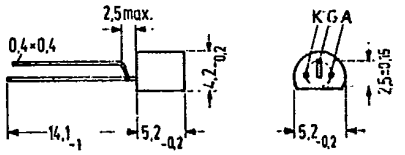
Silicon Miniature Thyristor — BR 103

— SIEMENS AKTIENGESELLSCHAF

BR 103 is a silicon planar thyristor in a TO-92 plastic package (10 A 3 DIN 41868). This thyristor is suitable for various applications within low power ranges, e.g. controls and regulations, counters, switches, etc.

Type	Ordering code
BR 103	Q68000-A729



Mounting instruction.
Fixing hole: 0.6 mm dia
Approx. weight 0.25 g

Dimensions in mm

Maximum ratings (T_j = −40 °C to +125 °C; R_{GK} = 1000 Ω)

Neg. and pos. repetitive peak off-state voltage	V_{RR}/V_{DR}	30	V
Max. rms on-state current	$I_{T(rms)}$	0.8	A
Surge on-state current, sinusoidal pulse (t_p < 10 ms)	I_{TSM}	6	A
Repetitive surge on-state current at t_p = 6 µs and f = 40 kHz sine	I_T	2	A
Peak gate forward current	I_{GFP}	0.5	A
Repetitive reverse gate voltage	$V_{(KG)R}$	6	V
Storage temperature range	T_{stg}	−40 to +125	°C
Junction temperature range	T_j	−40 to +125	°C
Average gate power dissipation	$P_{G(AV)}$	0.01	W
Peak gate power dissipation	P_{GP}	0.1	W

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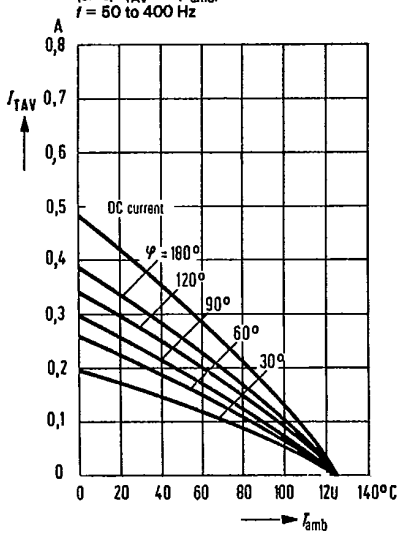
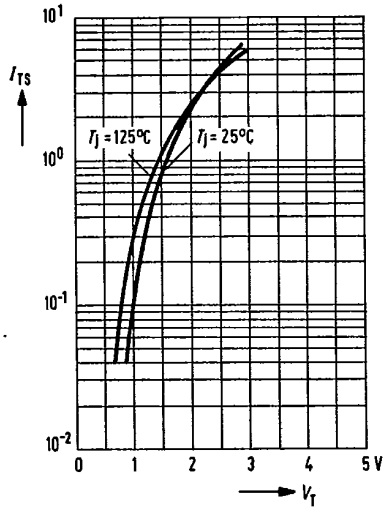
Static characteristics (T_{case} = 25 °C)

Continuous reverse blocking and off-state current	I_R/I_D	<2	µA
(R_{GK} = 1 kΩ) (T_j = 125 °C)	I_R/I_D	<50	µA
Holding current (R_{GK} = 1 kΩ)	I_H	<3	mA
(T_j = -40 °C)	I_H	<4	mA
On-state voltage			
(I_{TS} = 1 A; t_p = 1 ms)	V_T	<1.5	V
Gate trigger current			
(V_{AK} = 6V; R_L = 100 Ω)	I_{GT}	<200	µA
(T_j = 0 °C)	I_{GT}	<250	µA
Gate trigger voltage	V_{GT}	<0.8	V
(V_{AK} = 6V, R_L = 100 Ω,			
R_{GT} = 1 kΩ, T_j = 0 °C)	V_{GT}	<0.9	V
Gate non-trigger forward voltage			
(V_D = V_{DR}; R_{GK} = 1 kΩ; T_j = 125 °C)	V_{GF}	>0.1	V
Critical rate of voltage rise			
(R_{GK} = 1 kΩ; T_j = 125 °C; V_{AK} = 10 V)	dv/dt	10	V/µs
Turn-off time			
$I_{TS(rectangular)}$ = 1 A; t_P = 50 µs;	t_q	<6	µs
(V_R = 20 V; V_{AK} = V_{DR}; $T_{dV/dt}$ = 5 µs)			
Turn-on time			
(V_D = V_{DR}; R_L = 100 Ω; R_{GK} = 1 kΩ;	t_{on}	1.2	µs
I_{GTS} = 1.4 mA, t_p = 5 µs; t_r = 40 ns)			

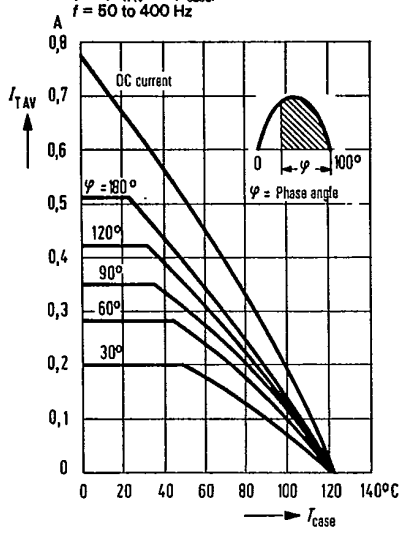
Max. mean on-state current
(sine) $I_{TAV} = f(T_{amb})$
f = 50 to 400 Hz



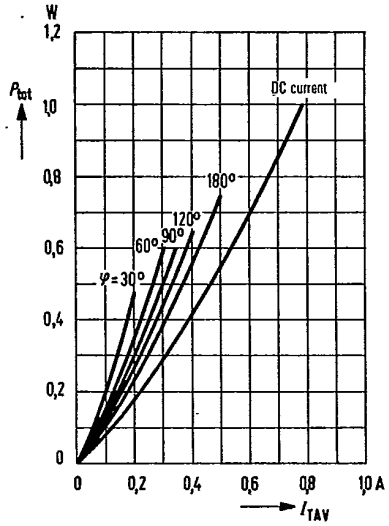
On-state characteristic
A (short-time power); $I_{TS} = f(V_T)$



Max. mean on-state current
(sine) $I_{TAV} = f(T_{case})$
f = 50 to 400 Hz



Power dissipation (sine) $P_{tot} = f(I_{TAV})$
f = 50 to 400 Hz; T = 125 °C



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Surge on-state current
$I_{TS} = f$ (overloads at 50 Hz)