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

Features

' 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

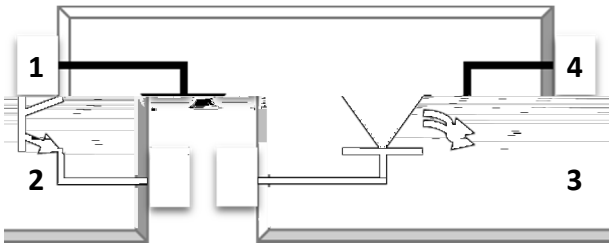
)D1 . 14503!3.(.(6)D1077!.(8

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

Applications

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

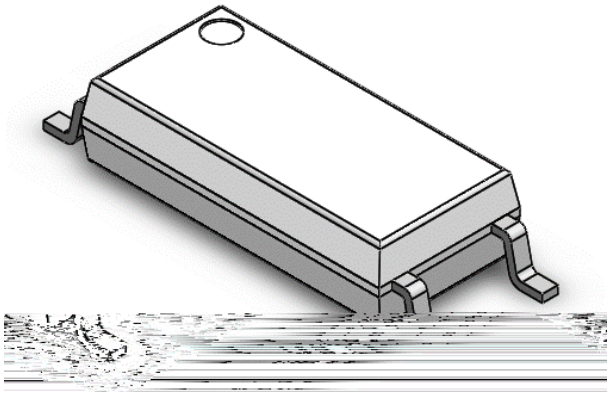
SCHEMATIC



PIN DEFINITION

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

PACKAGE OUTLINE



ABSOLUTE MAXIMUM RATINGS				
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	/,	

ELECTRICAL OPTICAL CHARACTERISTICS at Ta=25°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		!

CHARACTERISTIC CURVES

Fig.1 Forward Current vs. Ambient Temperature	Fig.2 Collector Power Dissipation vs. Ambient Temperature
Fig.3 Forward Current vs. Forward Voltage	**Fig.4 Collector Dark Current vs. Ambient Temperature**

Fig.5 Collector Current vs. Collector-emitter Voltage

Fig.6 Collector Current

CHARACTERISTIC CURVES

Fig.7 Normalized Current Transfer Ratio vs. Forward Current

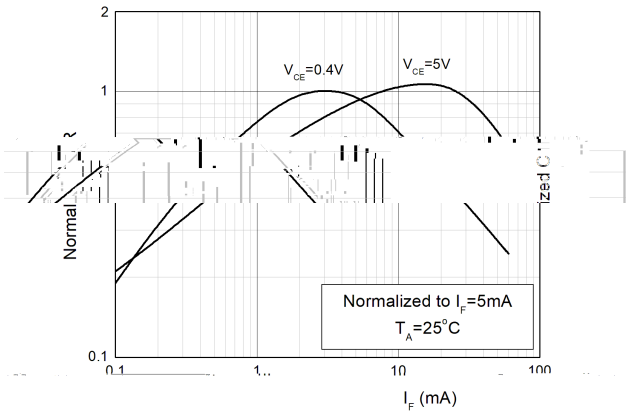


Fig.8 Normalized Current Transfer Ratio vs. Ambient Temperature

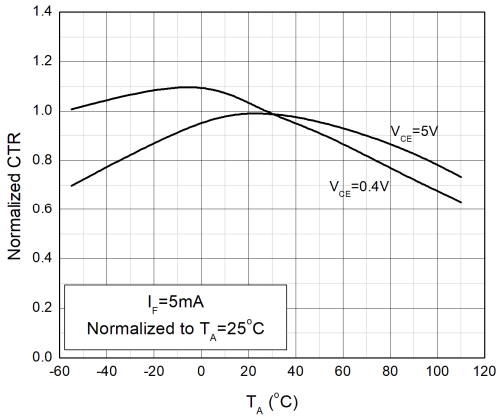


Fig.9 Collector-emitter Saturation Voltage vs. Ambient Temperature

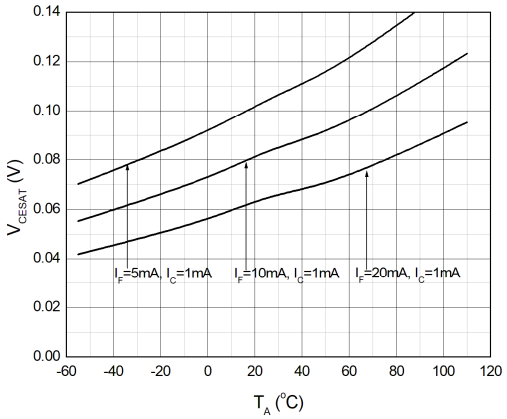


Fig.10 Switching Time vs. Load Resistance

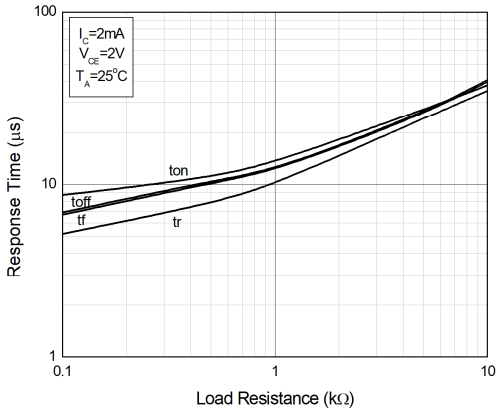
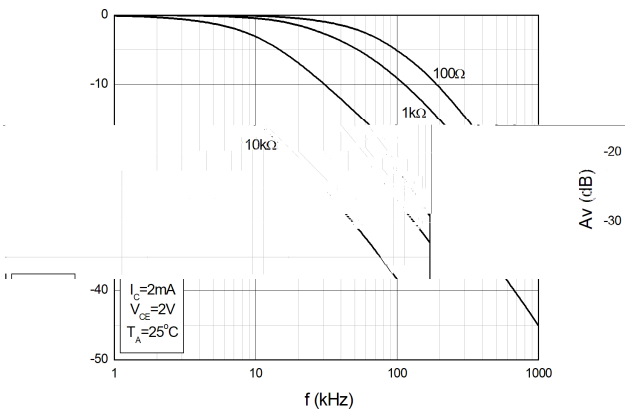


Fig.11 Frequency Response



TEST CIRCUITS

Fig.12 Test Circuits of Response Time

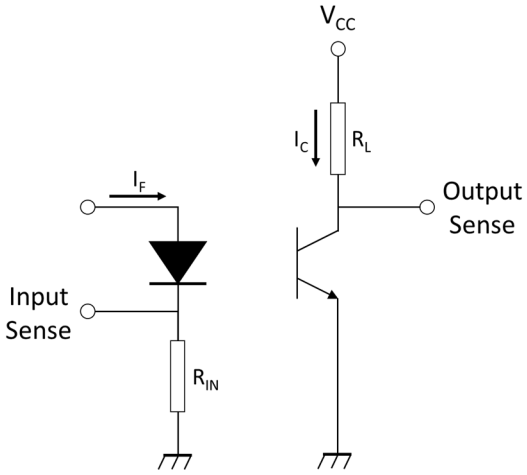


Fig.13 Curves of Response Time

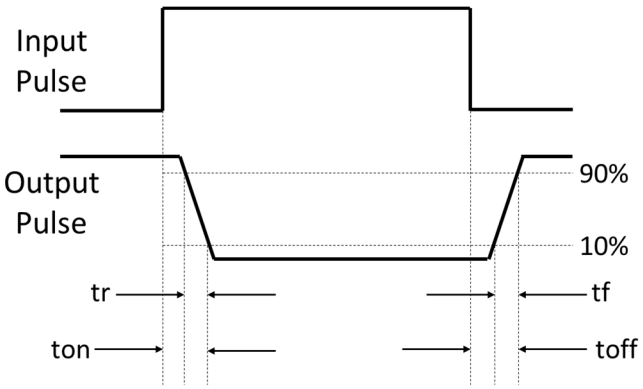
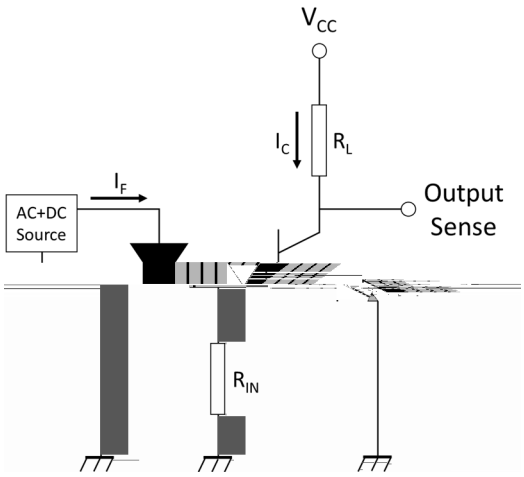
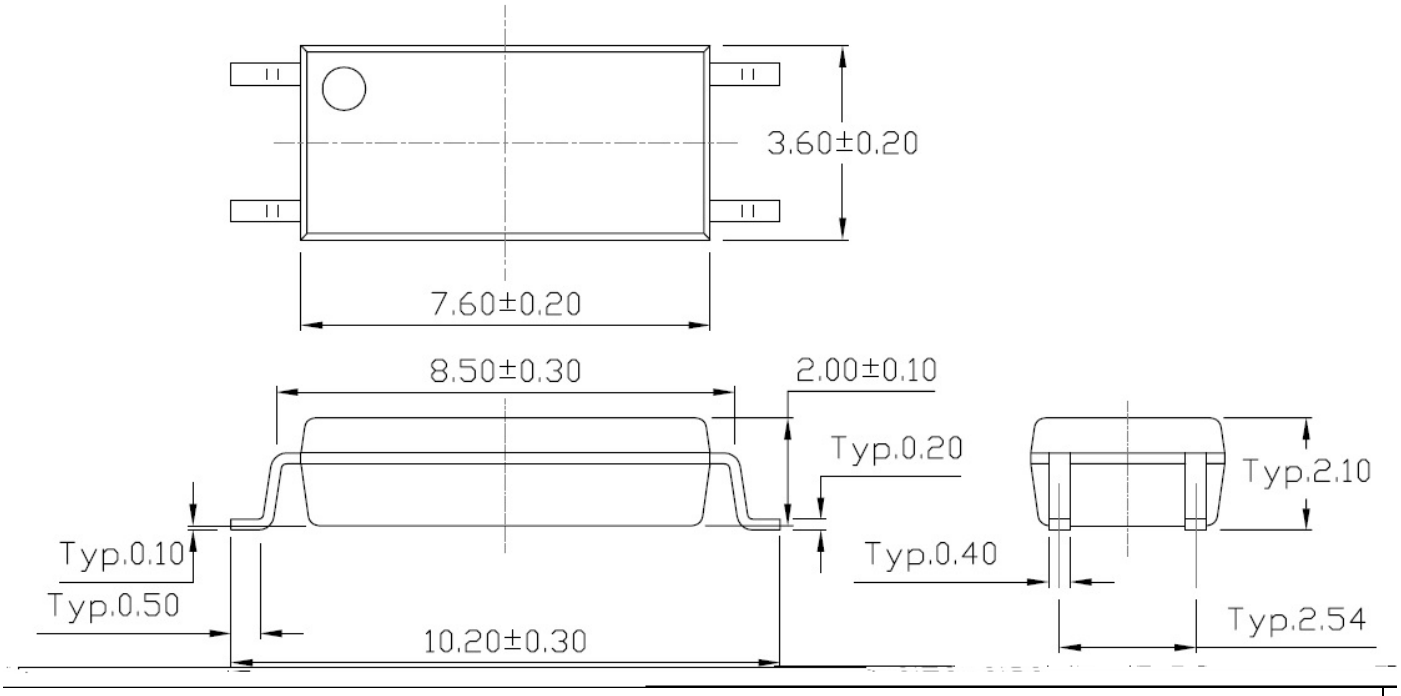


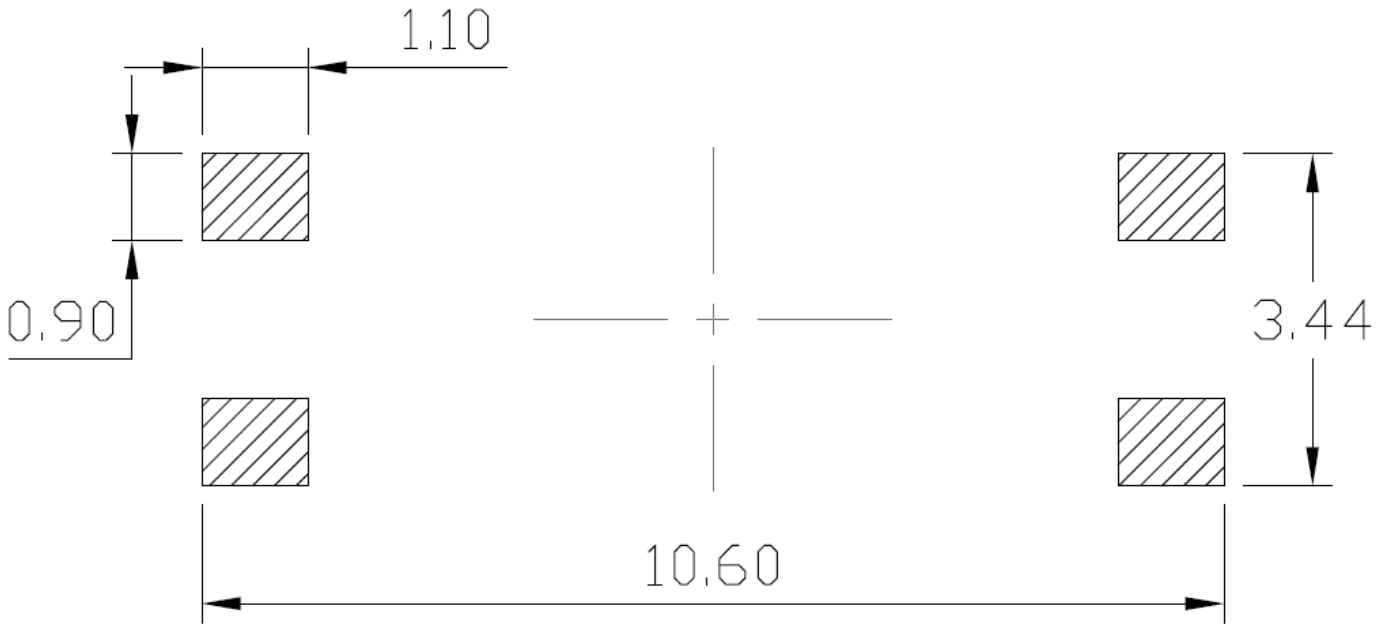
Fig.14 Test Circuits of Frequency Response



PACKAGE DIMENSIONS (Dimensions in mm unless otherwise stated)

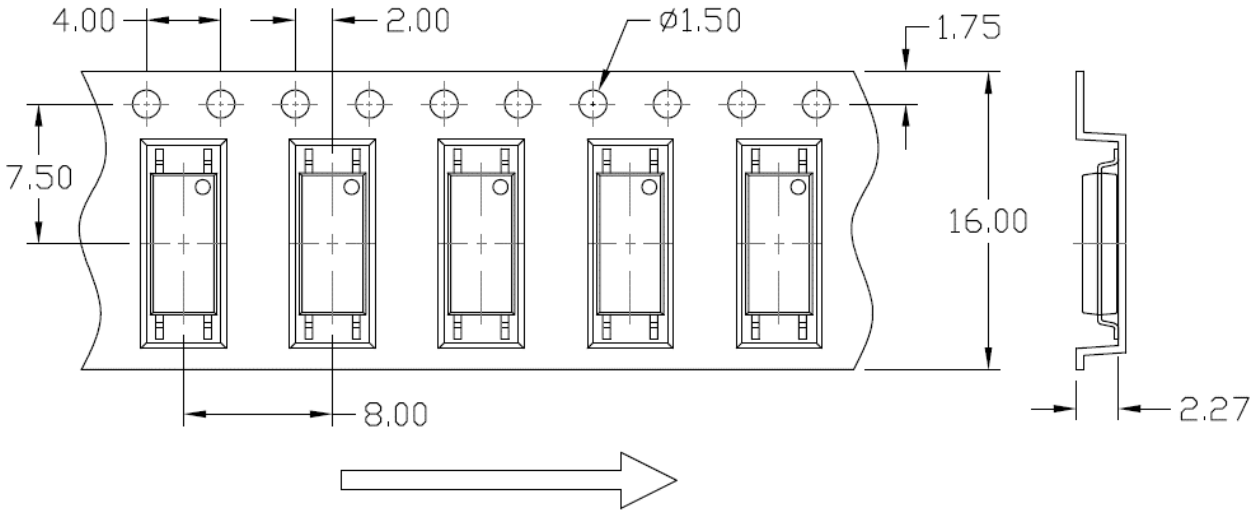


RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)

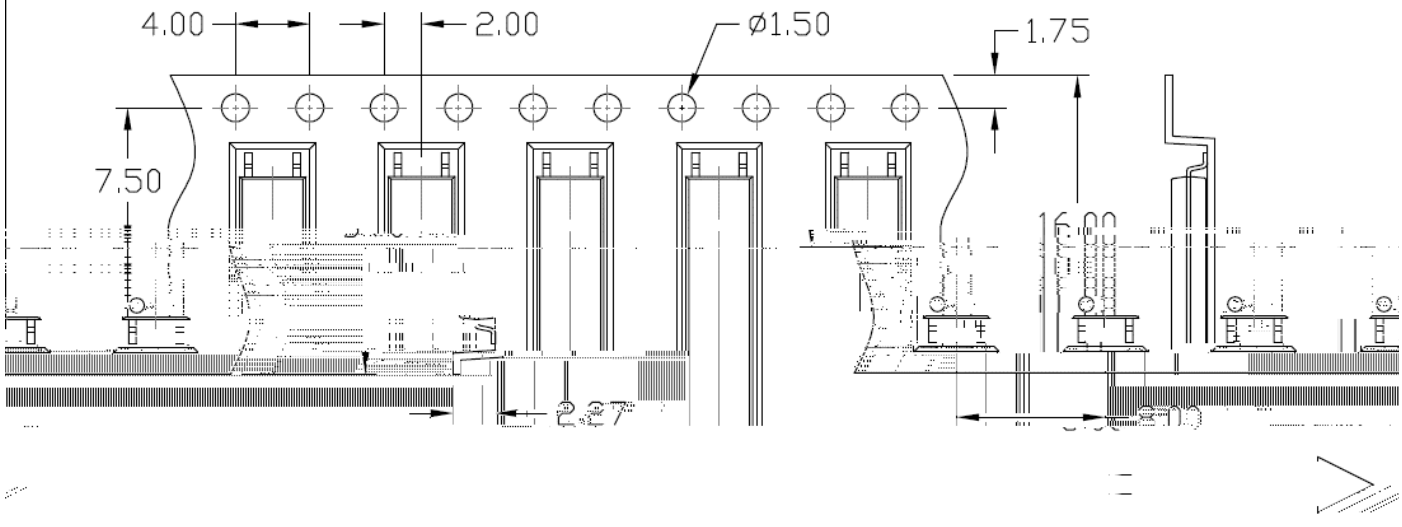


CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option T1

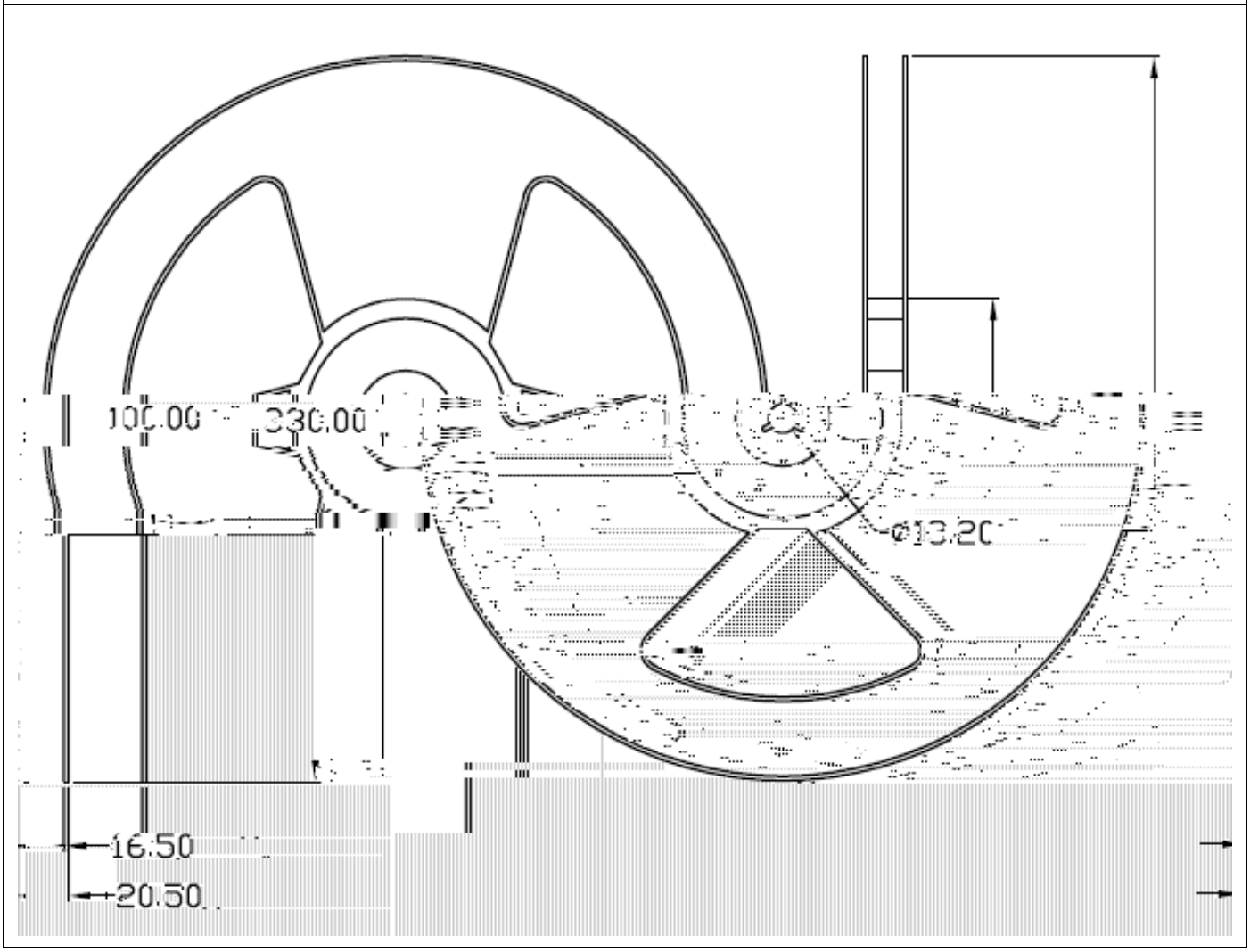


Option T2



REEL SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option T1 & T2



BOX SPECIFICATIONS (Reel Type)

Inner Box

ORDERING AND MARKING INFORMATION

MARKING INFORMATION

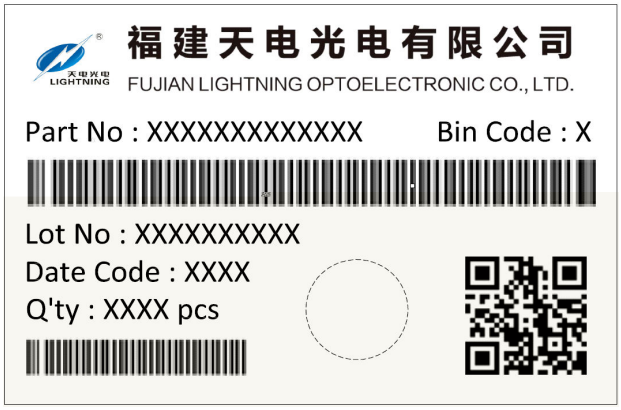
TD : Company Abbr.
101X : Part Number & Rank
V : VDE Option
Y : Fiscal Year
A : Manufacturing Code
WW : Work Week

ORDERING INFORMATION

TD101X(Z)-GV

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

LABEL INFORMATION

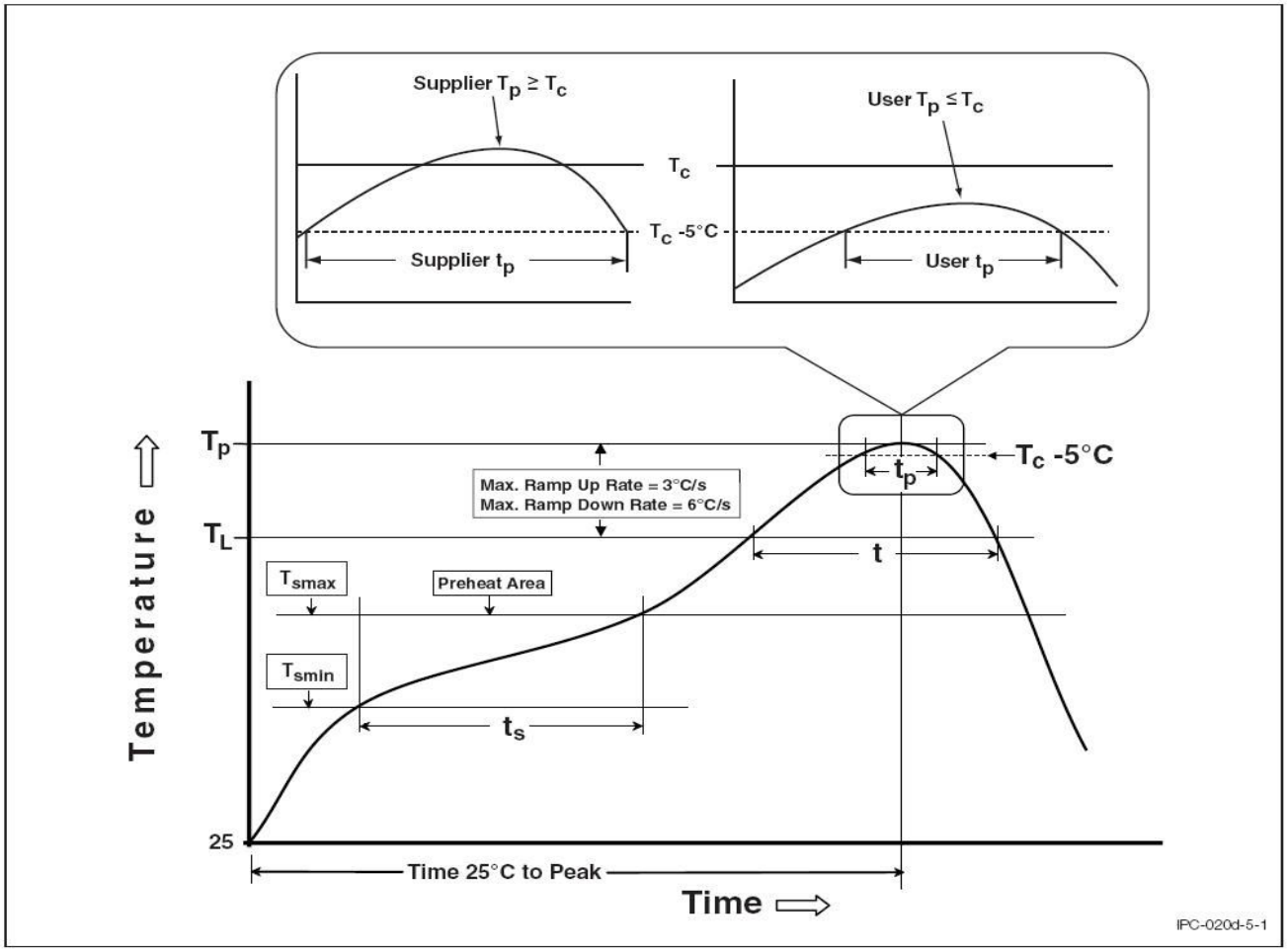


PACKING QUANTITY

Option	Quantity	Quantity – Inner box	Quantity – Outer box
T1	=000 2nitsJ*eel	= *eelsJAnner bo-	(Anner bo-JOuter bo- D !(" 2nits
T?	=000 2nitsJ*eel	= *eelsJAnner bo-	(Anner bo-JOuter bo- D !(" 2nits

REFLOW INFORMATION

REFLOW PROFILE



Profile Feature	Sn-Pb Assembly Profile	Pb-Free 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-#
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-#

DISCLAIMER

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

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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#