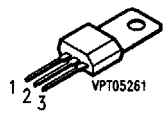
SIEMENS SIEMENS AKTIENGESELLSCHAF

T-33-17

PNP Silicon AF Transistors

BD 826
... BD 830

- High current gain
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BC 825, BC 827, BC 829 (NPN)



Type	Marking	Ordering Code	Pin Configuration 1	2	3	Package[1]
BD 826	–	Q62702-D1303	E	C	B	TO-202
BD 826-6		Q62702-D1304				
BD 826-10		Q62702-D1179				
BD 826-16		Q62702-D1257				
BD 828		Q62702-D1307				
BD 828-6		Q62702-D1308				
BD 828-10		Q62702-D61				
BD 830		Q62702-D1312				
BD 830-6		Q62702-D1313				
BD 830-10		Q62702-D1238				

[1] For detailed information see chapter Package Outlines.

Maximum Ratings

Parameter	Symbol	Values BD 826	BD 828	BD 830	Unit
Collector-emitter voltage	V_{CEO}	45	60	80	V
Collector-base voltage	V_{CBO}	45	60	100	
Emitter-base voltage	V_{EBO}	5			
Collector current	I_C	1			A
Peak collector current	I_{CM}	1.5			
Base current	I_B	100			mA
Peak base current	I_{BM}	200			
Total power dissipation, T_C = 30 °C	P_{tot}	8			W
Junction temperature	T_j	150			°C
Storage temperature range	T_{stg}	– 65 ... + 150			

Thermal Resistance

Junction - ambient	$R_{th\,JA}$	≤ 63	K/W
Junction - case[1)]	$R_{th\,JC}$	≤ 15	

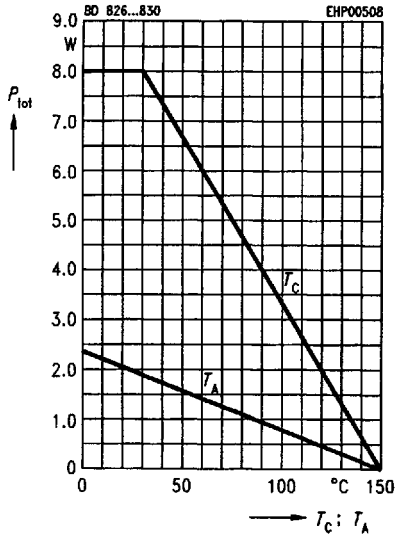
1) Mounted on Al heat sink 15 mm × 25 mm × 0.5 mm.

Electrical Characteristics
at T_A = 25 °C, unless otherwise specified.

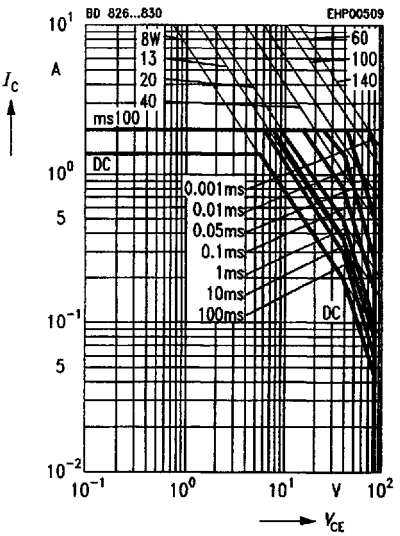
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 10 mA	$V_{(BR)CE0}$				V
BD 826		45	–	–	
BD 828		60	–	–	
BD 830		80	–	–	
Collector-base breakdown voltage I_C = 100 µA	$V_{(BR)CB0}$				
BD 826		45	–	–	
BD 828		60	–	–	
BD 830		100	–	–	
Emitter-base breakdown voltage I_E = 10 µA	$V_{(BR)EB0}$	5	–	–	
Collector cutoff current	I_{CB0}				
V_{CB} = 30 V		–	–	100	nA
V_{CB} = 30 V, T_A = 150 °C		–	–	20	µA
Emitter cutoff current V_{EB} = 4 V	I_{EB0}	–	–	100	nA
DC current gain	h_{FE}				–
I_C = 5 mA, V_{CE} = 2 V		25	–	–	
I_C = 150 mA, V_{CE} = 2 V					
BD 826-6, BD 828-6, BD 830-6		40	63	100	
BD 826-10, BD 828-10, BD 830-10		63	100	160	
BD 826-16		100	160	250	
I_C = 500 mA, V_{CE} = 2 V [1]		25	–	–	
Collector-emitter saturation voltage [1] I_C = 500 mA, I_B = 50 mA	V_{CEsat}	–	–	0.5	V
Base-emitter voltage [1] I_C = 500 mA, V_{CE} = 2 V	V_{BE}	–	–	1	
AC characteristics					
Transition frequency I_C = 50 mA, V_{CE} = 10 V, f = 20 MHz	f_T	–	125	–	MHz

[1] Pulse test: $t \leq 300$ µs, $D \leq 2$ %.

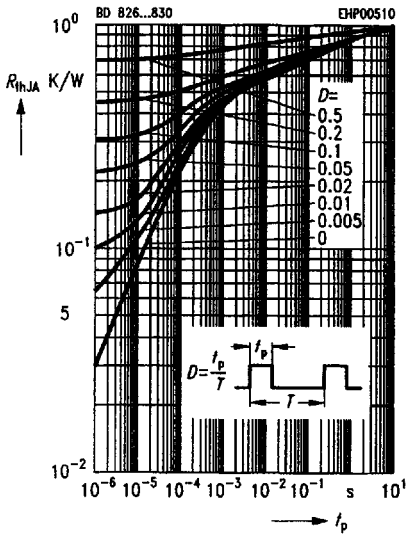
Total power dissipation $P_{tot} = f(T_A; T_C)$



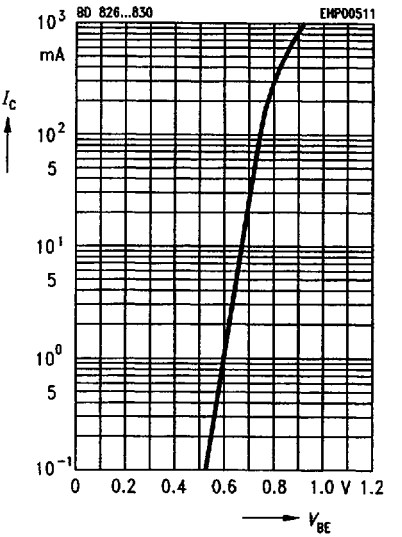
Operating range $I_C = f(V_{CE})$
$T_A = 25$ °C, $D = 0$



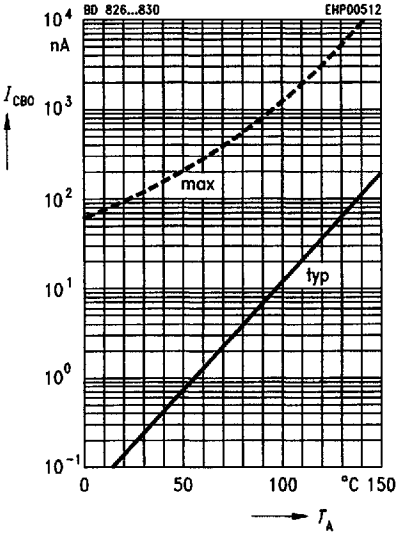
Permissible pulse load $R_{thJA} = f(t_p)$



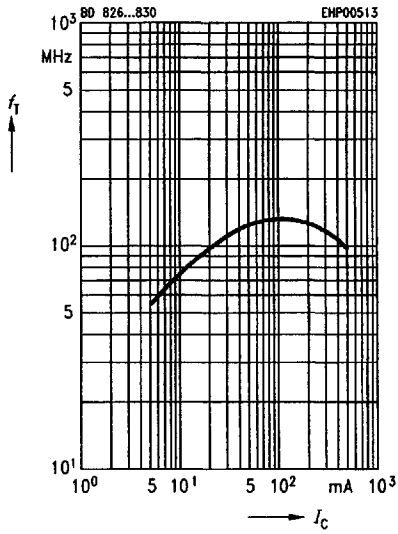
Collector current $I_C = f(V_{BE})$



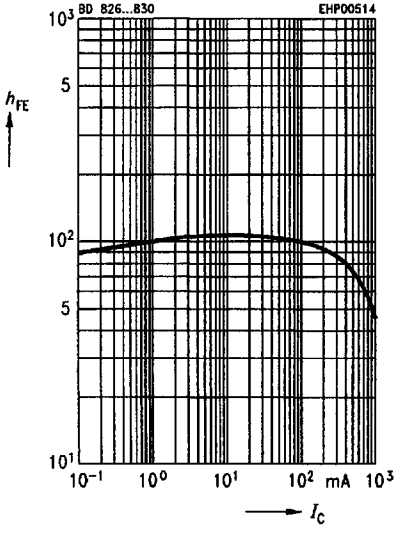
Collector cutoff current $I_{CBO} = f(T_A)$
V_{CB} = 30 V



Transition frequency $f_T = f(I_C)$
V_{CE} = 10 V, f = 20 MHz



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



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