THOMSON SEMICONDUCTORS

TLF 1006 ⟶ TLF 4006

FAST SWITCHING
ASYMMETRICAL THYRISTORS
THYRISTORS RAPIDES
ASYMETRIQUES

:K 78C 07746 D
T-25-13

- High frequency applications.
- V_{DRM} up to 400 V.
- Glass passivated chip - High stability and reliability.
- High surge capability.

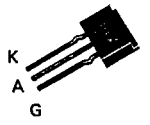
- *Applications hautes fréquences.*
- *V_{DRM} jusqu'à 400 V.*
- *Pastille glassivée - Grande stabilité des caractéristiques.*
- *Courant de surcharge élevé.*

$I_{T(RMS)}$ = 3 A / T_L = 50°C

V_{DRM}
100 V ≤ = ≤ 400 V
V_{RRM}

t_q ≤ 15 µs

Case *Boîtier* : TL (CB-274) plastic



ABSOLUTE RATINGS (LIMITING VALUES) *VALEURS LIMITES ABSOLUES D'UTILISATION*	Symbol	Value	Unit
RMS on-state current* *Courant efficace à l'état passant**	$I_{T(RMS)}$	3 @ T_L = 50°C	A
Mean on-state current* *Courant moyen à l'état passant**	$I_{T(AV)}$	2 @ T_L = 50°C	A
Non repetitive surge peak on-state current** *Courant non répétitif de surcharge crête accidentelle à l'état passant***	I_{TSM} I_{TSM}	52,5 (t = 8,3 ms) 50 (t = 10 ms) @ T_j ≤ 110°C	A A
I^2t for fusing *Valeur de la constante I^2t*	I^2t	12,5 (t = 10 ms) @ T_j ≤ 110°C	A^2s
Critical rate of rise of on-state current*** *Vitesse critique de croissance du courant à l'état passant****	di/dt	100	A/µs
Storage and operating junction temperatures *Températures extrêmes de stockage et de jonction en fonctionnement*	T_{stg} T_j	− 40, + 150 − 40, + 110	°C °C

@ T_j = 110°C	TLF 1006	TLF 2006	TLF 3006	TLF 4006
V_{DRM} (V)	100	200	300	400
V_{RRM} (V)	5	5	5	5

Thermal resistances *Résistances thermiques*	Symbol	Value	Unit
− Junction-leads *Jonction-connexions*	$R_{th(j-l)}$	15	°C/W
− Junction-ambient on printed circuit (with Cu 1 cm^2) *Jonction-ambiante sur circuit imprimé (avec Cu 1 cm^2)*	$R_{th(j-a)}$	50	°C/W

*Single phase circuit, 180° conduction angle
**Circuit monophasé, angle de conduction 180°*

**Half-sine wave
***Demi-onde sinusoïdale*

***I_{GT} = 100 mA , dI_G/dt = 1 A/µs

July 1984 - 1/4

THOMSON SEMICONDUCTORS
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THOMSON COMPONENTS

GATE CHARACTERISTICS (Maximum values)
CARACTERISTIQUES DE GACHETTE (Valeurs maximales)

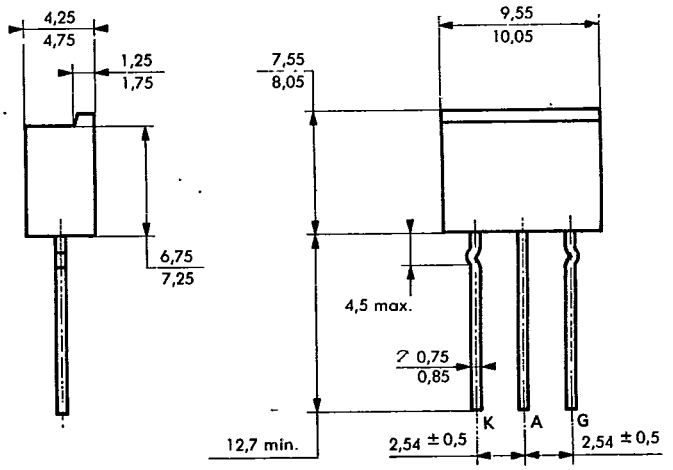
P_{GM} = 20 W (t = 10 µs) I_{FGM} = 1 A (t = 10 µs) V_{RGM} = 5 V
$P_{G(AV)}$ = 0,1 W V_{FGM} = 15 V (t = 10 µs)

ELECTRICAL CHARACTERISTICS
CARACTERISTIQUES ELECTRIQUES

Symbol	Value			Unit	Test conditions			
	min	typ	max					
I_{GT}			50	mA	T_j = 25°C	V_D = 12 V	R_L = 33 Ω	$t_p \geq 20$ µs
V_{GT}			2	V	T_j = 25°C	V_D = 12 V	R_L = 33 Ω	$t_p \geq 20$ µs
V_{GD}	0,2			V	T_j = 110°C	$V_D = V_{DRM}$	R_L = 3,3 kΩ	
I_H		30		mA	T_j = 25°C	I_T = 100 mA	Gate open	
V_{TM}			2,2	V	T_j = 25°C	I_{TM} = 6 A	t_p = 10 ms	
I_{DRM}			1	mA	T_j = 110°C	V_{DRM} specified		
I_{RRM}			1	mA	T_j = 110°C	V_{RRM} specified		
t_{gt}		1		µs	T_j = 25°C I_G = 100 mA	I_T = 6 A dI_G/dt = 1 A/µs	$V_D = V_{DRM}$	
t_q			15	µs	T_j = 110°C dI_R/dt = 30 A/µs	I_T = 5 A dv/dt = 100 V/µs	V_R = −1 V	V_D = 0,67 V_{DRM} Gate open
dv/dt*	100			V/µs	T_j = 110°C	Linear slope up to 0,67 V_{DRM} specified Gate open		

*For higher guaranted values, please consult us.

CASE DESCRIPTION
DESCRIPTION DU BOITIER



TL (CB-274) plastic

Cooling method : by convection (method A)
Marking : type number
Weight : 0,8 g

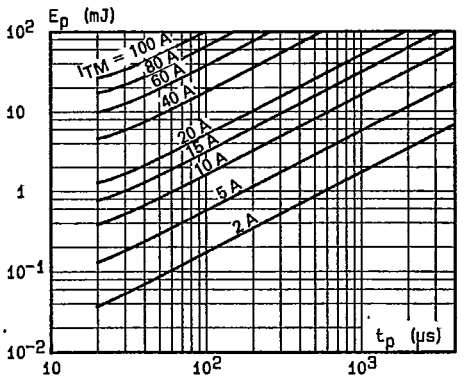


Fig.1 - Energy per pulse for sinusoidal pulses.

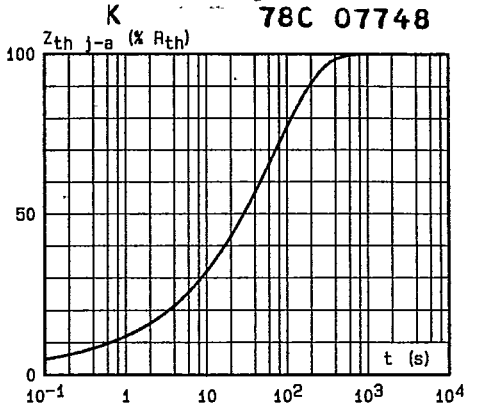
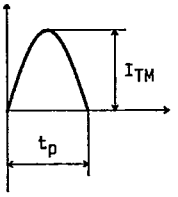


Fig.2 - Thermal transient impedance junction to ambient versus pulse duration.



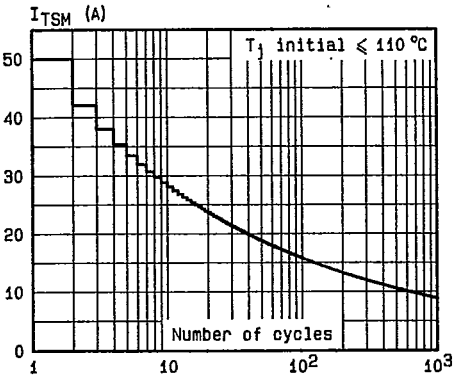


Fig.3 - Non repetitive surge peak on-state current versus number of cycles.

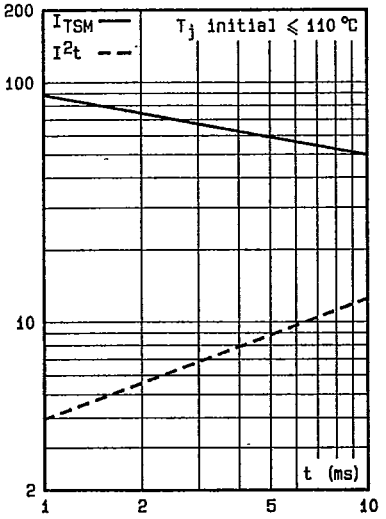


Fig.4 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : t ⩽ 10 ms, and corresponding value of I^2t.

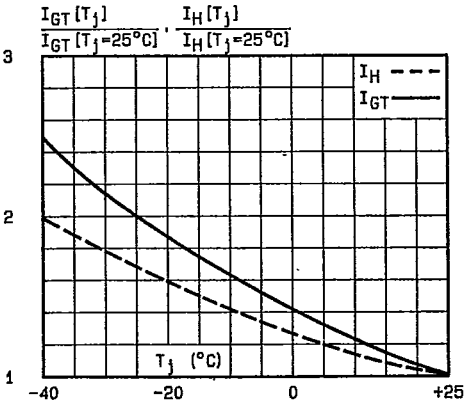


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

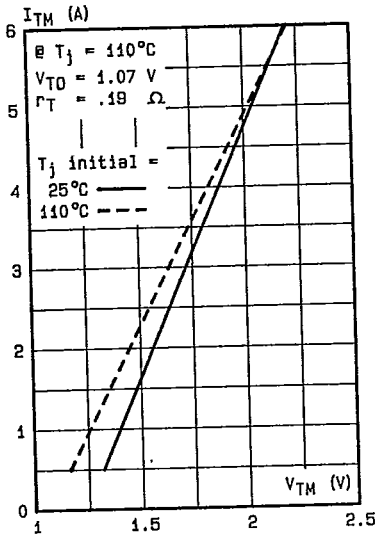


Fig.6 - On-state characteristics at low level (maximum values).

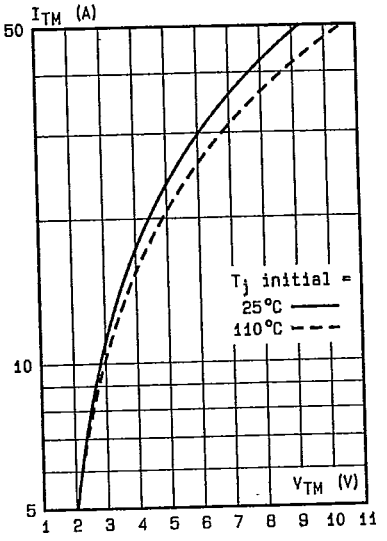


Fig.7 - On-state characteristics at high level (maximum values).