



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.

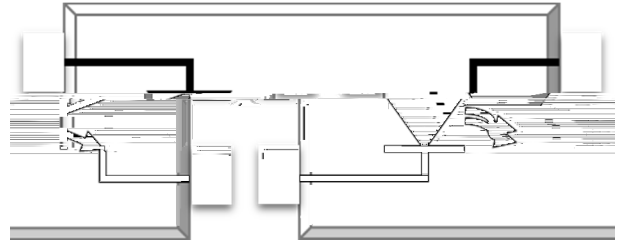
Features

- High isolation (000) * +S
- Temperature flexibility 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

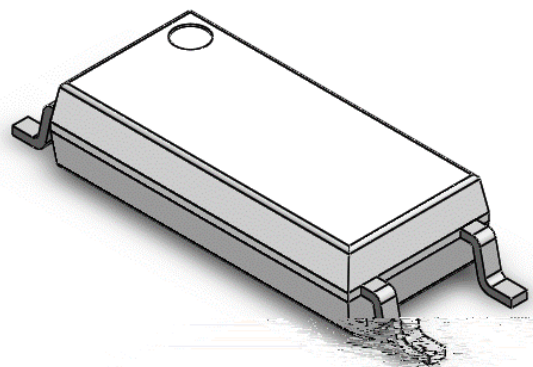
SCHEMATIC



PIN DEFINITION

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

PACKAGE OUTLINE





A ' SO# " TE MA (IM " M) ATIN ! S				
A * A+ 1T1 *	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	/,	

Note 1. 100µs pulse, 100 ! "#e\$uenc%

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



ELECTRICAL CHARACTERISTICS at Ta=25°C							
Symbol	Parameter	Min	Typ	Max	Unit	Test Conditions	Notes
I_{F1}	Forward Current	0	10	10	mA	$V_F = 2.0V$	
I_{F2}	Reverse Current	0	10	10	μA	$V_R = 5V$	
C_{in}	Input Capacitance	0	0	0	pF	$f = 1kHz$	
I_{C1}	Collector Current	0	100	100	nA	$V_{CE} = 5V$	
I_{C1}	Collector Current (1mA)	0	70	70	nA	$V_{CE} = 5V$	
I_{C1}	Collector Current (1mA)	0	3	3	nA	$V_{CE} = 5V$	
T_{10}	Turn-on Time	0	500	500	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	100	100	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	70	70	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	150	150	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	250	250	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	100	100	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	50	50	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	100	100	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	150	150	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	??	??	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	??	??	ns	$I_F = 10mA$	
T_{10}	Turn-on Time	0	5	5	ns	$I_F = 10mA$	
I_{C1}	Collector Current (Saturation)	0	10	10	nA	$V_{CE} = 5V$	
R_{SO}	Solderability Resistance	10	10	10	Ω		
C_{AO}	Bloating Capacitance	0	0	1	pF		
f_{Bc}	Cutoff Frequency	0	70	70	MHz	$I_F = 10mA$	
T_r	Rise Time	0	17	17	ns	$I_F = 10mA$	
T_f	Fall Time	0	5	17	ns	$I_F = 10mA$	

Note 1. $I_F = 10mA$

Note 2. $I_F = 10mA$



CHARACTERISTICS - ES

Fi..1 Forward Current 0\$. Ambient Temperature	Fi..2 Collector Power Dissipation 0\$. Ambient Temperature
Fi..3 Forward Current 0\$. Forward Voltage	Fi..4 Collector Dark Current 0\$. Ambient Temperature

**Fi..+ Collector Current
0\$. Collector Emitter Voltage**

Fi..4 Collector Current



CHARACTERISTIC CURVES

Fig. 5 Normalized Current Transfer Ratio vs. Collector Current

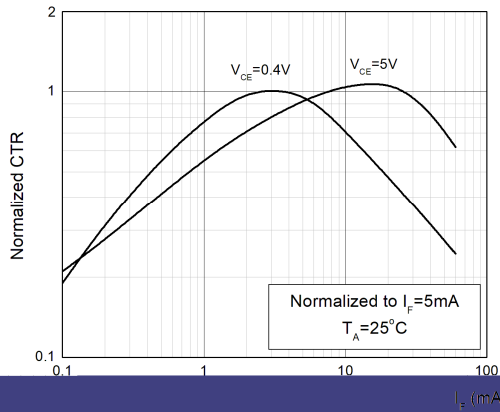


Fig. 8 Normalized Current Transfer Ratio vs. Ambient Temperature

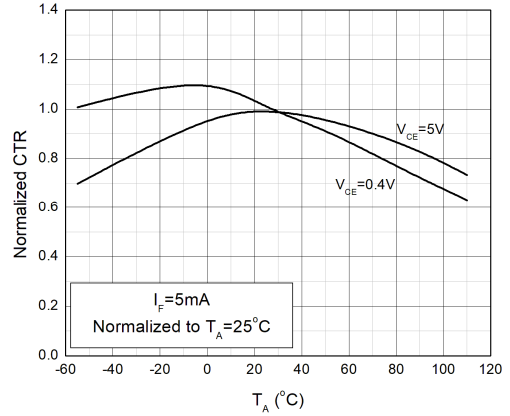


Fig. 9 Collector-Emitter Saturation Voltage vs. Ambient Temperature

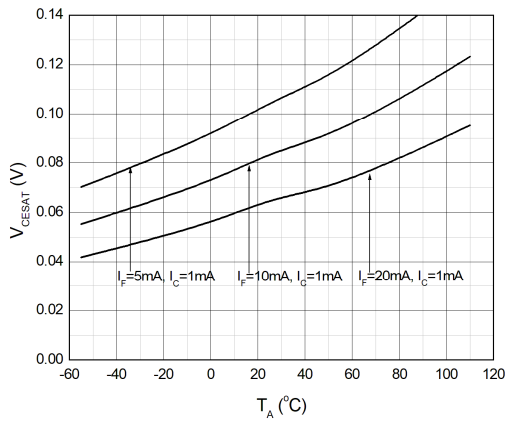


Fig. 10 Switching Time vs. Load Resistance

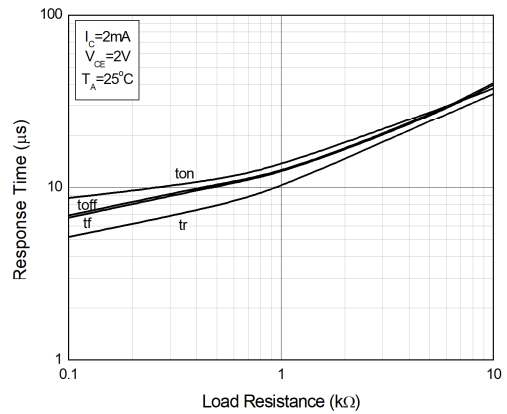
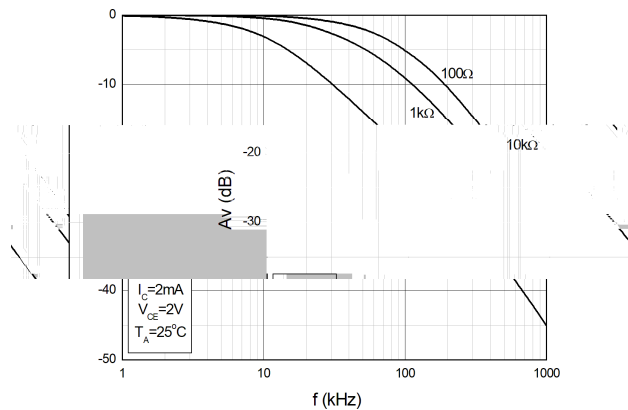


Fig. 11 Frequency Response



TEST CIRCUITS

Fig. 12 Test Circuit of Forward Time

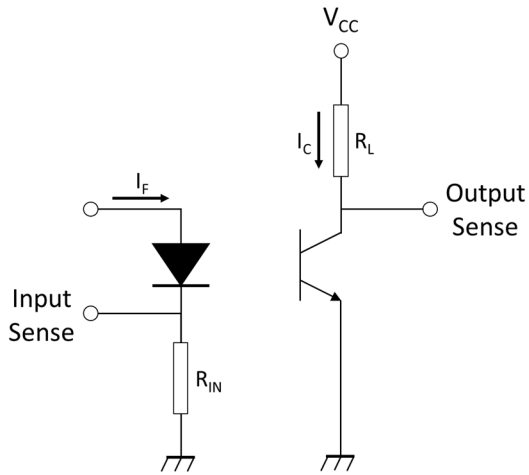


Fig. 13 Characteristic of Forward Time

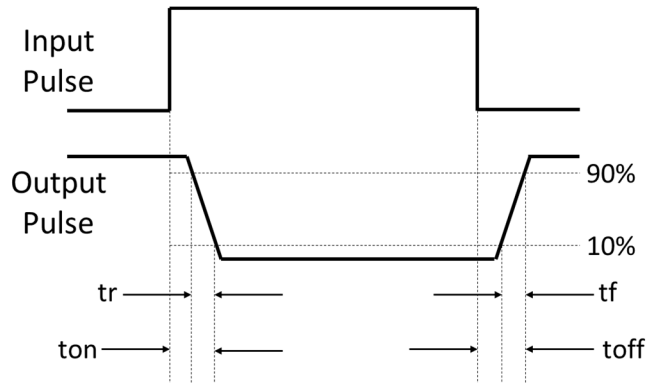
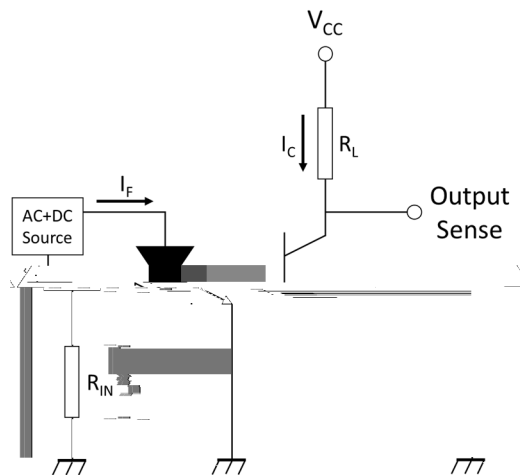
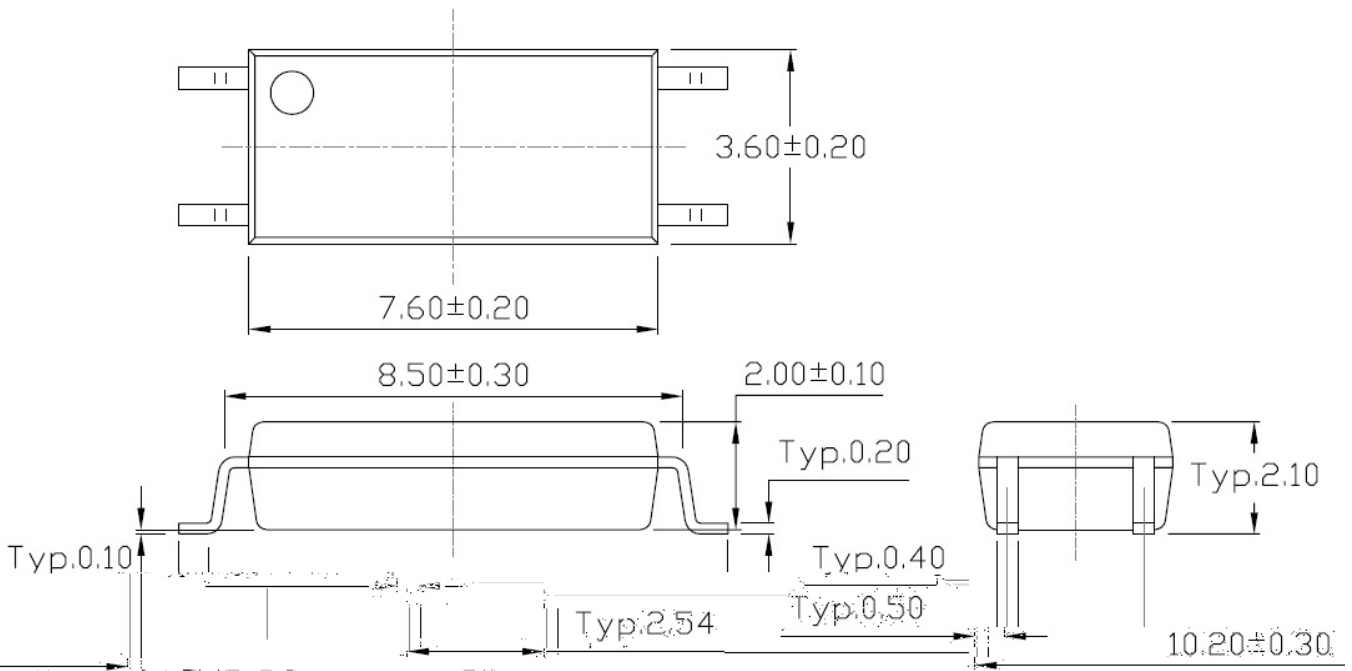


Fig. 14 Test Circuit of Reverse Time

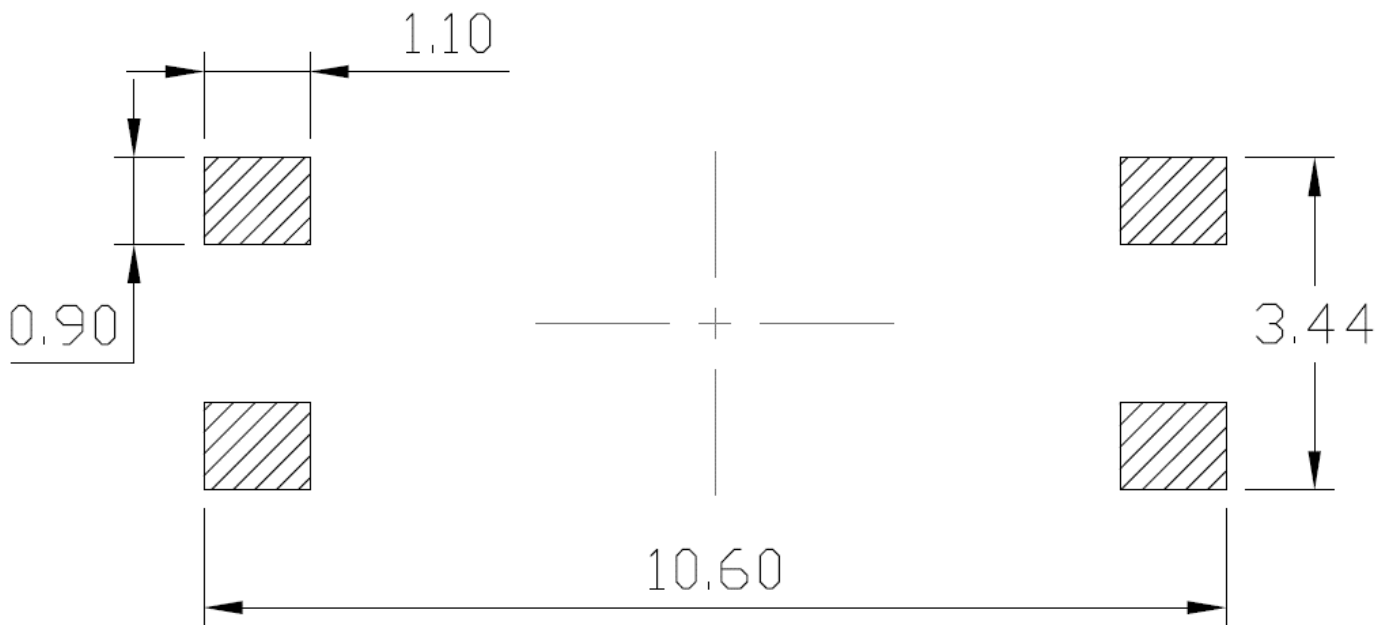




PAC A ! E DIMENSIONS Dimension\$ in mm & nle\$\$ other / i\$e \$tated=



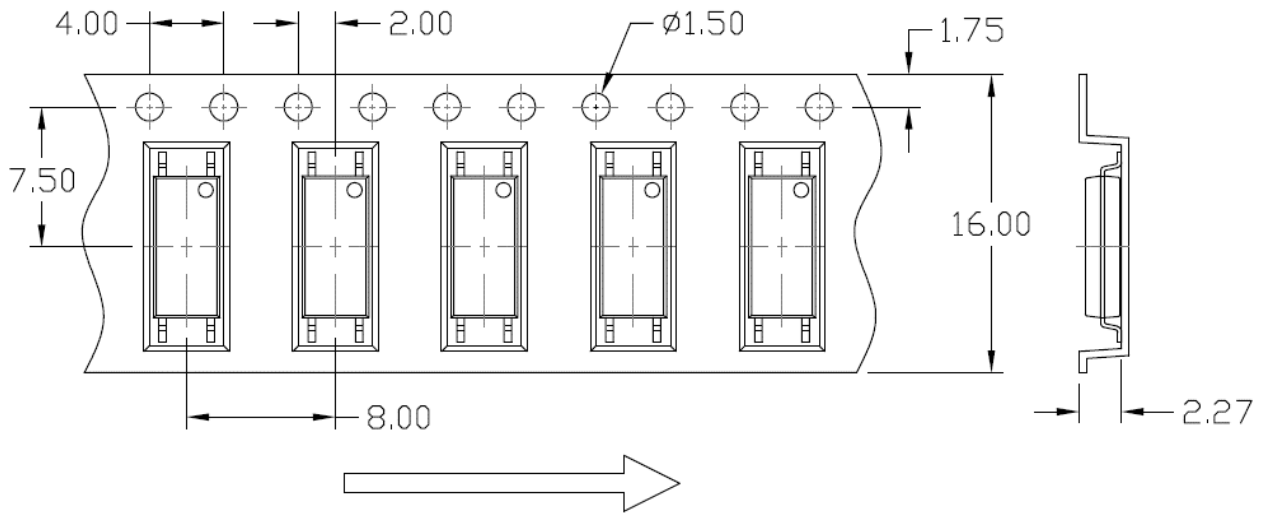
RECOMMENDED SIDE MOUNTING DIMENSIONS Dimension\$ in mm & nle\$\$ other / i\$e \$tated=



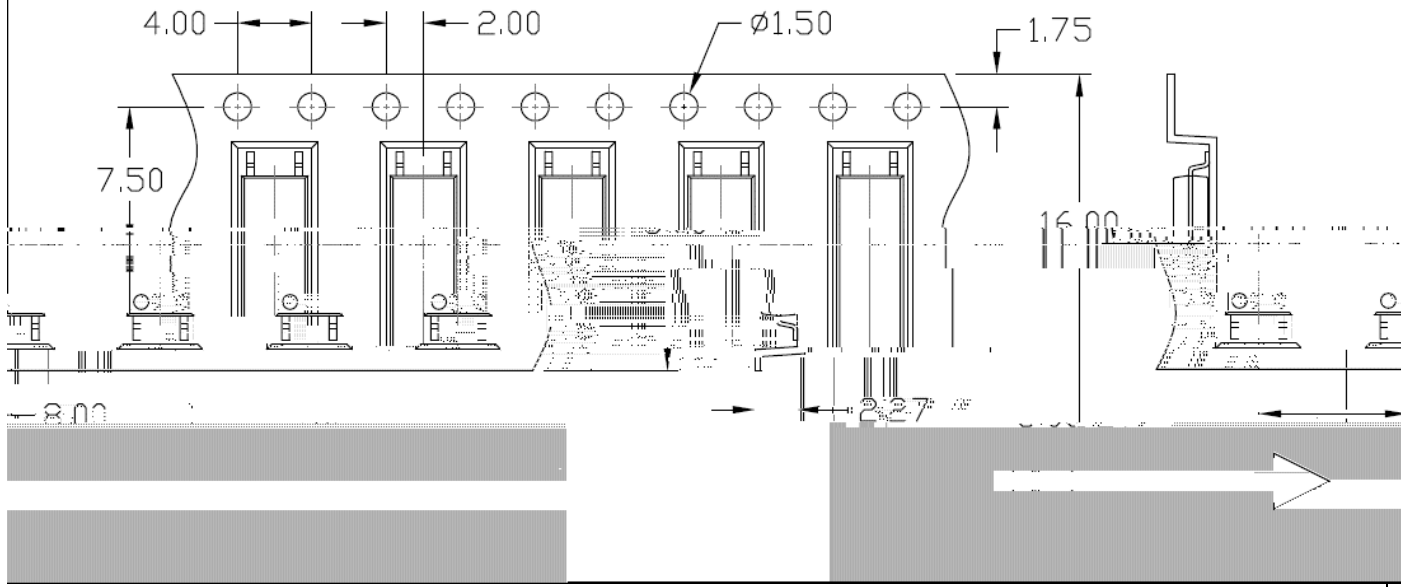


CA)) IE) TAPE SPECIFICATIONS Dimension\$ in mm &nle\$\$ other / i\$e \$tated=

O%tion T1



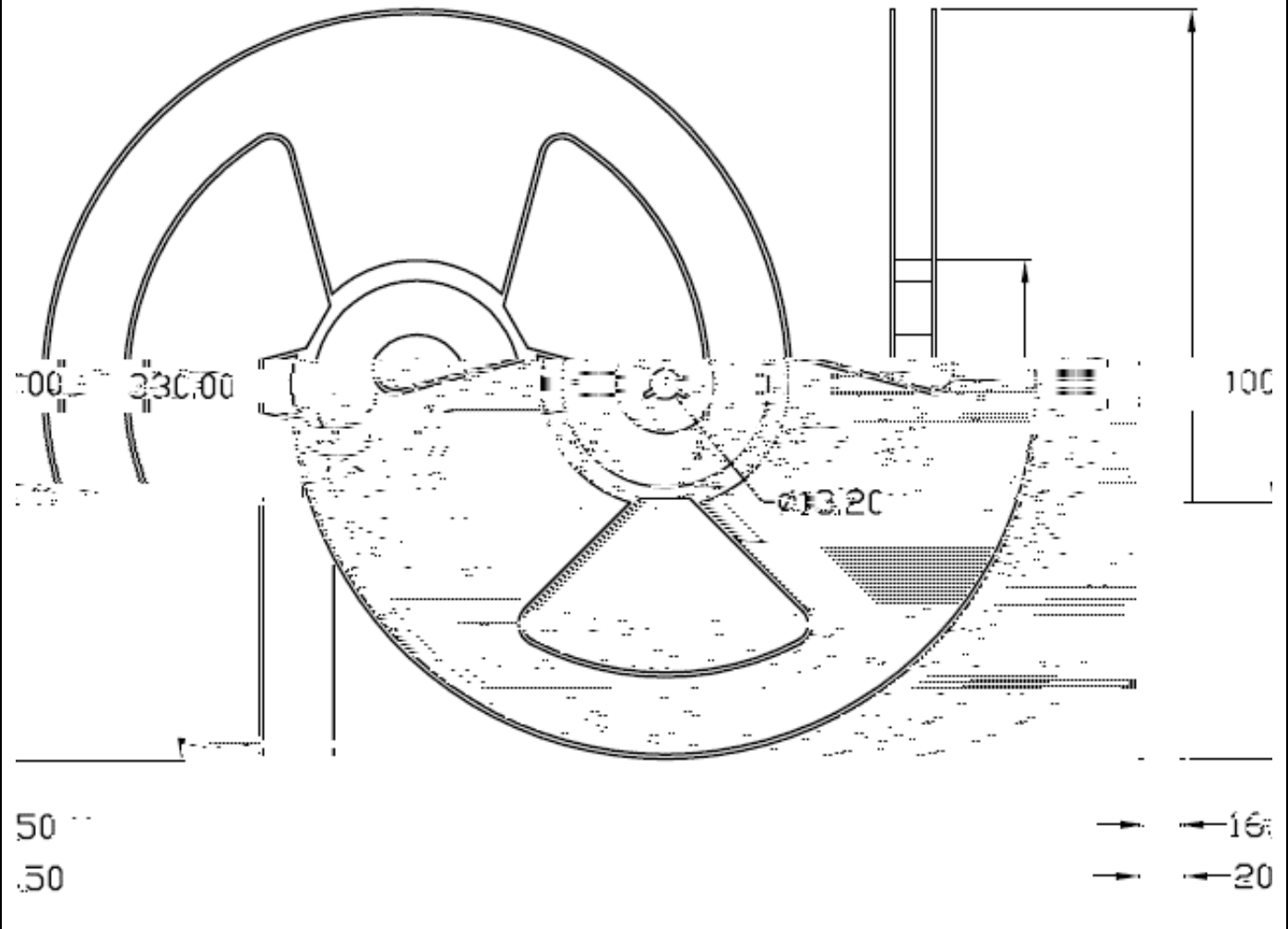
O%tion T2





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

O%tion T1 > T2





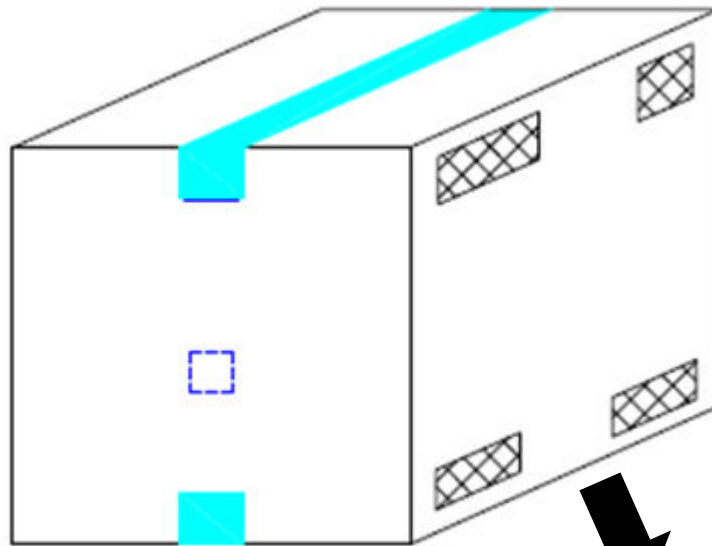
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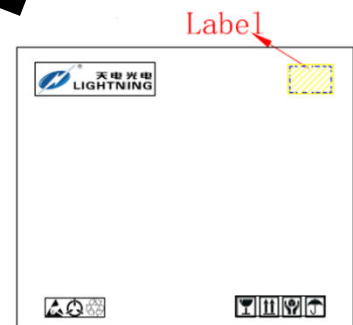


23 W 3 * /-cm 3 /-cm 3 -.9cm

O&ter ' o?



23 W 3 * +5cm 3 /4cm 3 /4cm





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

MA) IN! INFO)MATION




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1:1(@ Part N&m1er >)an2
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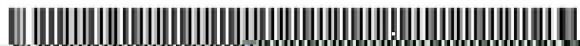
TD1:1 (CD=3! -

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



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




Part No : XXXXXXXXXXXXX Bin Code : X



Lot No : XXXXXXXXXXXX

Date Code : XXXX

Q'ty : XXXX pcs

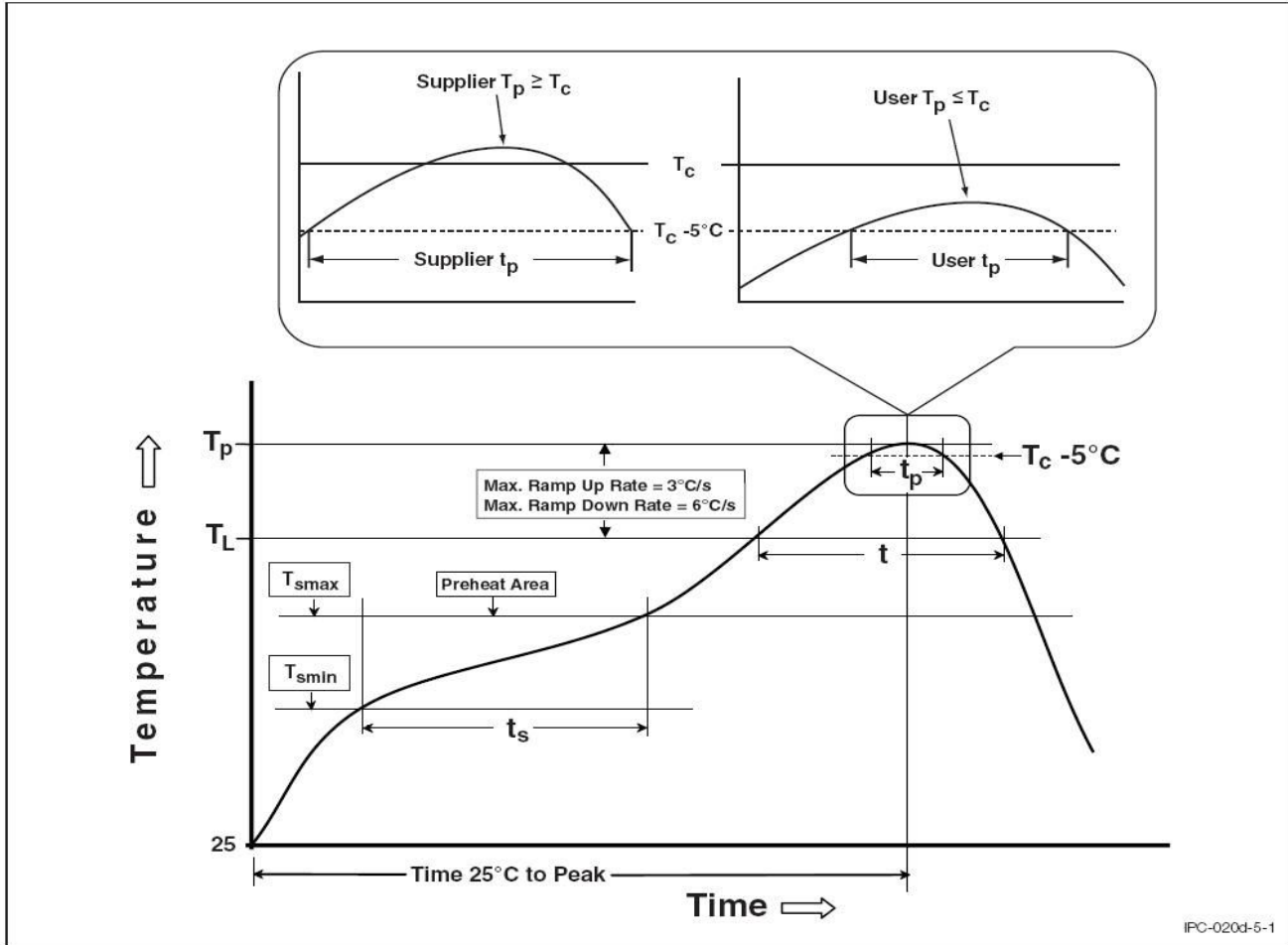
PAC IN! E " ANTITA

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



PROFILE INFORMATION

PROFILE OF THE



Profile Feature	Sn3P1 Assembly Profile	P13Free Assembly Profile
Temperature +in# T_{smin}	100	100
Temperature +a-# T_{smax}	100	100
Time t_s from T_{smin} to T_{smax}	50.1±0 seconds	50.1±0 seconds
* amp.up * ate T_L to T_p	=/ , Jsecond ma-#	=/ , Jsecond ma-#
Liquidous Temperature T_L	170	170
Time t_L + aintained Abo&e T_L	50 : 10 seconds	50 : 10 seconds
ea" ;ody ac"age Temperature	170, 180, 190	170, 180, 190
Time t_p within (/ , of 100 ,	±0 seconds	±0 seconds
* amp.down * ate T_p to T_L	5/ , Jsecond ma-	5/ , Jsecond ma-
Time (/ , to ea" Temperature	5 minutes ma-#	7 minutes ma-#



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