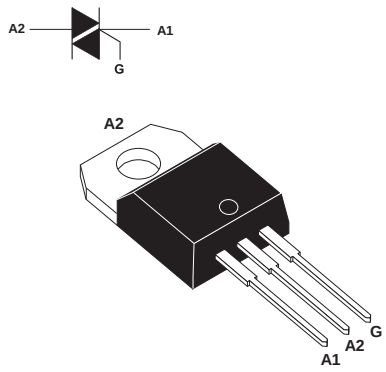
T2550H-600T

HIGH TEMPERATURE TRIAC FOR HOT APPLIANCES

MAIN FEATURES :

- HIGH JUNCTION TEMPERATURE: Tj (MAX) = 150°C
- $I_{T(RMS)}$ = 25 A
- V_{DRM}/V_{RRM} = 600 V
- SENSITIVITY : I_{GT} (MAX) = 50mA



TO-220

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 Tj = 150 °C, offers the additional benefit of improved thermal resistance (1 °C/W). Thanks to this feature, heatsink dimensionning 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_{RRM} V_{DRM}	Repetitive peak-off state voltage	Tj = 150 °C	600	V
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	Tc = 120 °C	25	A
I_{TSM}	Non repetitive surge peak on-state current (Tj initial = 25°C)	tp = 8.3 ms	260	A
		tp = 10 ms	250	
I^2t	I^2t Value for fusing	tp = 10 ms	310	A^2s
dI/dt	Critical rate of rise of on-state current	Repetitive F = 50 Hz	20	A/µs
	(Tj initial = 25 °C) I_G = 60 mA tr ≤100ns	Non Repetitive	100	
T_{stg} T_j	Storage and operating junction temperature range		- 40 to + 150	°C

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 W P_{GM} = 10 W (tp = 20 µs) I_{GM} = 4 A (tp = 20 µs)

Symbol	Test Conditions		Quadrant		Value	Unit
I_{GT}	V_D=12V (DC) R_L=33 Ω	Tj = 25 °C	I - II - III	MIN	5	mA
				MAX	50	
V_{GT}	V_D=12V (DC) R_L=33 Ω	Tj = 25 °C	I - II - III	MAX	1.3	V
V_{GD}	V_D=V_{DRM} R_L=3.3 kΩ	Tj = 150 °C	I - II - III	MIN	0.15	V
I_H	I_T= 500 mA Gate open	Tj = 25 °C		MAX	75	mA
I_L	I_G = 1.2 I_{GT}	Tj = 25 °C	I - II - III	MAX	90	mA
V_{TM}	I_{TM} = 35 A tp = 380 µs	Tj = 25 °C		MAX	1.5	V
I_{DRM}	V_D = V_{DRM}	Tj = 25 °C		MAX	5	µA
I_{RRM}	V_R = V_{RRM}	Tj = 150 °C		MAX	8.5	mA
	V_D / V_R = 400 V (operating application conditions)	Tj = 150 °C		MAX	5.5	
dV/dt	V_D= 67% V_{DRM} 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

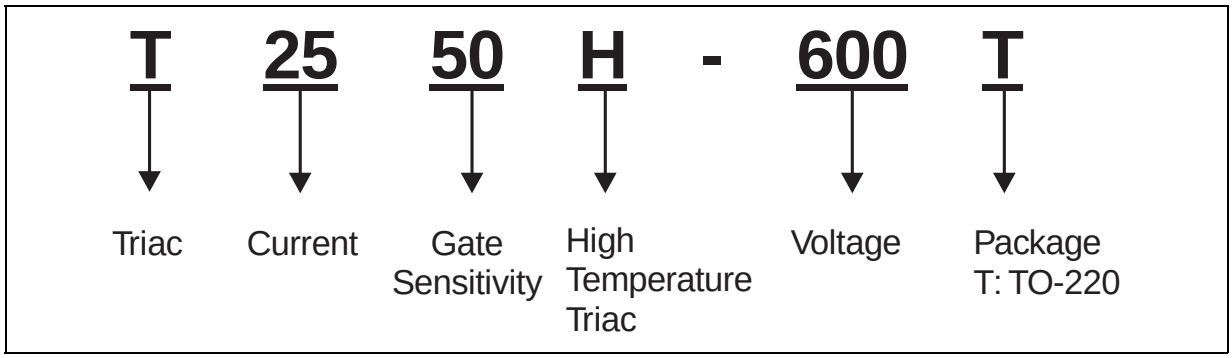


Fig. 1: Maximum power dissipation versus RMS on-state current.

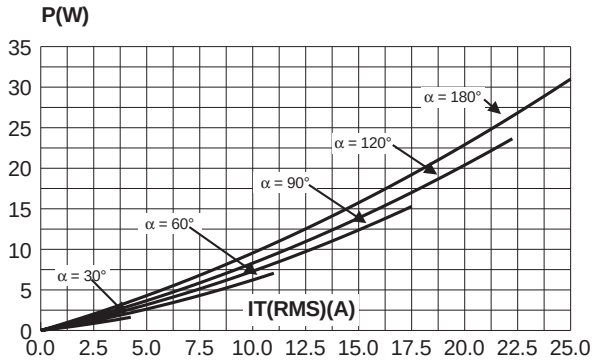


Fig. 2: Correlation between maximum power dissipation and maximum allowable temperatures (Tamb and Tcase) for different thermal resistances heatsink+contact.

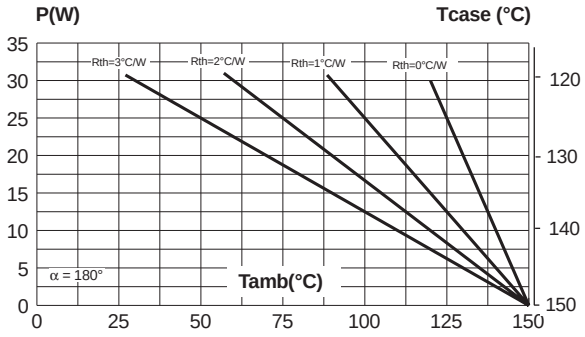


Fig. 3: RMS on-state current versus case temperature.

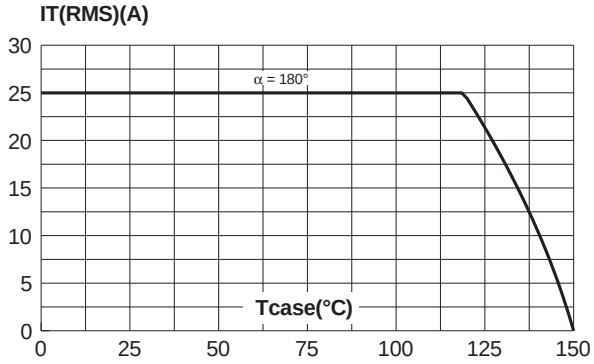


Fig. 4: Relative variation of thermal impedance versus pulse duration.

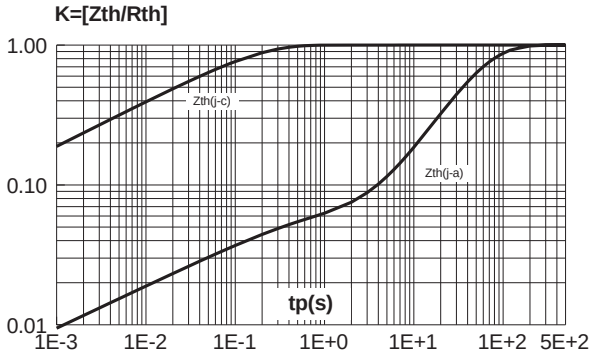


Fig. 5: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

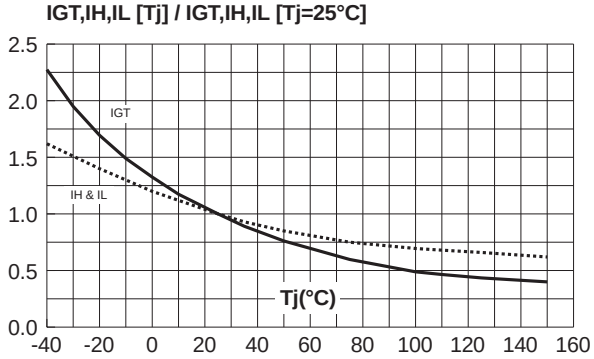


Fig. 6: Surge peak on-state current versus number of cycles.

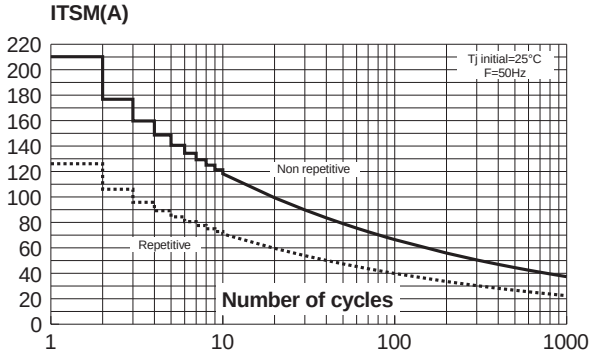


Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I^2t.

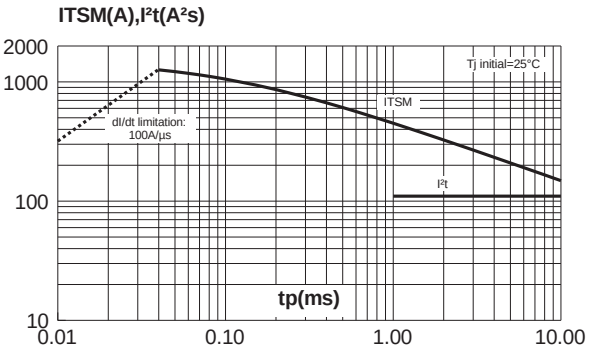


Fig. 8: On-state characteristics (maximum values).

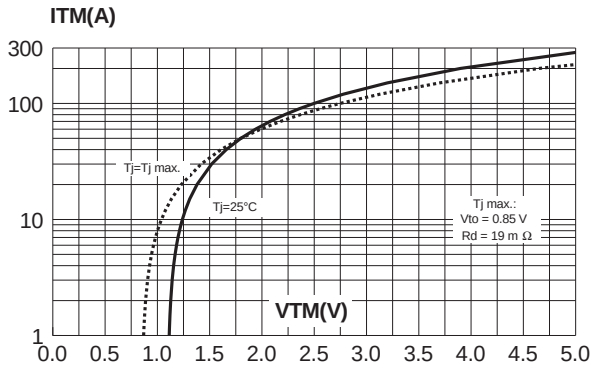


Fig. 9: Relative variation of critical rate of decrease of main current versus junction temperature (typical values).

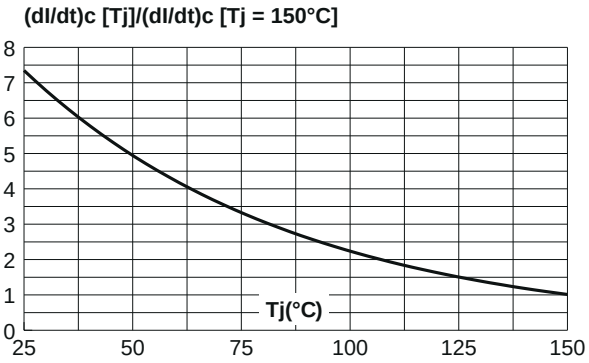


Fig. 10: Typical variation of leakage current versus junction temperature for different values of blocking voltage.

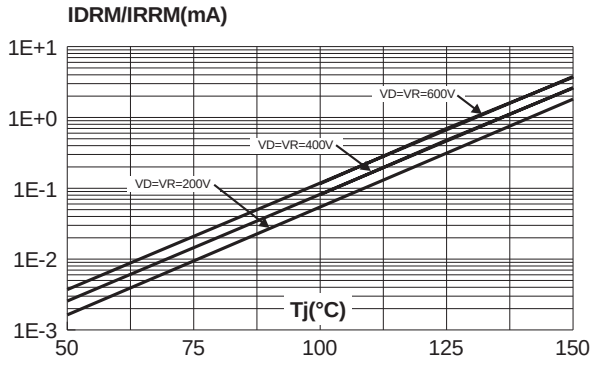
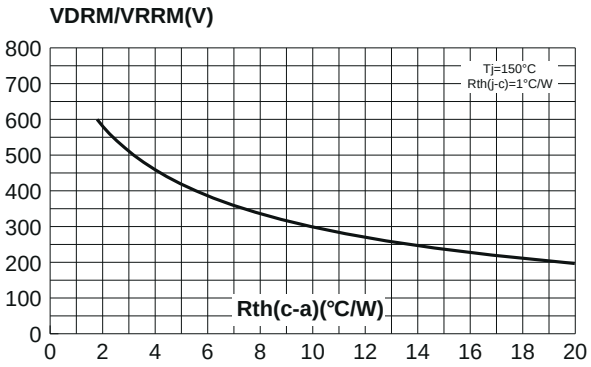
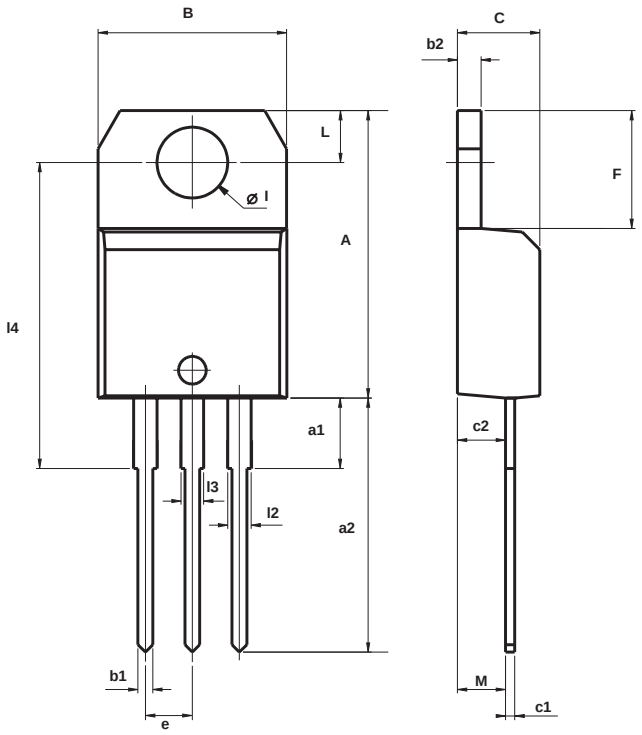


Fig. 11: Acceptable repetitive peak off state voltage versus thermal resistance case-ambient.



PACKAGE MECHANICAL DATA

TO-220 (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
I	3.75		3.85	0.147		0.151
l4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
l2	1.14		1.70	0.044		0.066
l3	1.14		1.70	0.044		0.066
M		2.60			0.102	