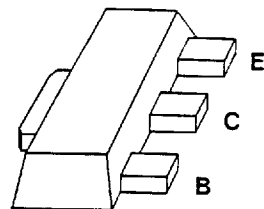


PNP AF Transistors

T-33-17 BCX 51
... BCX 53

SIEMENS AKTIENGESellschaft

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCX 54 ... BCX 56 (NPN)



Type	Marking	Type	Marking	Ordering code	Package
BCX 51-6	AB	BCX 52-16	AM	Refer to index	SOT 89
BCX 51-10	AC	BCX 53-6	AJ		
BCX 51-16	AD	BCX 53-10	AK		
BCX 52-6	AF	BCX 53-16	AL		
BCX 52-10	AG				

Maximum ratings

Parameter	Symbol	BCX 51	BCX 52	BCX 53	Unit
Collector-emitter voltage	V_{CE0}	45	60	80	V
Collector-base voltage	V_{CB0}	45	60	100	V
Emitter-base voltage	V_{EB0}	5	5	5	V
Collector current	I_C		1		A
Peak collector current	I_{CM}		1,5		A
Base current	I_B		100		mA
Peak base current	I_{BM}		200		mA
Total power dissipation $T_A = 25^\circ\text{C}$	P_{tot}		1		W
Junction temperature	T_j		150		$^\circ\text{C}$
Storage temperature range	T_{stg}		-65 ... +150		$^\circ\text{C}$
Thermal resistance junction-ambient package mounted on alumina 15 mm × 16.7 mm × 0.7 mm	R_{thJA}		≤ 125		K/W

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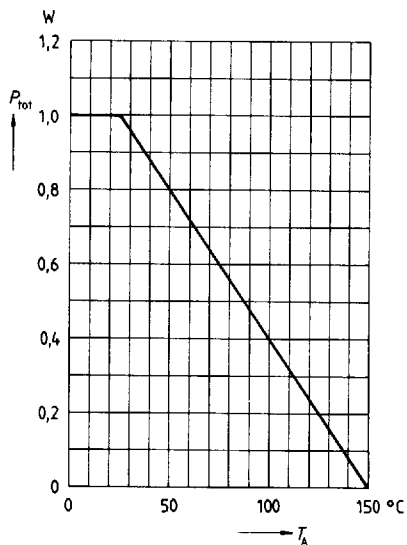
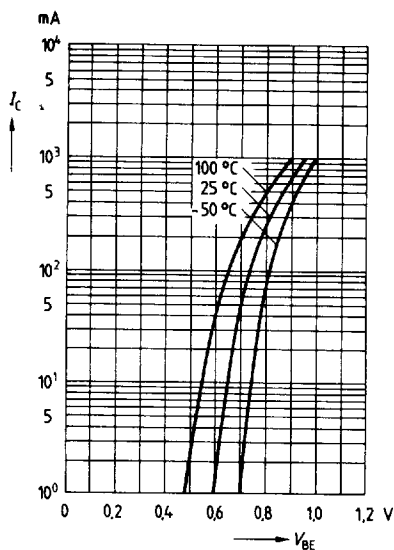
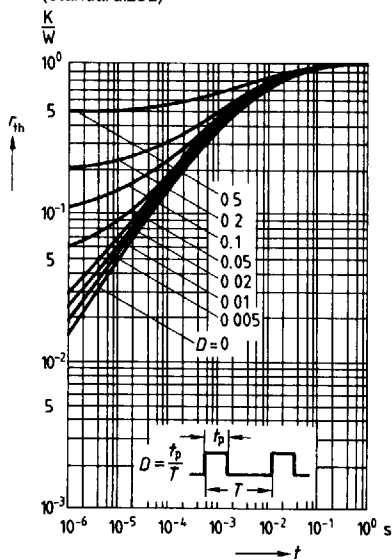
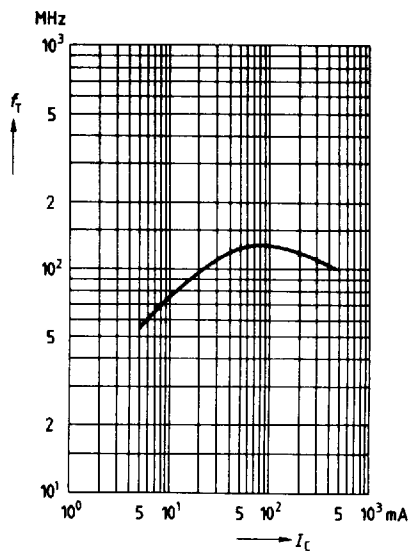
Electrical characteristicsat $T_A = 25^\circ\text{C}$, unless otherwise specified

DC characteristics	Symbol	min	typ	max	Unit
Collector-emitter breakdown voltage $I_C = 10\text{ mA}$	$V_{(BR) CE0}$				
BCX 51		45	—	—	V
BCX 52		60	—	—	V
BCX 53		80	—	—	V
Collector-base breakdown voltage $I_C = 100\text{ }\mu\text{A}$	$V_{(BR) CB0}$				
BCX 51		45	—	—	V
BCX 52		60	—	—	V
BCX 53		100	—	—	V
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}$	$V_{(BR) EB0}$	5	—	—	V
Collector cutoff current $V_{CB} = 30\text{ V}$ $V_{CB} = 30\text{ V}$, $T_A = 150^\circ\text{C}$	I_{CB0}	— —	— —	100 20	nA μA
Emitter cutoff current $V_{EB} = 4\text{ V}$	I_{EB0}	—	—	20	nA
DC current gain ¹⁾ $I_C = 5\text{ mA}$, $V_{CE} = 2\text{ V}$ $I_C = 150\text{ mA}$, $V_{CE} = 2\text{ V}$	h_{FE}	25	—	—	—
BCX 51, BCX 52, BCX 53-6		40	63	100	—
BCX 51, BCX 52, BCX 53-10		63	100	160	—
BCX 51-16, BCX 52-16, BCX 53-16		100	160	250	—
$I_C = 500\text{ mA}$, $V_{CE} = 2\text{ V}$		25	—	—	—
Collector-emitter saturation voltage ¹⁾ $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$	V_{CEsat}	—	—	0,5	V
Base-emitter voltage ¹⁾ $I_C = 500\text{ mA}$, $V_{CE} = 2\text{ V}$	V_{BE}	—	—	1	V

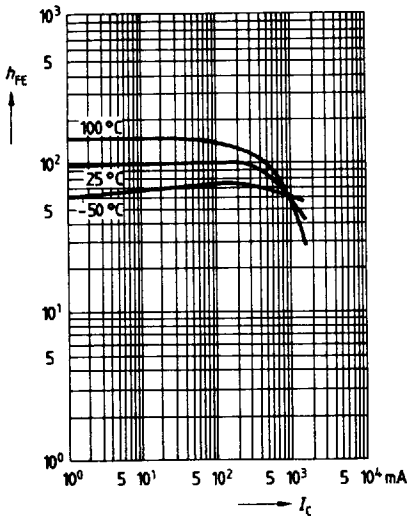
AC characteristics	Symbol	min	typ	max	Unit
Transition frequency $I_C = 50\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 20\text{ MHz}$	f_T	—	125	—	MHz

¹⁾ Pulse test: $t \leq 300\text{ }\mu\text{s}$, $D = 2\%$.

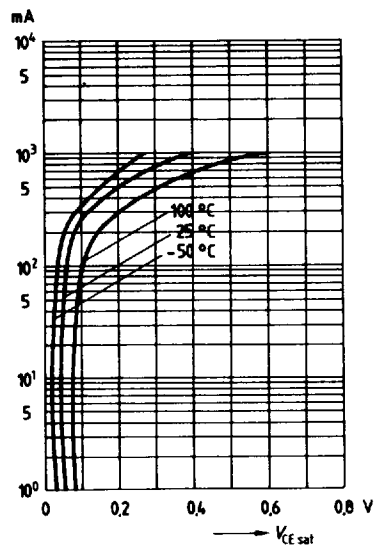
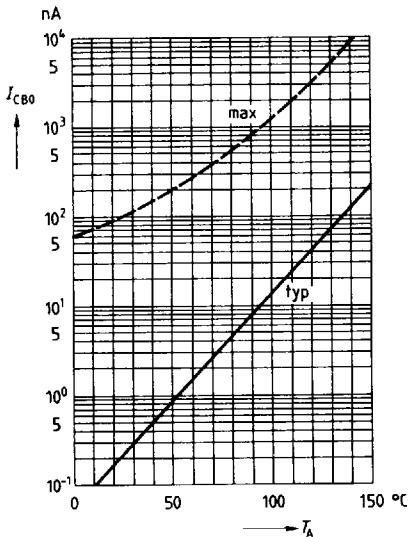
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Total power dissipation $P_{\text{tot}} = f(T_A)$ **Collector current** $I_C = f(V_{\text{BE}})$ $V_{\text{CE}} = 2 \text{ V}$ **Pulse handling capability** $r_{\text{th}} = f(t)$
(standardized)**Transition frequency** $f_T = f(I_C)$ $V_{\text{CE}} = 10 \text{ V}$ 

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DC current gain $h_{FE} = f(I_C)$
 $V_{CE} = 2 \text{ V}$


Collector-emitter saturation voltage

 $I_C = f(V_{CE \text{ sat}})$
 $h_{FE} = 10$

Collector cutoff current $I_{CB0} = f(T_A)$
 $V_{CB} = 30 \text{ V}$

Base-emitter saturation voltage $I_C = f(V_{BE \text{ sat}})$
 $h_{FE} = 10$
