



# ORIENT

## Ph c le

## P d c Da a Shee

Pa N be : OR-M302X(L)/M305X(L)/M307X(L)

C e : \_\_\_\_\_

Da e: \_\_\_\_\_

**一级代理商：**

深圳市弗瑞鑫电子有限公司

地址：深圳市宝安区西乡大道302号金源商务大厦B座三楼

frxelec

**Fea e**

- (1) High i lai l age be ee i a d (Vi :3750 V )
- (2) 4 i e -c i la iac die
- (3) High e e i e eak ff- ae l age VDRM :  
M302X: Mi . 400V, M305X: Mi . 600V, M307X: Mi . 800V
- (4) High ciical ae fie f ff- ae l age d /d :  
M302X: T . 100V / , M305X/M307X:MIN . 1000V /
- (5) Ta e a d eel ackagi g.
- (6) O e a i g e e a e -40 +110
- (7) Safe a al  
UL a ed(N .E323844)  
VDE a ed(N .40029733)  
CQC a ed(N .CQC19001231256 )
- (8) I c lia ce i hR HS, REACH a da d
- (9) MSL Cla



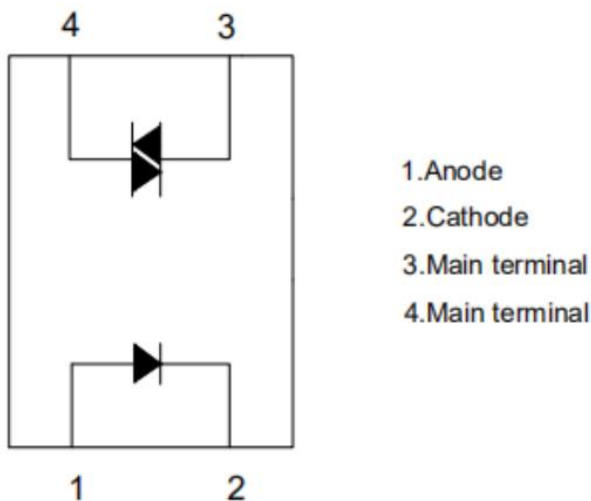
**De c i ion**

The OR-M302X(L)/M305X(L)/M307X(L) c i fa e c i g h iac, icall c led a galli a e ide i fa ed e i i g di de. The a eh ed i he SOP-4 ackage a d g a a ee i lai hick e .The ef e, he ee he ei f ced i lai cla e i e e fi e ai al afe a da d .

**3. A lica ion Range**

- ACM Die ACM Sa e Sa ic e ich
- Ligh i g C l S le id/Val e C l S lid Sa e Rela
- Te e a e C l

**4. F nc ional Diag am**



5. Ab ol e Ma im m Ra ing (Ta=25 )

Pa ame e		S mbol	Ra ed Val e	Uni	
I	F adC e	I <sub>F</sub>	50	A	
	J ci Te ea e	T <sub>J</sub>	125		
	Re e eV lage	V <sub>R</sub>	6	V	
	P e Di i ai	P	100	W	
O	Off-S ae O Te i al V lage	V <sub>DRM</sub>	OR-M302X	400	V
			OR-M305X	600	
			OR-M307X	800	
	O ae RMS c e	I <sub>T(RMS)</sub>	100	A(RMS)	
	Peak Re e i e S ge C e (PW=1 120 )	I <sub>TSM</sub>	1	A	
	J ci Te ea e	T <sub>J</sub>	125		
	C llec P e Di i ai	P <sub>C</sub>	300	W	
	T al P e Di i ai	P	330	W	
*1 I lai V lage	V <sub>i</sub>	3750	V		
W ki g Te ea e	T	-40 + 110			
De i Te ea e	T <sub>g</sub>	-55 + 125			
*2 S lde i g Te ea e	T <sub>1</sub>	260			

N e :

\*1 AC f l i e, R.H.= 40 60% R.H. I hi e , i 1, 2&3 ae h ed ge he , a d i 4, 6 ae h ed ge he .

\*2 F 10 ec d

6. Elec ical O ical Cha ac e i ic a Ta=25 C

Pa ame e		S mbol	Min	T .*	Ma	Uni	Condi ion	
I	F a d V l age	$V_F$	---	1.2	1.6	V	$I_F=10 \text{ A}$	
	Re e e C e	$I_R$	---	---	5	A	$V_R=6V$	
O	*1.Peak Bl cki g C e ,Ei he Di ec i	$I_{DRM}$	---	10	100	A	$V_{DRM} =$ Ra ed $V_{DRM}$	
	Peak O -S a e V l age, Ei he Di ec i	$V_{TM}$	---	---	2.5	V	$I_{TM}=100 \text{ A}$ Peak	
	*2.C i ical a e f Ri e f Off-S a e V l age	d /d	---	100	---	V/	$V_i =240V$	
OR-M302X OR-M305X OR-M307X	1000		---	---				
T a fe Cha ac e i ic	*3.Led T igge C e ,C e Re i ed La ch O ,Ei he Di ec i	OR-M3020 OR-M3050 OR-M3070	$I_{FT}$	---	---	30	A	Mai Te i al V l age = 3V
		OR-M3021 OR-M3051 OR-M3071		---	---	15		
		OR-M3022 OR-M3052 OR-M3072		---	---	10		
		OR-M3023 OR-M3053 OR-M3073		---	---	5		
		OR-M3024 OR-M3054 OR-M3074		---	---	3		
	H ldi g C e ,Ei he Di ec i	$I_H$	0.5	1.0	5.0	A		
	T -O Ti e	T	---	---	100		$V_D=6V$ $R_L=100$ $I_F=20 \text{ A}$	

\*1.Te l age be a lied i hi d /d a i g.

\*2.Thi i a ic d /d .C a i g d /d i a f c i f h e l a d -d i i g h i ( ) l .

\*3. All de ice a e g a a eed igge a a  $I_F$  a l e l e h a e a l a  $I_{FT}$ . The ef e, ec e ded e a i g  $I_F$  lie be ee a  $I_{FT}$ , 30 A f OR-M3020 a d OR-M3050, 15 A f OR-M3021 a d OR-M3051, 10 A f OR-M3022 a d OR-M3052, 5 A f OR-M3023 a d OR-M3053, 3 A f OR-M3024 a d OR-M3054, a d a b l e a  $I_F$  (50 A).



7. O de Info ma ion

Pa N mbe

**OR-M302X(L)-W-Y-Z**

**OR-M305X(L)-W-Y-Z**

**o OR-M307X(L)-W-Y-Z**

No e

M302X(L)/M305X(L)/M307X(L) = Pa N be (X = 0,1,2,3 4)

W = Ta e a d eel i (TP TP1).

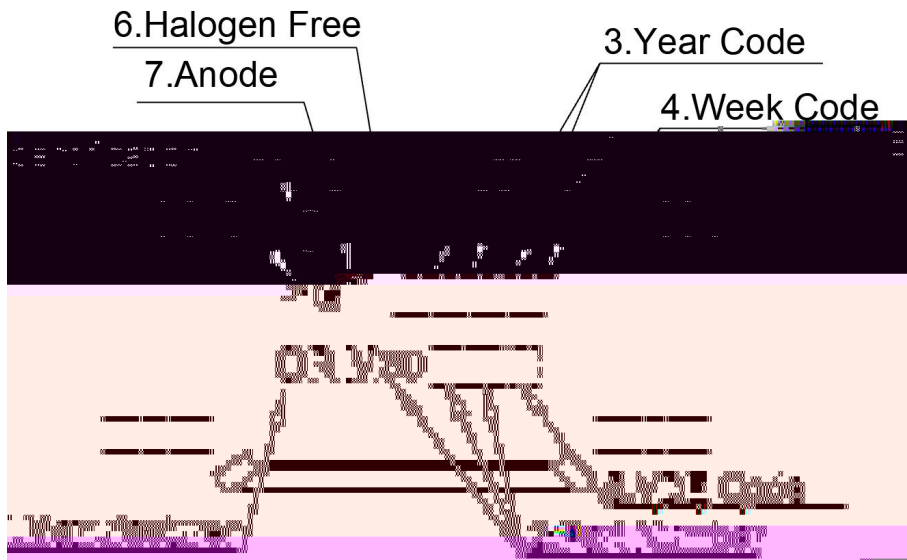
Y = V c de f VDE afe (Thi i i ece a ).

Z = G c de f Hal ge fee.

\* VDE C de ca be elec ed.

O ion	De c i ion	Packing an i
TP	S face lead f (l file) + TP a e & eel i	3000 i e eel
TP1	S face lead f (l file) + TP1 a e & eel i	3000 i e eel

## 8. Naming Rule

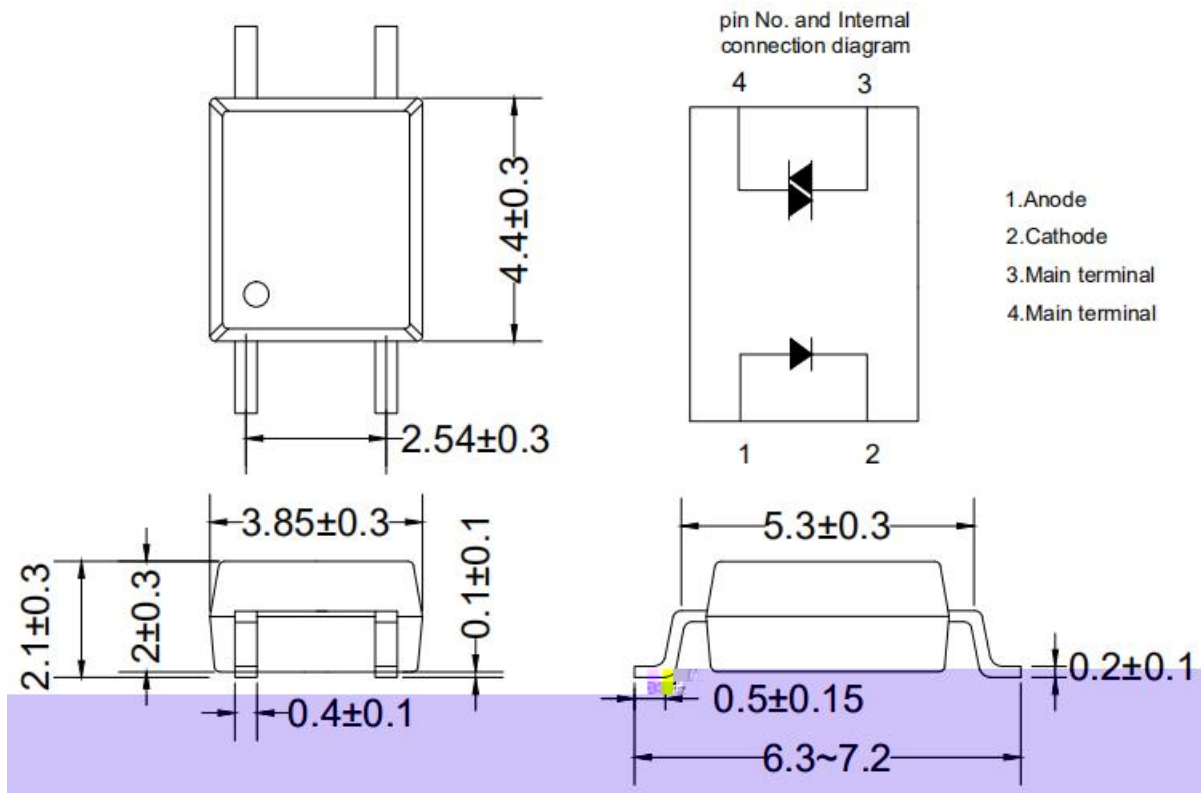


1. Manufacturer : ORIENT.
2. Part Number : M30□□.
3. Year Code □□ '21' ea '2021' a d .
4. Week Code □□ 01 ea he fi eek, 02 ea he ec d eek a d .
5. VDE Code □□□□. (Optional)
6. HFC Code G : Halogen Free.
7. Anode.
8. Identification .

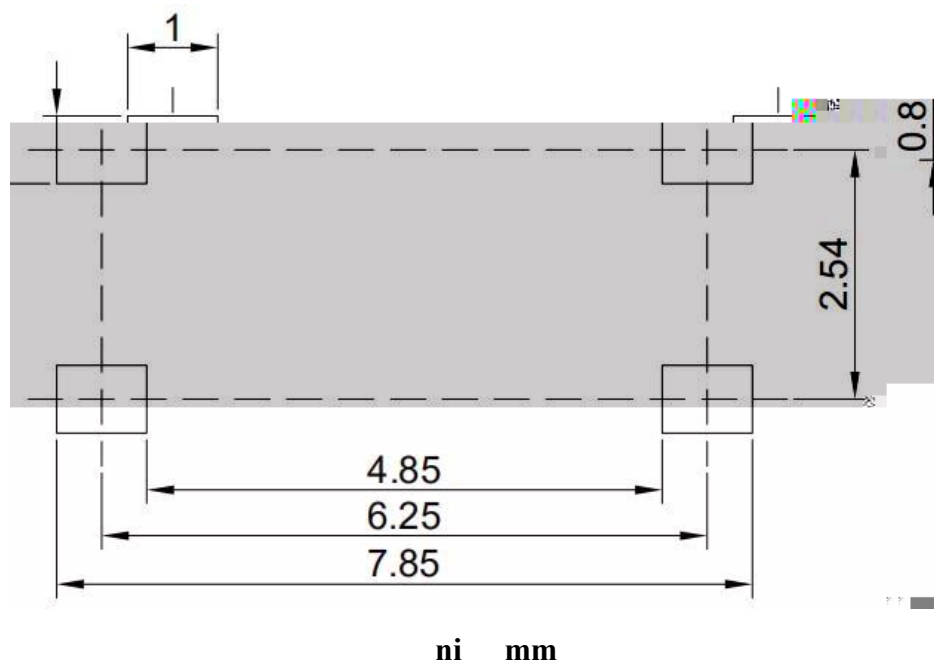
\* VDE Code cable elected.

### 9. Package Dimension

OR-M30XX

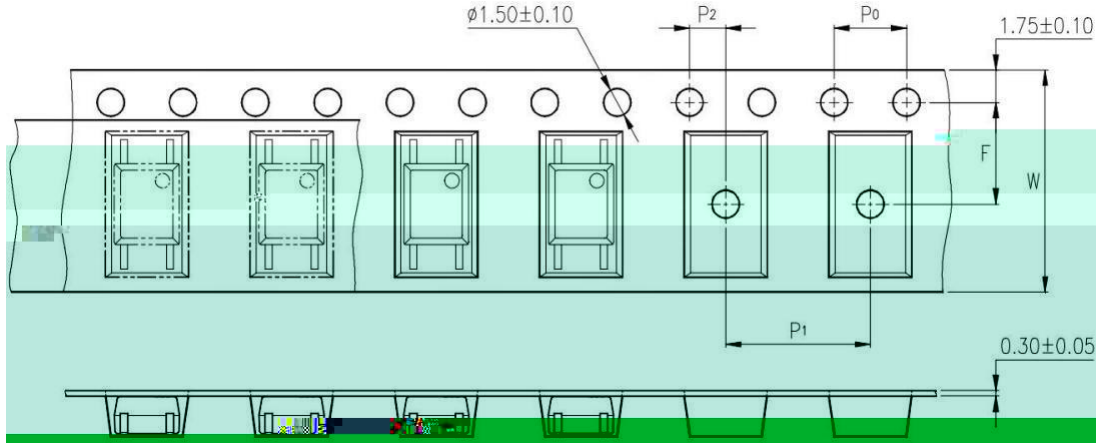


### 10. Recommended Foot Print Pattern (Mount Pad)

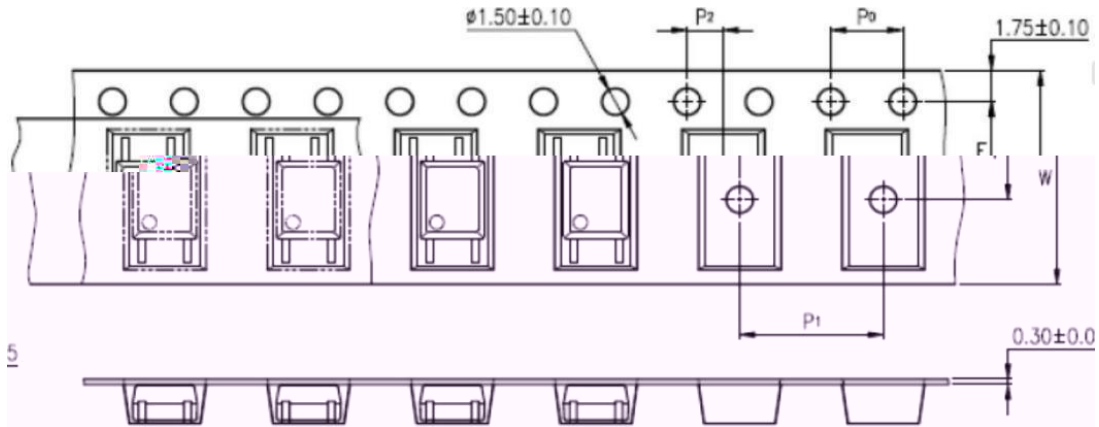


### 11. Ta ing Dimen ion

(1)TP T e



(2)TP1 T e



De c i i	S b l	Di e i i (i ch)
Ta e ide	W	12 0.3 0.472
Pi ch f c k e h l e	P0	4 0.1 0.157
Di a c e f c a e	F	5.5 0.1 0.217
	P2	2 0.1 0.079
Di a c e f c a e c a e	P1	8 0.1 0.315

Package T e	TP/TP1
Q a i i e ( c )	3000

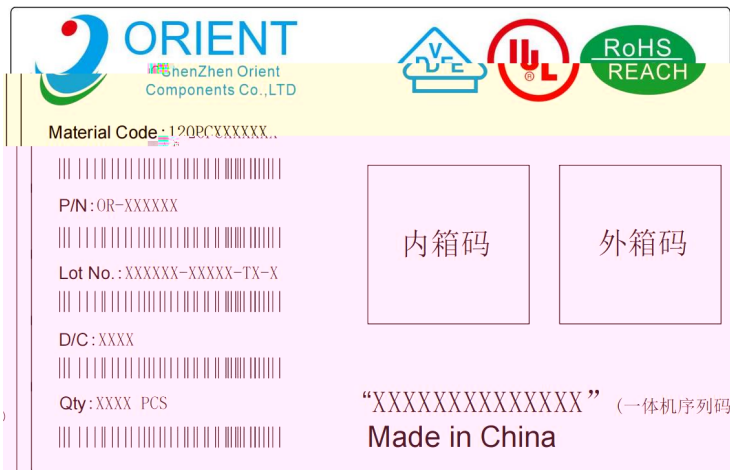


## 12. Package Dimension

### (1) Package dimension

Packing Information	
Packing	Reel
Tape Width	12
Quantity Reel	3,000 pcs
Small (inner) Dimension	345*345*45
Large (Outer) Dimension	480 360 360
Master Dimension	6,000 pcs
Master Length	60,000 pcs

### (2) Packing Label Sample



#### Note

1. Material Code: Product ID.
2. P/N: Character "O" de  
If "a" in the specification.
3. Lot No.: Product data.
4. D/C: Product week.
5. Quantity: Packaging quantity.



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2 Wa e lde i g (JEDEC22A111 c lia )

O e i e lde i gi ec e ded i hi he c di i f e e a e.

Te e a e	260+0/-5 C
Ti e	10 ec
P ehea e e a e	5 140 C
P ehea i e	30 80 ec



3 Ha d lde i g b lde i gi

All i gle lead lde i gi e e i gle ce .O e i e lde i gi ec e ded.

Temperature	380+0/-5°C
Time	3 sec max

### 14. CHARACTERISTICS CURVES (TYPICAL PERFORMANCE)

Fig.1 Forward current vs Ambient temperature

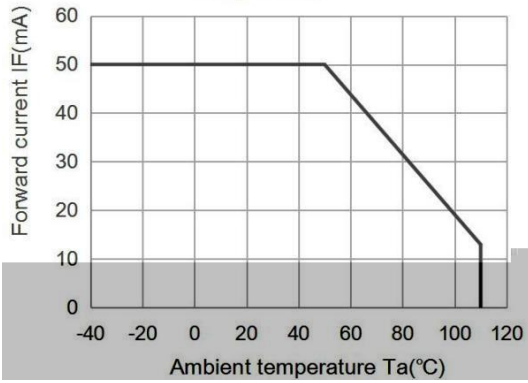


Fig.2 On-state current ITM (A) vs Ambient temperature

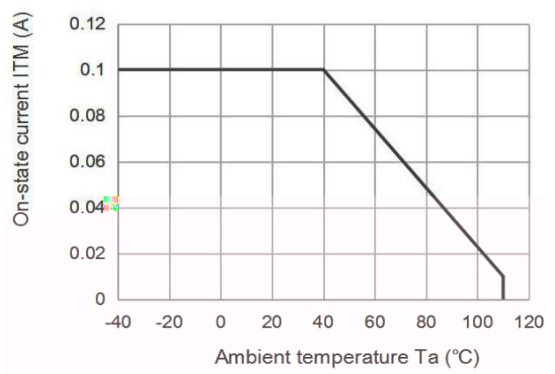


Fig.3 Minimum Trigger Current vs. Ambient temperature

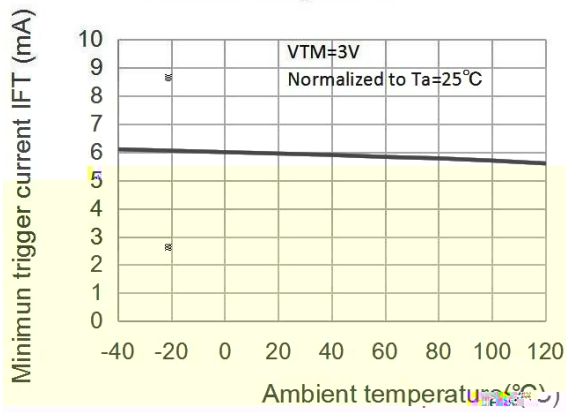


Fig.4 Forward current vs. Forward voltage

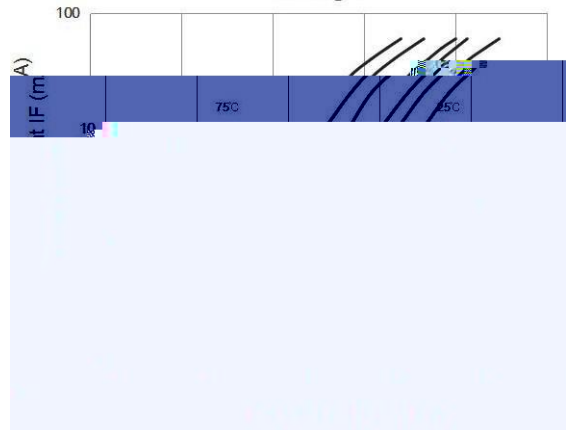


Fig.5 On-state voltage vs. Ambient temperature



Fig.6 Holding current vs. Ambient temperature

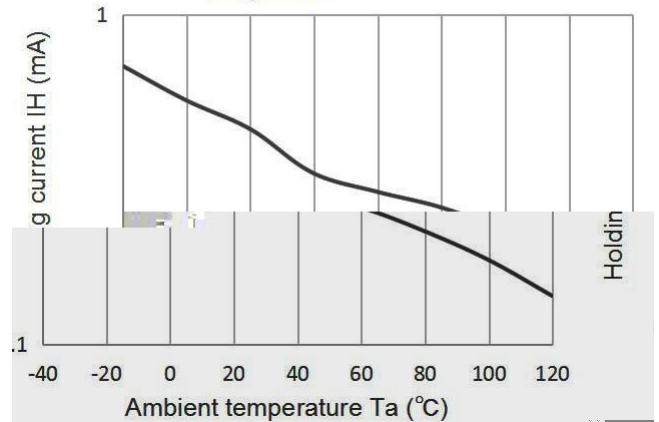


Fig.7 Repetitive peak off-state current vs. Temperature

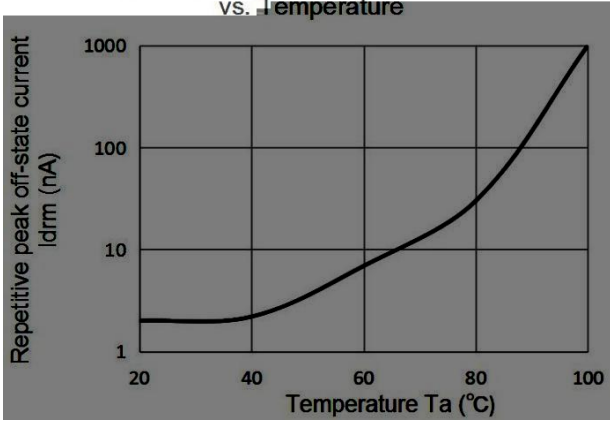


Fig.8 On-state current vs. On-state voltage

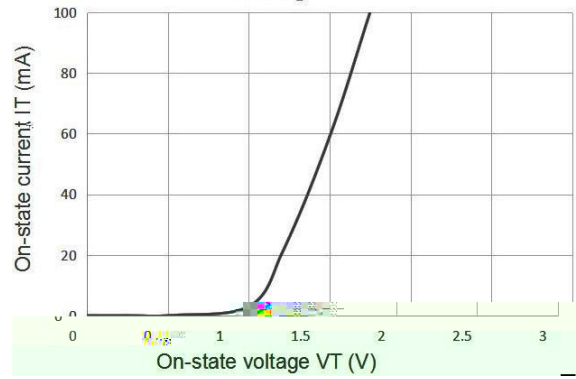


Fig9. Basic On-state Characteristics /High Power Triac Drive Circuit

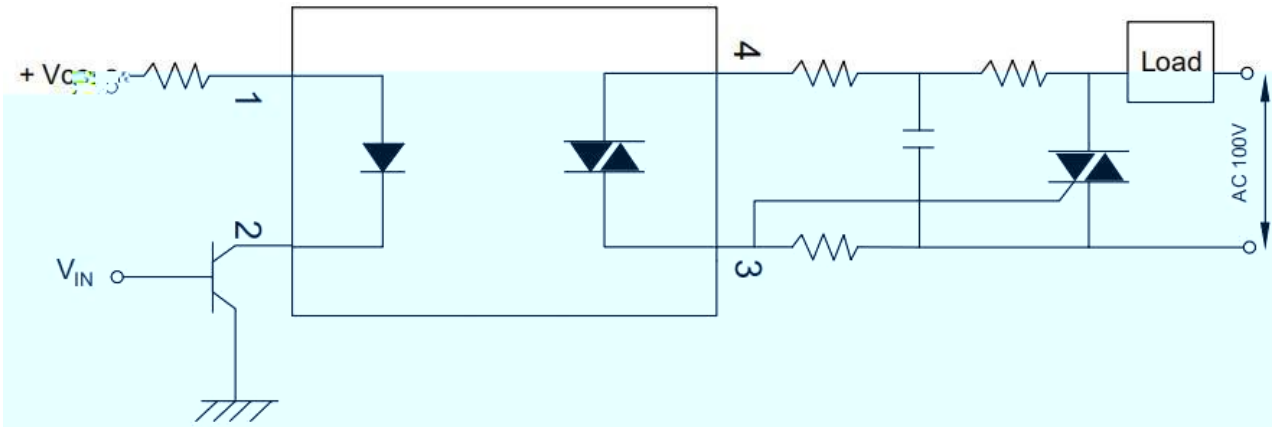
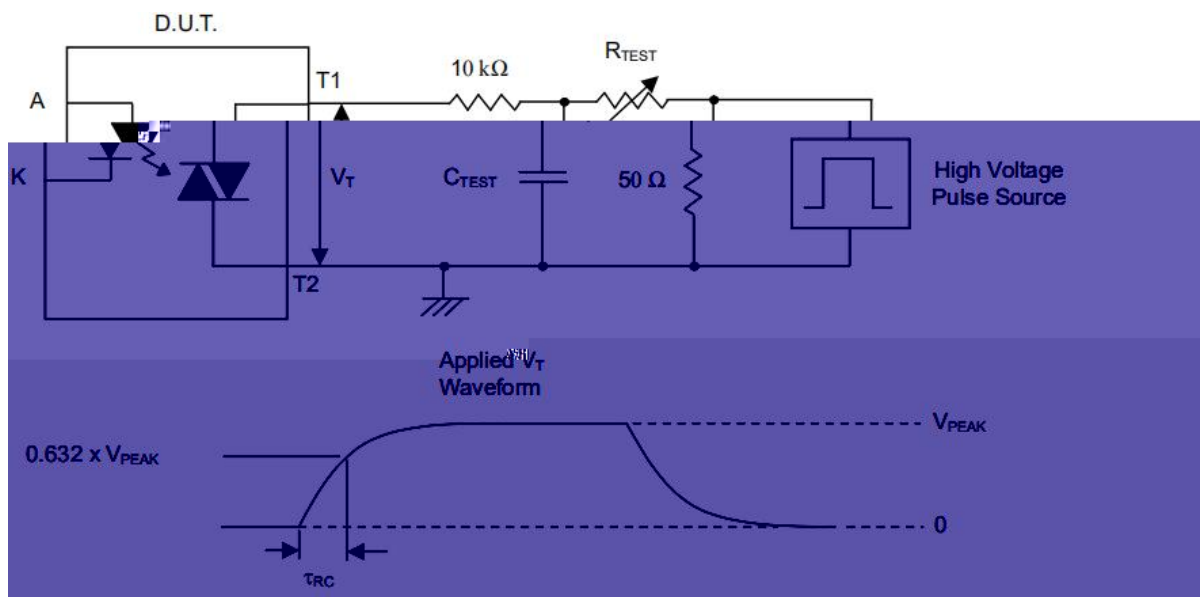


Fig10. Standard Test Circuit & Waveform



## Measurement Method

The high voltage pulse is set to the required  $V_{PEAK}$  value and applied to the D.U.T. output side through the RC circuit above. LED current is not applied. The waveform  $V_T$  is monitored using a x100 scope probe. By varying  $R_{TEST}$ , the  $dv/dt$  (slope) is increased, until the D.U.T. is observed to trigger (waveform collapses). The  $dv/dt$  is then decreased until the D.U.T. stops triggering. At this point,  $\tau_{RC}$  is recorded and the  $dv/dt$  calculated.

$$dv/dt = \frac{0.632 \times V_{PEAK}}{\tau_{RC}}$$

$$dv/dt = \frac{0.632 \times V_{PEAK}}{\tau_{RC}}$$

For example,  $V_{PEAK} = 600V$  for EL306X series. The  $dv/dt$  value is calculated as follows:

$$dv/dt = \frac{0.63 \times 600}{\tau_{RC}} = \frac{378}{\tau_{RC}}$$