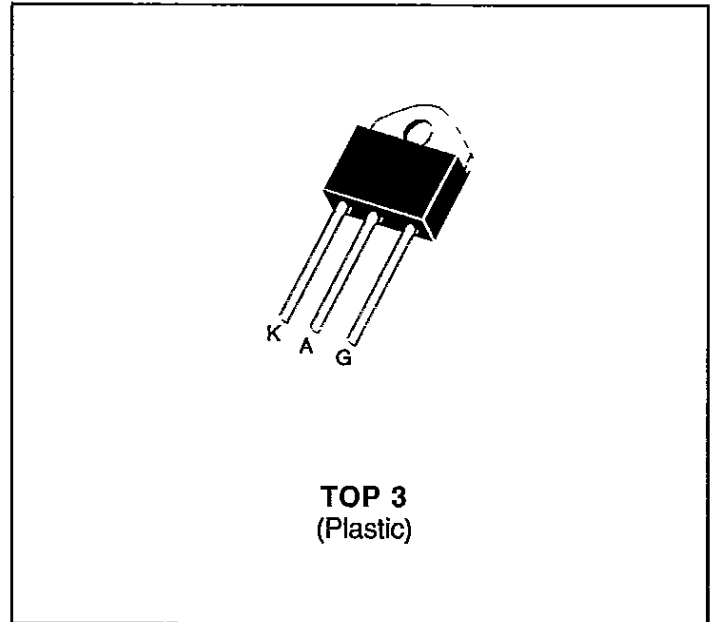


- GLASS PASSIVATED CHIP
- HIGH STABILITY AND RELIABILITY
- HIGH SURGE CAPABILITY
- HIGH ON-STATE CURRENT
- EASY MOUNTING ON HEATSINK



DESCRIPTION

General purpose SCR suited for power supplies up to 400 Hz on resistive or inductive loads.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		BTW69-200N → 800N	BTW69-1000N/1200N	Unit
$I_{T(RMS)}$	RMS on-state Current (1)	$T_c = 70\text{ }^\circ\text{C}$	55		A
$I_{T(AV)}$	Mean on-state Current (1)	$T_c = 70\text{ }^\circ\text{C}$	35		A
I_{TSM}	Non Repetitive Surge Peak on-state Current (T_j initial = $25\text{ }^\circ\text{C}$) (2)	$t = 8.3\text{ ms}$	525	420	A
		$t = 10\text{ ms}$	500	400	
I^2t	I^2t Value for Fusing	$t = 10\text{ ms}$	1250	800	A^2s
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 125		$^\circ\text{C}$
			- 40 to 125		$^\circ\text{C}$

Symbol	Parameter	BTW69-						Unit
		200N	400N	600N	800N	1000N	1200N	
V_{DRM} V_{RRM}	Repetitive Peak off-state Voltage (4)	200	400	600	800	1000	1200	V

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

(2) Half sine wave.

(3) $I_G = 800\text{ mA}$ $di/dt = 1\text{ A}/\mu\text{s}$.

(4) $T_j = 125\text{ }^\circ\text{C}$.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case for D.C.	0.87	$^\circ\text{C}/\text{W}$
$R_{th(c-h)}$	Contact (case to heatsink)	0.20	$^\circ\text{C}/\text{W}$

GATE CHARACTERISTICS (maximum values)

T-25-17

$P_{GM} = 50 \text{ W}$ ($t_p = 10 \mu\text{s}$)

$I_{FGM} = 2 \text{ A}$ ($t_p = 10 \mu\text{s}$)

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

$P_{G(AV)} = 1 \text{ W}$

$V_{FGM} = 15 \text{ V}$ ($t_p = 10 \mu\text{s}$)

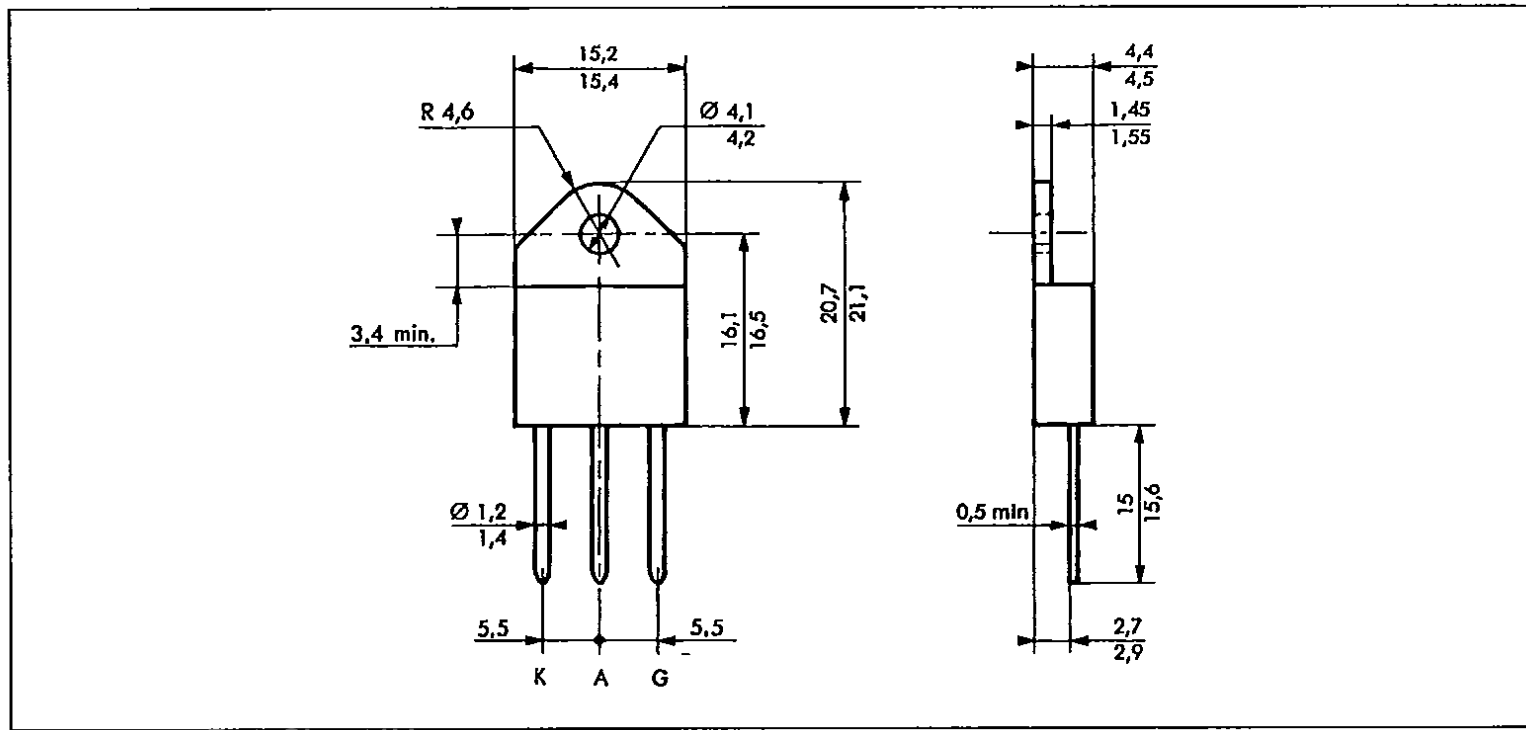
ELECTRICAL CHARACTERISTICS

S G S-THOMSON

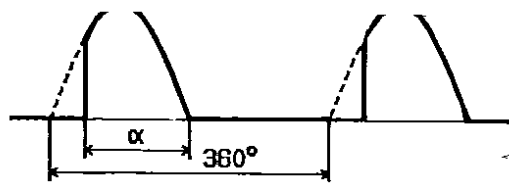
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
I_{GT}	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration > 20 μs	$V_D = 12 \text{ V}$	$R_L = 33 \text{ } \Omega$			80	mA
V_{GT}	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration > 20 μs	$V_D = 12 \text{ V}$	$R_L = 33 \text{ } \Omega$			1.5	V
V_{GD}	$T_j = 125 \text{ }^\circ\text{C}$	$V_D = V_{DRM}$	$R_L = 3.3 \text{ k}\Omega$	0.2			V
I_H	$T_j = 25 \text{ }^\circ\text{C}$	$I_T = 0.5 \text{ A}$	Gate Open		20	150	mA
I_L	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration > 20 μs	$V_D = 12 \text{ V}$	$I_G = 160 \text{ mA}$		40		mA
V_{TM}	$T_j = 25 \text{ }^\circ\text{C}$	$I_{TM} = 110 \text{ A}$	$t_p = 10 \text{ ms}$			2	V
I_{DRM}	V_{DRM} Specified			$T_j = 25 \text{ }^\circ\text{C}$		0.02	mA
				$T_j = 125 \text{ }^\circ\text{C}$		6	
I_{RRM}	V_{RRM} Specified			$T_j = 25 \text{ }^\circ\text{C}$		0.02	mA
				$T_j = 125 \text{ }^\circ\text{C}$		6	
t_{gt}	$T_j = 25 \text{ }^\circ\text{C}$ $I_G = 200 \text{ mA}$	$V_D = V_{DRM}$ $di_G/dt = 0.2 \text{ A}/\mu\text{s}$	$I_T = 110 \text{ A}$		2		μs
t_q	$T_j = 125 \text{ }^\circ\text{C}$ $V_D = 67 \% V_{DRM}$ Gate Open	$I_T = 110 \text{ A}$ $di/dt = 30 \text{ A}/\mu\text{s}$	$V_R = 75 \text{ V}$ $dv/dt = 20 \text{ V}/\mu\text{s}$		100		μs
dv/dt^*	$T_j = 125 \text{ }^\circ\text{C}$ Gate Open Linear Slope up to $V_D = 67 \% V_{DRM}$			$V_{DRM} \leq 800 \text{ V}$	500		V/ μs
				$V_{DRM} \geq 1000 \text{ V}$	250		

* For higher guaranteed values, please consult us.

PACKAGE MECHANICAL DATA : TOP 3 Plastic



Cooling method : by conduction (method C)
 Marking : type number
 Weight : 5 g.



T-25-17

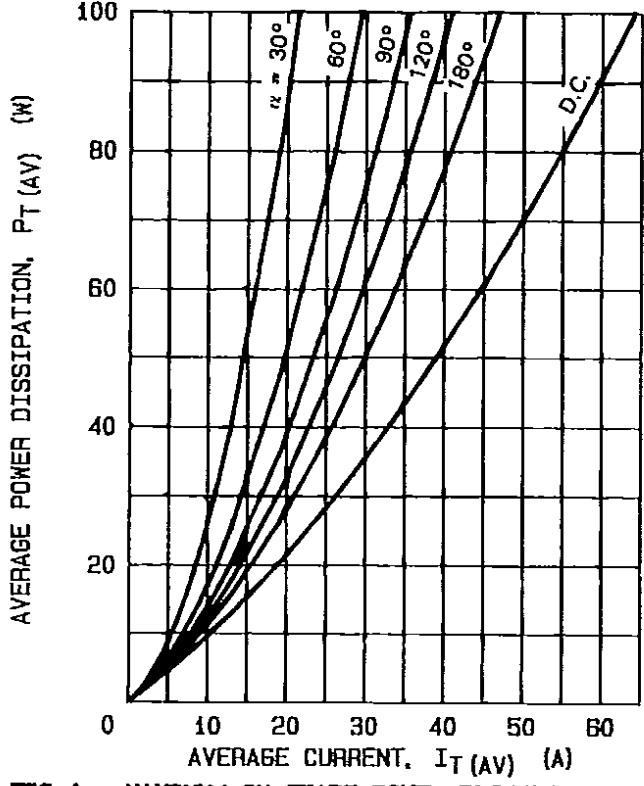


FIG.1 - MAXIMUM ON-STATE POWER DISSIPATION FOR SINUSOIDAL CURRENT WAVEFORM

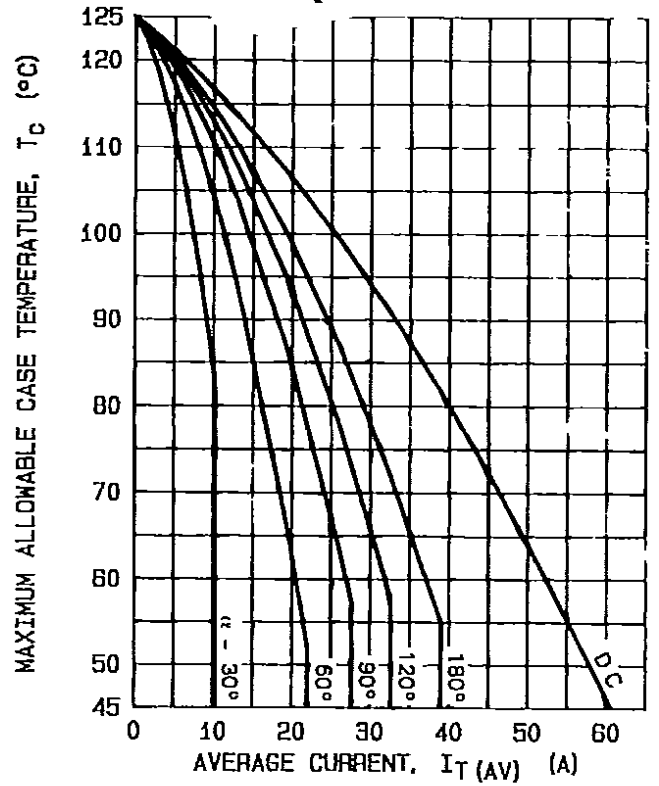


FIG.2 - MAXIMUM ALLOWABLE CASE TEMPERATURE FOR SINUSOIDAL CURRENT WAVEFORM

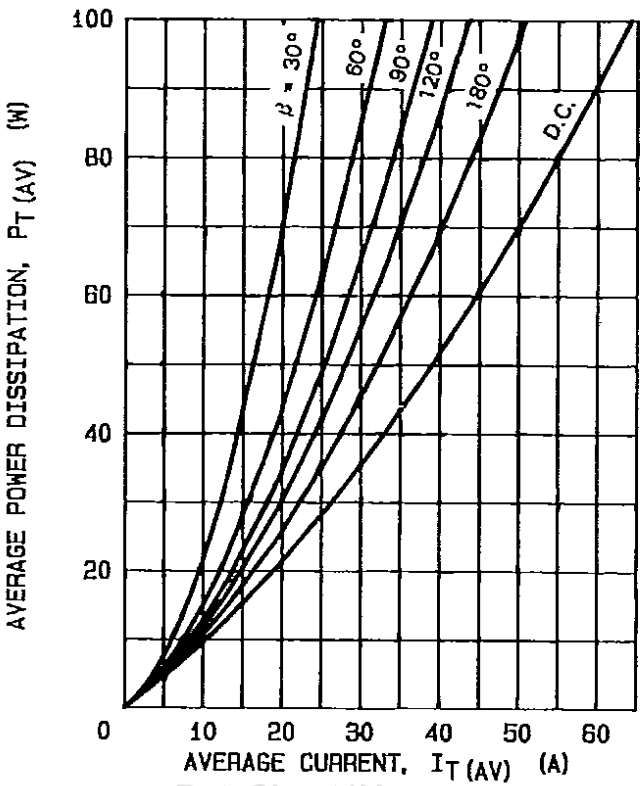
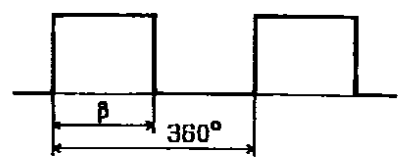


FIG.3 - MAXIMUM ON-STATE POWER DISSIPATION FOR RECTANGULAR CURRENT WAVEFORM

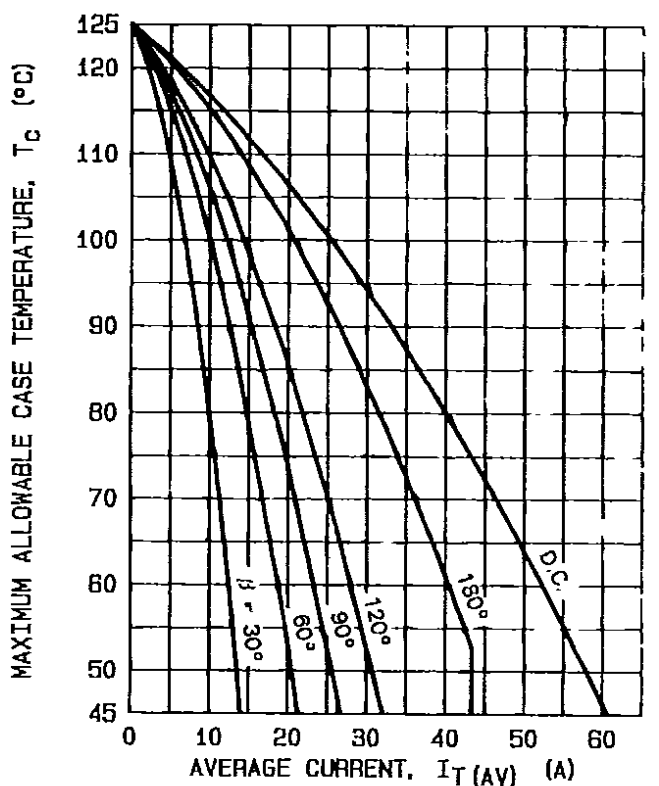


FIG.4 - MAXIMUM ALLOWABLE CASE TEMPERATURE FOR RECTANGULAR CURRENT WAVEFORM

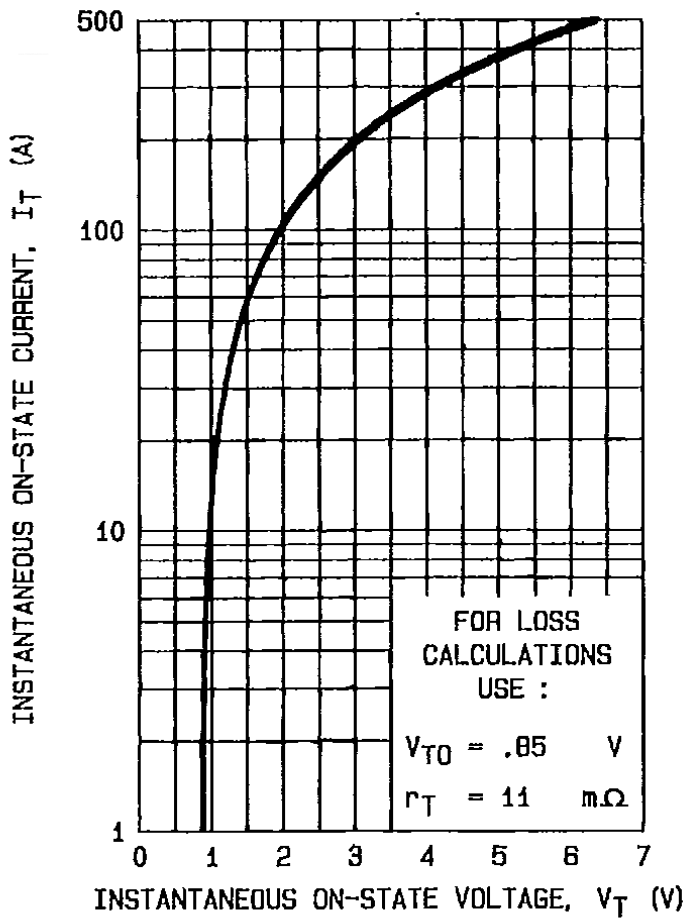


FIG.5 - MAXIMUM ON-STATE CONDUCTION CHARACTERISTIC ($T_J = 125^\circ\text{C}$).

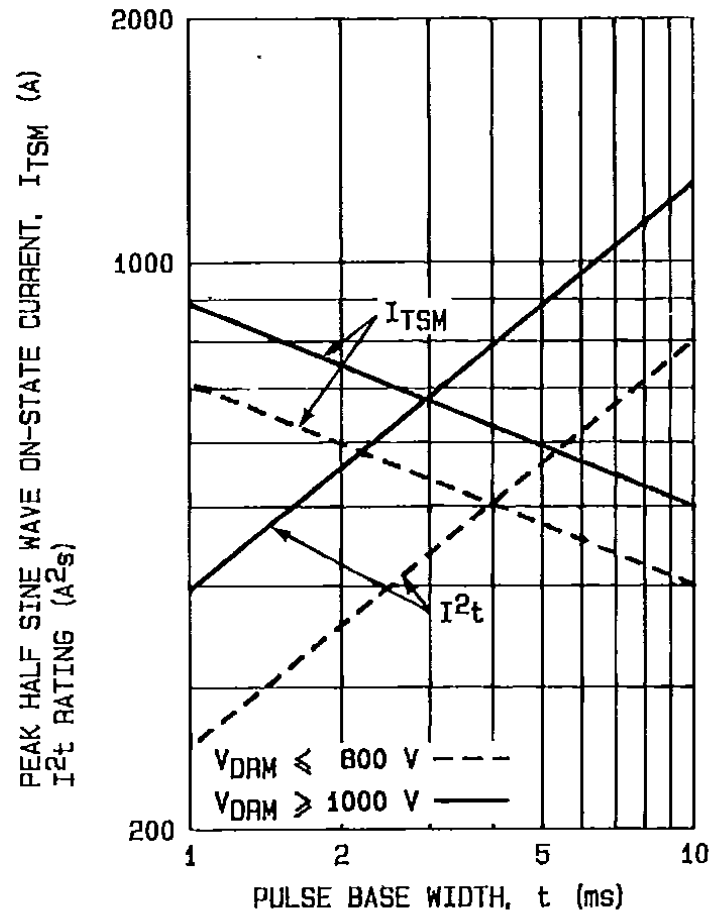


FIG.6 - NON REPETITIVE SUB-CYCLE SURGE ON-STATE CURRENT AND I^2t RATING (INITIAL $T_J = 25^\circ\text{C}$).

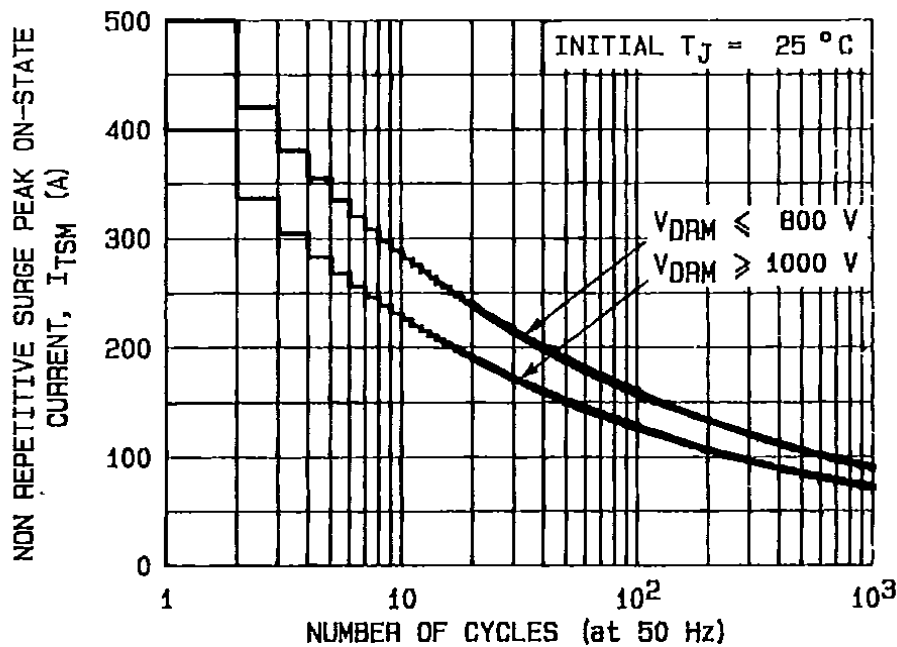


FIG.7 - NON REPETITIVE SURGE PEAK ON-STATE CURRENT VERSUS NUMBER OF CYCLES.