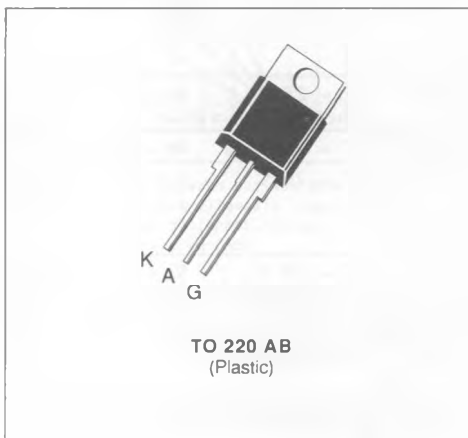




THYRISTORS

- GLASS PASSIVATED CHIP
- POSSIBILITY OF MOUNTING ON PRINTED CIRCUIT
- AVAILABLE IN NON-INSULATED VERSION → TYN SERIES OR IN INSULATED VERSION → TXN SERIES (INSULATING VOLTAGE 2500 V_{RMS})
- UL RECOGNIZED FOR TXN SERIES (E81734)



DESCRIPTION

SCR's designed for motor control, heating controls, power supplies...

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I _{T(RMS)}	RMS on-state Current (1)	T _c = 75 °C	8	A
I _{T(AV)}	Mean on-state Current (1)	T _c = 75 °C	5	A
I _{TSM}	Non Repetitive Surge Peak on-state Current (T _j initial = 25 °C) (2)	t = 8.3 ms	84	A
		t = 10 ms	80	
I ² t	I ² t Value for Fusing	t = 10 ms	32	A ² s
di/dt	Critical Rate of Rise of on-state Current (3)		50	A/μs
T _{stg} T _j	Storage and Operating Junction Temperature Range		- 40 to 110 - 40 to 110	°C °C

Symbol	Parameter	TXN/TYN ..., G, K							Unit
		058	108	208	408	608	808	1008	
V _{DRM} V _{RRM}	Repetitive Peak off-state Voltage (4)	50	100	200	400	600	800	1000	V

(1) Single phase circuit, 180° conduction angle.

(2) Half sine wave

(3) I_G = 400 mA di/dt = 1 A/μs

(4) T_j = 110 °C.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction-case for D.C.	4.7	°C/W
R _{th(j-a)}	Junction-ambient	60	°C/W

GATE CHARACTERISTICS (maximum values)

$P_{GM} = 20 \text{ W}$ ($t_p = 20 \mu\text{s}$)

$I_{FGM} = 2 \text{ A}$ ($t_p = 20 \mu\text{s}$)

$V_{RGM} = 5 \text{ V}$

$P_{G(AV)} = 0.5 \text{ W}$

$V_{FGM} = 15 \text{ V}$ ($t_p = 20 \mu\text{s}$)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
I_{GT}	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration > 20 μs	$V_D = 12 \text{ V}$	$R_L = 33 \text{ } \Omega$	Without Suffix		15	mA
				Suffix G		25	
				Suffix K		40	
V_{GT}	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration > 20 μs	$V_D = 12 \text{ V}$	$R_L = 33 \text{ } \Omega$			1.5	V
V_{GD}	$T_i = 110 \text{ }^\circ\text{C}$	$V_D = V_{DRM}$	$R_L = 3.3 \text{ k}\Omega$	0.2			V
I_H	$T_j = 25 \text{ }^\circ\text{C}$	$I_T = 100 \text{ mA}$	Gate Open	Without Suffix		30	mA
				Suffix G		45	
				Suffix K		60	
I_L	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration > 20 μs	$V_D = 12 \text{ V}$	$I_G = 80 \text{ mA}$		50		mA
V_{TM}	$T_j = 25 \text{ }^\circ\text{C}$	$I_{TM} = 16 \text{ A}$	$t_p = 10 \text{ ms}$			1.6	V
I_{DRM}	V_{DRM} Specified			$T_j = 25 \text{ }^\circ\text{C}$		0.01	mA
				$T_j = 110 \text{ }^\circ\text{C}$		1	
I_{RRM}	V_{RRM} Specified			$T_j = 25 \text{ }^\circ\text{C}$		0.01	mA
				$T_j = 110 \text{ }^\circ\text{C}$		1	
t_{gt}	$T_j = 25 \text{ }^\circ\text{C}$ $I_G = 40 \text{ mA}$	$V_D = V_{DRM}$ $di_G/dt = 0.45 \text{ A}/\mu\text{s}$		$I_T = 16 \text{ A}$	2		μs
t_q	$T_j = 110 \text{ }^\circ\text{C}$ $V_D = 67 \% V_{DRM}$ $dv/dt = 50 \text{ V}/\mu\text{s}$	$I_T = 16 \text{ A}$ $di/dt = 30 \text{ A}/\mu\text{s}$		$V_R = 25 \text{ V}$ Gate Open	70		μs
dv/dt^*	$T_j = 110 \text{ }^\circ\text{C}$ Gate Open Linear Slope up to $V_D = 67 \% V_{DRM}$			Without Suffix	200		V/ μs
				Suffix G	500		
				Suffix K	750		

* For higher guaranteed values, please consult us.

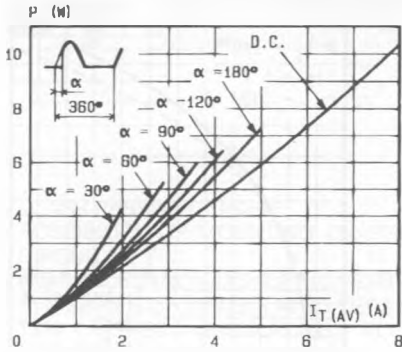


Fig. 1 - Maximum mean power dissipation versus mean on-state current.

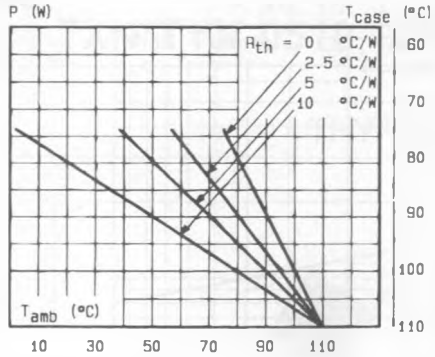


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

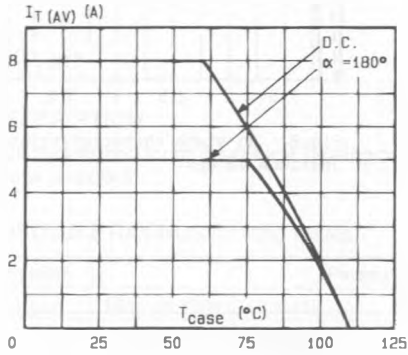


Fig. 3 - Mean on-state current versus case temperature.

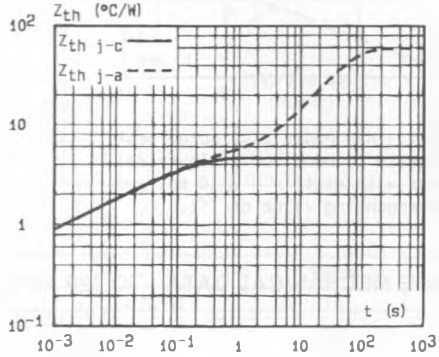


Fig. 4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

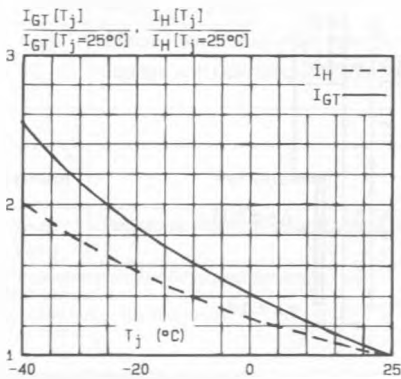


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

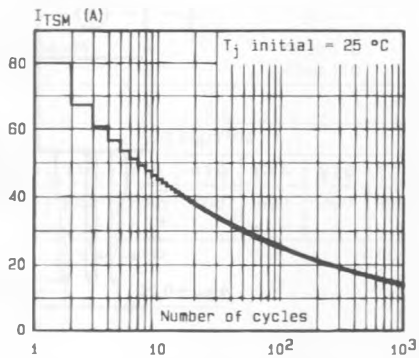


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

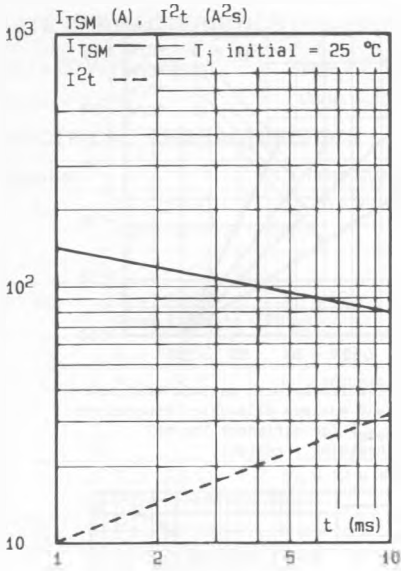


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

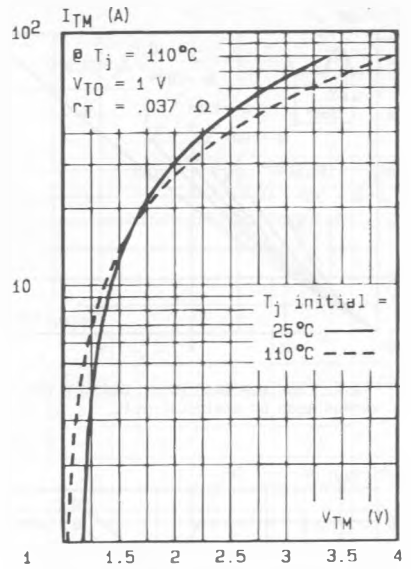
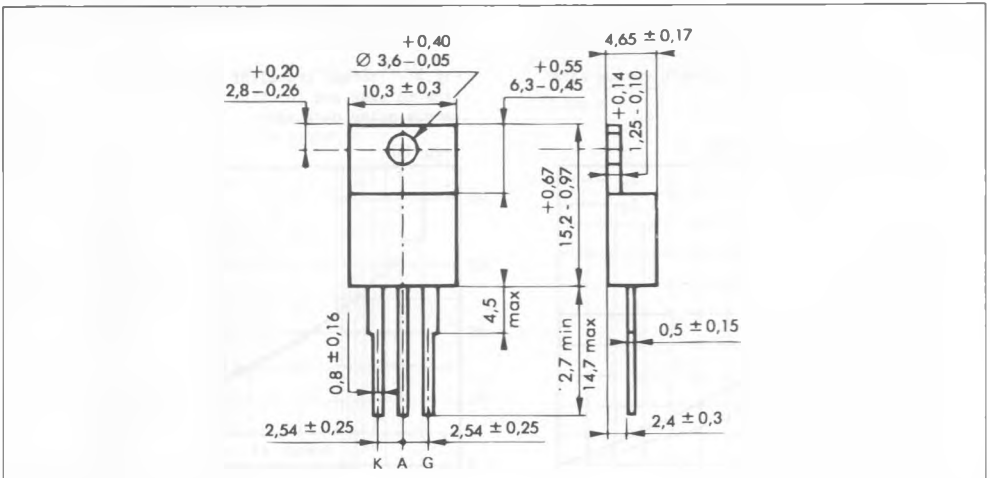


Fig.8 - On-state characteristics (maximum values).

PACKAGE MECHANICAL DATA : TO 220 AB Plastic



Cooling method : by conduction (method C)
 Marking : type number
 Weight : 2 g