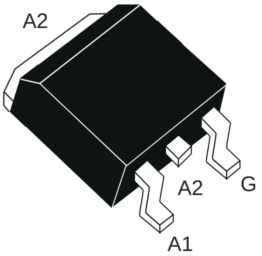
T835-600G
T850-600G

HIGH PERFORMANCE TRIAC

FEATURES

- HIGH COMMUTATION PREFORMANCES
- SNUBBERLESS^{TM} TECHNOLOGY
- HIGH NOISE IMMUNITY (dV/dt)
- HIGH I_{TSM}



D^{2}PAK

DESCRIPTION

The T835-600G and T850-600G triacs are using high performance SNUBBERLESS technology.

They are intended for AC control applications using surface mount tecnology.

These devices are perfectly suited where high commutation and surge performances are required.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{DRM} V_{RRM}	Repetitive peak off-state voltage	Tj = 125°C	600	V
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	Tc= 110°C	8	A
I_{TSM}	Non repetitive surge peak on-state current (Tj initial = 25°C)	tp = 8.3ms	85	A
		tp = 10 ms	80	
I^2t	I^2t Value for fusing	tp = 10 ms	32	A^2s
dI/dt	Critical rate of rise of on-state current I_G = 500 mA dI_G/dt = 1 A/µs.	Repetitive F = 50 Hz	20	A/µs
		Non Repetitive	100	
T_{stg} T_j	Storage temperature range Operating junction temperature range		- 40, + 150 - 40, + 125	°C
T	Maximum temperature for soldering during 10s		260	°C

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient (S = 1 cm^2)	45	°C/W
Rth(j-c)	Junction to case for DC	2.1	°C/W
Rth(j-c)	Junction to case for AC 360° conduction angle (F=50Hz)	1.6	°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		T835	T850	Unit
I_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	I-II-III	MIN	2		mA
				MAX	35	50	
V_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	I-II-III	MAX	1.3		V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ	Tj= 125°C	I-II-III	MIN	0.2		V
I_H *	I_T= 100mA Gate open	Tj= 25°C		MAX	35	50	mA
I_L	I_G = 1.2 I_{GT}	Tj = 25°C	I-III	MAX	50	60	mA
			II	MAX	80	100	
V_{TM} *	I_{TM}= 11A tp= 380µs	Tj= 25°C		MAX	1.5		V
I_{DRM}	VD = V_{DRM}	Tj= 25°C		MAX	5		µA
I_{RRM}	V_R = V_{RRM}	Tj= 125°C		MAX	2		mA
dV/dt *	Linear slope up to V_D=67%V_{DRM} Gate open	Tj= 125°C		MIN	500	1000	V/µs
(dI/dt)c *	Without snubber	Tj= 125°C		MIN	4.5	7	A/ms

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

ORDERING INFORMATION

Add "-TR" suffix for Tape & Reel shipment

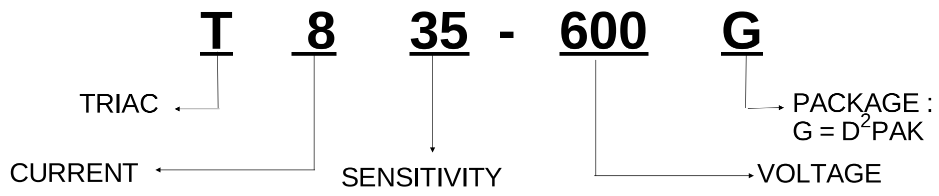


Fig. 1: Maximum power dissipation versus RMS on-state current.

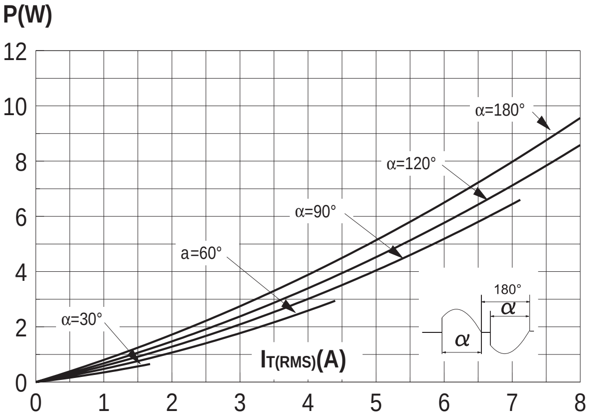


Fig. 2: Correlation between maximum power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink+contact.

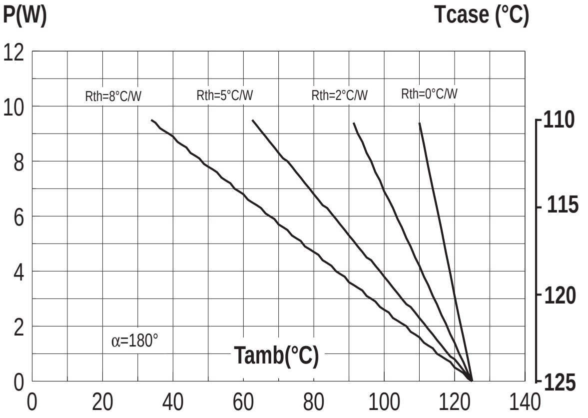


Fig. 3: RMS on-state current versus case temperature.

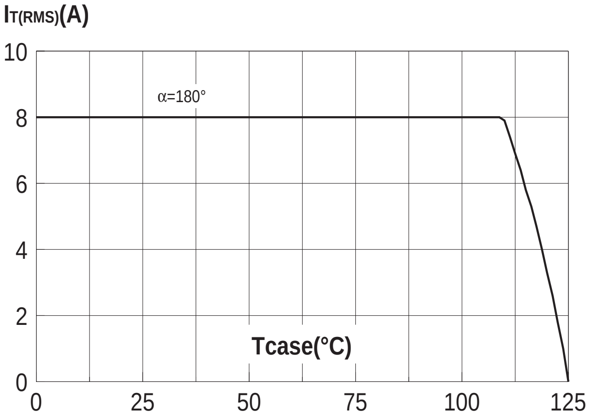


Fig. 4 : Relative variation of thermal impedance versus pulse duration.

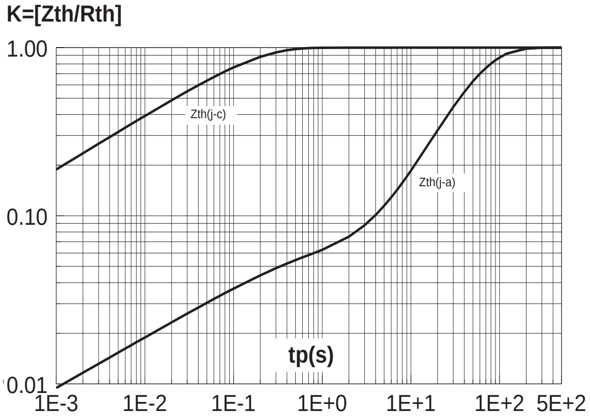


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature (typical values).

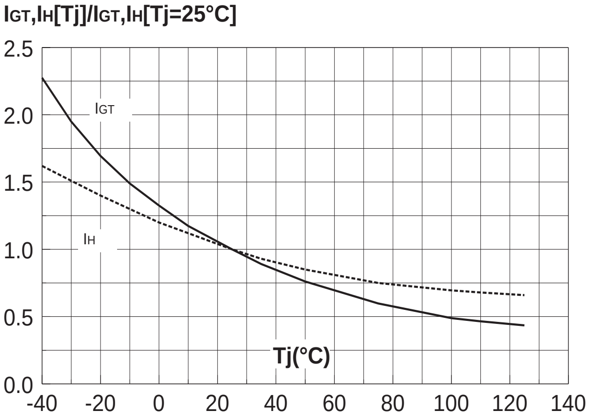


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.

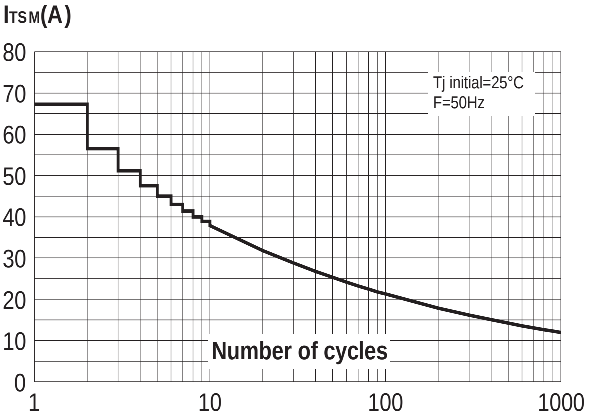


Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I^2t.

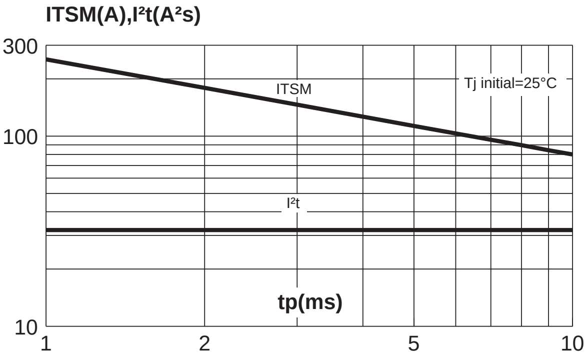


Fig. 8: On-state characteristics (maximum values).

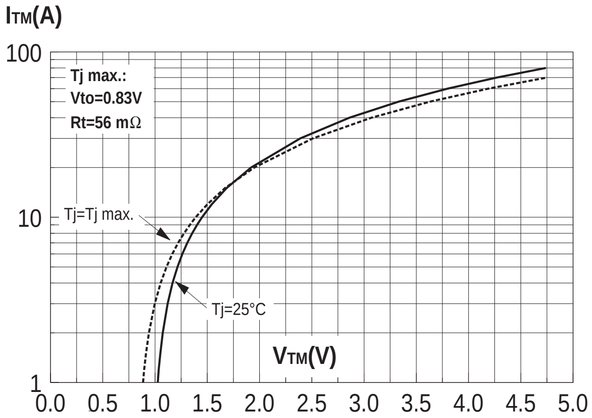


Fig. 9: Thermal resistance junction to ambient versus copper surface under tab (Epoxy printed circuit board FR4, copper thickness: 35µm).

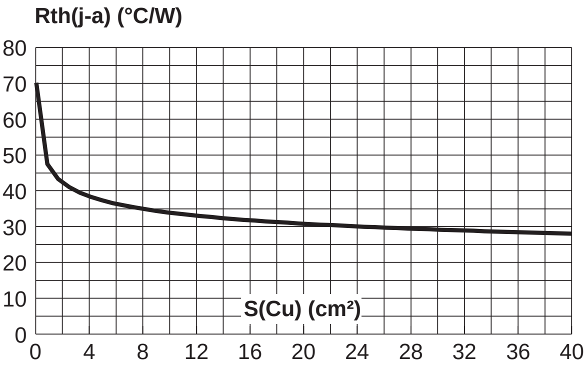
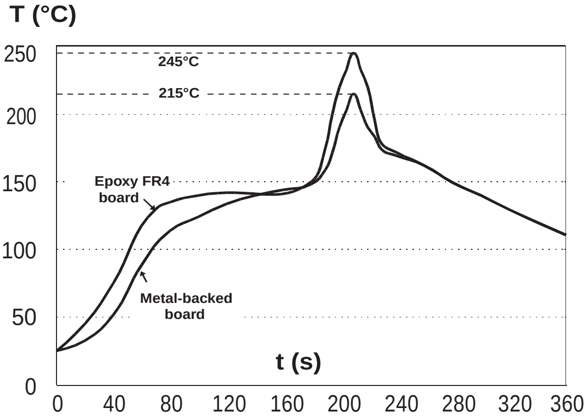
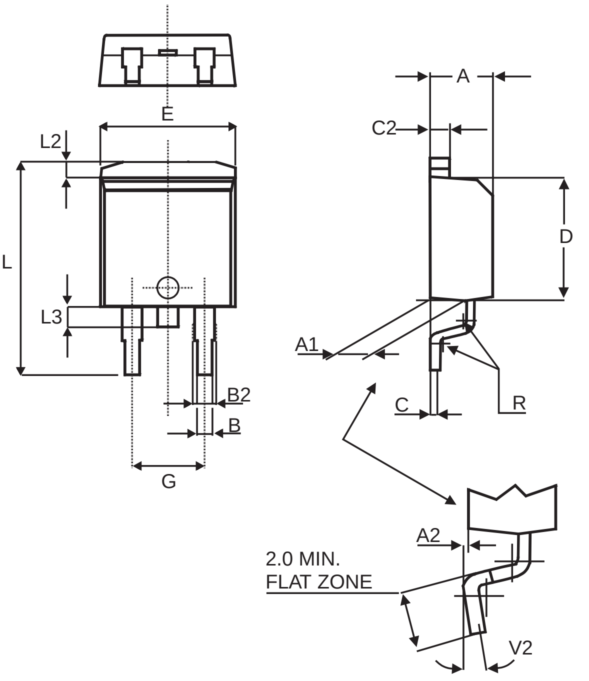


Fig. 10: Typical reflow soldering heat profile, either for mounting on FR4 or metal-backed boards.



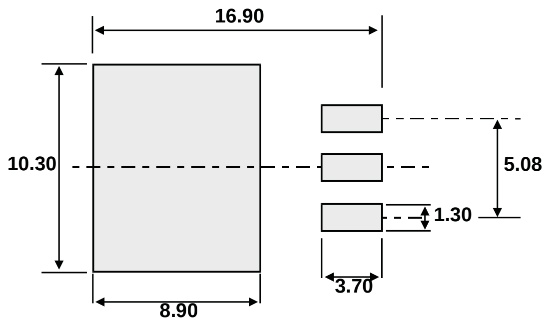
PACKAGE MECHANICAL DATA

D^{2}PAK



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

TYPE	MARKING
T835-600G	T835 600G
T850-600G	T850 600G

PACKING

Tube : 50 units

Tape and reel : 500 units

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