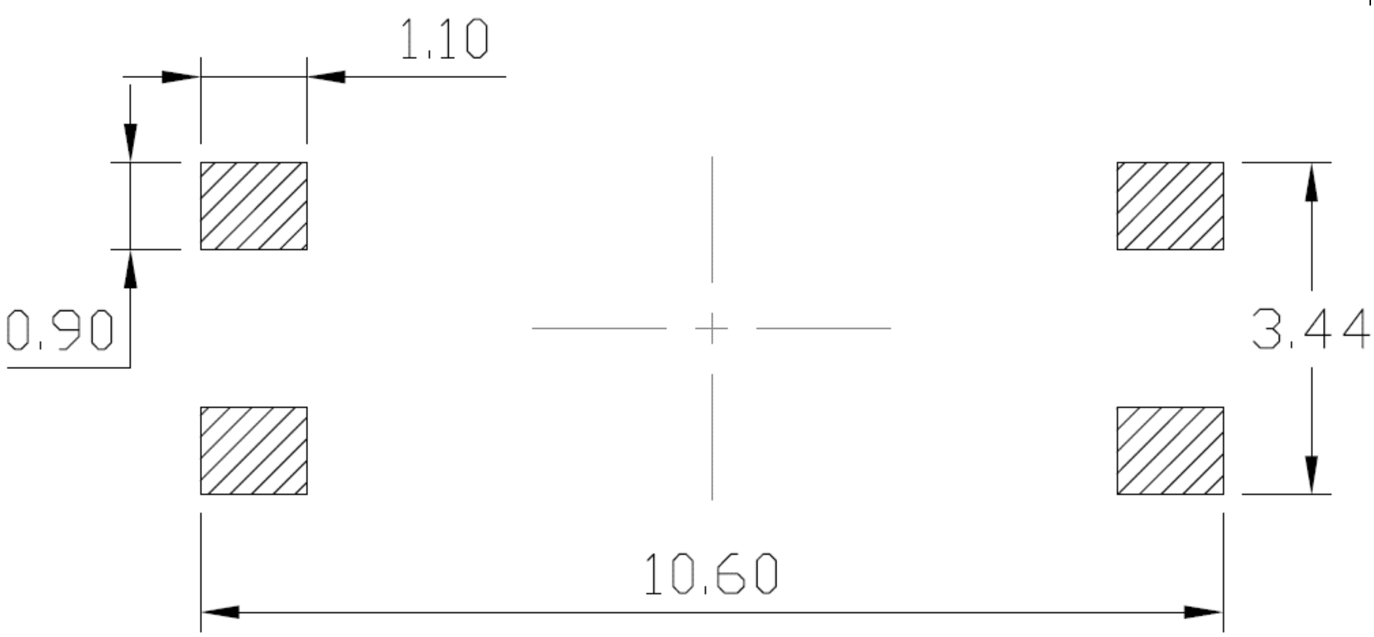


| TEST CI)C"ITS | |
|---|---|
| Fi..12 Te$t Circ&it$ o7 )e$%on$e Time | Fi..13 C&r0e$ o7 )e$%on$e Time |
|  |  |
| Fi..14 Te$t Circ&it$ o7 Fre;&enc< )e$%on$e | |
|  | |

## PAC A ! E DIMENSIONS (Dimen$ion$ in mm &nle$$ other / i$e $tated=

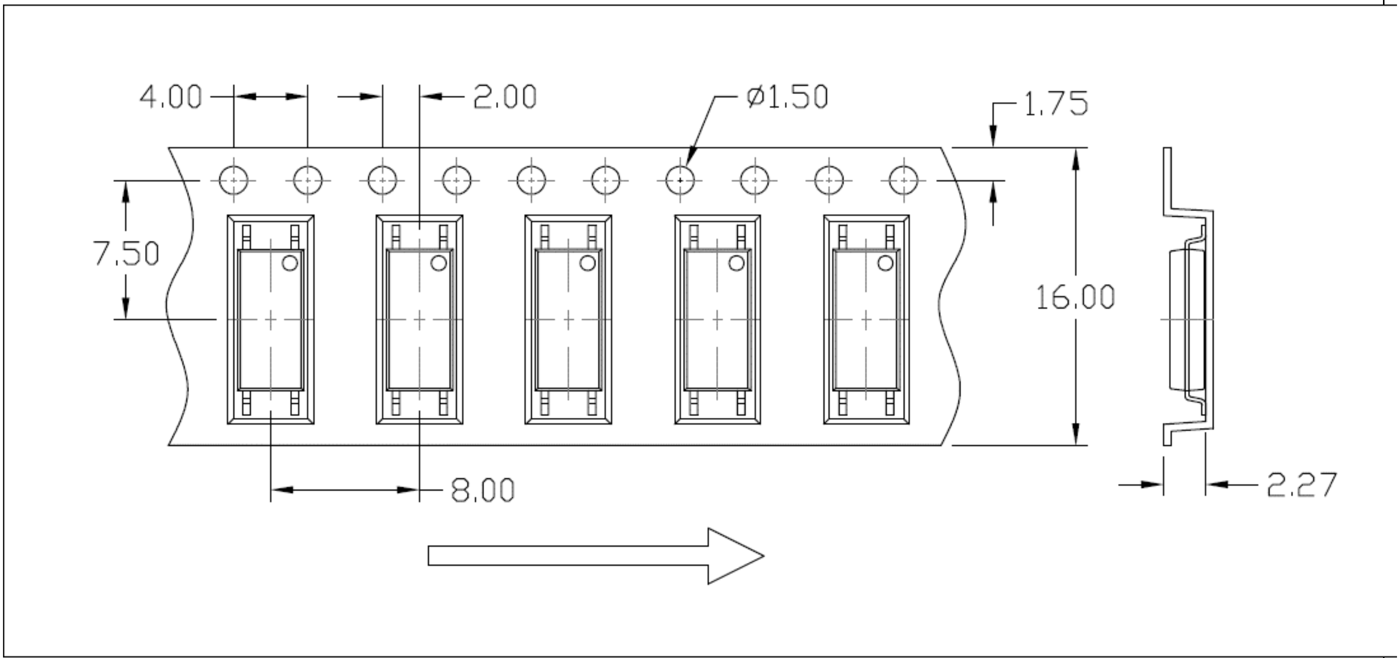



## ) ECOMMENDED SO#DE ) MAS (Dimen$ion$ in mm &nle$$ other / i$e $tated=

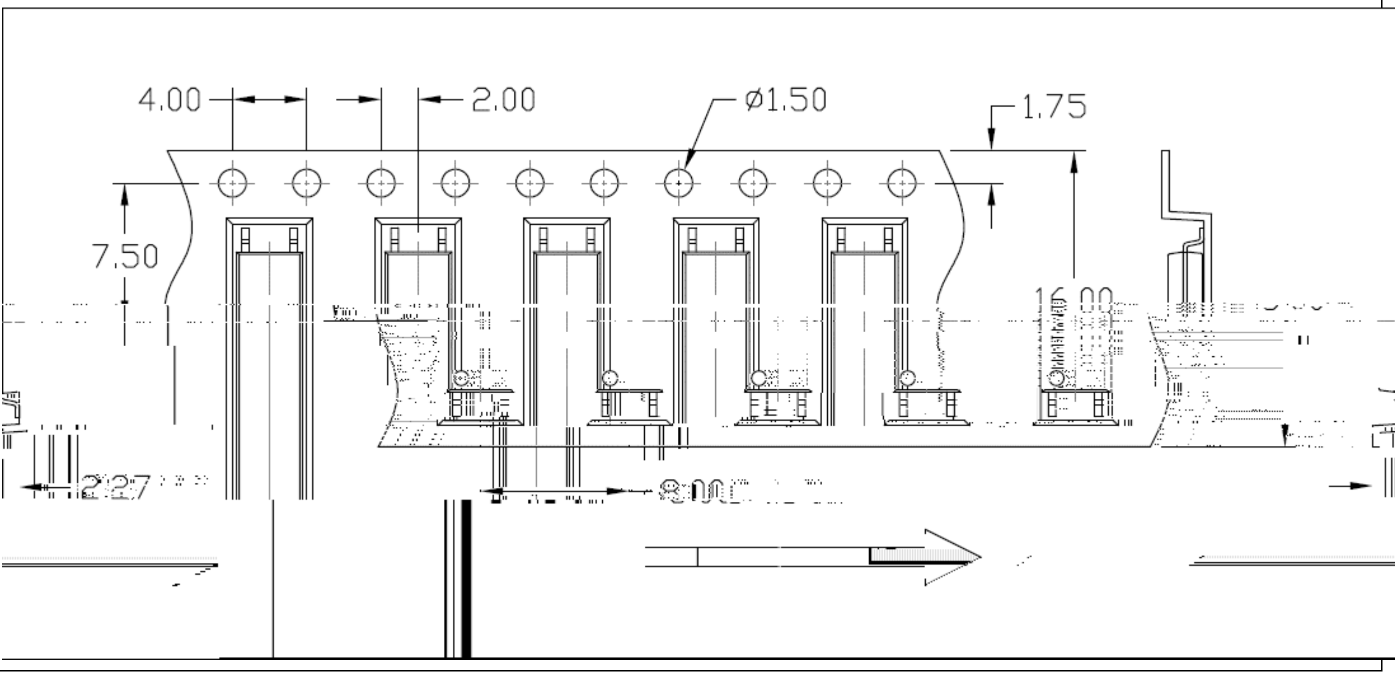


## CA))IE) TAPE SPECIFICATIONS (Dimen$ion$ in mm &nle$$ other / i$e $tated=

O%tion T1

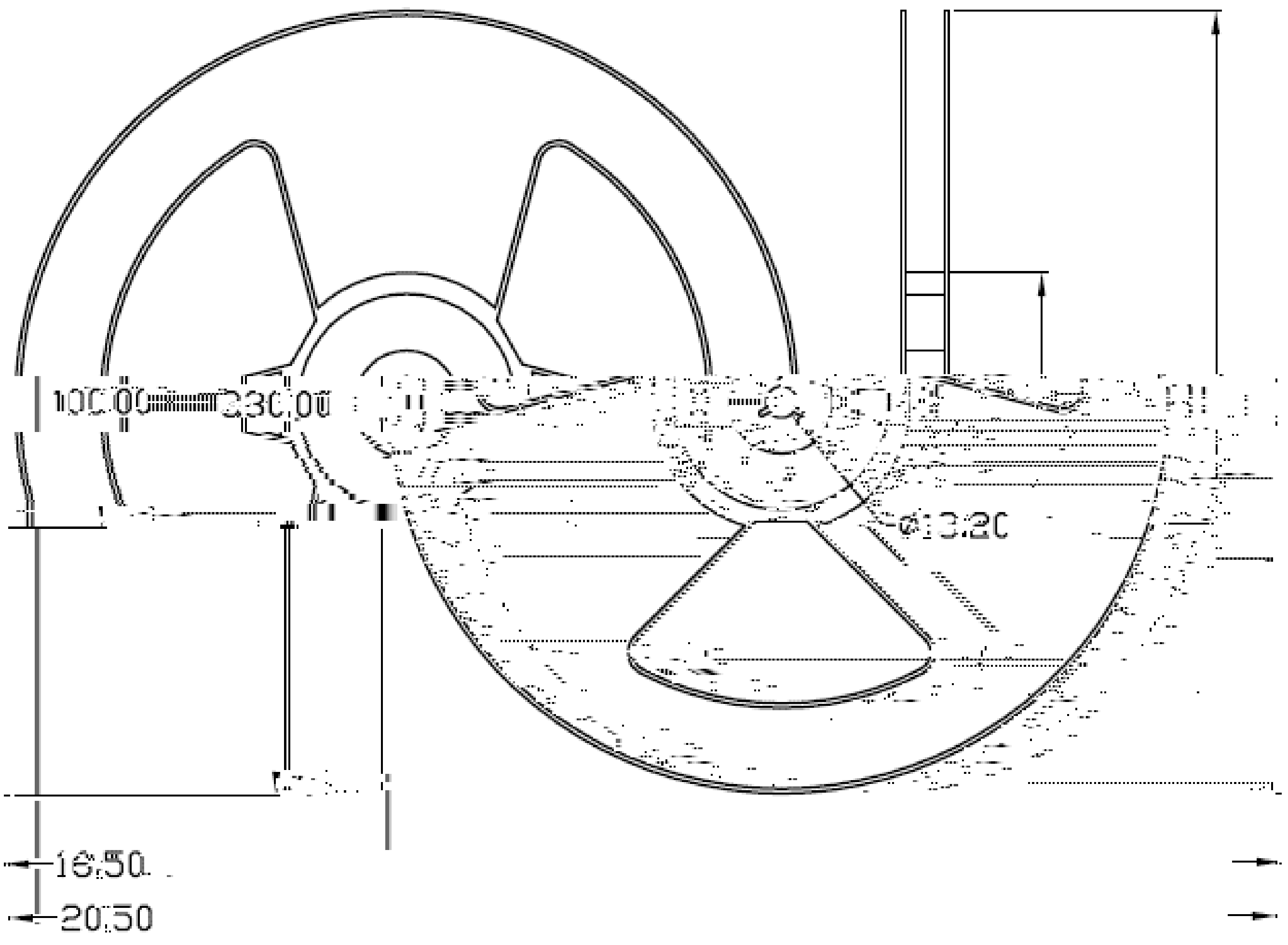



O%tion T2



## ) EE# SPECIFICATIONS (Dimen$ion$ in mm &nle$$ other / i$e $tated=

O%tion T1 > T2



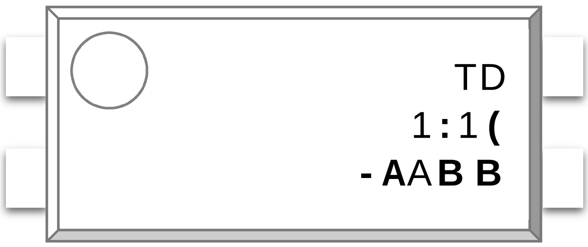
## ' O ( SPECIFICATIONS ( ) eel T<%e=

Inner ' o?

L x W x H = 36cm x 36cm x 6.9cm

## O)DE)IN! AND MA) IN! INFO)MATION

### MA) IN! INFO)MATION

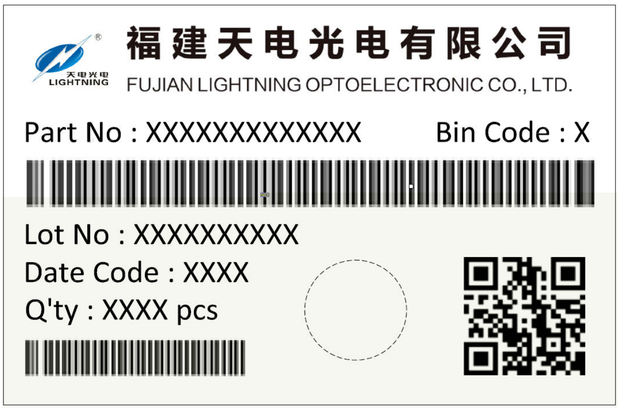



TD @Com%an< A11r.
1:1( @Part N&m1er > )an2
- @ -DE O%tion
A @Fi$cal Aear
A @Man&7act&rin. Code
B B @ Bor2 Bee2

| O)DE)IN! INFO)MATION | #A'E# INFO)MATION |
|---|---|
| | |

## TD1:1(CD=3! -

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

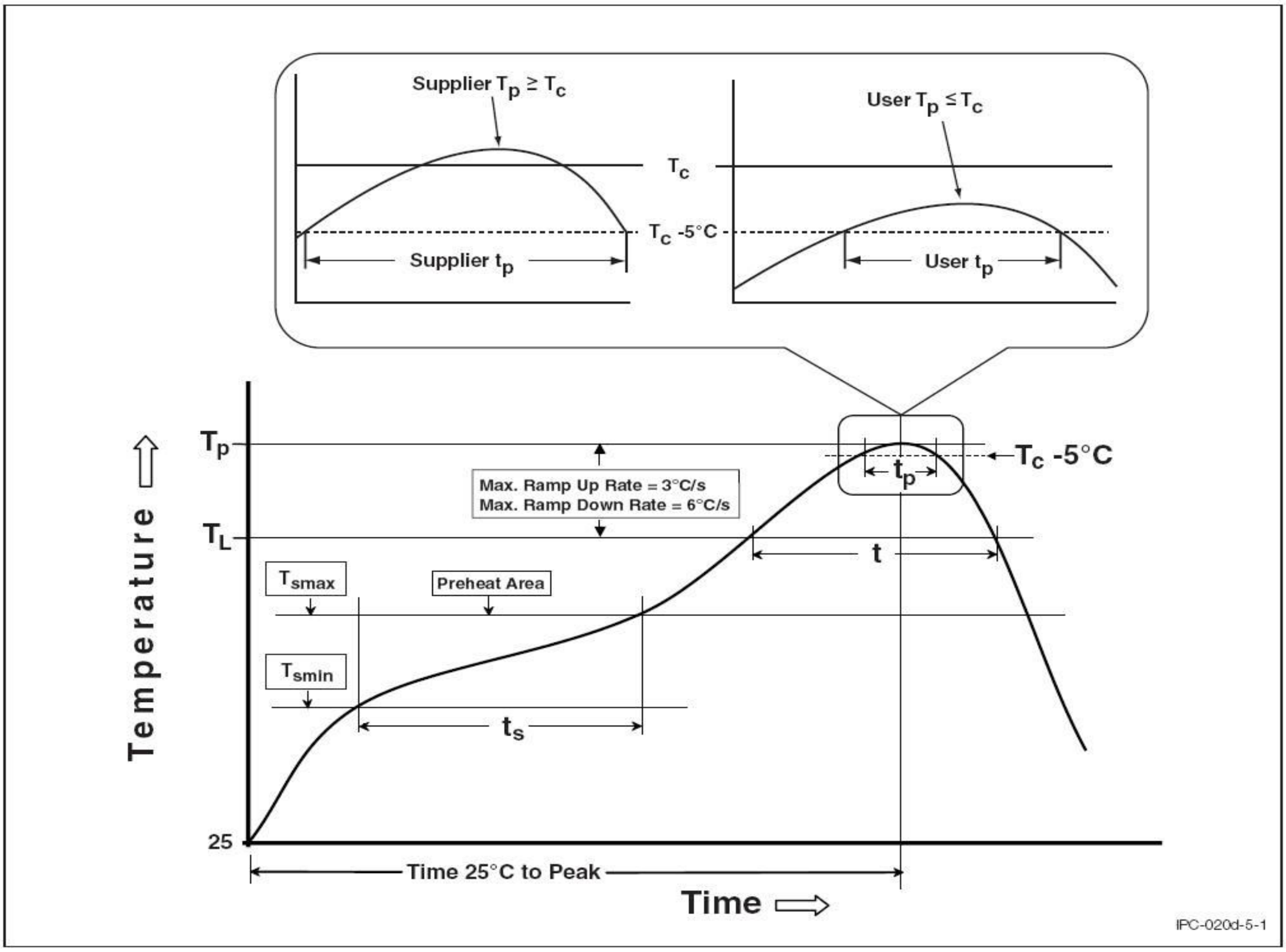



### PAC IN! E"ANTITA

| O%tion | E&antit< | E&antit< F Inner 1o? | E&antit< F O&ter 1o? |
|---|---|---|---|
| T1 | =000 2nitsJ*eel | = *eelsJAnner bo- | (Anner bo-JOuter bo- D!(" 2nits |
| T? | =000 2nitsJ*eel | = *eelsJAnner bo- | (Anner bo-JOuter bo- D!(" 2nits |

# )EF#OB INFO)MATION

## )EF#OB P)OFI#E




| Pro7ile Feat&re | Sn3P1 A$$em1l< Pro7ile | P13Free A$$em1l< Pro7ile |
|---|---|---|
| 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-# |
| Li>uidous 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-# |

# DISC#AIME)

LAG ' T4A4G is continually impro&ing the >uality% reliability% function and design# LAG ' T4A4G reser&es the right to ma"e changes without further notices#

The characteristic cur&es shown in this datasheet are representing typical performance which are not guaranteed#

LAG ' T4A4G ma"es no warranty% representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product# To the ma-imum e-tent permitted by applicable law% LAG ' T4A4G disclaims 6a8 any and all liability arising out of the application or use of any product% 6b8 any and all liability% including without limitation special% conse>uential or incidental damages% and 6c8 any and all implied warranties% including warranties of fitness for particular

The products shown in this publication are designed for the general use in electronic applications such as office automation% e>uipment% communications de&ices% audioJ&isual e>uipment% electrical application and instrumentation purpose% non.infringement and merchantability#

This product is not intended to be used for military% aircraft% automoti&e% medical% life sustaining or lifesa&ing applications or any other application which can result in human inlury or death#

lease contact LAG ' T4A4G sales agent for special application re>uest#

Ammerge unitls body in solder paste is not recommended#

arameters pro&ided in datasheets may &ary in different applications and performance may &ary o&er time# All operating parameters% including typical parameters% must be &alidated in each customer application by the customerls technical e-perts# roduct specifications do not e-pand or otherwise modify LAG ' T4A4Gls terms and conditions of purchase% including but not limited to the warranty e-pressed therein#

Discoloration might be occurred on the pac"age surface after soldering% reflow or long.time use# At neither impacts the performance nor reliability#