PNP Silicon AF Transistors

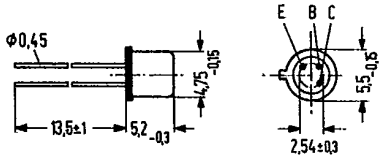
BCX 23
BCX 39

SIEMENS AKTIENGESELLSCHAF

T-29-19

BCX 23 and BCX 39 are epitaxial PNP silicon planar transistors in TO 18 metal case (18 A 3 DIN 41876). The collector is electrically connected to the case. These transistors are particularly suitable for use in AF input and driver stages as well as for universal applications at higher reverse voltages.

Type	Ordering code
BCX 23	Q62702-C733
BCX 39	Q62702-C821



Approx. weight 0.33 g

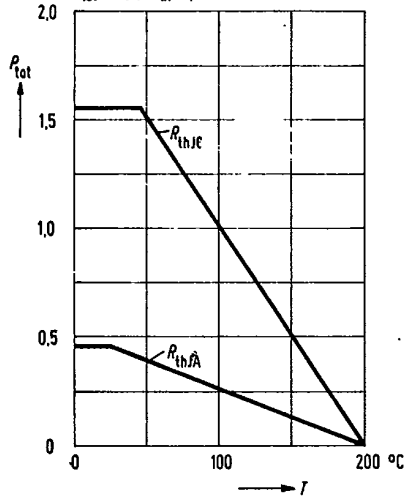
Dimensions in mm

Maximum ratings (T_{amb} = 25 °C)		BCX 23	BCX 39	
Collector-emitter voltage	$-V_{CES}$	125	100	V
Collector-emitter voltage	$-V_{CEO}$	125	100	V
Emitter-base voltage	$-V_{EBO}$	5	5	V
Collector current	$-I_C$	800	800	mA
Collector peak current	$-I_{CM}$	1	1	A
Base current	$-I_B$	100	100	mA
Junction temperature	T_j	200	200	°C
Storage temperature range	T_{stg}	−65 to +200	−65 to +200	°C
Total power dissipation (T_{amb} = 25 °C)	P_{tot}	450	450	mW
Total power dissipation (T_{case} = 45 °C)	P_{tot}	1.55	1.55	W
Thermal resistance				
Junction to ambient air	R_{thJA}	<390	<390	K/W
Junction to case	R_{thJC}	<100	<100	K/W

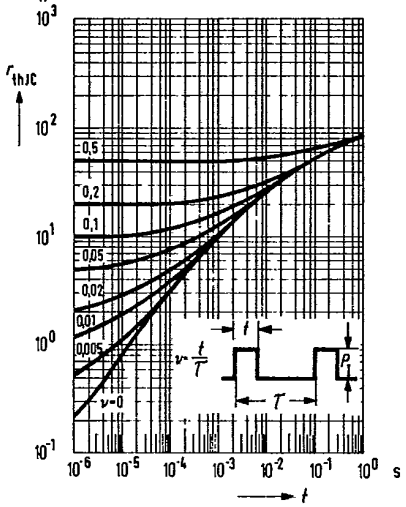
Static characteristics (T_{amb} = 25 °C)		BCX 23	BCX 39	
Collector-emitter breakdown voltage ($-I_C$ = 10 mA)	$-V_{(BR)CEO}$	>125	>100	V
Collector-emitter breakdown voltage ($-I_C$ = 100 µA)	$-V_{(BR)CES}$	>125	>100	V
Emitter-base breakdown voltage ($-I_E$ = 100 µA)	$-V_{(BR)EBO}$	>5	>5	V
Collector-emitter saturation voltage ($-I_C$ = 300 mA; $-I_B$ = 30 mA)	$-V_{CEsat}$	≤0.9	≤0.9	V
Base-emitter saturation voltage ($-I_C$ = 300 mA; $-I_B$ = 30 mA)	$-V_{BEsat}$	≤1.4	≤1.4	V
Collector cutoff current ($-V_{CES}$ = 100 V)	$-I_{CES}$	≤100	≤100	nA
($-V_{CES}$ = 100 V; T_{amb} = 150 °C)	$-I_{CES}$	≤10	≤10	µA
Emitter cutoff current ($-V_{EB}$ = 4 V)	$-I_{EBO}$	≤100	≤100	nA
DC current gain ($-I_C$ = 100 mA; $-V_{CE}$ = 1 V)	h_{FE}	≥63	>63	–
($-I_C$ = 200 mA; $-V_{CE}$ = 1 V)	h_{FE}	≥40	>40	–

Dynamic characteristics (T_{amb} = 25 °C)				
Transition frequency ($-I_C$ = 10 mA; $-V_{CE}$ = 5 V; f = 20 MHz)	f_T	100	100	MHz
Output capacitance ($-V_{CB}$ = 10 V; $-I_E$ = 0; f = 1 MHz)	C_{ob}	12	12	pF

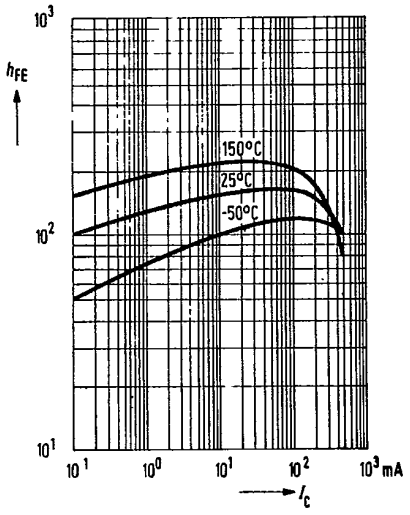
Total perm. power dissipation versus temperature
$P_{tot} = f(T)$; R_{th} = parameter



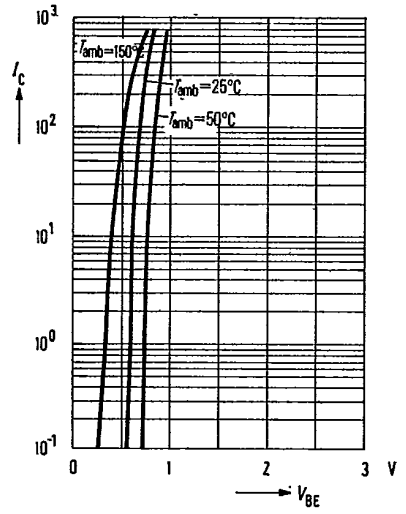
Permissible pulse load
$r_{thJC} = f(t)$; ν = parameter



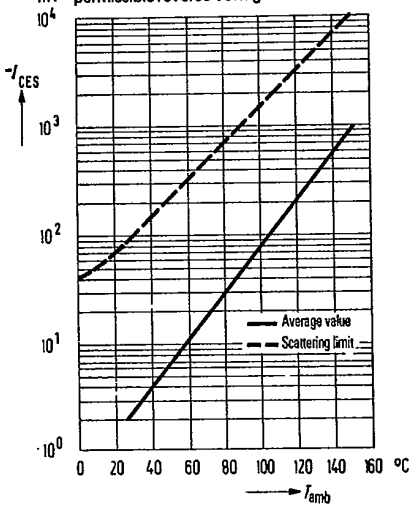
DC current gain $h_{FE} = f(I_C)$
T_{amb} = parameter; V_{CE} = 1 V



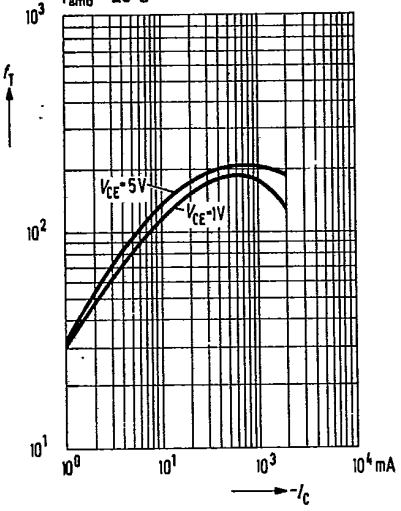
Collector current $I_C = f(V_{BE})$
T_{amb} = parameter



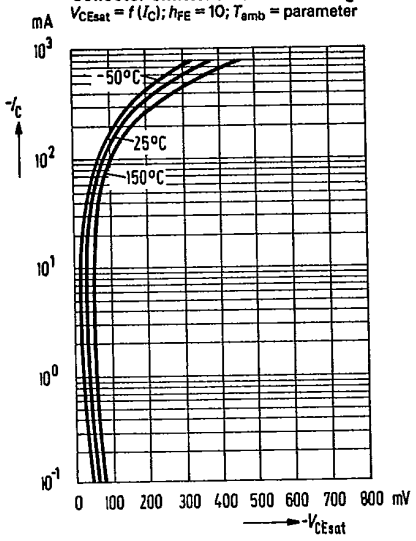
Collector cutoff current versus temperature $I_{CES} = f(T_{amb})$ for max. permissible reverse voltage



Transition frequency $f_T = f(I_C)$
V_{CE} = parameter; f_M = 20 MHz;
T_{amb} = 25°C



Collector-emitter saturation voltage
$V_{CEsat} = f(I_C)$; $h_{FE} = 10$; T_{amb} = parameter



Base-emitter saturation voltage
$V_{BEsat} = f(I_C)$; $h_{FE} = 10$;
T_{amb} = parameter