SIEMENS

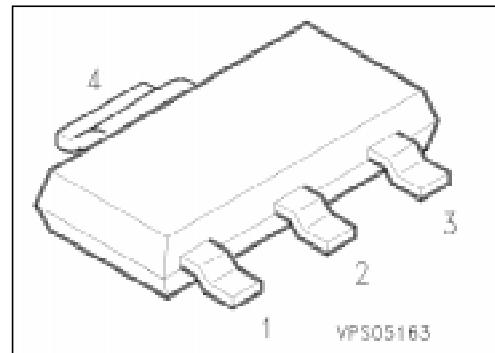## PNP Silicon High-Voltage Transistors

PZTA 92
PZTA 93

● High breakdown voltage
● Low collector-emitter saturation voltage
● Complementary types: PZTA 42, PZTA 43 (NPN)

| Type | Marking | Ordering Code (tape and reel) | Pin Configuration | | | | Package[1] |
			1	2	3	4	
PZTA 92	PZTA 92	Q62702-Z2037	B	C	E	C	SOT-223
PZTA 93	PZTA 93	Q62702-Z2038					

Maximum Ratings

| Parameter | Symbol | Values | | Unit |
		PZTA 92	PZTA 93	
Collector-emitter voltage	V_{CE0}	300	200	V
Collector-base voltage	V_{CB0}	300	200	
Emitter-base voltage	V_{EB0}	5		
Collector current	I_C	500		mA
Base current	I_B	100		
Total power dissipation, $T_S = 124\ ^\circ$C	P_{tot}	1.5		W
Junction temperature	T_j	150		$^\circ$C
Storage temperature range	T_{stg}	$-65 \dots +150$		

Thermal Resistance

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

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[1] For detailed information see chapter Package Outlines.

[2] Package mounted on epoxy pcb 40 mm $\times$ 40 mm $\times$ 1.5 mm/6 cm^2 Cu.

Electrical Characteristics

at $T_A = 25 \, ^\circ C$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC characteristics
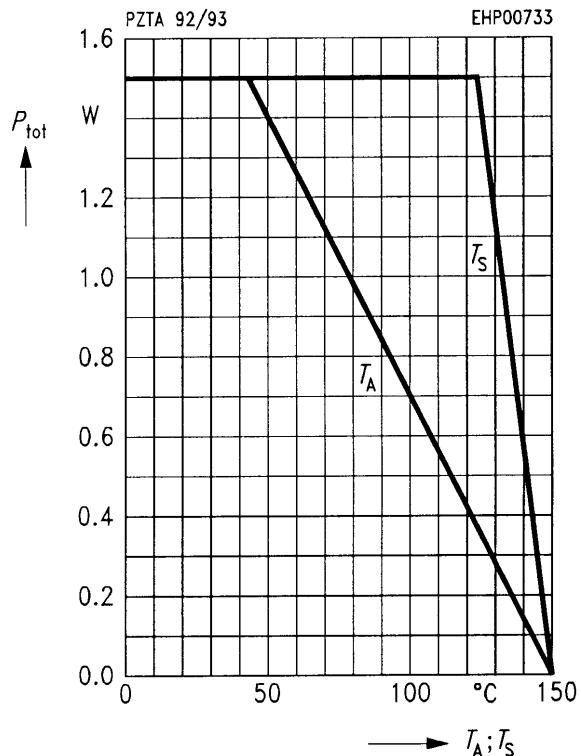
Parameter	Symbol	min.	typ.	max.	Unit
Collector-emitter breakdown voltage $I_C = 1$ mA, $I_B = 0$ PZTA 92 PZTA 93	$V_{(BR)CE0}$	 300 200	 – –	 – –	V
Collector-base breakdown voltage $I_C = 100 \, \mu A$, $I_B = 0$ PZTA 92 PZTA 93	$V_{(BR)CB0}$	 300 200	 – –	 – –	
Emitter-base breakdown voltage $I_E = 100 \, \mu A$, $I_C = 0$	$V_{(BR)EB0}$	5	–	–	
Collector-base cutoff current $V_{CB} = 200$ V PZTA 92 $V_{CB} = 160$ V PZTA 93 $V_{CB} = 200$ V, $T_A = 150\,^\circ C$ PZTA 92 $V_{CB} = 160$ V, $T_A = 150\,^\circ C$ PZTA 93	I_{CB0}	 – – – –	 – – – –	 250 250 20 20	 nA nA μA μA
Emitter-base cutoff current $V_{EB} = 3$ V, $I_C = 0$	I_{EB0}	–	–	100	nA
DC current gain[1] $I_C = 1$ mA, $V_{CE} = 10$ V $I_C = 10$ mA, $V_{CE} = 10$ V $I_C = 30$ mA, $V_{CE} = 10$ V	h_{FE}	 25 40 25	 – – –	 – – –	–
Collector-emitter saturation voltage[1] $I_C = 20$ mA, $I_B = 2$ mA PZTA 92 PZTA 93	V_{CEsat}	 – –	 – –	 0.5 0.4	V
Base-emitter saturation voltage[1] $I_C = 20$ mA, $I_B = 2$ mA	V_{BEsat}	–	–	0.9	

AC characteristics
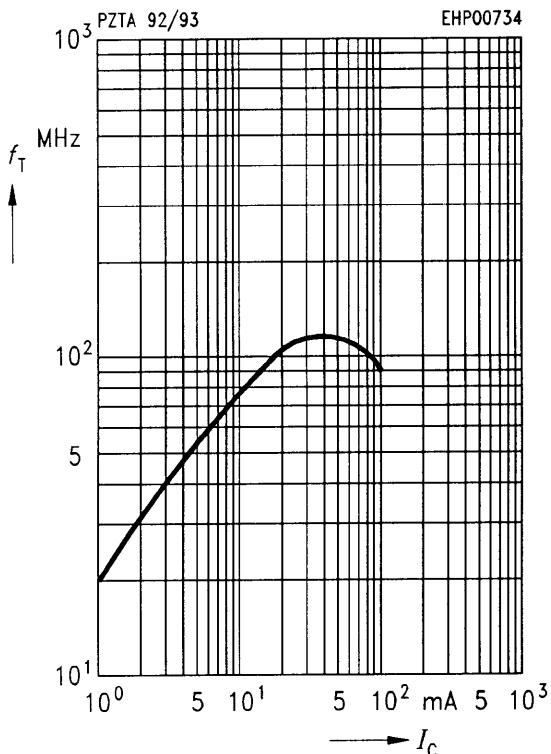
Parameter	Symbol	min.	typ.	max.	Unit
Transition frequency $I_C = 20$ mA, $V_{CE} = 10$ V, $f = 100$ MHz	f_T	–	100	–	MHz
Collector-base capacitance $V_{CB} = 20$ V, $f = 1$ MHz PZTA 92 PZTA 93	C_{obo}	 – –	 – –	 6 8	pF

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[1] Pulse test conditions: $t \leq 300 \, \mu s$, $D = 2$ %.
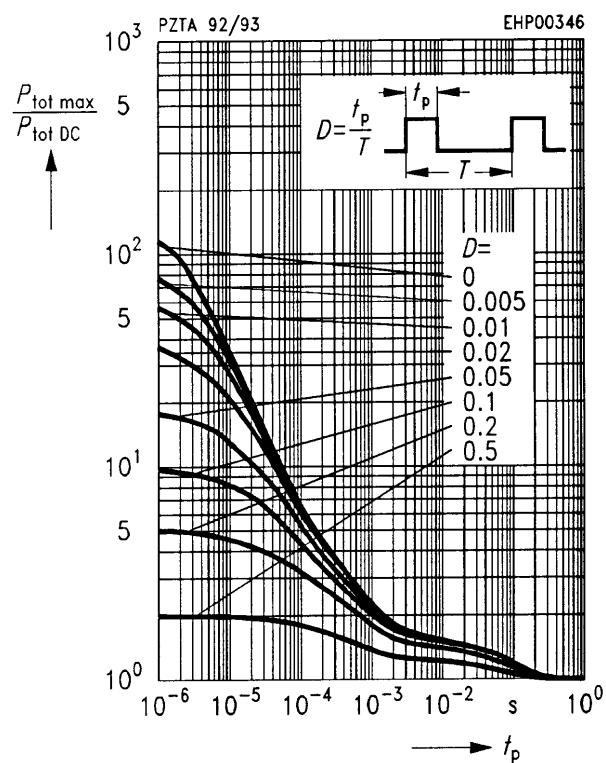
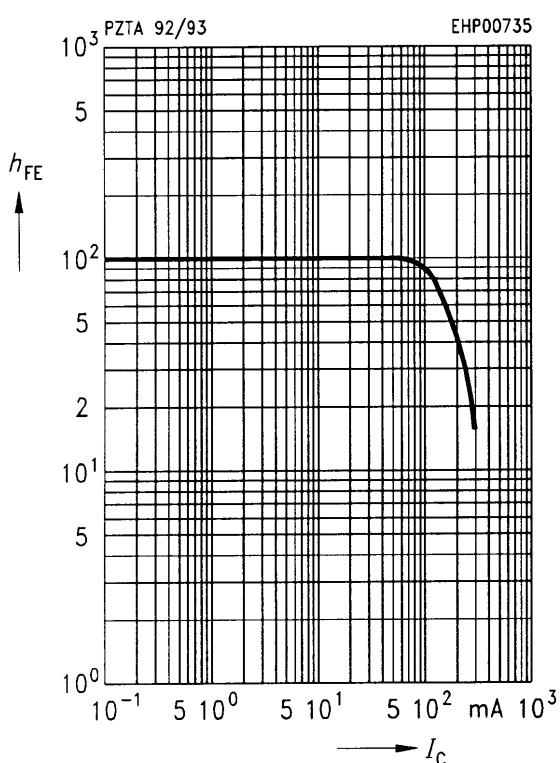**Total power dissipation** $P_{tot} = f(T_A*; T_S)$
* Package mounted on epoxy

PZTA 92/93   EHP00733

Transition frequency $f_T = f(I_C)$
$V_{CE} = 10$ V, $f = 100$ MHz

PZTA 92/93   EHP00734
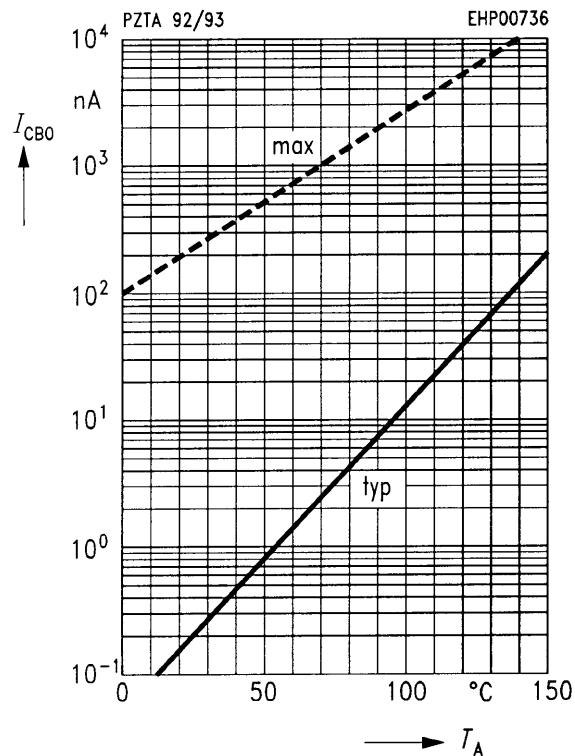
Permissible pulse load $P_{tot\,max} / P_{tot\,DC} = f(t_p)$

PZTA 92/93   EHP00346

$$D = \frac{t_p}{T}$$

D=
0
0.005
0.01
0.02
0.05
0.1
0.2
0.5

DC current gain $h_{FE} = f(I_C)$
$V_{CE} = 10$ V

PZTA 92/93   EHP00735

Collector cutoff current $I_{CB0} = f(T_A)$
$V_{CB} = 160$ V

Collector current $I_C = f(V_{BE})$
$V_{CE} = 10$ V