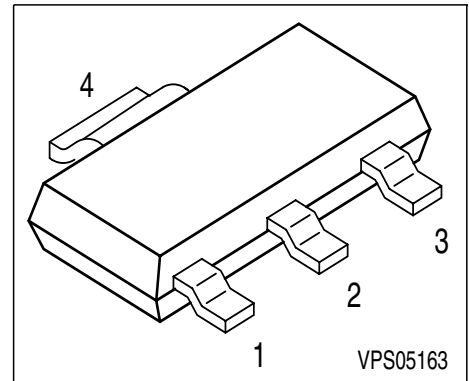


NPN Silicon High-Voltage Transistors

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary types; PZTA 92, PZTA 93 (PNP)



Type	Marking	Pin Configuration				Package
PZTA 42	PZTA 42	1 = B	2 = C	3 = E	4 = C	SOT-223
PZTA 43	PZTA 43	1 = B	2 = C	3 = E	4 = C	SOT-223

Maximum Ratings

Parameter	Symbol	PZTA 42	PZTA 43	Unit
Collector-emitter voltage	V_{CEO}	300	200	V
Collector-base voltage	V_{CBO}	300	200	
Emitter-base voltage	V_{EBO}	6	6	
DC collector current	I_C	500		mA
Base current	I_B	100		
Total power dissipation, $T_S = 124\text{ °C}$	P_{tot}	1.5		W
Junction temperature	T_j	150		°C
Storage temperature	T_{stg}	-65 ... 150		

Thermal Resistance

Junction ambient ¹⁾	R_{thJA}	≤72	K/W
Junction - soldering point	R_{thJS}	≤17	

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 6cm² Cu

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 1\text{ mA}, I_B = 0$	$V_{(BR)CEO}$				V
PZTA 42		300	-	-	
PZTA 43		200	-	-	
Collector-base breakdown voltage $I_C = 100\ \mu\text{A}, I_B = 0$	$V_{(BR)CBO}$				
PZTA 42		300	-	-	
PZTA 43		200	-	-	
Emitter-base breakdown voltage $I_E = 100\ \mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	6	-	-	
Collector cutoff current $V_{CB} = 200\text{ V}, I_E = 0$	I_{CBO}				nA
PZTA 42		-	-	100	
$V_{CB} = 160\text{ V}, I_E = 0$	PZTA 43			100	
Collector cutoff current $V_{CB} = 200\text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	I_{CBO}				μA
PZTA 42		-	-	20	
$V_{CB} = 160\text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	PZTA 43			20	
Emitter cutoff current $V_{EB} = 3\text{ V}, I_C = 0$	I_{EBO}	-	-	100	nA
DC current gain 1) $I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$	h_{FE}	25	-	-	-
$I_C = 10\text{ mA}, V_{CE} = 10\text{ V}$		40	-	-	
$I_C = 30\text{ mA}, V_{CE} = 10\text{ V}$		40	-	-	
Collector-emitter saturation voltage1) $I_C = 20\text{ mA}, I_B = 2\text{ mA}$	V_{CEsat}				V
PZTA 42		-	-	0.5	
PZTA 43		-	-	0.4	
Base-emitter saturation voltage 1) $I_C = 20\text{ mA}, I_B = 2\text{ mA}$	V_{BEsat}	-	-	0.9	

 1) Pulse test: $t < 300\ \mu\text{s}$; $D < 2\%$

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

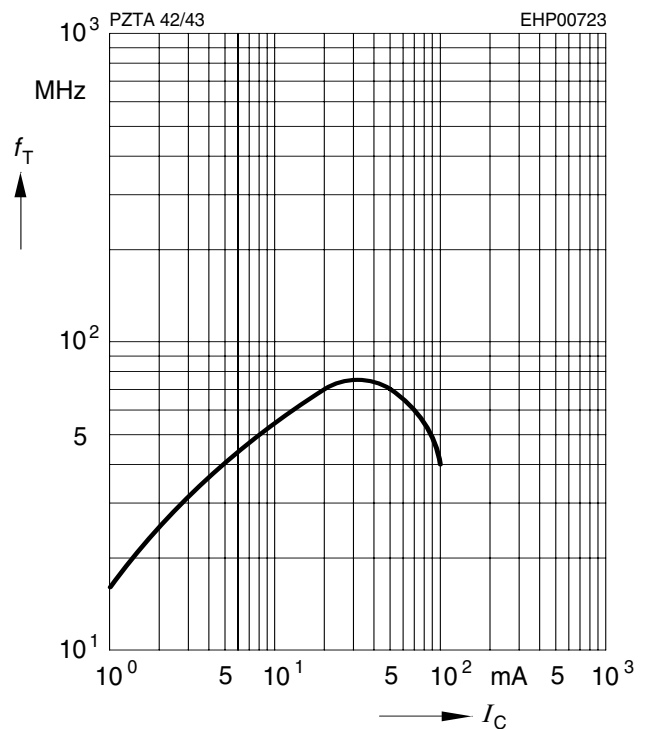
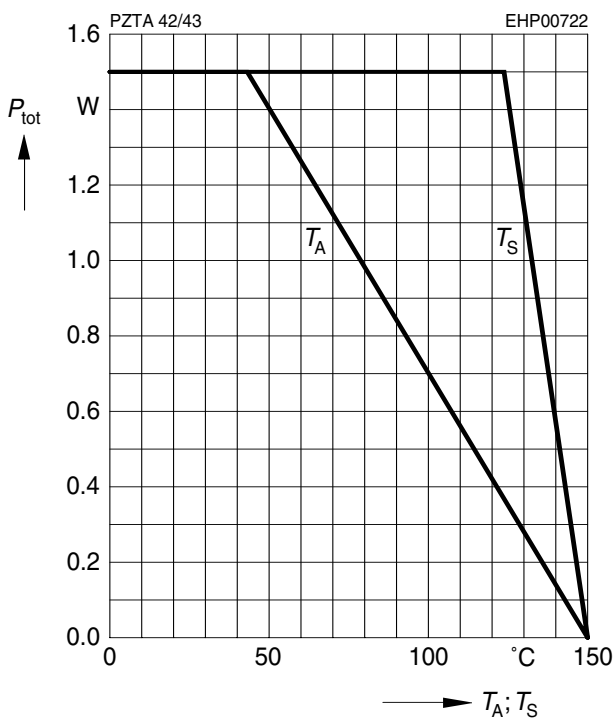
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency $I_C = 20 \text{ mA}, V_{CE} = 10 \text{ V}, f = 100 \text{ MHz}$	f_T	-	70	-	MHz
Collector-base capacitance $V_{CB} = 20 \text{ V}, f = 1 \text{ MHz}$	C_{cb}	-	-	3	pF
				4	

Total power dissipation $P_{tot} = f(T_A^*; T_S)$

* Package mounted on epoxy

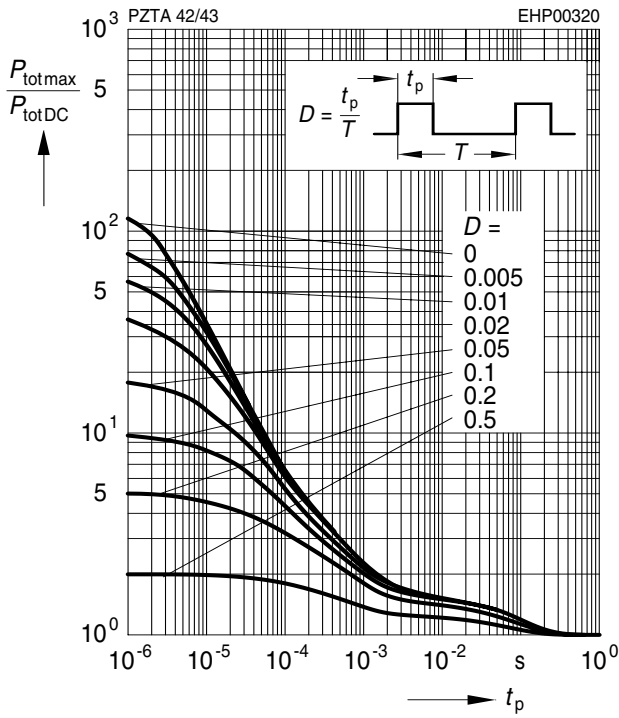
Transition frequency $f_T = f(I_C)$

$V_{CE} = 10\text{V}, f = 100\text{MHz}$



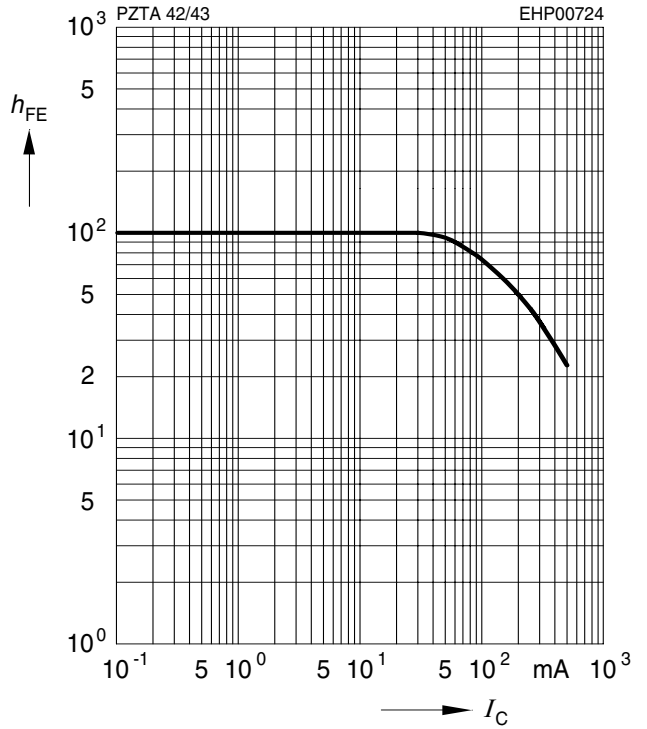
Permissible pulse load

$$P_{\text{totmax}} / P_{\text{totDC}} = f(t_p)$$



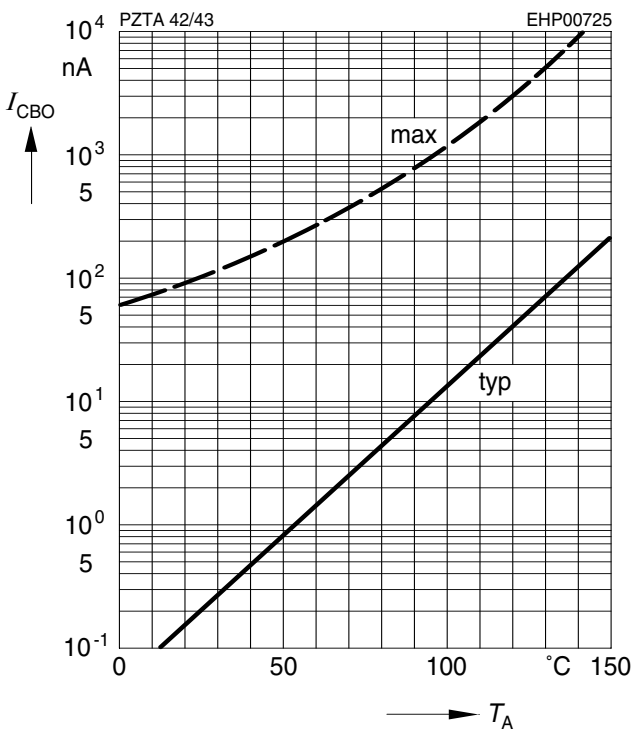
DC current gain $h_{FE} = f(I_C)$

$$V_{CE} = 10V$$



Collector cutoff current $I_{CBO} = f(T_A)$

$$V_{CB} = 160V$$



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

$$V_{CE} = 10V$$

