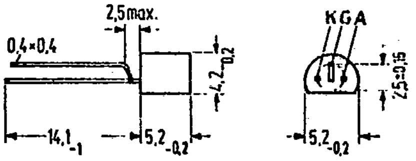
Silicon Miniature Thyristors

BRY 55/30 ... BRY 55/300

— SIEMENS AKTIENGESELLSCHAF

These diffused silicon thyristors in TO 92 plastic package (10 A 3 DIN 41868) are intended for various applications of low performance, such as controls and regulations, counters, switches, etc. These thyristors are particularly recommended for entertainment and consumer electronics.

Type	Ordering code
BRY 55/30	Q68000-A114-F10
BRY 55/60	Q68000-A183-F10
BRY 55/100	Q68000-A184-F10
BRY 55/200	Q68000-A520-F10
BRY 55/300	Q68000-A185-F10



Mounting instruction:
Fixing hole Ø 0.6
Approx. weight 0.25 g

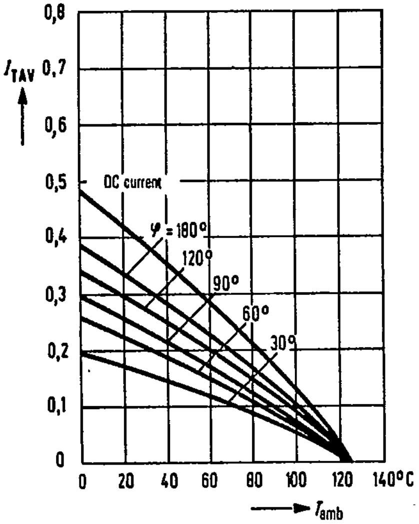
Dimensions in mm

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

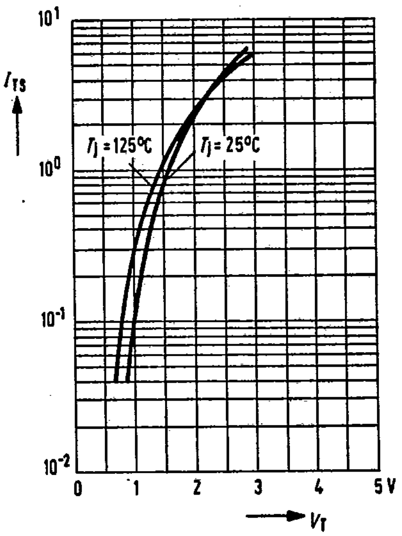
		BRY 55/30	BRY 55/60	BRY 55/100	BRY 55/200	BRY 55/300	
Neg. and pos. repetitive peak off-state voltage	V_{RR}/V_{DR}	30	60	100	200	300	V
Max. rms on-state current	$I_{T\,(rms)}$	0.8	0.8	0.8	0.8	0.8	A
Surge on-state current, sinusoidal pulse							
t_p < 10 ms	I_{Ts}	8	8	8	8	8	A
t_p < 100 µs	I_{Ts}	20	20	20	20	20	A
Peak gate forward current	I_{GFP}	0.5	0.5	0.5	0.5	0.5	A
Repetitive reverse gate voltage	$V_{(KG)\,R}$	6	6	6	6	6	V
Critical rate of current rise I_{TS} = 20 A; t_p < 10 µs I_{GT} = 1 A; t_r < 0.2 s f_{max} = 50 Hz	di/dt	100	100	100	100	100	A/µs
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	0.01	0.01	0.01	0.01	W
Peak gate power dissipation	P_{GP}	0.1	0.1	0.1	0.1	0.1	W

Static characteristics (T_{case} = 25°C)		BRY 55/30 ... BRY 55/300	
Continuous reverse blocking and off-state current (R_{GK} = 1 kΩ)	I_R/I_D	<1	μA
(T_j = 125 °C)	I_R/I_D	<50	μA
Holding current (R_{GK} = 1 kΩ)	I_H	<5	mA
(T_j = -40°C)	I_H	<10	mA
Forward voltage (I_{TS} = 1 A; f_p = 1 ms)	V_T	<1.5	V
Gate-trigger current (V_{AK} = 6 V; R_L = 100 Ω)	I_{GT}	<200	μA
(T_j = -40°C)	I_{GT}	<500	μA
Gate-trigger voltage (V_{AK} = 6 V; R_L = 100 Ω)	V_{GT}	<0.8	V
(T_j = -40°C)	V_{GT}	<1	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; V = 0.67 V_{DW}; T_j = 125°C)	dv/dt	10	V/μs
Turn-off time (R_{GK} = 1 kΩ; T_{case} = 125°C; $I_{TS(rectangular)}$ = 1 A; t_p = 50 μs; V_R = 20 V; V_{AK} = 0.67 V_{DR}; dv/dt = 5 V/μs	t_q	30	μs
Turn-on time (V_D = V_{DR}; R_L = 100 Ω; R_{GK} = 1 kΩ; I_{GTS} = 1.5 mA; t_p = 2 μs; t_r = 40 ns)	t_{on}	2	μs
Thermal resistance			
Junction to case	R_{thJC}	<125	K/W
Junction to ambient air	R_{thJA}	<230	K/W

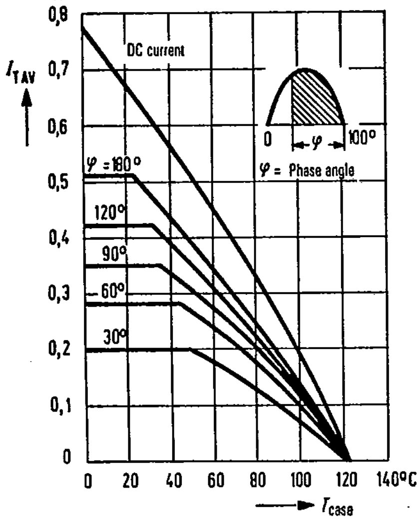
Max. mean on-state current
(sine) $I_{TAV} = f(T_{amb})$; f = 50 to 400 Hz



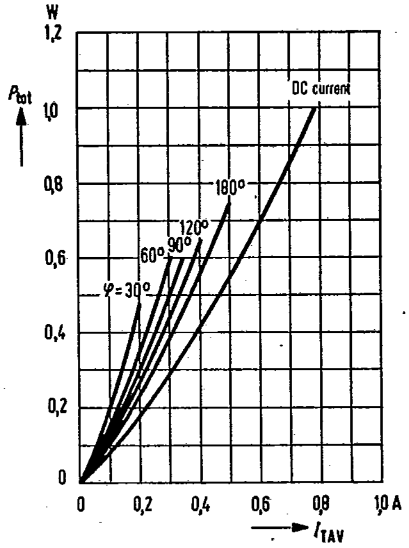
Forward characteristic
(short-time power); $I_{TS} = f(V_T)$



Power dissipation (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



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