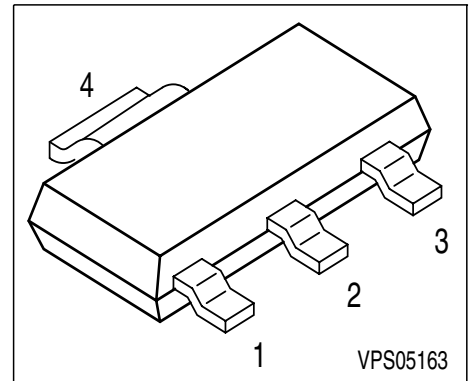


**NPN Silicon High-Voltage Transistors**

- 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 <sup>1)</sup>	$R_{thJA}$	≤72	K/W
Junction - soldering point	$R_{thJS}$	≤17	

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 6cm<sup>2</sup> Cu

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

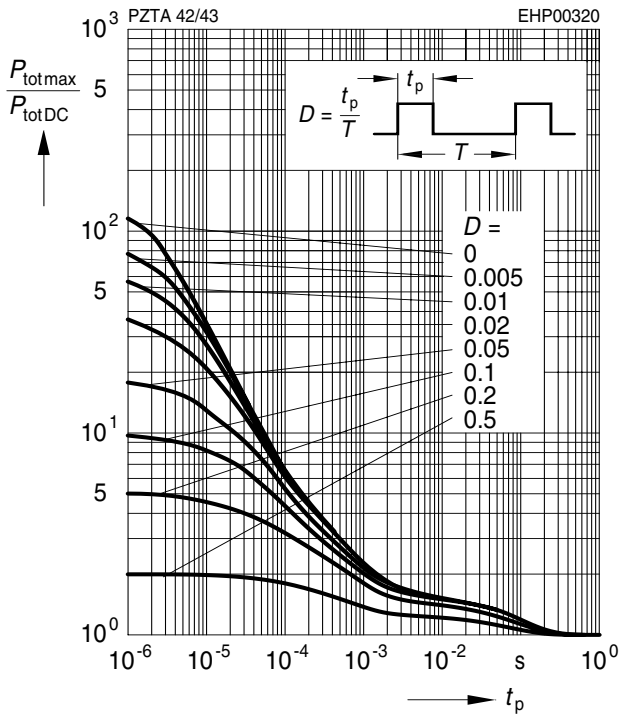
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 1 \text{ mA}, I_B = 0$	$V_{(BR)CEO}$				V
PZTA 42		300	-	-	
PZTA 43		200	-	-	
Collector-base breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$	$V_{(BR)CBO}$				
PZTA 42		300	-	-	
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 $V_{CB} = 200 \text{ V}, I_E = 0, T_A = 150^\circ\text{C}$	$I_{CBO}$				$\mu\text{A}$
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:  $t < 300\mu\text{s}$ ;  $D < 2\%$



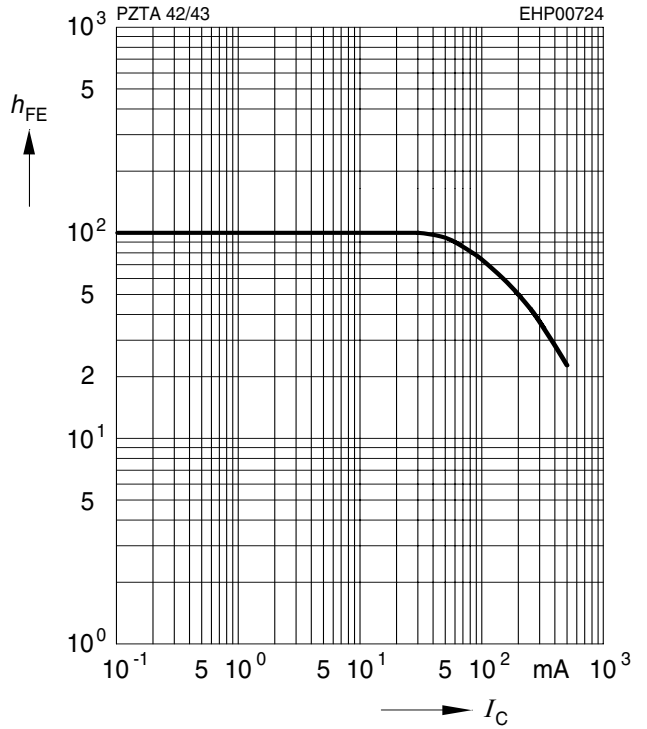
**Permissible pulse load**

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



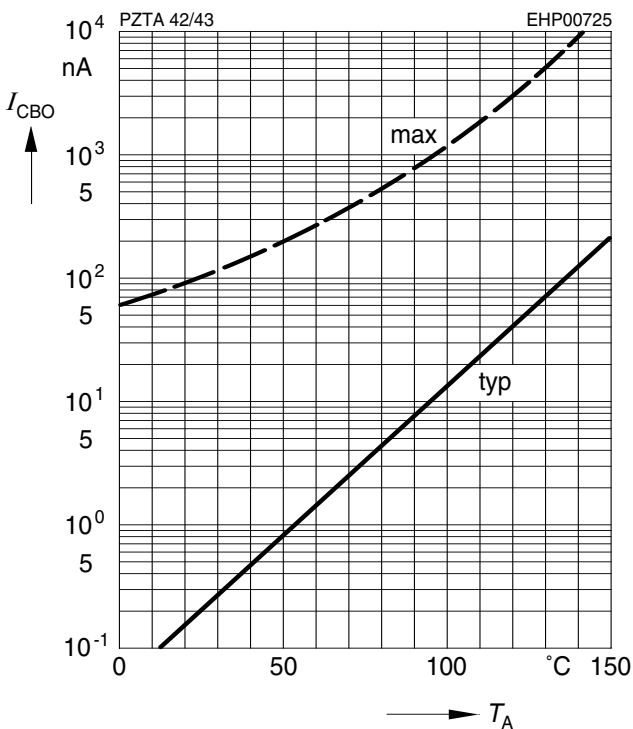
**DC current gain  $h_{FE} = f(I_C)$**

$$V_{CE} = 10V$$



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

$$V_{CB} = 160V$$



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

$$V_{CE} = 10V$$

