TD101X Series

LSOP4, DC Input, Photo Transistor Coupler

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

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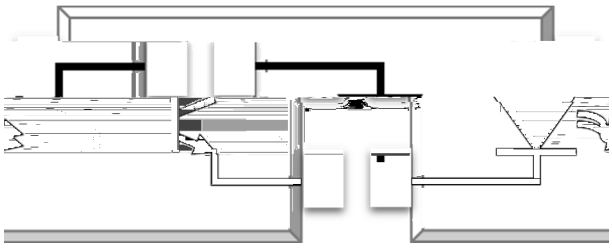
)D1 . 14503!3.(.(6)D1077!.(8

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

A%%lication$

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

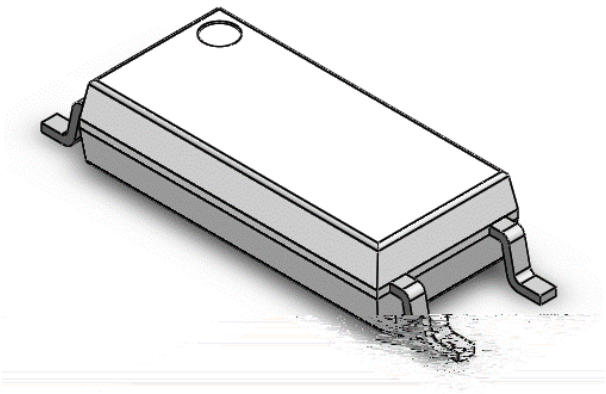
SCHEMATIC



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, 100 !"#e$uenc%

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

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 /. ')0.1211/

Note +. ')0.1+

0$. Collector3emitter -olta.e

0$. Collector3emitt( ) -2.33292(F)0.480-1

CHARACTERISTIC CURVES

Fig.5 Normalized Current Transfer Ratio vs. Forward Current

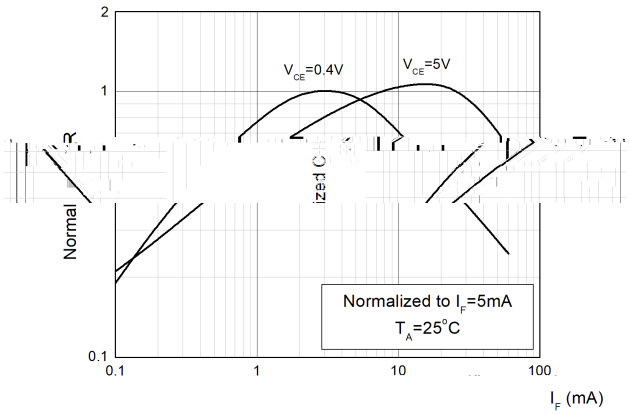


Fig.8 Normalized Current Transfer Ratio vs. Ambient Temperature

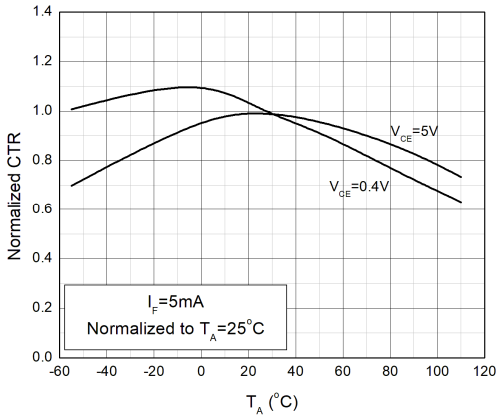


Fig.9 Collector-emitter Saturation Voltage vs. Ambient Temperature

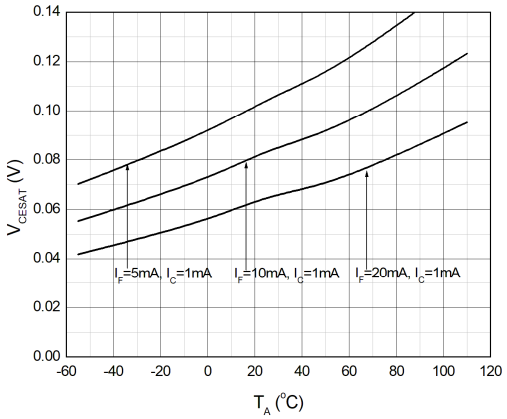


Fig.11 Switching Time vs. Load Resistance

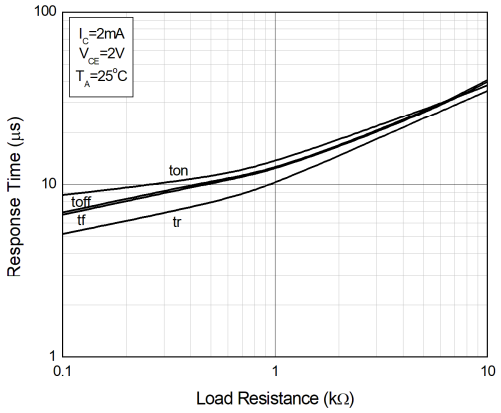
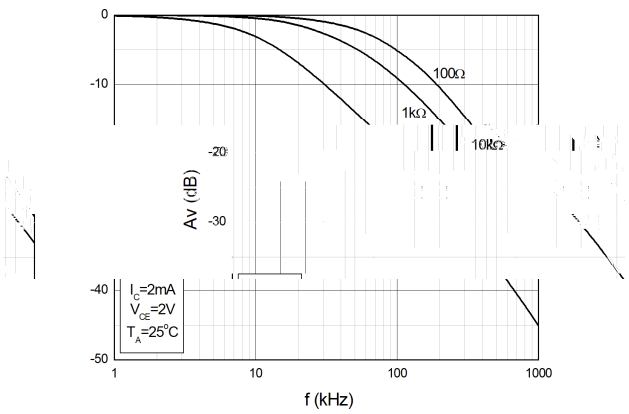


Fig.11 Frequency Response



TEST CIRCUITS

Fig.12 Test Circuit of Response Time

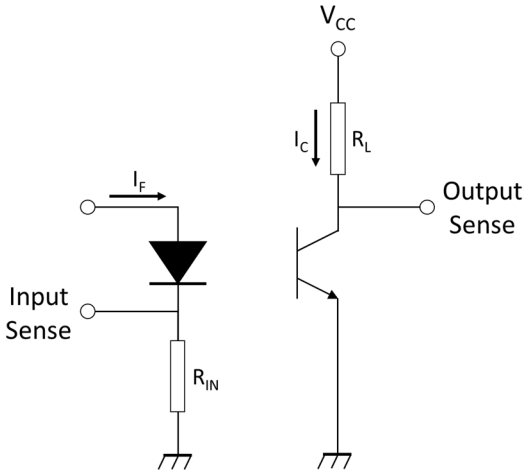


Fig.13 Circuit of Response Time

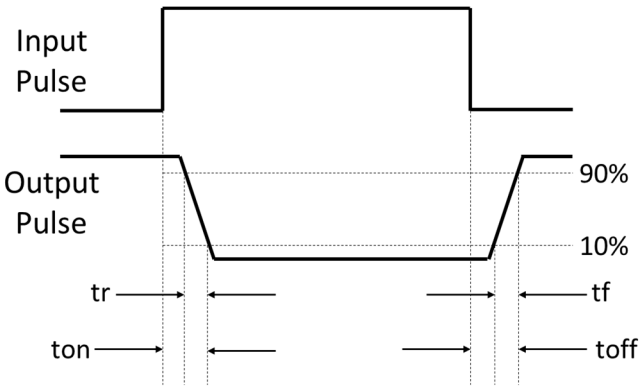
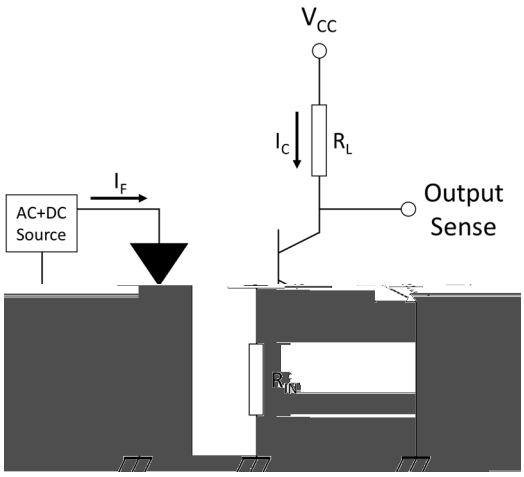
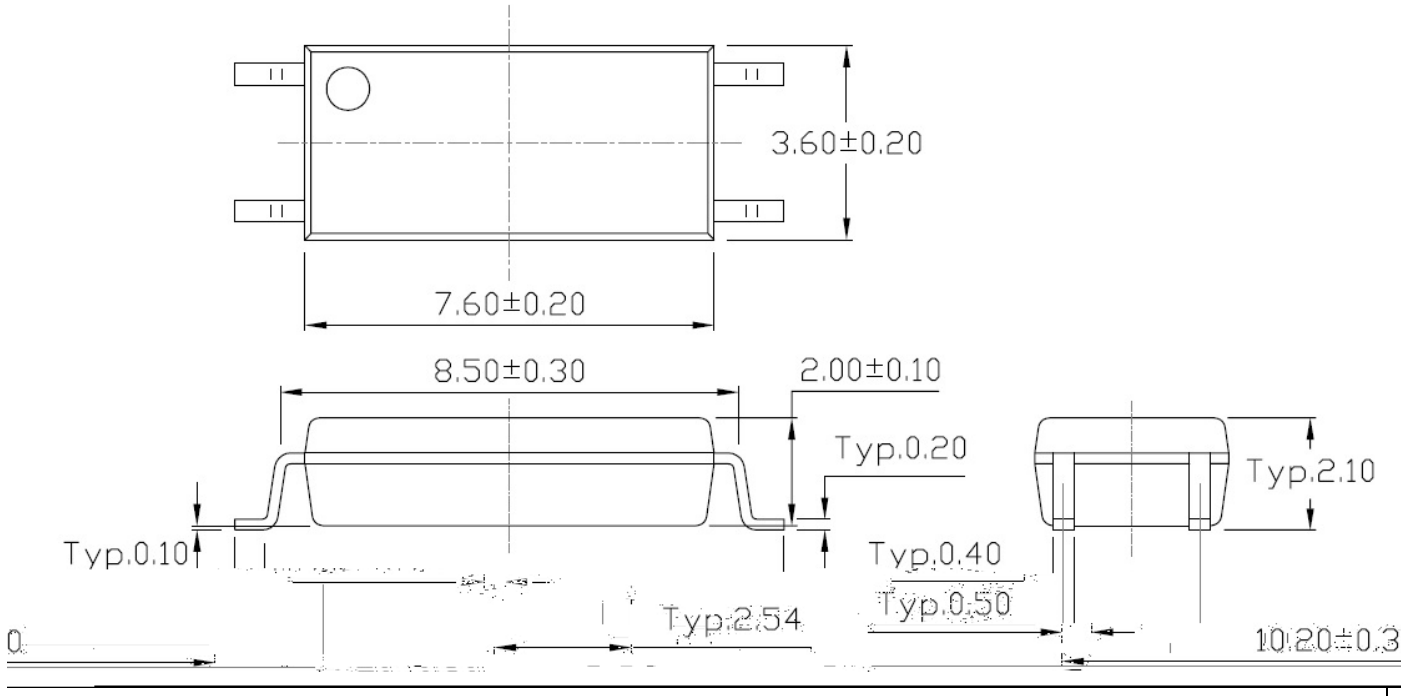


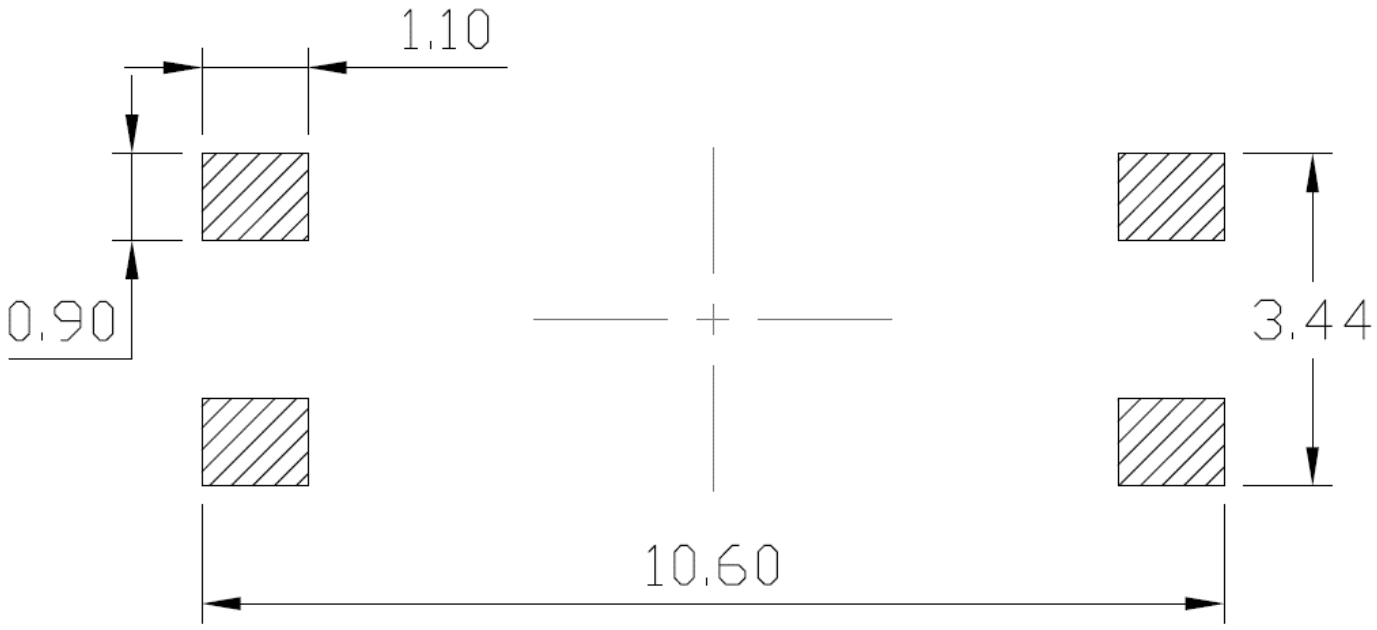
Fig.14 Test Circuit of Frequency Response



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

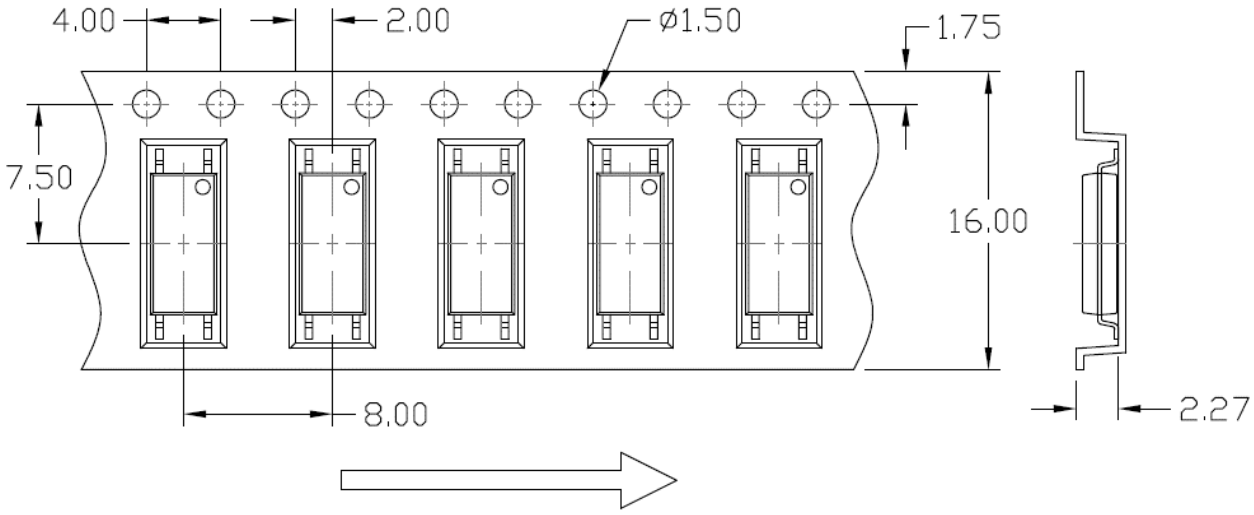


) ECOMMENDED SO#DE) MAS Dimenion in mm &nle$$ other / i$e $tated=

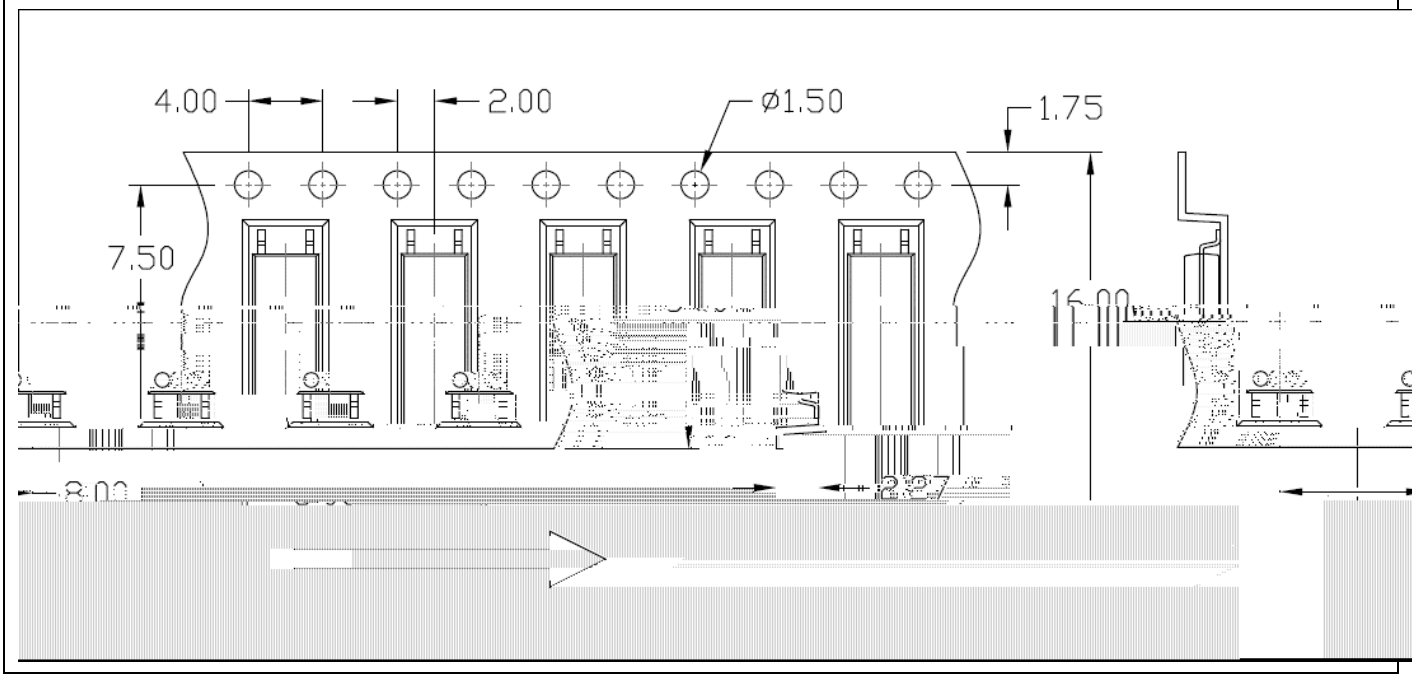


CA)) IE) TAPE SPECIFICATIONS Dimenion in mm &nle$$ other / i$e $tated=

O%tion T1

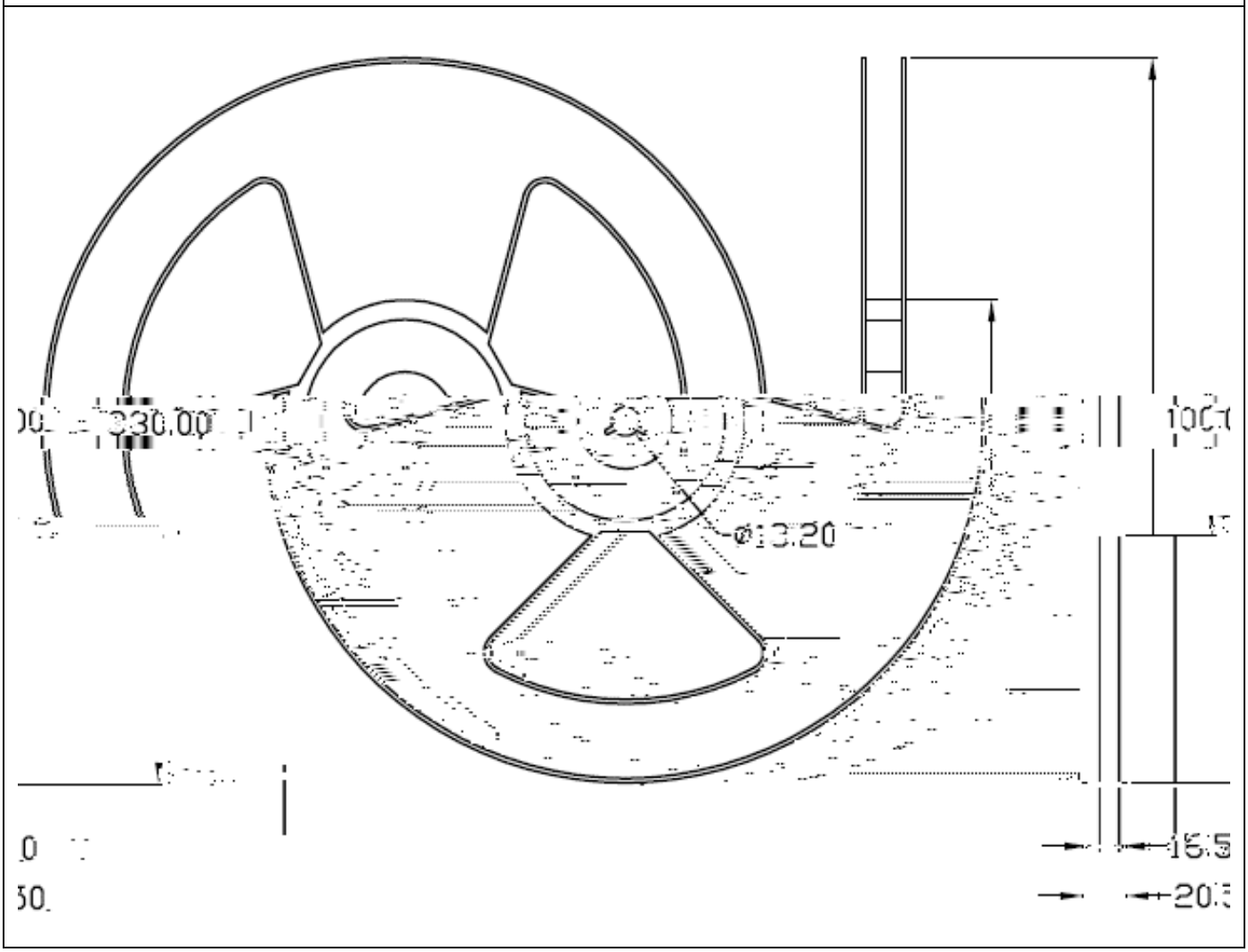


O%tion T2



) EE# SPECIFICATIONS Dimenion in mm &nle$$ other / i$e $tated=

O%tion T1 > T2



' O (SPECIFICATIONS) eel T<%e=

Inner ' o?

2 3 W 3 * / - cm 3 / - cm 3 - .9cm

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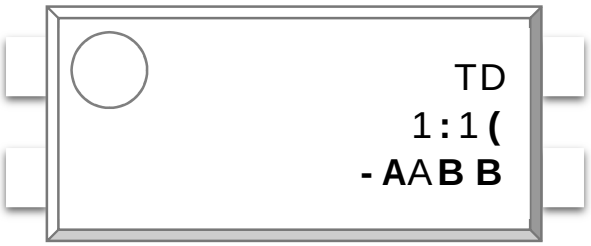

TD @Com%an< A11r.
1:1(@Part N&m1er >)an2
- @-DE O%tion
A @Fi$cal Aear
A @Man&7act&rin. Code
BB @Bor2 Bee2

O)DE)IN! 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

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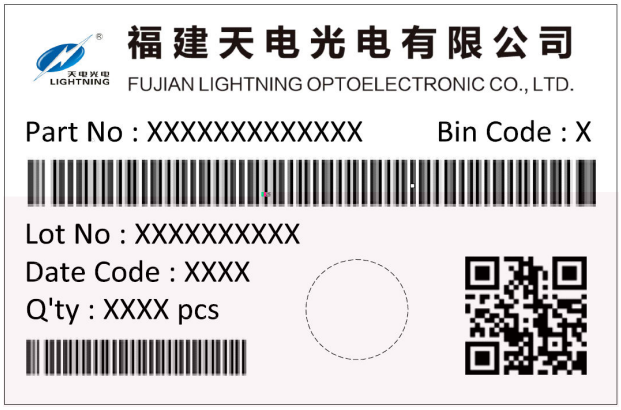

PAC IN! E"ANTITA

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

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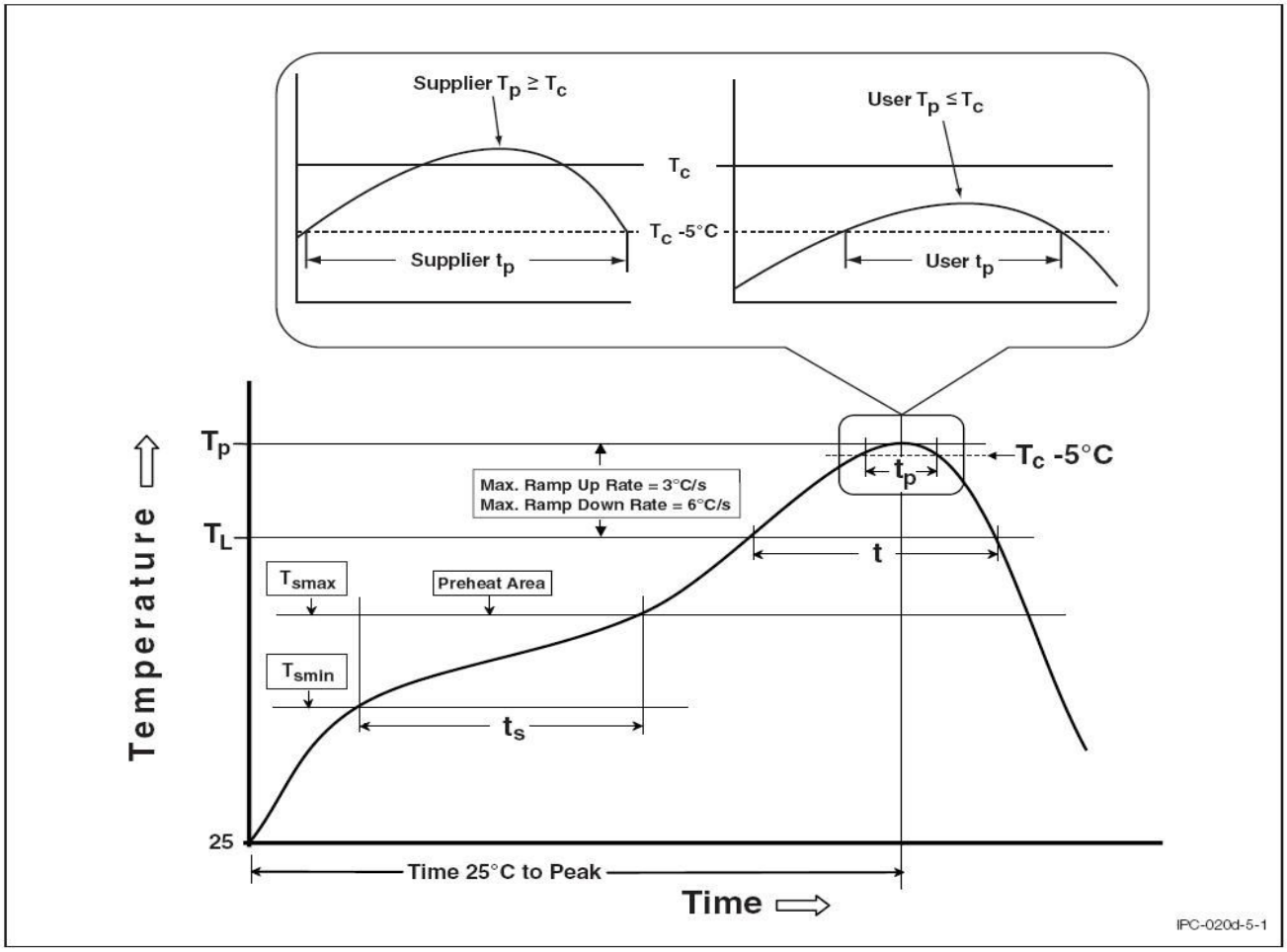

Pro7ile Feat&re	Sn3P1 A$$em1l< Pro7ile	P13Free A$$em1l< Pro7ile
Temperature +in# 6Tsmin8	100	1(0/ ,
Temperature +a-# 6Tsma-8	1(0	?00/ ,
Time 6ts8 from 6Tsmin to Tsma-8	50.1?0 seconds	50.1?0 seconds
*amp.up *ate 6tL to t 8	=/ , Jsecond ma-#	=/ , Jsecond ma-#
Li>uidous Temperature 6TL8	17=/ ,	?13/ ,
Time 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-#

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Ammerge unit\s body in solder paste is not recommended#

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