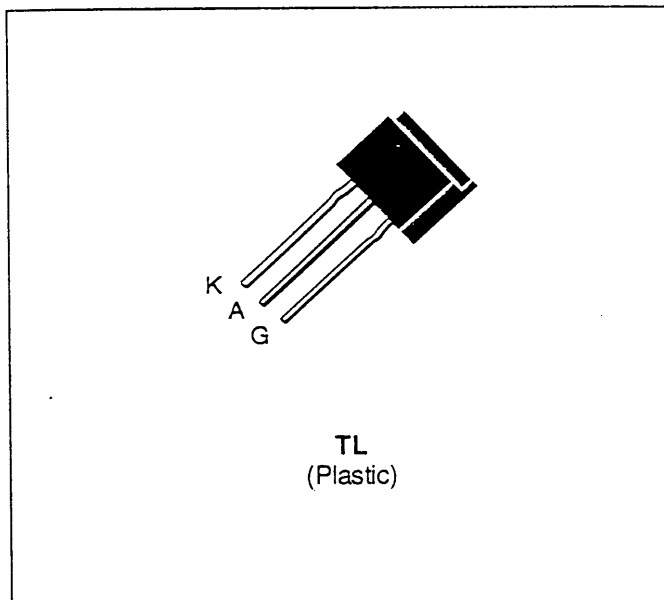


363-054

SENSITIVE GATE THYRISTORS

- OPERATES DIRECTLY FROM LOW SIGNAL
- GLASS PASSIVATED CHIP
- HIGH STABILITY AND RELIABILITY
- HIGH ON-STATE CURRENT



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state Current (1)	$T_1 = 25\text{ }^\circ\text{C}$ 4	A
$I_{T(AV)}$	Mean on-state Current (1)	$T_1 = 25\text{ }^\circ\text{C}$ 2.5	A
$I_{TSM}$	Non Repetitive Surge Peak on-state Current ( $T_j$ initial = $25\text{ }^\circ\text{C}$ ) (2)	$t = 8.3\text{ ms}$	37
		$t = 10\text{ ms}$	35
$I^2t$	$I^2t$ Value for Fusing	$t = 10\text{ ms}$ 6	$\text{A}^2\text{s}$
$di/dt$	Critical Rate of Rise of on-state Current (3)	100	$\text{A}/\mu\text{s}$
$T_{stg}$ $T_j$	Storage and Operating Junction Temperature Range	- 40 to 150 - 40 to 110	$^\circ\text{C}$ $^\circ\text{C}$

Symbol	Parameter	TLS106-.. or TLS107-..					Unit
		05	1	2	4	6	
$V_{DRM}$ $V_{RRM}$	Repetitive Peak off-state Voltage (4)	50	100	200	400	600	V

(1) Single phase circuit,  $180^\circ$  conduction angle.

(2) Half sine wave.

(3)  $I_G = 5\text{ mA}$   $di/dt = 1\text{ A}/\mu\text{s}$ .

(4)  $T_1 = 110\text{ }^\circ\text{C}$   $R_{GK} = 1\text{ K}\Omega$ .

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads	15	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	Junction-ambient on Printed Circuit (with Cu $1\text{ cm}^2$ )	50	$^\circ\text{C}/\text{W}$

**GATE CHARACTERISTICS** (maximum values)

$P_{GM} = 20 \text{ W}$  ( $t_p = 20 \mu\text{s}$ )       $I_{FGM} = 1 \text{ A}$  ( $t_p = 20 \mu\text{s}$ )       $V_{RGM} = 5 \text{ V}$   
 $P_{G(AV)} = 10 \text{ mW}$        $V_{FGM} = 15 \text{ V}$  ( $t_p = 20 \mu\text{s}$ )

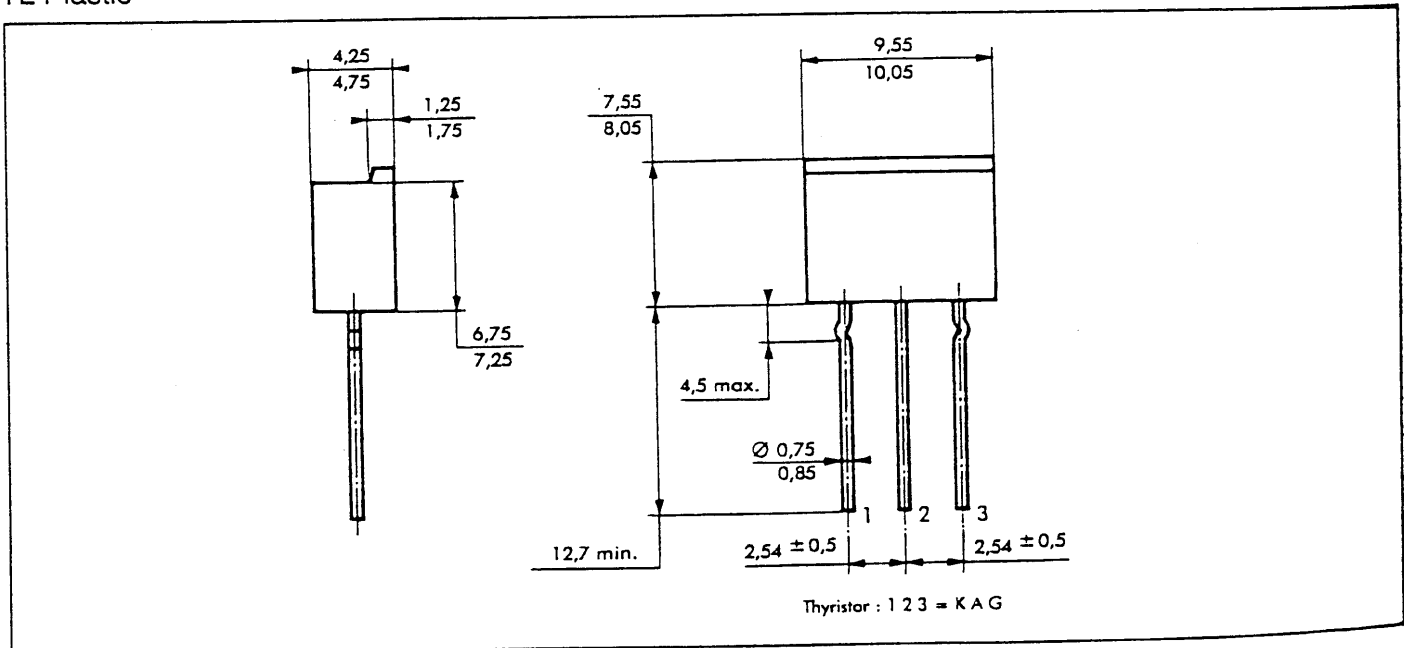
**ELECTRICAL CHARACTERISTICS**

Symbol	Types	Test Conditions			Min.	Typ.	Max.	Unit
$I_{GT}$	TL5106	$T_j = 25 \text{ }^\circ\text{C}$	$V_D = 12 \text{ V}$	$R_L = 140 \text{ } \Omega$			0.2	mA
	TL5107	Pulse Duration > 20 $\mu\text{s}$					0.5	
$V_{GT}$		$T_j = 25 \text{ }^\circ\text{C}$	$V_D = 12 \text{ V}$	$R_L = 140 \text{ } \Omega$			1.5	V
$V_{GD}$		$T_j = 110 \text{ }^\circ\text{C}$	$V_D = V_{DRM}$	$R_L = 3.3 \text{ k}\Omega$	0.1			V
$I_H$		$T_j = 25 \text{ }^\circ\text{C}$	$I_T = 50 \text{ mA}$	$R_{GK} = 1 \text{ k}\Omega$			5	mA
$I_L$		$T_j = 25 \text{ }^\circ\text{C}$	$V_D = 12 \text{ V}$	$I_G = 10 \text{ mA}$			7	mA
$V_{TM}$		$T_j = 25 \text{ }^\circ\text{C}$	$I_{TM} = 4 \text{ A}$	$t_p = 10 \text{ ms}$			1.9	V
$I_{DRM}$		$V_{DRM}$ specified	$R_{GK} = 1 \text{ k}\Omega$	$T_j = 25 \text{ }^\circ\text{C}$			0.01	mA
				$T_j = 110 \text{ }^\circ\text{C}$			0.3	
$I_{RRM}$		$V_{RRM}$ specified	$R_{GK} = 1 \text{ k}\Omega$	$T_j = 25 \text{ }^\circ\text{C}$			0.01	mA
				$T_j = 110 \text{ }^\circ\text{C}$			0.3	
$t_{gt}$		$T_j = 25 \text{ }^\circ\text{C}$	$V_D = V_{DRM}$	$I_T = 4 \text{ A}$		1.5		$\mu\text{s}$
$t_q$		$T_j = 110 \text{ }^\circ\text{C}$	$V_D = 67 \% V_{DRM}$	$I_T = 4 \text{ A}$		100		$\mu\text{s}$
$dv/dt^*$		$T_j = 110 \text{ }^\circ\text{C}$	$R_{GK} = 1 \text{ k}\Omega$	Linear Slope up to $V_D = 67 \% V_{DRM}$		10		V/ $\mu\text{s}$

\* For higher guaranteed values, please consult us.

**PACKAGE MECHANICAL DATA**

TL Plastic



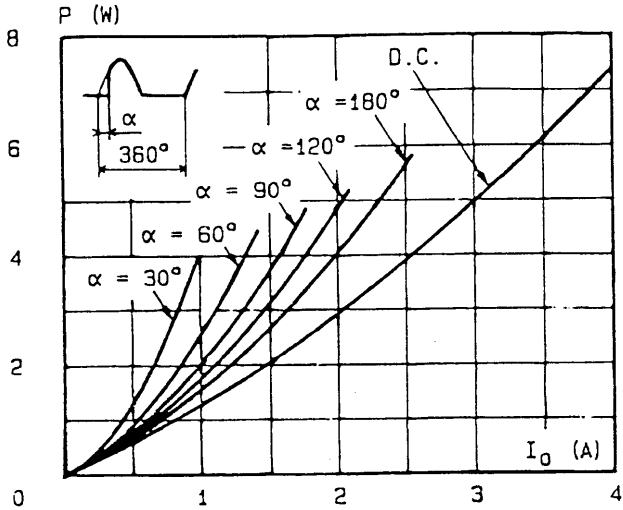


Fig.1 - Maximum mean power dissipation versus mean on-state current.

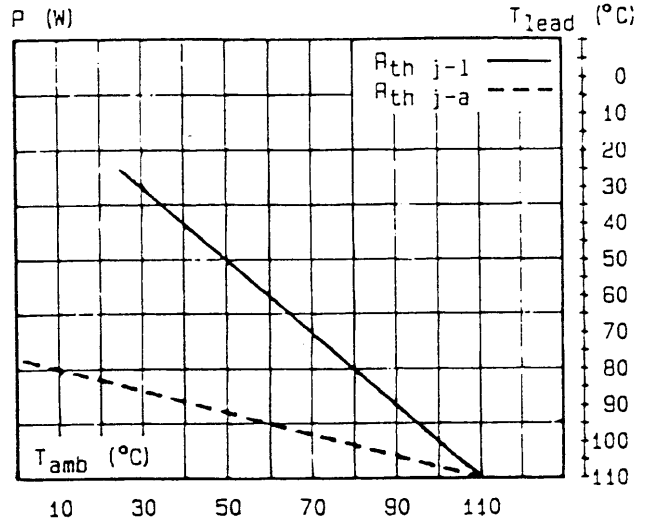


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures ( $T_{amb}$  and  $T_{lead}$ ).

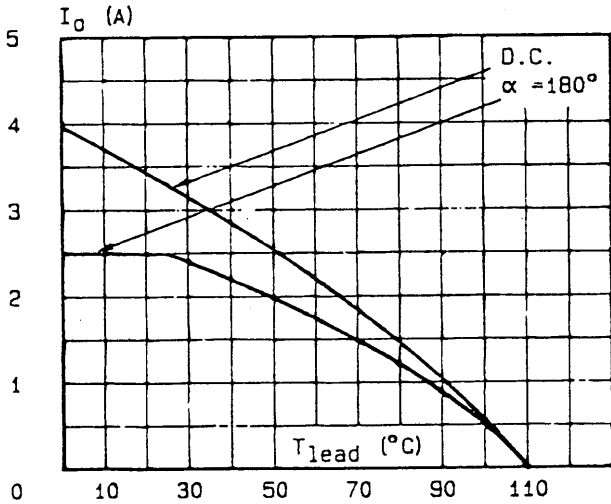


Fig.3 - Mean on-state current versus leads temperature.

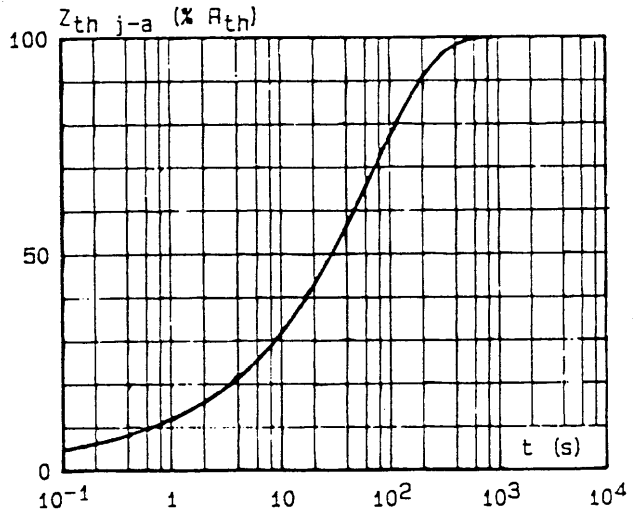


Fig.4 - Thermal transient impedance junction to ambient versus pulse duration.

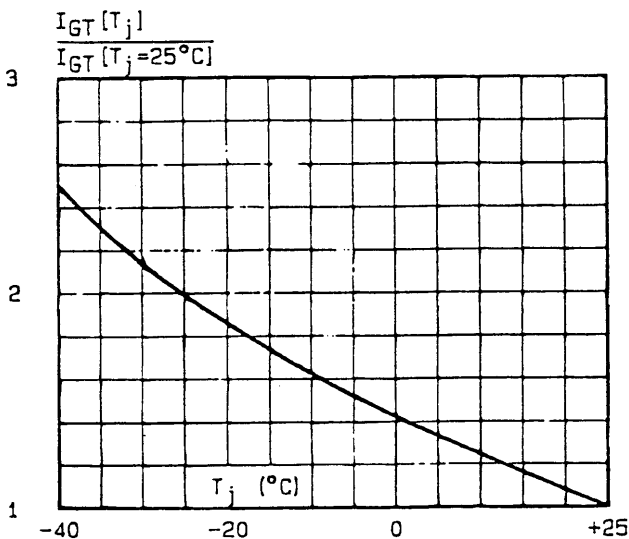


Fig.5 - Relative variation of gate trigger current versus junction temperature.

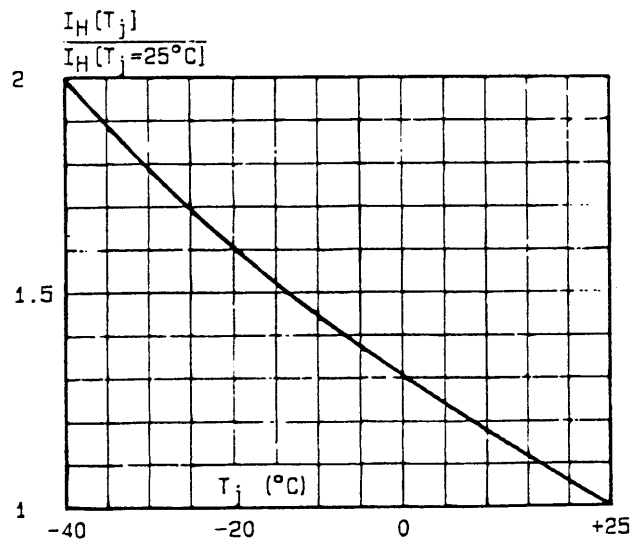


Fig.6 - Relative variation of holding current versus junction temperature.

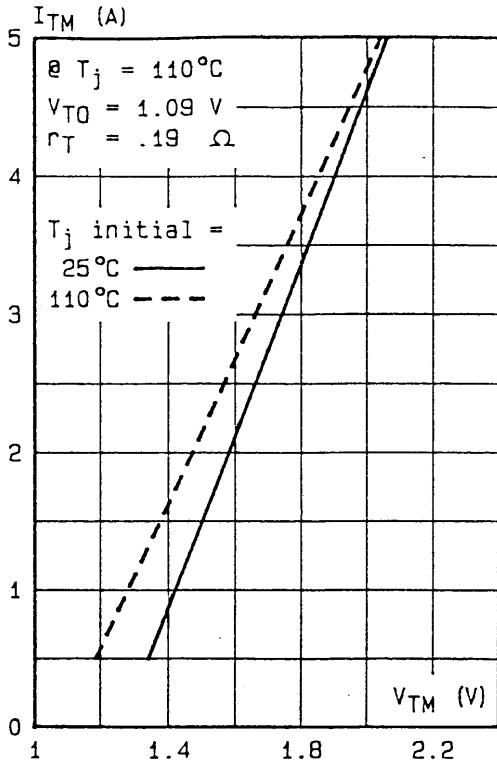


Fig.7 - On-state characteristics at low level (maximum values).

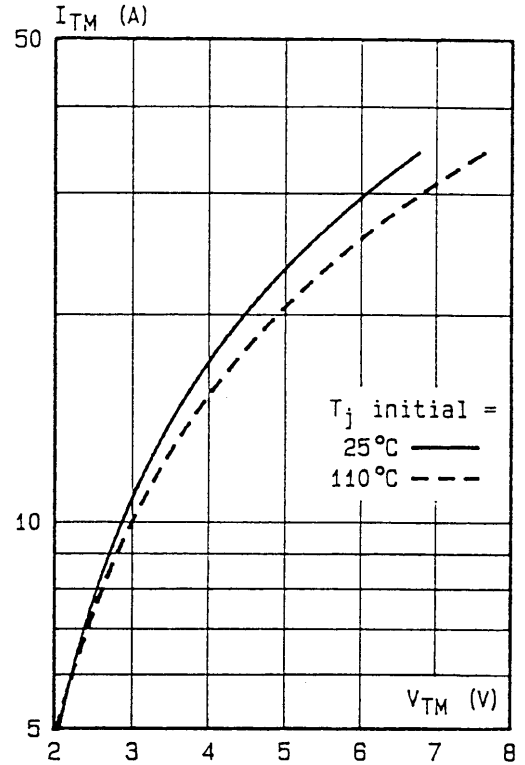


Fig.8 - On-state characteristics at high level (maximum values).

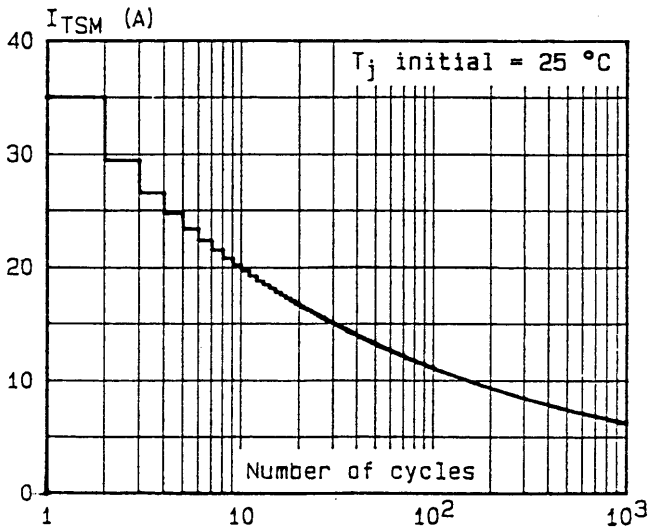


Fig.9 - Non repetitive surge peak on-state current versus number of cycles.

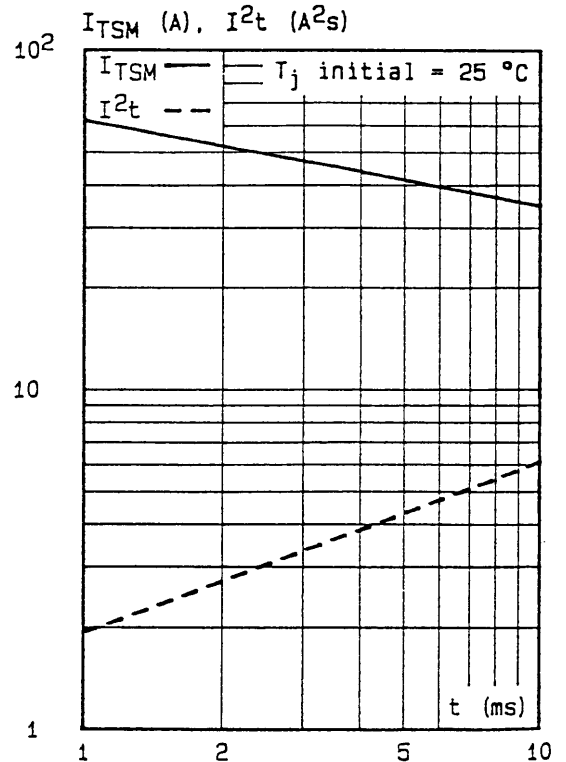


Fig.10 - Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t \leq 10$  ms, and corresponding value of  $I^2t$ .