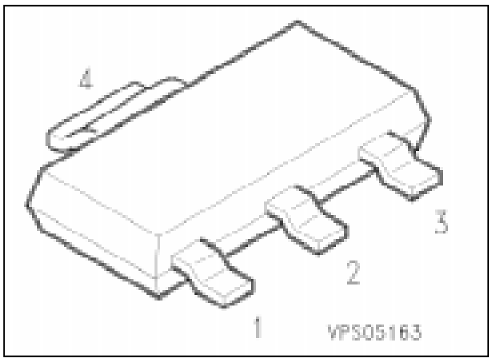
SIEMENS

NPN Silicon Darlington Transistors

PZTA 13
PZTA 14

- For general AF applications
- High collector current
- High current gain
- Complementary types: PZTA 63
  PZTA 64 (PNP)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	4	Package[1)]
PZTA 13 PZTA 14	PZTA 13 PZTA 14	Q62702-Z2033 Q62702-Z2034	B	C	E	C	SOT-223

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CES}	30	V
Collector-base voltage	V_{CB0}	30	
Emitter-base voltage	V_{EB0}	10	
Collector current	I_C	300	mA
Peak collector current	I_{CM}	500	
Base current	I_B	100	
Peak base current	I_{BM}	200	
Total power dissipation, T_S = 124 ˚C	P_{tot}	1.5	W
Junction temperature	T_j	150	˚C
Storage temperature range	T_{stg}	– 65 … + 150	

Thermal Resistance

Junction - ambient[2)]	$R_{th\ JA}$	≤ 72	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 17	

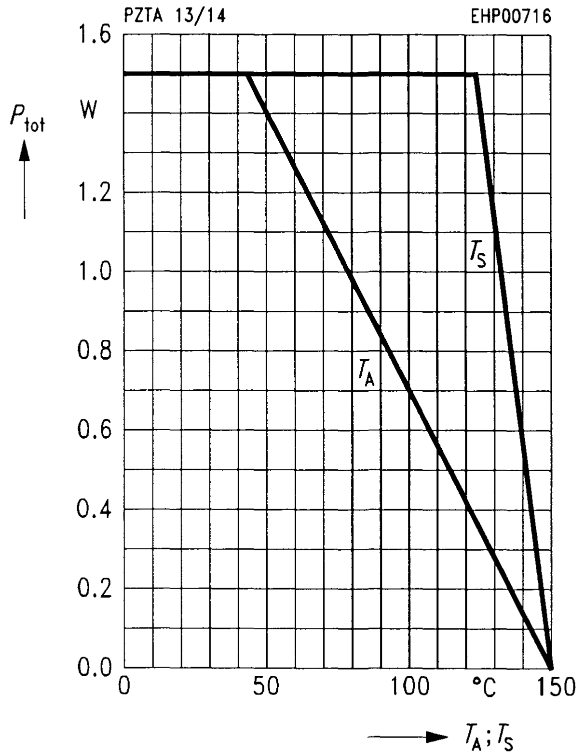
1) For detailed information see chapter Package Outlines.
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm^2 Cu.

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

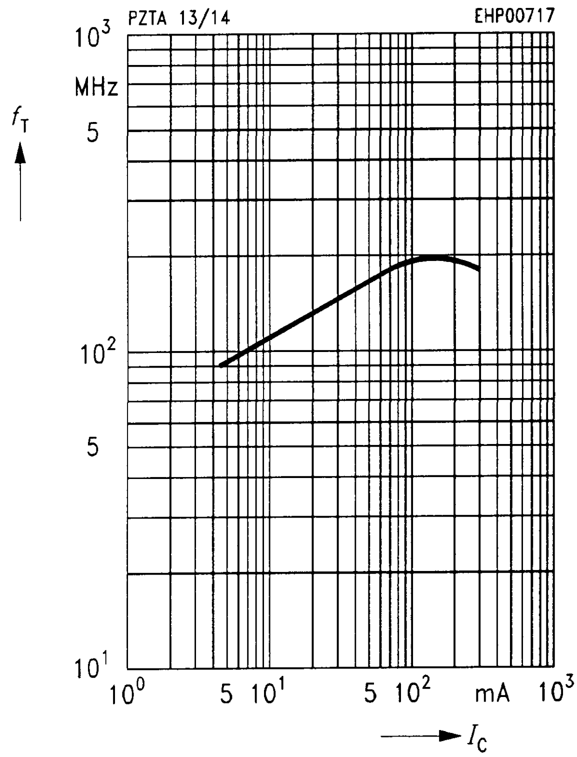
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 100 µA	$V_{(BR)CES}$	30	–	–	V
Collector-base breakdown voltage I_C = 100 µA, I_B = 0	$V_{(BR)CB0}$	30	–	–	
Emitter-base breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EB0}$	10	–	–	
Collector-base cutoff current V_{CE} = 30 V, I_E = 0 V_{CE} = 30 V, I_E = 0, T_A = 150 ˚C	I_{CB0}	 – –	 – –	 100 10	 nA µA
Emitter-base cutoff current V_{EB} = 10 V, I_C = 0	I_{EB0}	–	–	100	nA
DC current gain I_C = 10 mA, V_{CE} = 5 V PZTA 13 PZTA 14 I_C = 100 mA, V_{CE} = 5 V PZTA 13 PZTA 14	h_{FE}	 5000 10000 10000 20000	 – – – –	 – – – –	–
Collector-emitter saturation voltage[1)] I_C = 100 mA, I_B = 0.1 mA	V_{CEsat}	–	–	1.5	V
Base-emitter saturation voltage[1)] I_C = 100 mA, I_B = 0.1 mA	V_{BEsat}	–	–	2.0	
AC characteristics					
Transition frequency I_C = 50 mA, V_{CE} = 5 V, f = 100 MHz	f_T	125	–	–	MHz

1) Pulse test conditions: $t \leq$ 300 µs, D = 2 %.

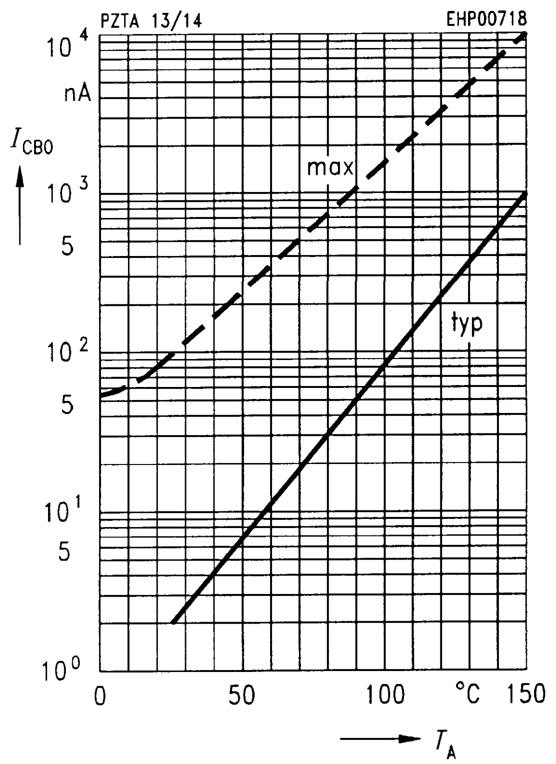
Total power dissipation $P_{tot} = f\,(T_A{}^*;\ T_S)$
* Package mounted on epoxy



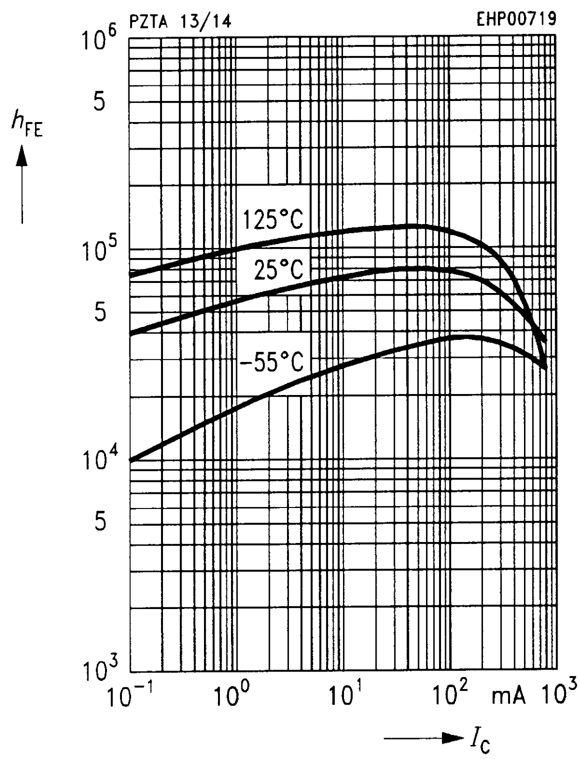
Transition frequency $f_T = f\,(I_C)$
V_{CE} = 5 V, f = 100 MHz



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

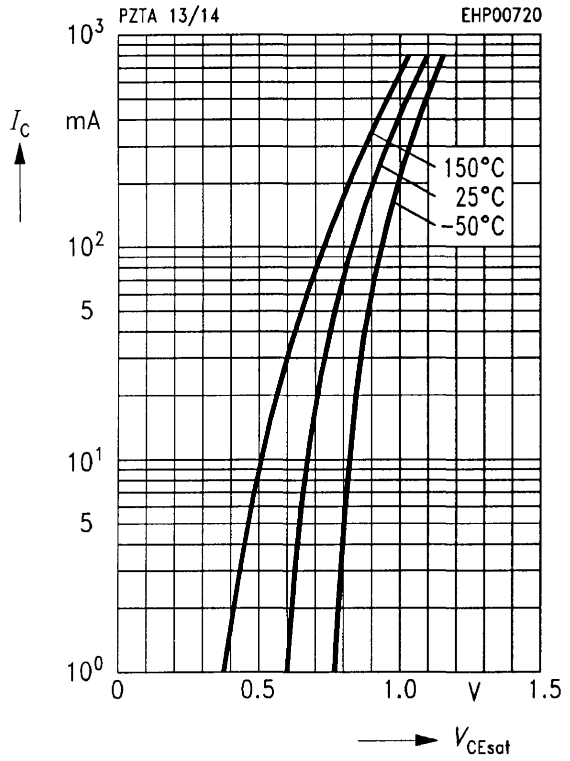


DC current gain $h_{FE} = f\,(I_C)$
V_{CE} = 5 V



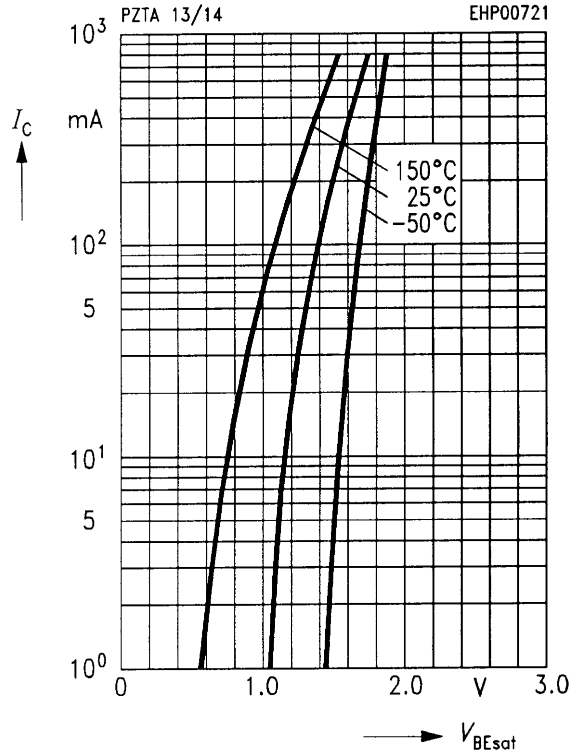
Collector-emitter saturation voltage

$I_C = f\,(V_{CE\,sat})$
h_{FE} = 1000



Base-emitter saturation voltage

$I_C = f\,(V_{BE\,sat})$
h_{FE} = 1000



Permissible pulse load $P_{tot\,max}$ / $P_{tot\,DC} = f\,(t_p)$