

HIGH PERFORMANCE TRIAC

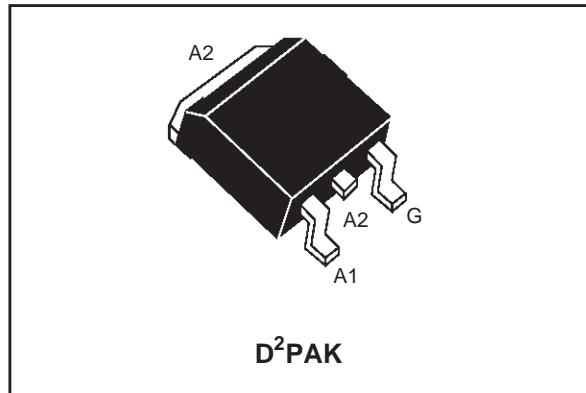
FEATURES

- HIGH COMMUTATION (dI/dt)c > 13 A/ms without snubber
- HIGH STATIC dV/dt > 500 V/ μ s

DESCRIPTION

The T2535-600G triac uses a high performance SNUBBERLESS™ technology.

The part is intended for general purpose applications using surface mount technology.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V_{DRM} V_{RRM}	Repetitive peak off-state voltage	125	°C
$I_T(\text{RMS})$	RMS on-state current (360° conduction angle)	25	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	tp = 8.3ms	A
		tp = 10 ms	
I^2t	I^2t Value (half-cycle, 50 Hz)	312.5	A^2s
dl/dt	Critical rate of rise of on-state current $I_G = 500$ mA $dl_G/dt = 1$ A/ μ s.	20	A/μ s
		100	
T_{stg} T_j	Storage temperature range Operating junction temperature range	-40, +150 -40, +125	°C
T_I	Maximum temperature for soldering during 10s	260	°C

T2535-600G

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-a)}	Junction to ambiant (S=1cm ²)	45	°C/W
R _{th(j-c)}	Junction to case for DC	1.4	°C/W
R _{th(j-c)}	Junction to case for AC 360° conduction angle (F=50Hz)	1.0	°C/W

GATE CHARACTERISTICS (maximum values)

P_{G (AV)}= 1 W P_{GM} = 10 W (tp = 20 µs) I_{GM} = 4 A (tp = 20 µs)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Quadrant		Sensitivity	Unit
I _{GT}	V _D =12V (DC) R _L =33Ω	T _j = 25°C	I-II-III	MIN	2	mA
				MAX	35	
V _{GT}	V _D =12V (DC) R _L =33Ω	T _j = 25°C	I-II-III	MAX	1.3	V
V _{GD}	V _D =V _{DRM} R _L =3.3kΩ	T _j = 125°C	I-II-III	MIN	0.2	V
I _H *	I _T = 500mA Gate open	T _j = 25°C		MAX	50	mA
I _L	I _G = 1.2 I _{GT}	T _j = 25°C	I-II-III	MAX	80	mA
V _{TM} *	I _{TM} = 35A tp= 380µs	T _j = 25°C		MAX	1.5	V
I _{DRM}	V _D = V _{DRM}	T _j = 25°C		MAX	5	µA
I _{RRM}	V _R = V _{RRM}			MAX	3	mA
dV/dt *	Linear slope up to V _D =67%V _{DRM} Gate open	T _j = 125°C		MIN	500	V/µs
(dI/dt)c *	Without snubber	T _j = 125°C		MIN	13	A/ms

* For either polarity of electrode A2 voltage with reference to electrode A1.

ORDERING INFORMATION Add "-TR" suffix for Tape & Reel shipment

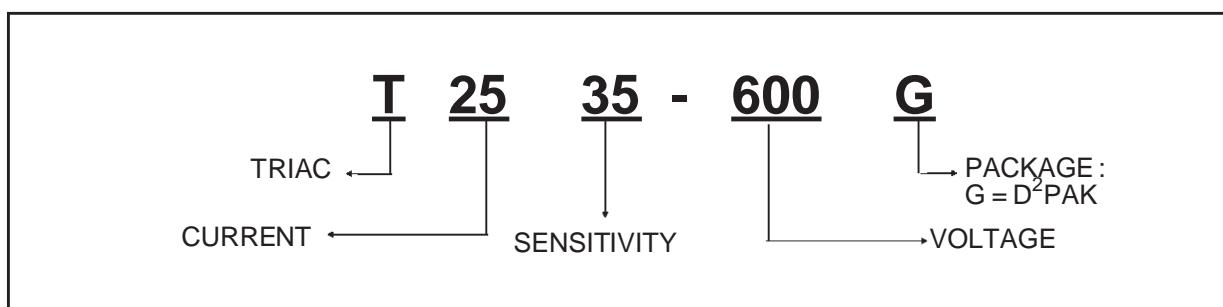


Fig. 1: Maximum power dissipation versus RMS on-state current .

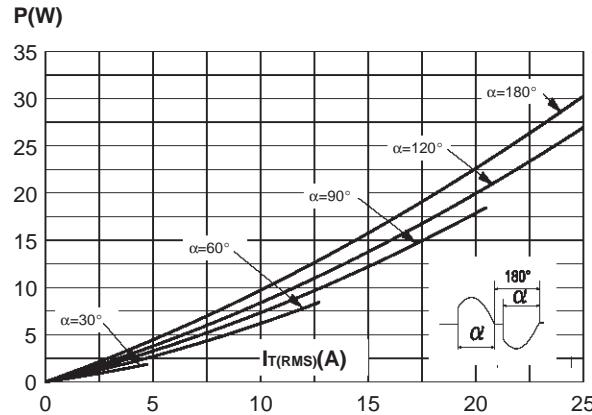


Fig. 3: RMS on-state current versus case temperature.

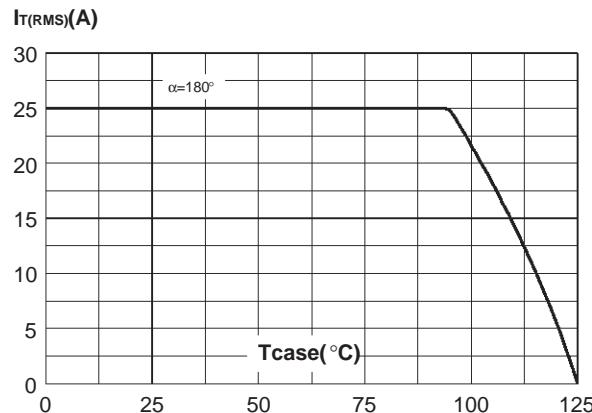


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature (typical values).

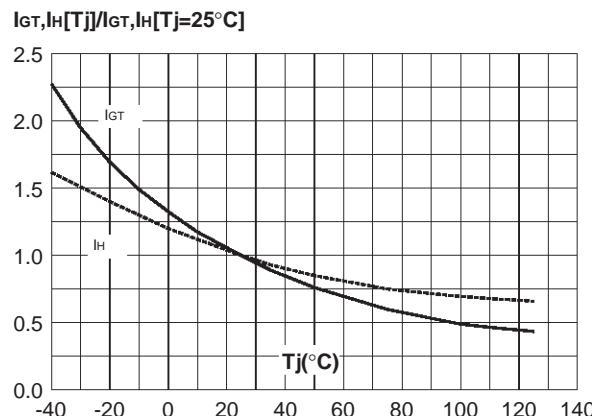


Fig. 2: Correlation between maximum power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink+contact.

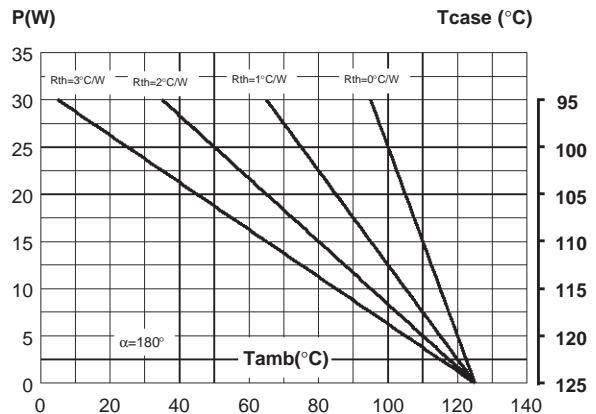


Fig. 4: Relative variation of thermal impedance versus pulse duration.

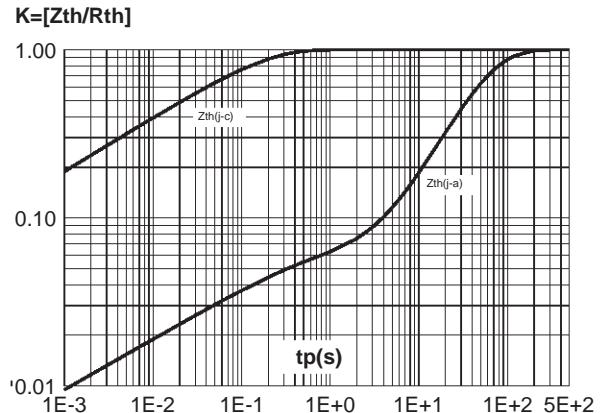
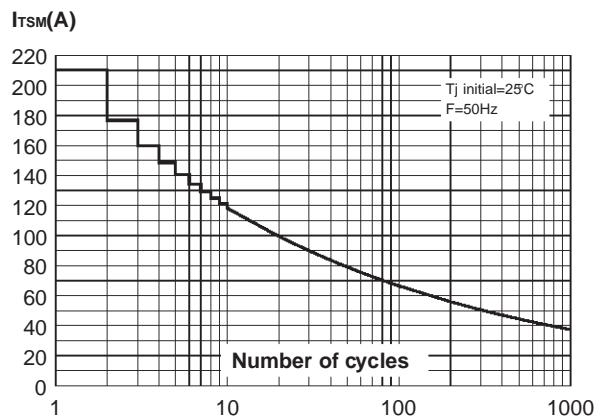


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



T2535-600G

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 .

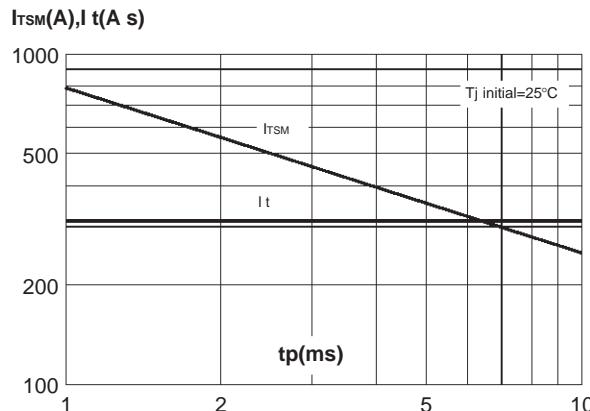


Fig. 9: Thermal resistance junction to ambient versus copper surface under tab (Epoxy printed circuit board FR4, copper thickness: $35\mu\text{m}$).

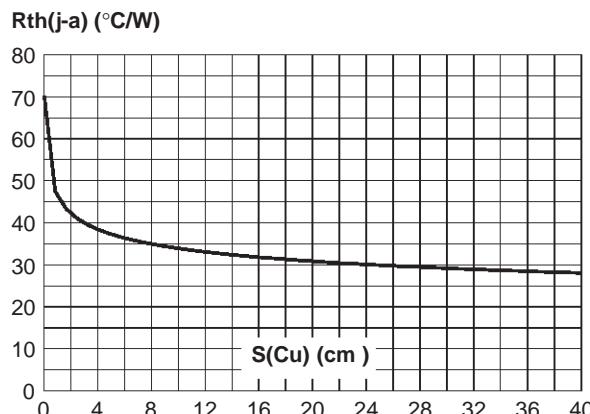


Fig. 8: On-state characteristics (maximum values).

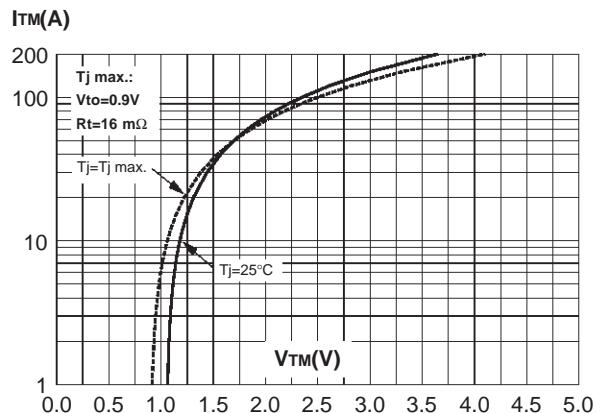
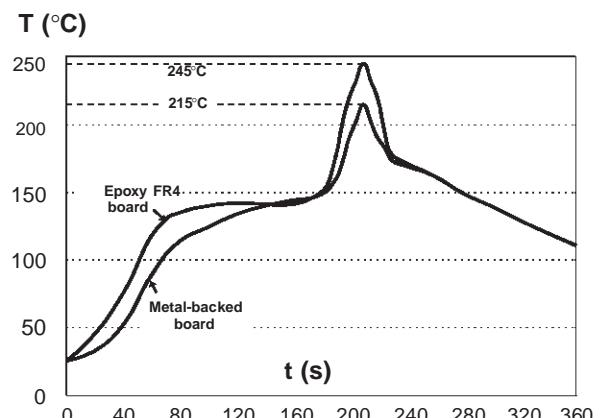
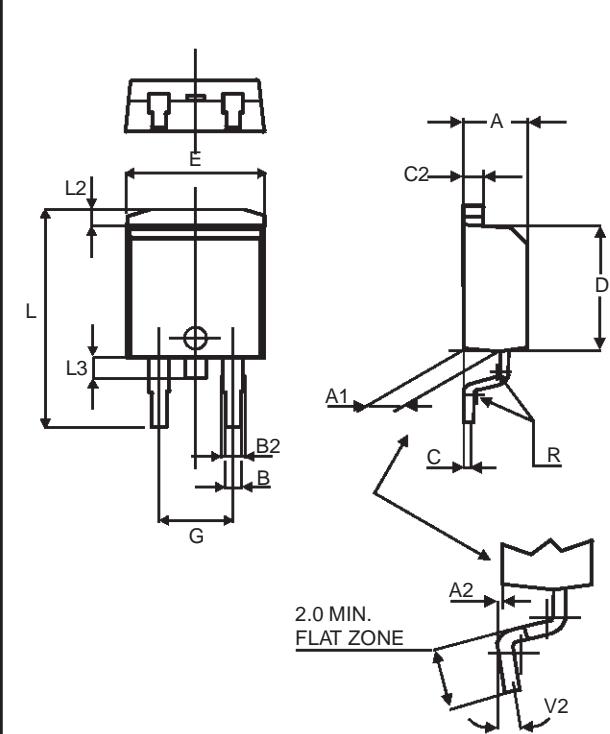
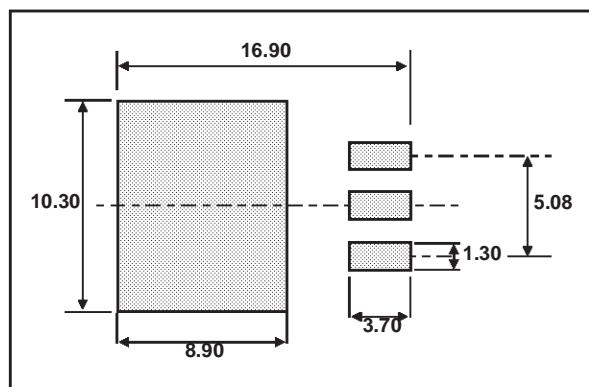


Fig. 10: Typical reflow soldering heat profile, either for mounting on FR4 or metal-backed boards.



PACKAGE MECHANICAL DATA
D²PAK


REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.60	0.169		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
B	0.70		0.93	0.027		0.037
B2	1.25	1.40		0.048	0.055	
C	0.45		0.60	0.017		0.024
C2	1.21		1.36	0.047		0.054
D	8.95		9.35	0.352		0.368
E	10.00		10.28	0.393		0.405
G	4.88		5.28	0.192		0.208
L	15.00		15.85	0.590		0.624
L2	1.27		1.40	0.050		0.055
L3	1.40		1.75	0.055		0.069
R		0.40			0.016	
V2	0°		8°	0°		8°

FOOT PRINT DIMENSIONS (in millimeters)

**MARKING : T2535
600G**

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