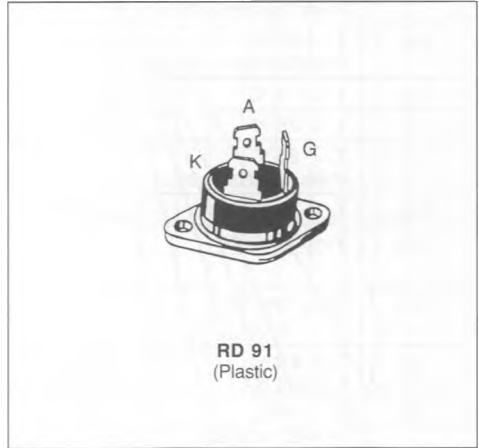


**THYRISTORS**

- GLASS PASSIVATED CHIP
- HIGH STABILITY AND RELIABILITY
- HIGH SURGE CAPABILITY
- HIGH ON-STATE CURRENT
- EASY MOUNTING (FAST-ON CONNECTIONS)
- ISOLATED PACKAGE :  
INSULATING VOLTAGE 2500 V<sub>RMS</sub>
- UL RECOGNIZED (E81734)


**DESCRIPTION**

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

**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state Current (1)	$T_c = 65^\circ\text{C}$	40	A
$I_{T(AV)}$	Mean on-state Current (1)	$T_c = 65^\circ\text{C}$	25	A
$I_{TSM}$	Non Repetitive Surge Peak on-state Current ( $T_j$ initial = $25^\circ\text{C}$ ) (2)	$t = 8.3$ ms	525	A
		$t = 10$ ms	500	
$I^2t$	$I^2t$ Value for Fusing	$t = 10$ ms	1250	A <sup>2</sup> s
di/dt	Critical Rate of Rise of on-state Current (3)		100	A/ $\mu\text{s}$
$T_{stg}$ $T_j$	Storage and Operating Junction Temperature Range		- 40 to 125 - 40 to 110	$^\circ\text{C}$ $^\circ\text{C}$

Symbol	Parameter	BTW67-						Unit
		200	400	600	800	1000	1200	
$V_{DRM}$ $V_{RRM}$	Repetitive Peak off-state Voltage (4)	200	400	600	800	1000	1200	V

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

(2) Half sine wave

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

(4)  $T_j = 110^\circ\text{C}$ .

**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case for D.C.	0.93	$^\circ\text{C}/\text{W}$
$R_{th(c-h)}$	Contact (case to heatsink)	0.10	$^\circ\text{C}/\text{W}$

**GATE CHARACTERISTICS** (maximum values)

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

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

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

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

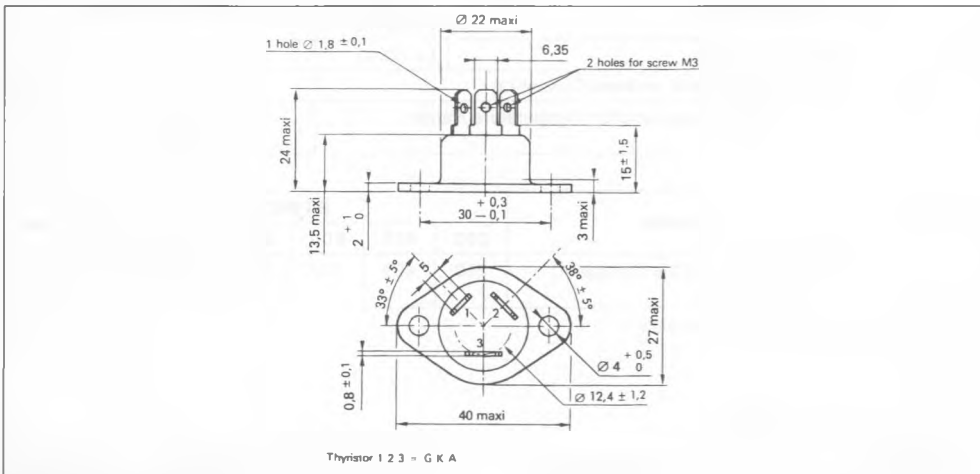
$V_{FGM} = 15 \text{ V}$  ( $t_p = 10 \mu\text{s}$ )

**ELECTRICAL CHARACTERISTICS**

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

\* For higher guaranteed values, please consult us

**PACKAGE MECHANICAL DATA : RD 91 Plastic**



Cooling method : by conduction (method C)

Marking : type number

Weight : 15 g

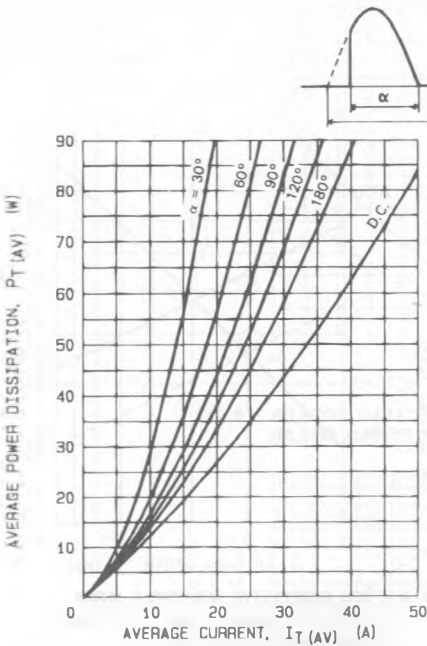


FIG.1 - MAXIMUM ON-STATE POWER DISSIPATION FOR SINUSOIDAL CURRENT WAVEFORM

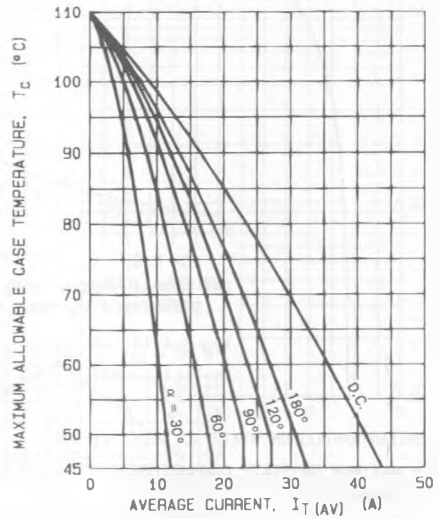


FIG.2 - MAXIMUM ALLOWABLE CASE TEMPERATURE FOR SINUSOIDAL CURRENT WAVEFORM

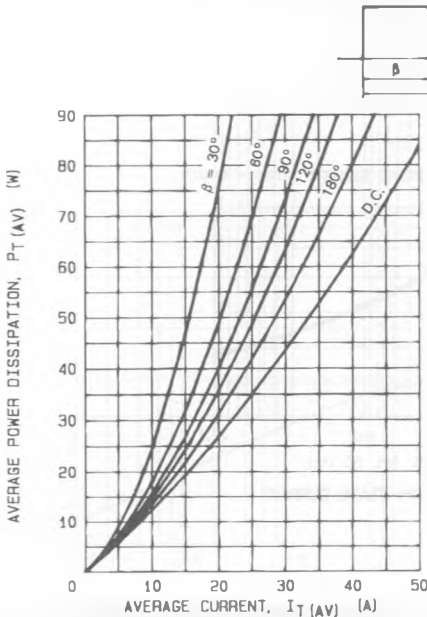


FIG.3 - MAXIMUM ON-STATE POWER DISSIPATION FOR RECTANGULAR CURRENT WAVEFORM

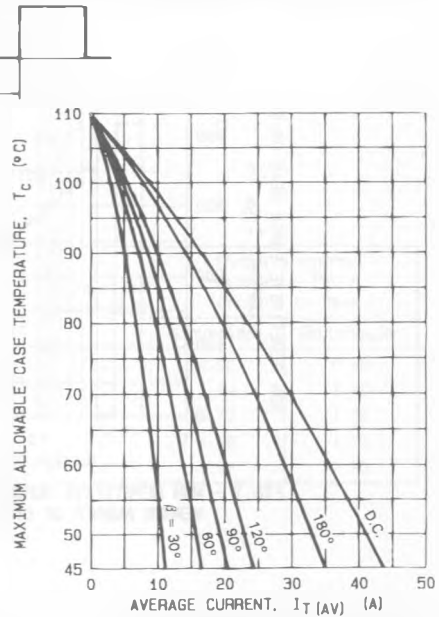


FIG.4 - MAXIMUM ALLOWABLE CASE TEMPERATURE FOR RECTANGULAR CURRENT WAVEFORM

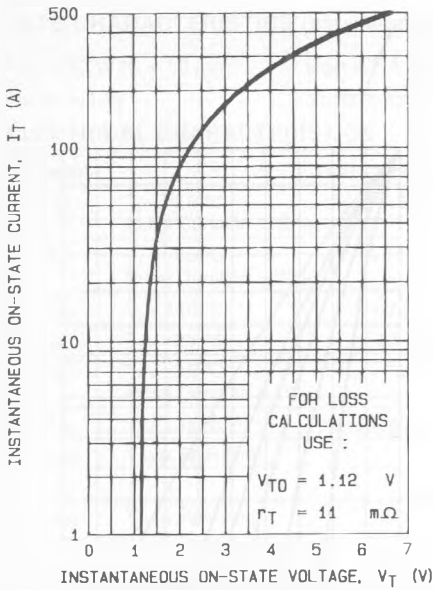


FIG.5 - MAXIMUM ON-STATE CONDUCTION CHARACTERISTIC ( $T_J = 110^\circ\text{C}$ ).

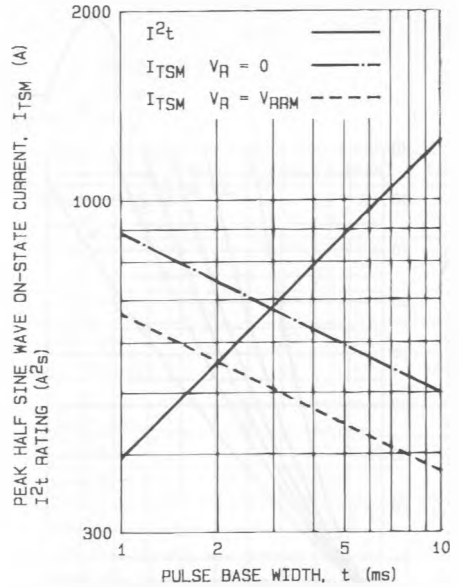


FIG.8 - NON REPETITIVE SUB-CYCLE SURGE ON-STATE CURRENT AND  $I^2t$  RATING (INITIAL  $T_J = 25^\circ\text{C}$ ).

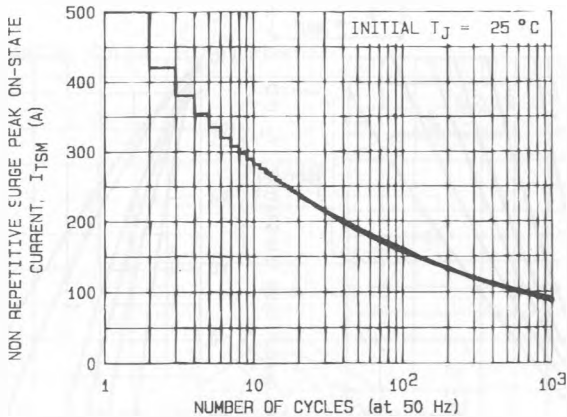


FIG.7 - NON REPETITIVE SURGE PEAK ON-STATE CURRENT VERSUS NUMBER OF CYCLES.

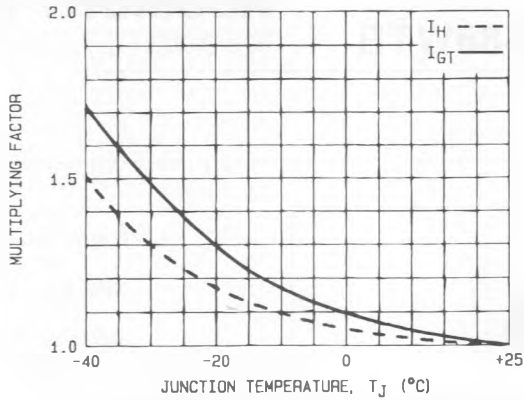


FIG.8 - RELATIVE VARIATION OF GATE TRIGGER CURRENT AND HOLDING CURRENT VERSUS JUNCTION TEMPERATURE.

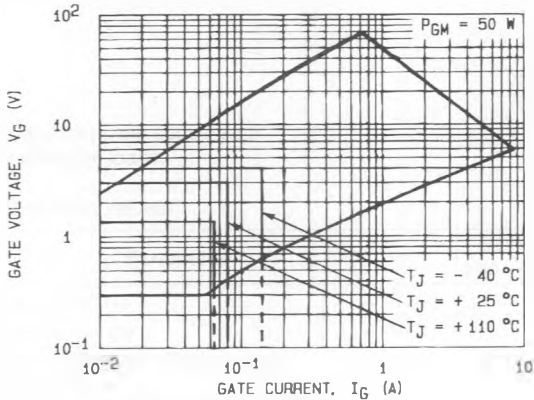
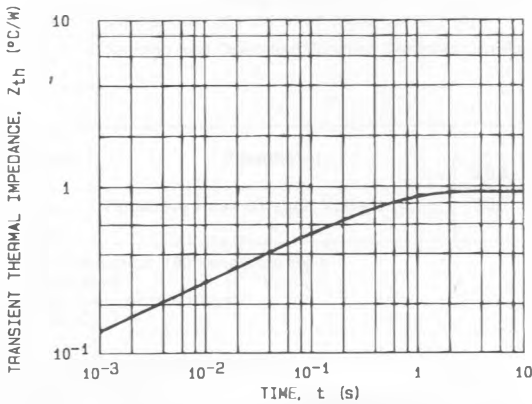


FIG.9 - GATE TRIGGER CHARACTERISTICS.



Conduction angle ( $\alpha, \beta$ )	Effective thermal resistance ( $^{\circ}\text{C}/\text{W}$ ) junction to case	
	Sinusoidal	Rectangular
180°	1.00	0.99
120°	1.04	1.40
90°	1.12	1.58
60°	1.30	1.77
30°	1.67	2.23

FIG.10 - TRANSIENT THERMAL IMPEDANCE JUNCTION TO CASE.