



# T2550H-600T

## HIGH TEMPERATURE TRIAC FOR HOT APPLIANCES

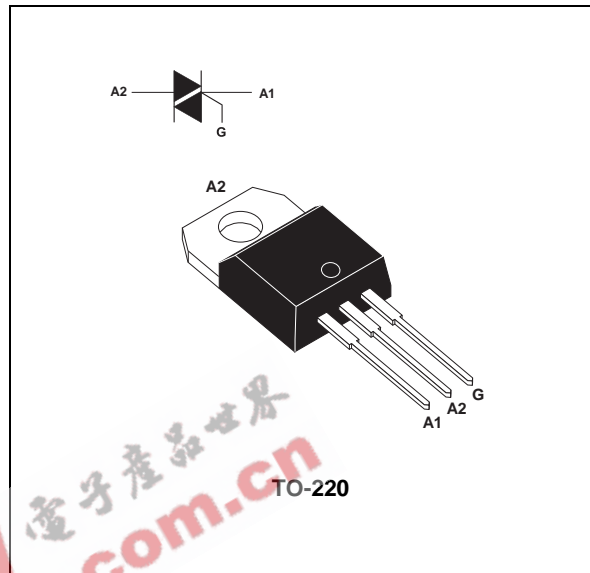
### MAIN FEATURES :

- HIGH JUNCTION TEMPERATURE:  
T<sub>j</sub> (MAX) = 150°C
- I<sub>T(RMS)</sub> = 25 A
- V<sub>DRM</sub>/V<sub>RRM</sub> = 600 V
- SENSITIVITY : I<sub>GT</sub> (MAX) = 50mA

### DESCRIPTION

Specifically developed for use in high temperature and harsh environments, the T2550H-600T triac is perfectly suited to driving heating elements found in hot appliances such as ovens, electric ranges or halogen ranges.

The T2550H-600T, which is specified for use in temperature up to T<sub>j</sub> = 150 °C, offers the additional benefit of improved thermal resistance (1 °C/W). Thanks to this feature, heatsink dimensioning can be optimized to suit typical conditions in such applications. The devices surge features, which have proven to be highly performing, ensure safe operation under peak inrush current conditions - for example, in halogen ranges.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit	
V <sub>RRM</sub> V <sub>DRM</sub>	Repetitive peak-off state voltage	T <sub>j</sub> = 150 °C 600	V	
I <sub>T(RMS)</sub>	RMS on-state current (360° conduction angle)	T <sub>c</sub> = 120 °C 25	A	
I <sub>TSM</sub>	Non repetitive surge peak on-state current (T <sub>j</sub> initial = 25°C )	tp = 8.3 ms	260	A
		tp = 10 ms	250	
i <sup>2</sup> <sub>t</sub>	i <sup>2</sup> <sub>t</sub> Value for fusing	tp = 10 ms	310	A <sup>2</sup> s
di/dt	Critical rate of rise of on-state current  (T <sub>j</sub> initial = 25 °C) I <sub>G</sub> = 60 mA tr ≤100ns	Repetitive F = 50 Hz	20	A/μs
		Non Repetitive	100	
T <sub>stg</sub> T <sub>j</sub>	Storage and operating junction temperature range	- 40 to + 150	°C	

## T2550H-600T

### THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case for DC	1.3	°C/W
Rth(j-c)	Junction to case for AC 360 ° conduction angle (F = 50 Hz)	1	°C/W

### GATE CHARACTERISTICS

$P_{G(AV)} = 1 \text{ W}$

$P_{GM} = 10 \text{ W}$  (tp = 20 μs)

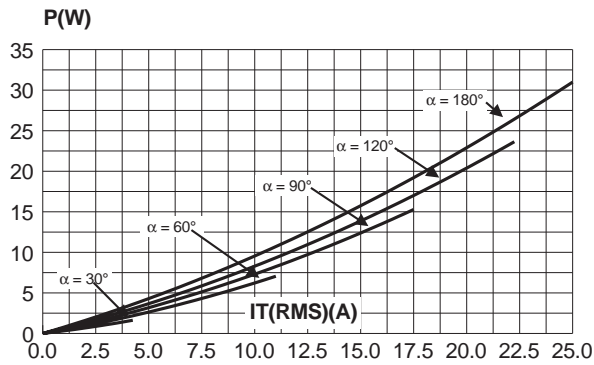
$I_{GM} = 4 \text{ A}$  (tp = 20 μs)

Symbol	Test Conditions	Quadrant	Value	Unit	
IGT	VD=12V (DC) RL=33 Ω Tj = 25 °C	I - II - III	MIN	5	mA
			MAX	50	
VGT	VD=12V (DC) RL=33 Ω Tj = 25 °C	I - II - III	MAX	1.3	V
VGD	VD=VDRM RL=3.3 kΩ Tj = 150 °C	I - II - III	MIN	0.15	V
IH	IT= 500 mA Gate open Tj = 25 °C		MAX	75	mA
IL	IG = 1.2 IGT Tj = 25 °C	I - II - III	MAX	90	mA
VTM	ITM = 35 A tp = 380 μs Tj = 25 °C		MAX	1.5	V
IDRM	VD = VDRM Tj = 25 °C		MAX	5	μA
IRRM	VR = VRRM Tj = 150 °C		MAX	8.5	mA
	VD / VR = 400 V (operating application conditions) Tj = 150 °C		MAX	5.5	
dV/dt	VD= 67% VDRM Gate open Tj = 150 °C		MIN	250	V/μs
(di/dt)c	(dV/dt)c = 5 V/μs Tj = 150 °C		MIN	10	A/ms
	Without snubber			7	

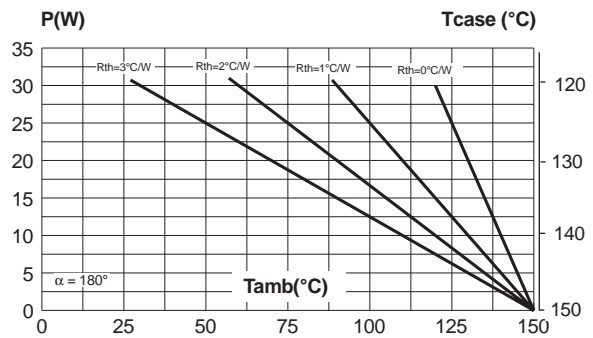
### ORDER INFORMATION

<b>T</b>	<b>25</b>	<b>50</b>	<b>H</b>	<b>-</b>	<b>600</b>	<b>T</b>
↓	↓	↓	↓		↓	↓
Triac	Current	Gate Sensitivity	High Temperature Triac		Voltage	Package T: TO-220

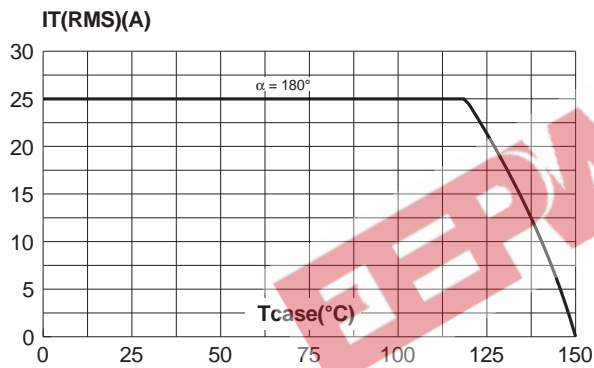
**Fig. 1:** Maximum power dissipation versus RMS on-state current.



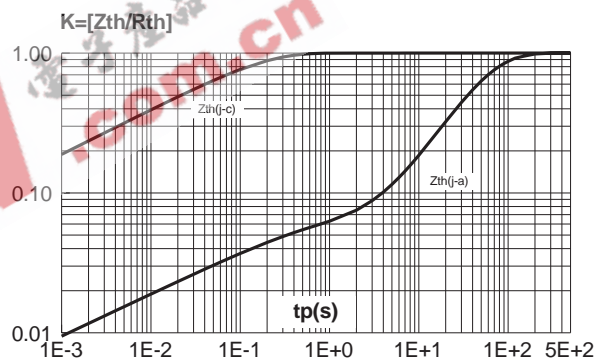
**Fig. 2:** Correlation between maximum power dissipation and maximum allowable temperatures ( $T_{amb}$  and  $T_{case}$ ) for different thermal resistances heatsink+contact.



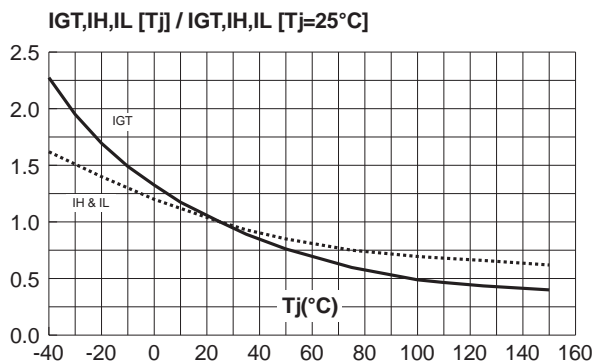
**Fig. 3:** RMS on-state current versus case temperature.



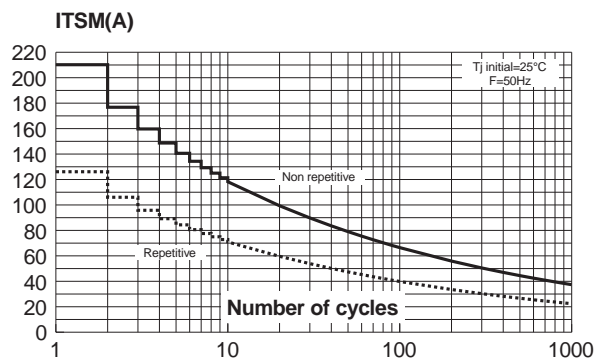
**Fig. 4:** Relative variation of thermal impedance versus pulse duration.



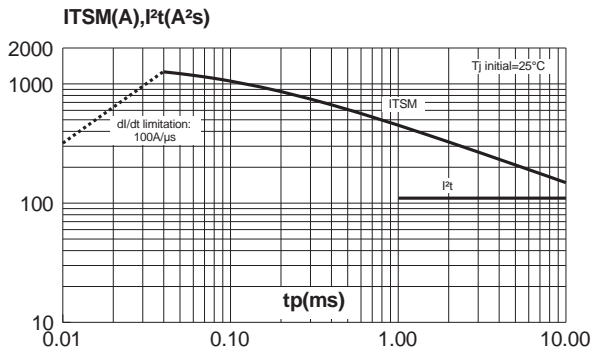
**Fig. 5:** Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).



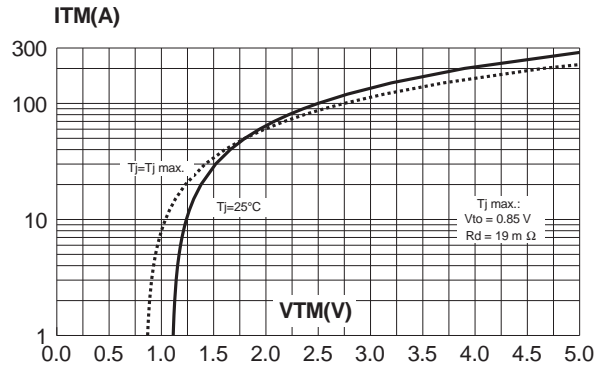
**Fig. 6:** Surge peak on-state current versus number of cycles.



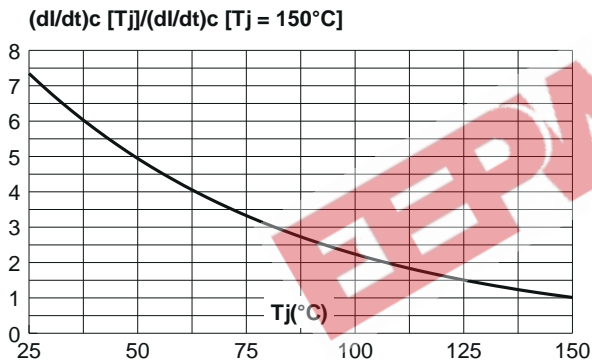
**Fig. 7:** Non repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$ .



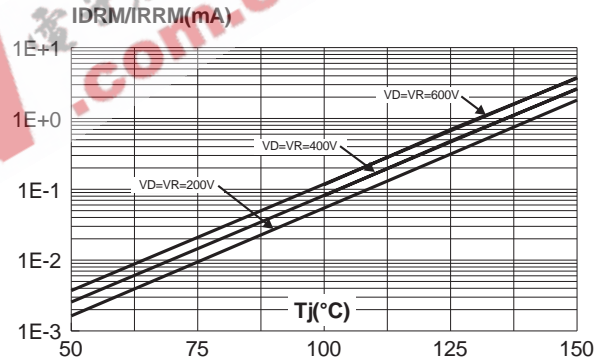
**Fig. 8:** On-state characteristics (maximum values).



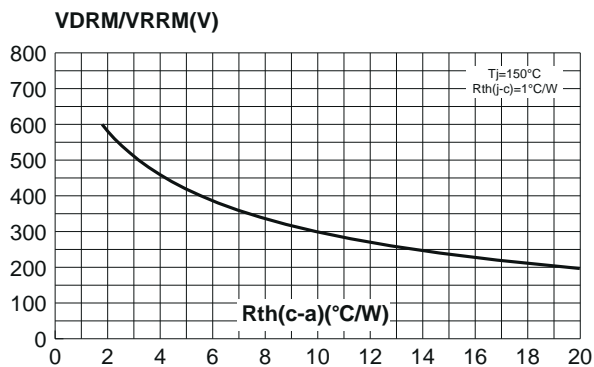
**Fig. 9:** Relative variation of critical rate of decrease of main current versus junction temperature (typical values).

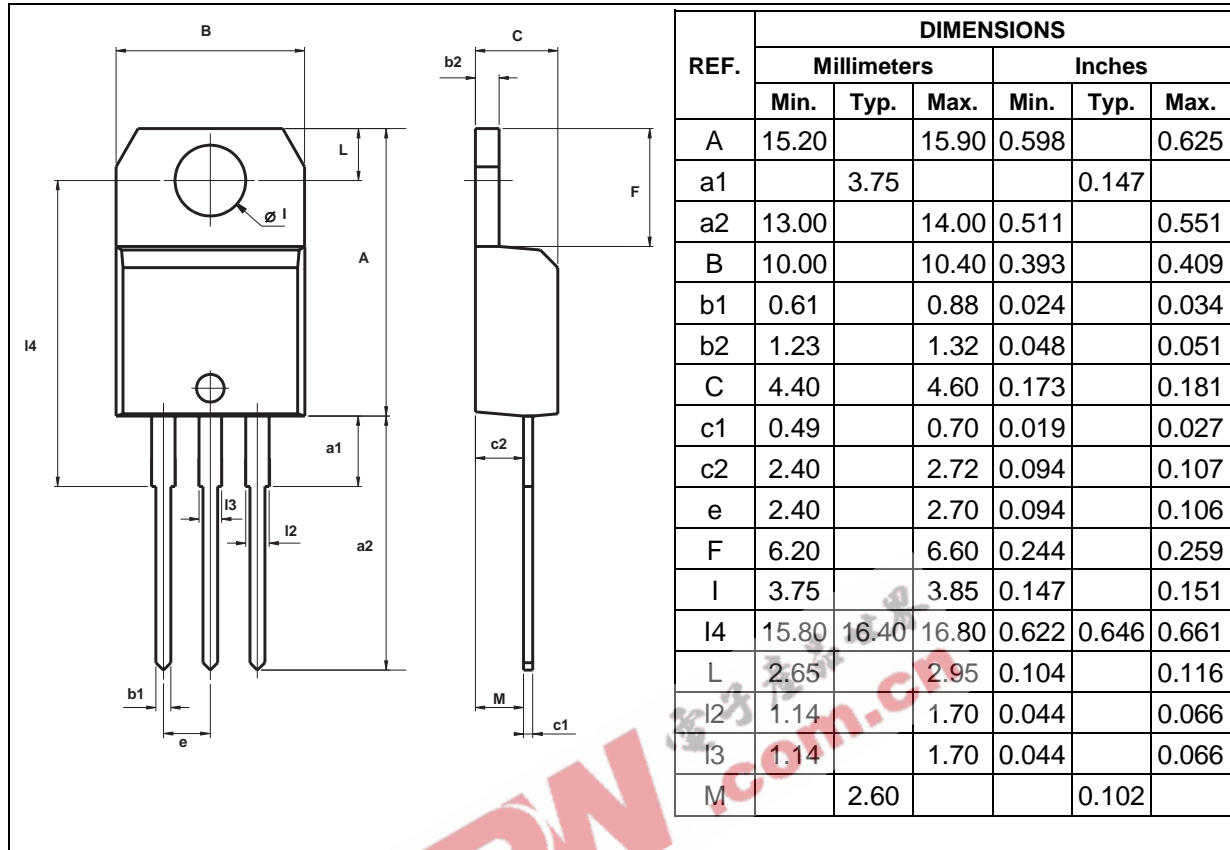


**Fig. 10:** Typical variation of leakage current versus junction temperature for different values of blocking voltage.



**Fig. 11:** Acceptable repetitive peak off state voltage versus thermal resistance case-ambient.



**PACKAGE MECHANICAL DATA**  
 TO-220 (Plastic)


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