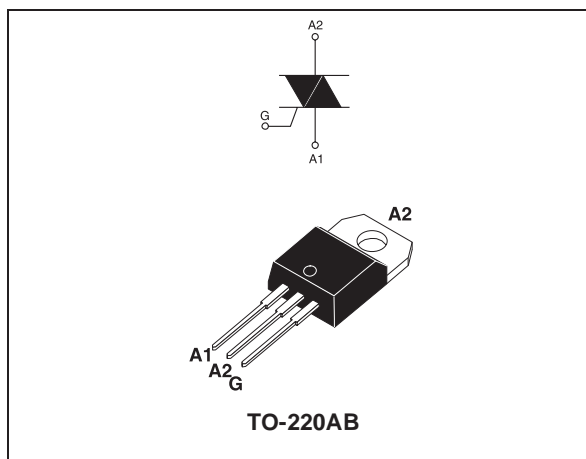


### MAIN FEATURES:

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT}(Q_1)$	50	mA

### DESCRIPTION



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)		$T_c = 125^\circ\text{C}$	25	A
$I_{TSM}$	Non repetitive surge peak on-state current (full cycle, $T_j$ initial = $25^\circ\text{C}$ )	F = 60 Hz	t = 16.7 ms	260	A
		F = 50 Hz	t = 20 ms	250	
$I^2 t$	$I^2 t$ Value for fusing	tp = 10 ms		340	$\text{A}^2\text{s}$
di/dt	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$ , tr ≤ 100 ns	F = 120 Hz	$T_j = 150^\circ\text{C}$	50	A/μs
$V_{DSM}/V_{RSM}$	Non repetitive surge peak off-state voltage	tp = 10 ms	$T_j = 25^\circ\text{C}$	700	V
$I_{GM}$	Peak gate current	tp = 20 μs	$T_j = 150^\circ\text{C}$	4	A
$P_{G(AV)}$	Average gate power dissipation		$T_j = 150^\circ\text{C}$	1	W
$T_{stg}$ $T_j$	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 150	$^\circ\text{C}$

## T2550H-600T

### ELECTRICAL CHARACTERISTICS (T<sub>j</sub> = 25°C, unless otherwise specified)

Symbol	Test Conditions	Quadrant		Value	Unit
I <sub>GT</sub> (1)	V <sub>D</sub> = 12 V    R <sub>L</sub> = 33 Ω	I - II - III	MAX.	50	mA
V <sub>GT</sub>				1.3	V
V <sub>GD</sub>	V <sub>D</sub> = V <sub>DRM</sub> R <sub>L</sub> = 3.3 kΩ    T <sub>j</sub> = 150°C	I - II - III	MIN.	0.15	V
I <sub>H</sub> (2)	I <sub>T</sub> = 500 mA		MAX.	75	mA
I <sub>L</sub>	I <sub>G</sub> = 1.2 I <sub>GT</sub>	I - II - III	MAX.	90	mA
dV/dt (2)	V <sub>D</sub> = 67 % V <sub>DRM</sub> gate open    T <sub>j</sub> = 150°C		MIN.	500	V/μs
(dI/dt) <sub>c</sub> (2)	Without snubber    T <sub>j</sub> = 150°C		MIN.	11.1	A/ms

### STATIC CHARACTERISTICS

Symbol	Test Conditions		Value	Unit	
V <sub>TM</sub> (2)	I <sub>TM</sub> = 35 A    t <sub>p</sub> = 380 μs	T <sub>j</sub> = 25°C	MAX.	1.5	V
V <sub>to</sub> (2)	Threshold voltage	T <sub>j</sub> = 150°C	MAX.	0.80	V
R <sub>d</sub> (2)	Dynamic resistance	T <sub>j</sub> = 150°C	MAX.	19	mΩ
I <sub>DRM</sub>	V <sub>DRM</sub> = V <sub>RDM</sub>	T <sub>j</sub> = 25°C	MAX.	5	μA
		T <sub>j</sub> = 150°C		8.5	mA
I <sub>RDM</sub>	V <sub>DRM</sub> / V <sub>RDM</sub> = 400 V (at mains peak voltage)	T <sub>j</sub> = 150°C		5.5	

**Note 1:** minimum IGT is guaranteed at 10% of IGT max.

**Note 2:** for both polarities of A2 referenced to A1

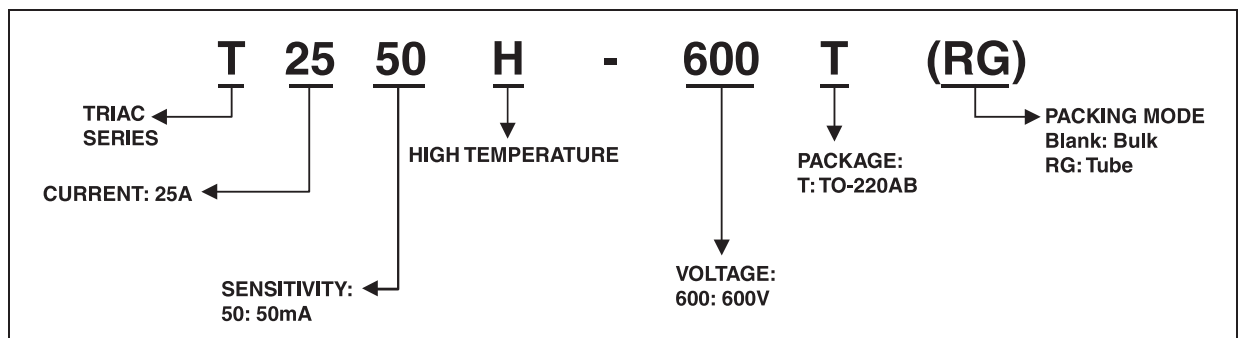
### THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	Junction to case (AC)	0.8	°C/W

### PRODUCT SELECTOR

Part Number	Voltage	Sensitivity	Type	Package
T2550H-600T	600 V	50 mA	Snubberless	TO-220AB

### ORDERING INFORMATION



OTHER INFORMATION

Part Number	Marking	Weight	Base quantity	Packing mode
T2550H-600T	T2550H600T	2.3 g	250	Bulk
T2550H-600TRG	T2550H600T	2.3 g	50	Tube

Fig. 1: Maximum power dissipation versus RMS on-state current (full cycle).

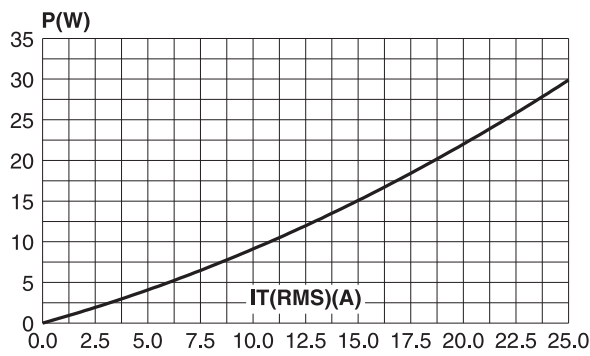


Fig. 3: Relative variation of thermal impedance versus pulse duration.

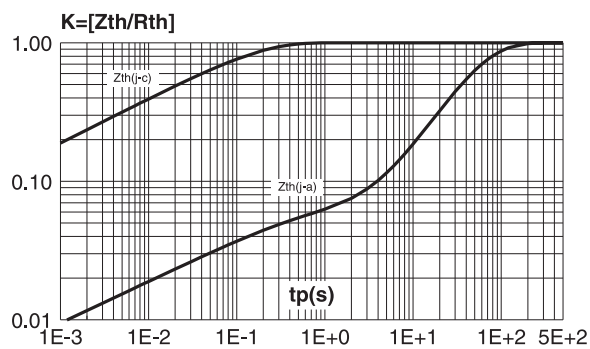


Fig. 2: RMS on-state current versus case temperature (full cycle).

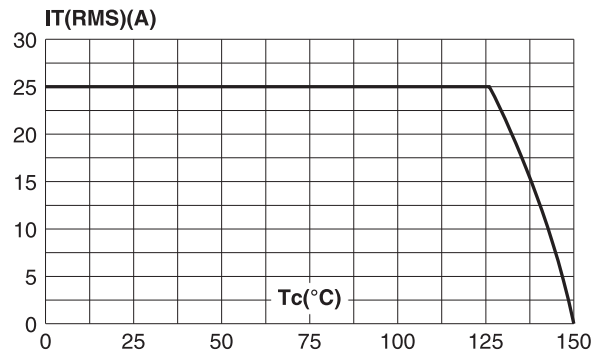
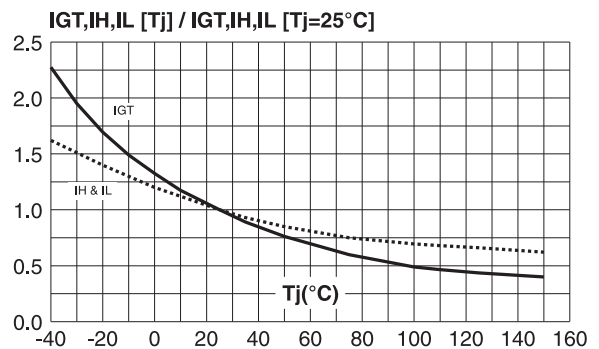
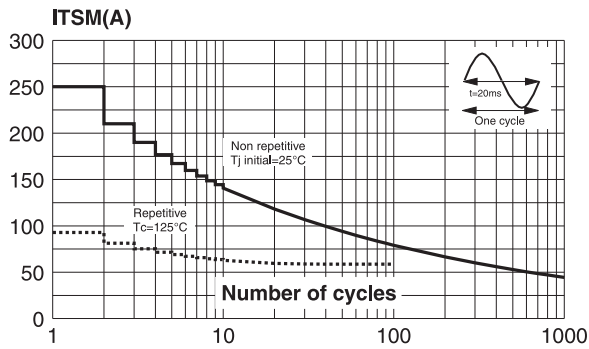


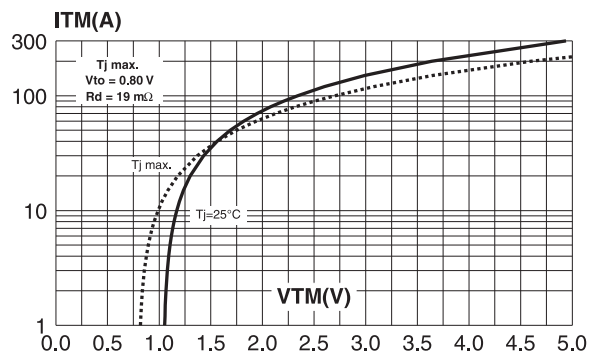
Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).



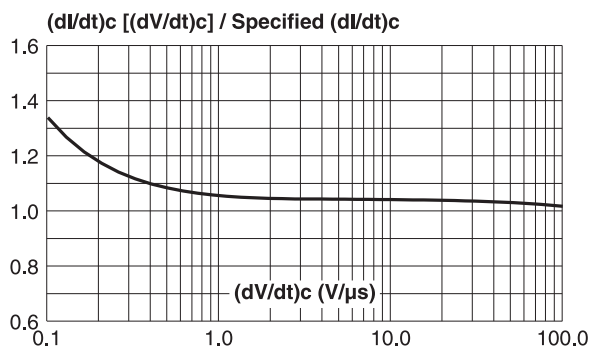
**Fig. 5:** Surge peak on-state current versus number of cycles.



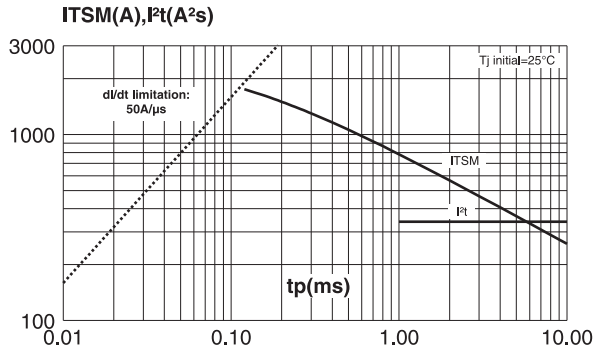
**Fig. 7:** On-state characteristics (maximum values).



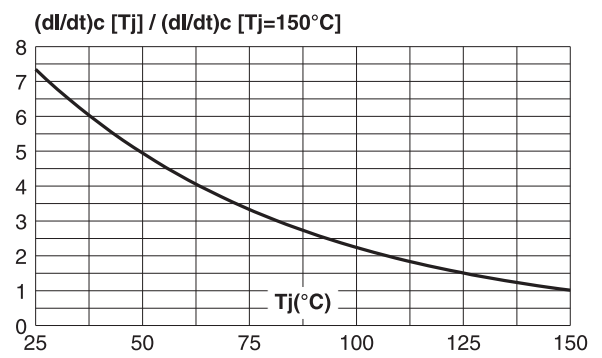
**Fig. 9:** Relative variation of critical rate of decrease of main current versus  $(dV/dt)c$  (typical values).



**Fig. 6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10ms$ , and corresponding value of  $I^2t$ .



**Fig. 8:** Relative variation of critical rate of decrease of main current versus junction temperature (typical values).



**Fig. 10:** Leakage current versus junction temperature for different values of blocking voltage (typical values).

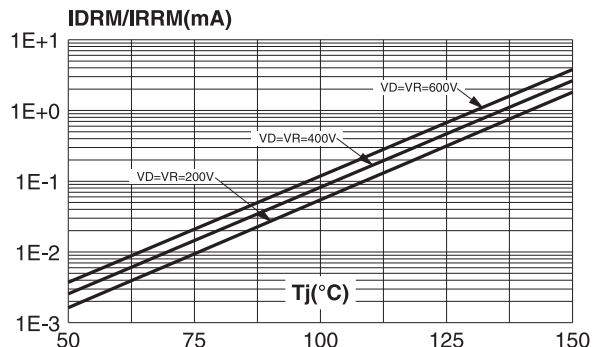
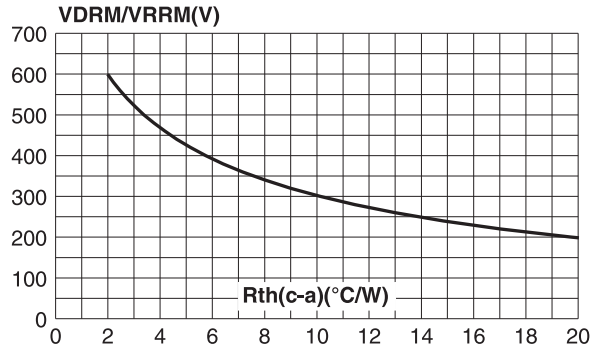


Fig. 11: Acceptable repetitive peak off-state voltage versus case-ambient thermal resistance.



PACKAGE MECHANICAL DATA

TO-220AB (Plastic)

