



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 LSO package with the robust coplanar double mold structure. TD101X series provide the most stable isolation feature.

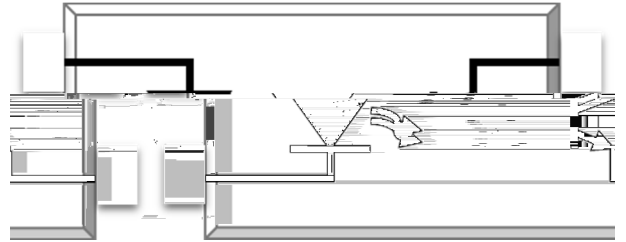
Features

- High isolation (000) * +S
- Temperature stability available see order information
- D, input with transistor output
- Operating temperature range . (/ , to 110 / ,
- $I_{SO} \leq 1A$, , compliance
- +SL class 1
- Regulatory Approvals
 - 2L . 2L1(33)
 -)D1 . 14503!3.(. (6)D1077!. (8
 - , 9 , : G ; !< !=#1% G ; 77<7

Applications

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

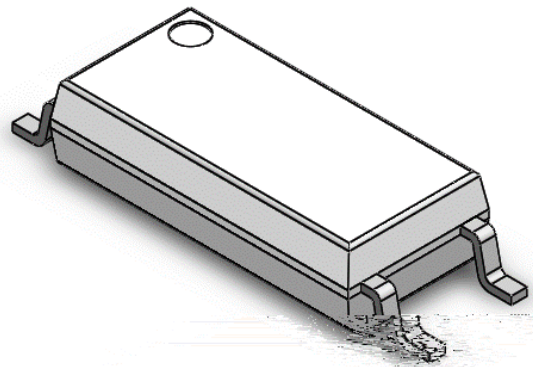
SCHEMATIC



PIN DEFINITION

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

PAC A ! E O " T # I N E





A ' SO# " TE MA (IM " M) ATIN ! S

A * A + 1 T1 *	S@+ ; OL	) AL21	24AT	4OT1
A4 2T				
Borward , urrent	A _B	50	mA	
ea" Borward , urrent	A _B	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	/ ,	



ELECTRONIC OPTICAL CHARACTERISTICS at Ta=25°C

A ₁ A ₂ T1 *		S _{OL} ; OL	+A4#	T@ #	+AX#	24AT	T1ST , O4DATAO4	4OT1
A4 2T								
Forward Voltage	V _B	.	1#!	(1#5	)		V _{BD} (0mA	
Reverse Current	I _A *	.	.	10	EA		μA(D5)	
Input Capacitance	C _{in}	.	=0	?	(0 pB		μs(D0% fD1 " ' F	
O2T 2T								
Collector Dark Current	I _A ,10	.	.	100	nA		μA(,1D?0)% V _{BD} 0	
Collector Emitter Saturation Voltage	V _{CE} ; V _{BE} ,10	70	.	.	)		V _{CE} , D0#1mA% V _{BD} 0	
Emitter Saturation Voltage	V _{BE} ; V _{CE} ,1,0	3	.	.	)		V _{BE} , D0#1mA% V _{BD} 0	
T* A4SB1* , 'A*A, T1*ASTA, S								
Current Transfer Ratio	TD1010	T*	=00	.	500	G	V _{BD} (mA%) ,1D()	
	TD101(		(0	.	1(0			
	TD1015		100	.	=00			
	TD1013		70	.	150			
	TD1017		1=0	.	?50			
	TD101<		?00	.	!00			
	TD1011		50	.	=00		V _{BD} 10mA%) ,1D()	
	TD101?		5=	.	1?(
	TD101=		100	.	?00			
	TD101!		150	.	=?0			
	TD101?		??	.	.			
	TD101=		=!	.	.			V _{BD} 1mA%) ,1D()
TD101!	(5	.	.					
Collector Emitter Saturation Voltage	V _{CE} , 16sat8	.	0#1	0#=	)		V _{CE} D10mA% V _{BE} D1mA	
Isolation Resistance	R _{ISO} *	10H1?	10H1!	.	Ω		Ω, (00)% !0 C 50G *# '#	
Bloating Capacitance	C _{AO}	.	0#!	1	pB		μs(D0% fD1 + ' F	
Cutoff Frequency	f _C	.	70	.	" ' F		μs(,1D?)% V _{BE} , D?mA *LD100 I %.=d;	=
Response Time (rise)	t _r	.	(	17	Es		μs(,1D?)% V _{BE} , D?mA	!
Response Time (fall)	t _f	.	5	17	Es		*LD100 I	!



CHARACTERISTICS - ES

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

Fi..+ Collector C&rrent
0\$. Collector3emitter -olta .e

Fi..4 Collector C&rrent



CHARACTERISTIC CURVES

Fig. 5 Normalized Current Transfer Ratio vs. Base Current

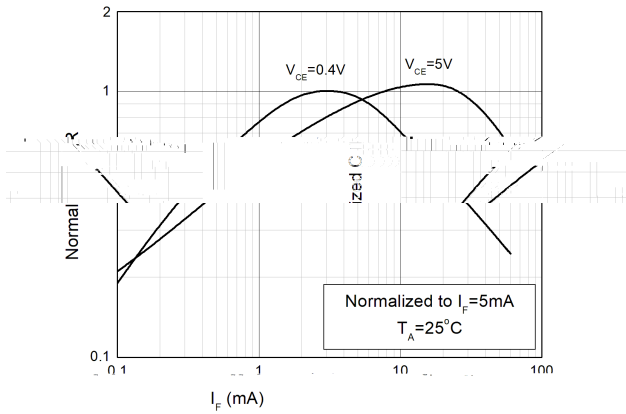


Fig. 8 Normalized Current Transfer Ratio vs. Ambient Temperature

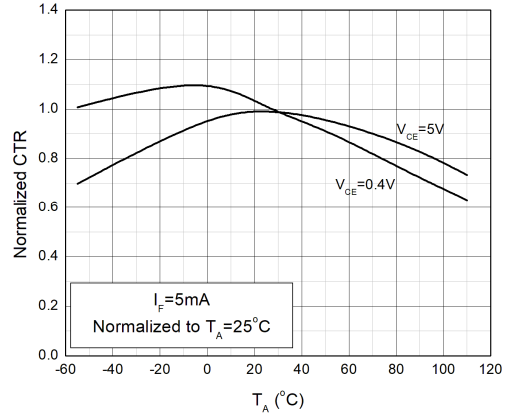


Fig. 9 Collector-Emitter Saturation Voltage vs. Ambient Temperature

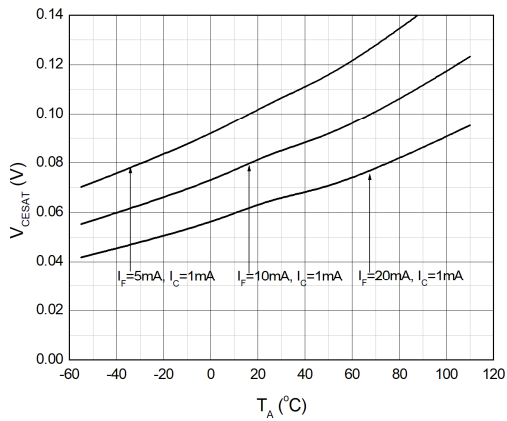


Fig. 10 Switching Time vs. Load Resistance

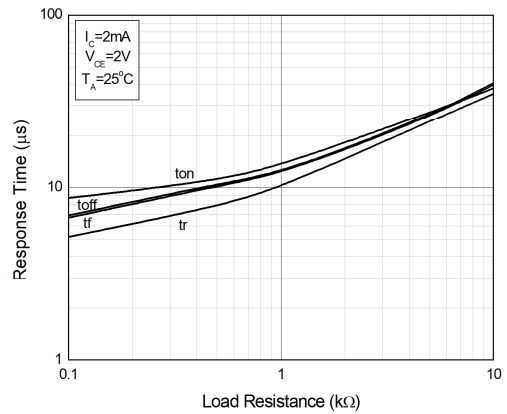
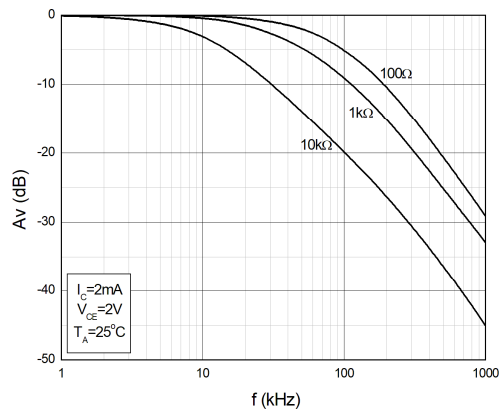


Fig. 11 Frequency Response



TEST CIRCUITS

Fig. 12 Test Circuit of Forward Time

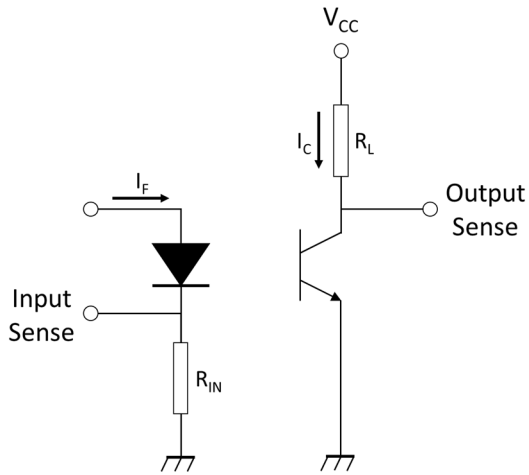


Fig. 13 Characteristic of Forward Time

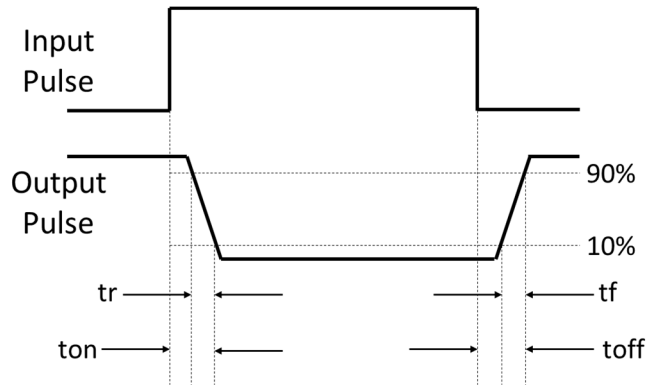
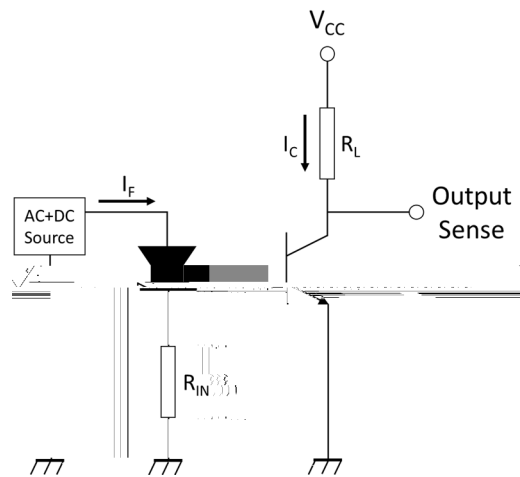
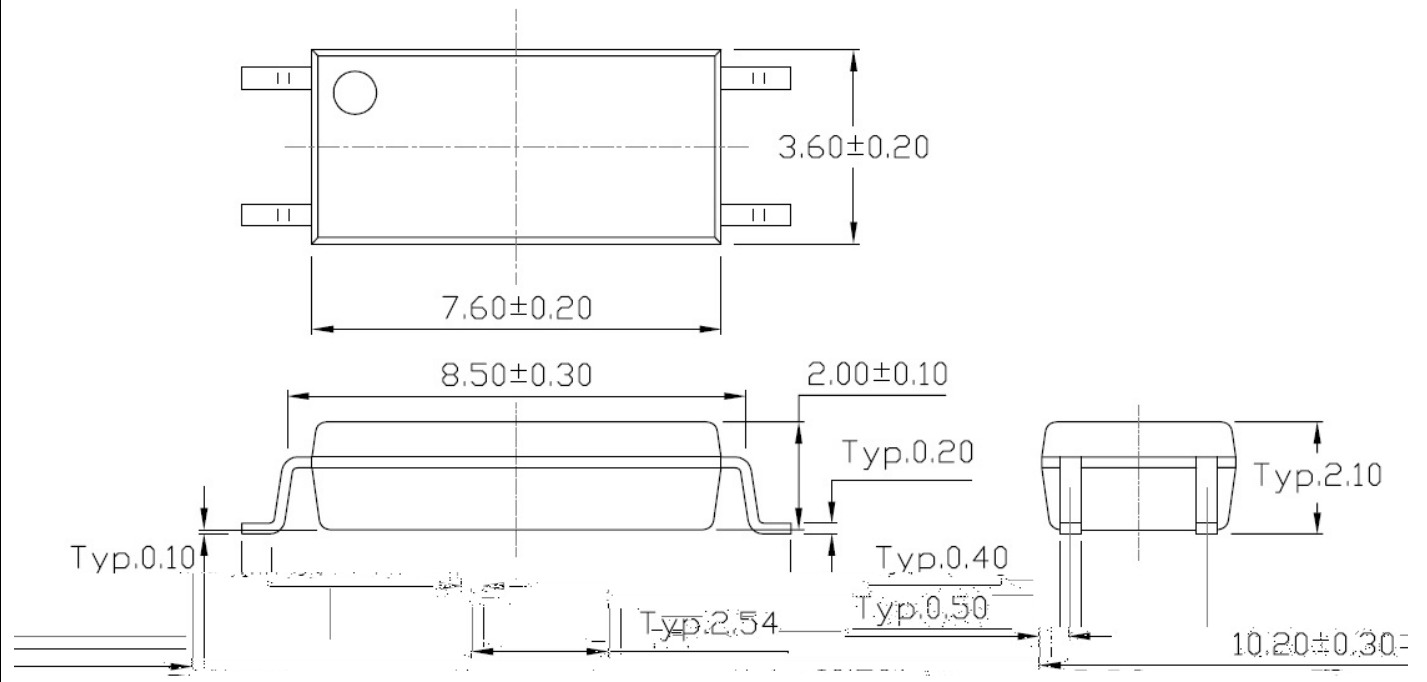


Fig. 14 Test Circuit of Frequency

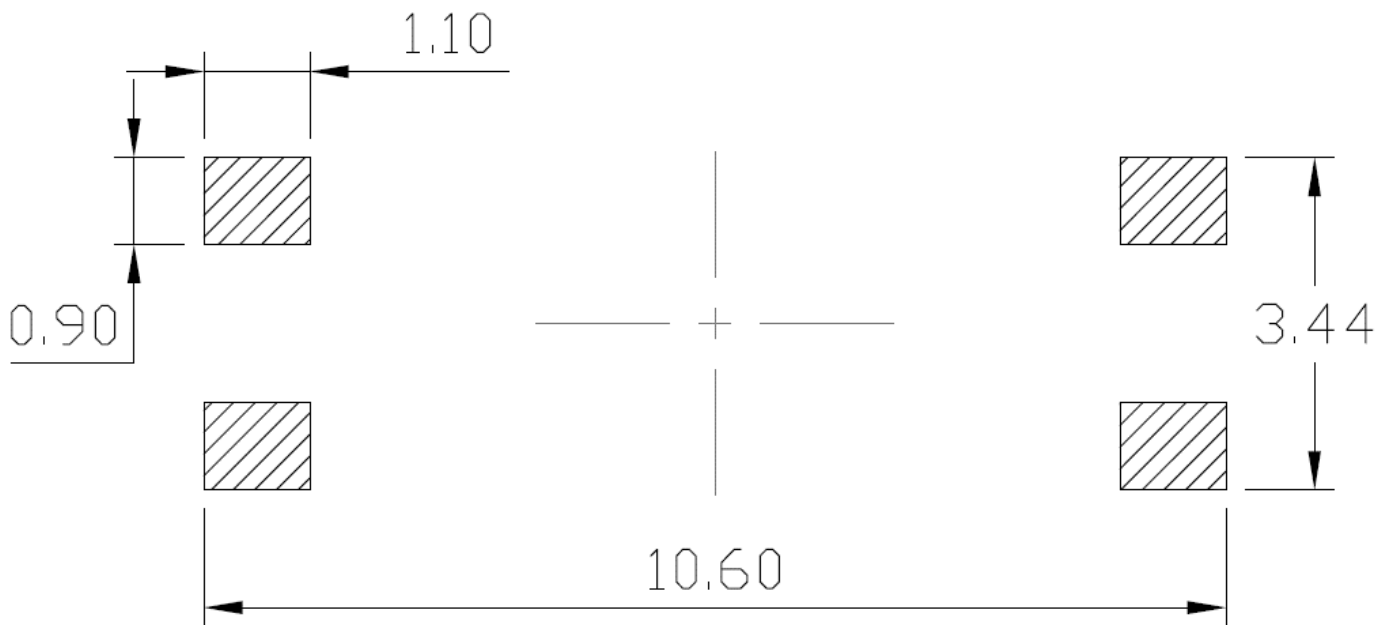




PAC A! E DIMENSIONS Dimension\$ in mm & nle\$\$ other / i\$e \$tated=

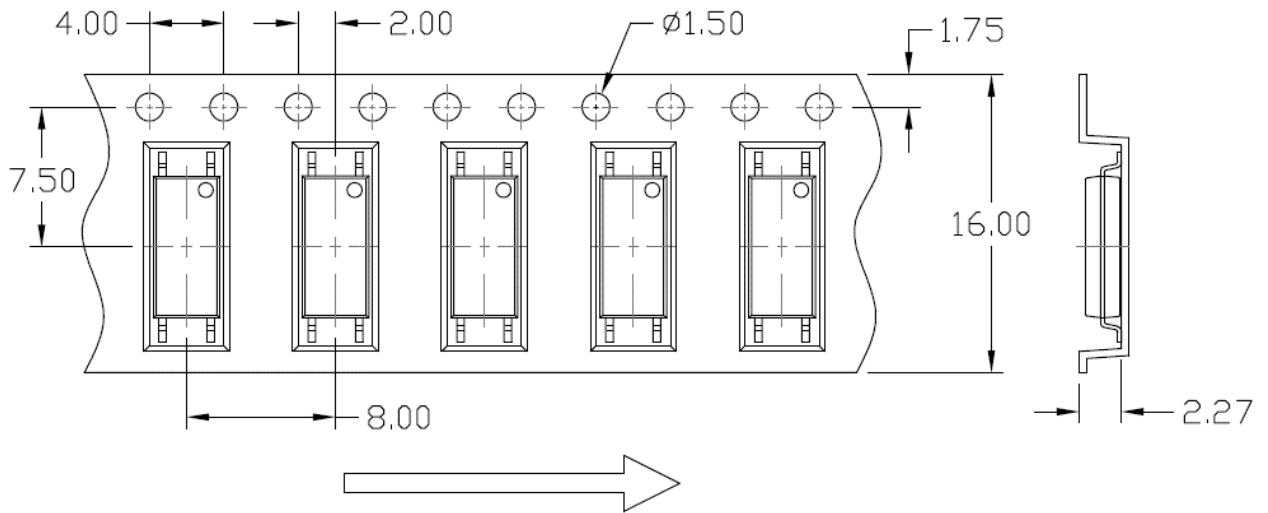


RECOMMENDED SIDE MOUNTING DIMENSIONS Dimension\$ in mm & nle\$\$ other / i\$e \$tated=

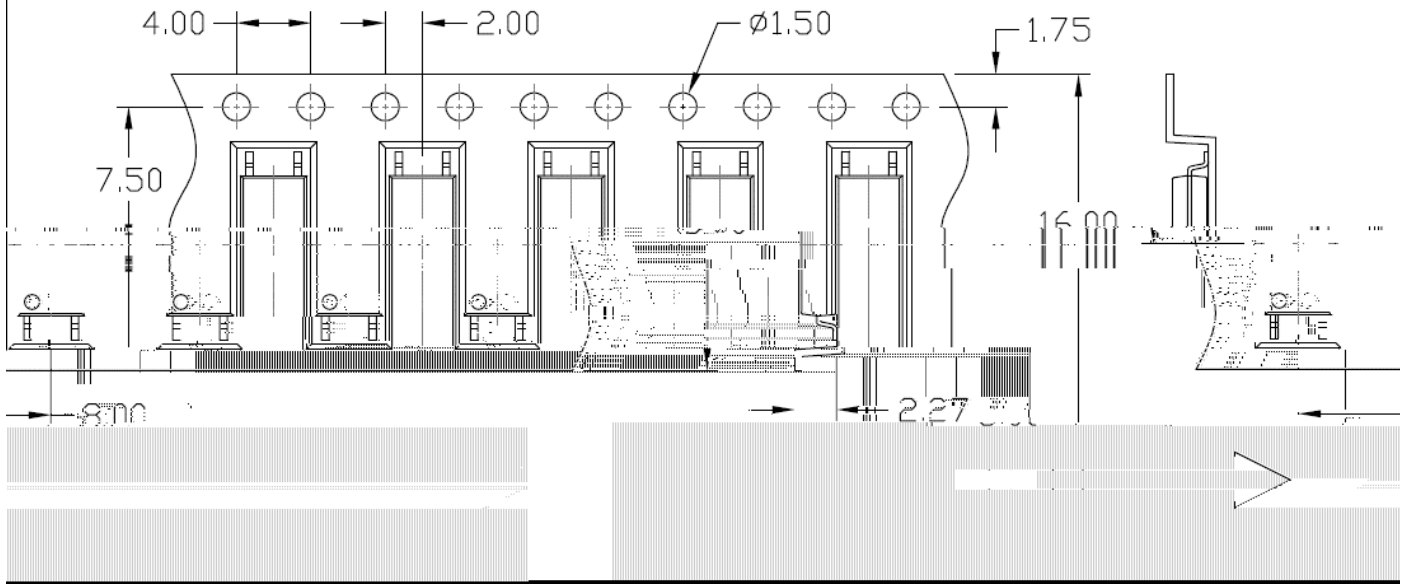


CA))IE) TAPE SPECIFICATIONS Dimension\$ in mm &nle\$\$ other / ise \$stated=

O%tion T1



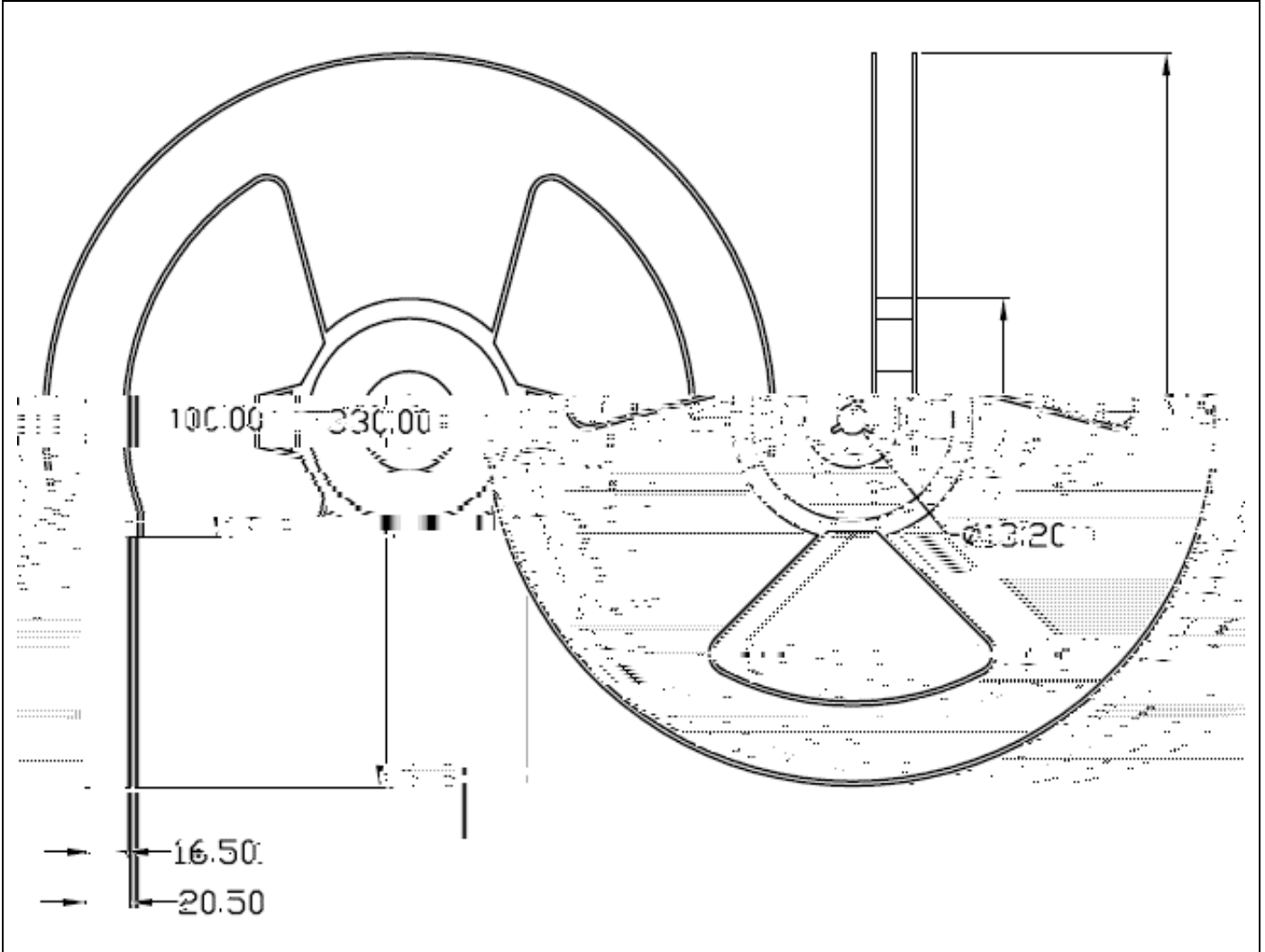
O%tion T2

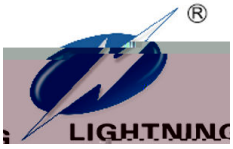




EE# SPECIFICATIONS Dimension\$ in mm &nle\$\$ other / i\$e \$tated=

O%tion T1 > T2





' O (SPECIFICATIONS) eel T<%e=

Inner ' o?

O&ter ' o?

OPTION AND MAIN INFORMATION

MAIN INFORMATION




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

OPTION INFORMATION

FEATURE 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.

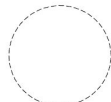


Part No : XXXXXXXXXXXX Bin Code : X



Lot No : XXXXXXXXXXXX

Date Code : XXXX

Q'ty : XXXX pcs

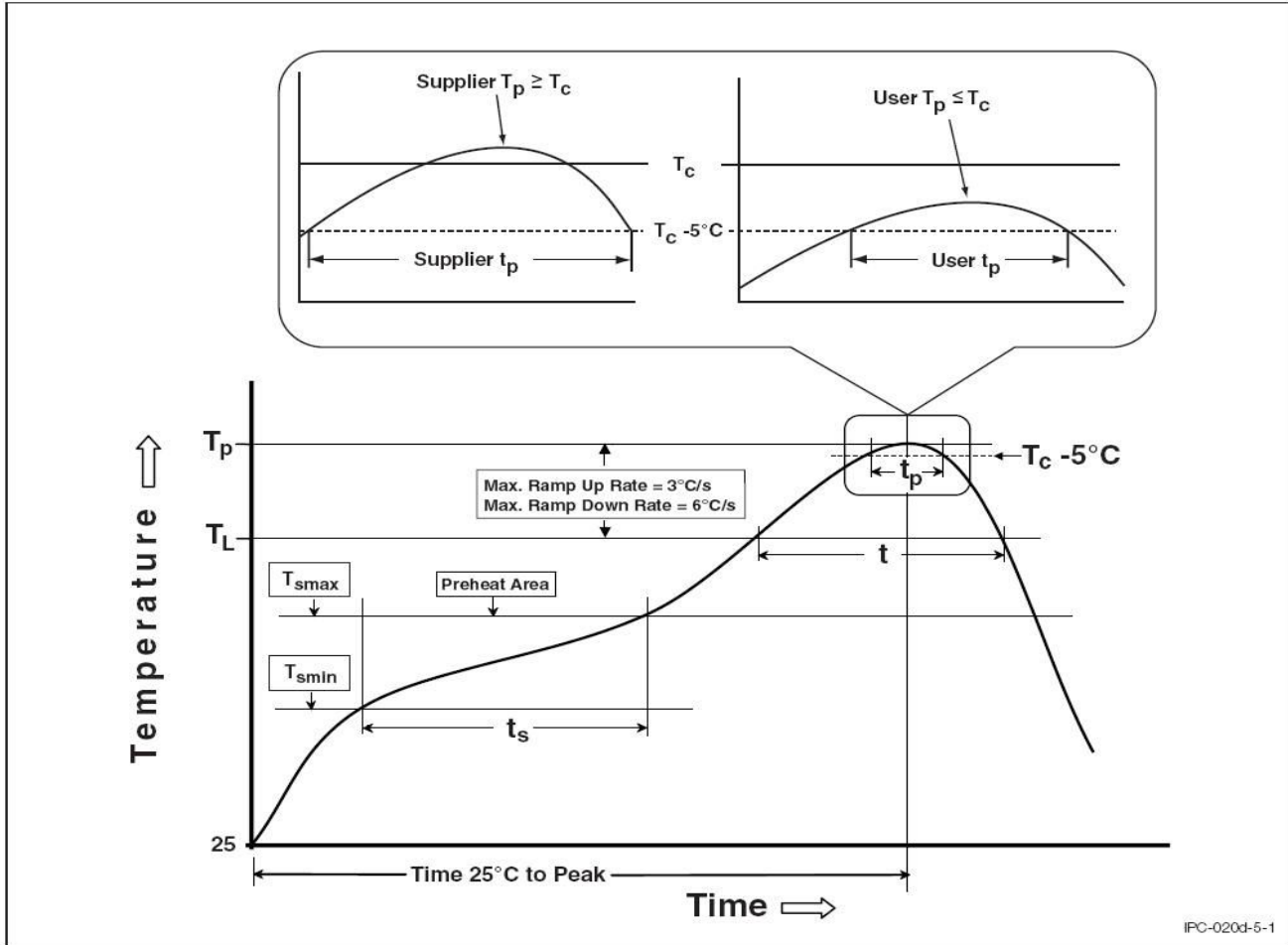
PACKING ANTIFES

Option	ESD Protection	ESD Protection Inner Box?	ESD Protection Outer Box?
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



)EF#OB INFO)MATION

)EF#OB P)OFI#E



Profile Feature	Sn3P1 Assembly Profile	P13Free Assembly Profile
Temperature +in# 6T _{min}	100	1 (0/ ,
Temperature +a-# 6T _{max}	1 (0	?00/ ,
Time 6ts from 6T _{min} to T _{max}	50.1?0 seconds	50.1?0 seconds
* amp.up * ate 6t _L to t 8	=/ , Jsecond ma-#	=/ , Jsecond ma-#
Liquidous Temperature 6TL	17=/ ,	?13/ ,
Time 6t _L + aintained Abo&e 6TL	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 TL	5/ , Jsecond ma-	5/ , Jsecond ma-
Time ?(/ , to ea" Temperature	5 minutes ma-#	7 minutes ma-#



DISCLAIMER

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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 LIGTHNING sales agent for special application request.

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

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