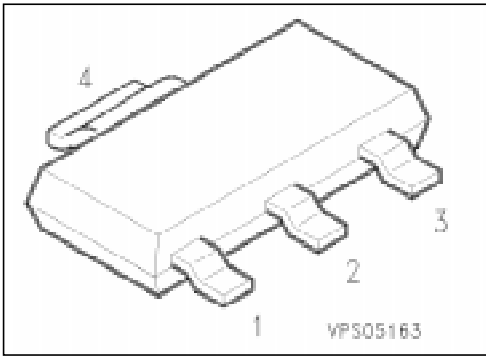


NPN Silicon High-Voltage Transistors

PZTA 42
PZTA 43

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



Type	Marking	Ordering Code (tape and reel)	Pin Configuration				Package ¹⁾
			1	2	3	4	
PZTA 42 PZTA 43	PZTA 42 PZTA 43	Q62702-Z2035 Q62702-Z2036	B	C	E	C	SOT-223

Maximum Ratings

Parameter	Symbol	Values		Unit
		PZTA 42	PZTA 43	
Collector-emitter voltage	V_{CE0}	300	200	V
Collector-base voltage	V_{CB0}	300	200	
Emitter-base voltage	V_{EB0}	6		
Collector current	I_C	500		mA
Base current	I_B	100		
Total power dissipation, $T_S = 124\text{ }^{\circ}\text{C}$	P_{tot}	1.5		W
Junction temperature	T_j	150		$^{\circ}\text{C}$
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 cm² Cu.

Electrical Characteristics

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC characteristics

Collector-emitter breakdown voltage $I_C = 1\text{ mA}$, $I_B = 0$ PZTA 42 PZTA 43	$V_{(BR)CE0}$	300 200	— —	— —	V
Collector-base breakdown voltage $I_C = 100\text{ }\mu\text{A}$, $I_B = 0$ PZTA 42 PZTA 43	$V_{(BR)CB0}$	300 200	— —	— —	
Emitter-base breakdown voltage $I_E = 100\text{ }\mu\text{A}$, $I_C = 0$	$V_{(BR)EB0}$	6	—	—	
Collector-base cutoff current $V_{CB} = 200\text{ V}$ PZTA 42 $V_{CB} = 160\text{ V}$ PZTA 43 $V_{CB} = 200\text{ V}$, $T_A = 150\text{ }^{\circ}\text{C}$ PZTA 42 $V_{CB} = 160\text{ V}$, $T_A = 150\text{ }^{\circ}\text{C}$ PZTA 43	I_{CB0}	— — — —	— — — —	100 100 20 20	nA nA μA μA
Emitter-base cutoff current $V_{EB} = 3\text{ V}$, $I_C = 0$	I_{EB0}	—	—	100	nA
DC current gain ¹⁾ $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$ $I_C = 10\text{ mA}$, $V_{CE} = 10\text{ V}$ $I_C = 30\text{ mA}$, $V_{CE} = 10\text{ V}$	h_{FE}	25 40 40	— — —	— — —	—
Collector-emitter saturation voltage ¹⁾ $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$ PZTA 42 PZTA 43	V_{CEsat}	— —	— —	0.5 0.4	V
Base-emitter saturation voltage $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$	V_{BEsat}	—	—	0.9	

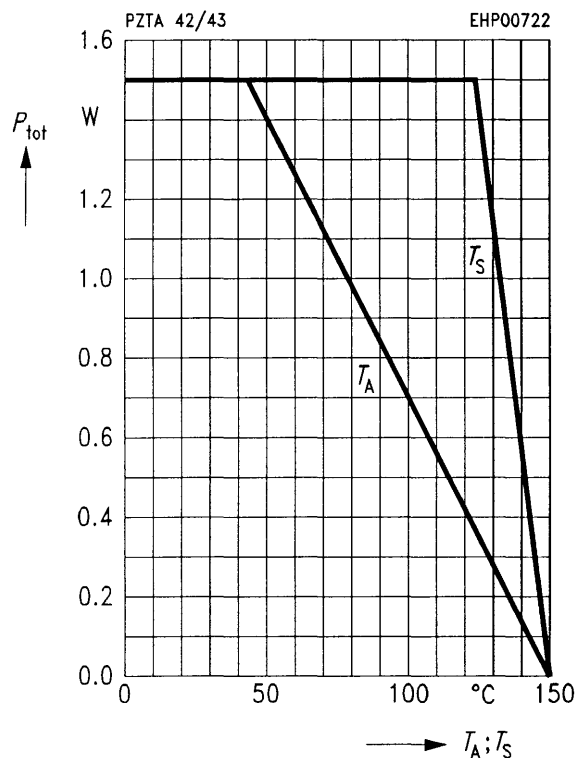
AC characteristics

Transition frequency $I_C = 20\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$	f_T	—	70	—	MHz
Collector-base capacitance $V_{CB} = 20\text{ V}$, $f = 1\text{ MHz}$ PZTA 42 PZTA 43	C_{obo}	— —	— —	3 4	pF

¹⁾ Pulse test conditions: $t \leq 300\text{ }\mu\text{s}$, $D = 2\text{ }\%$.

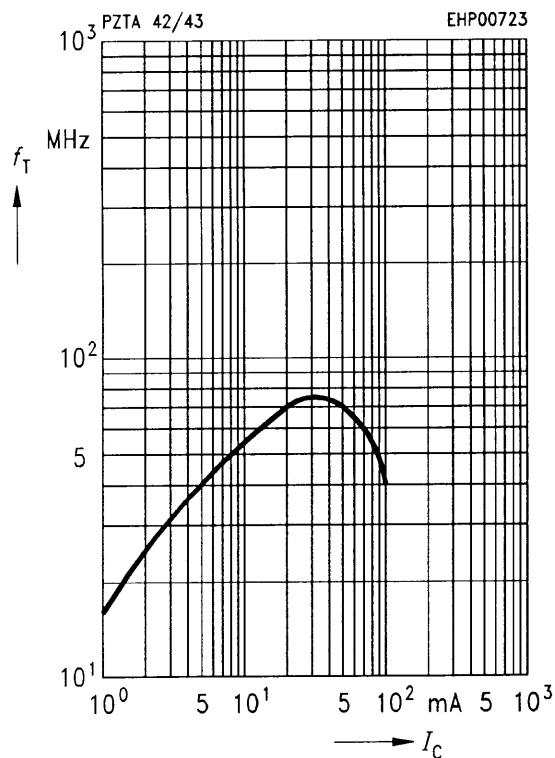
Total power dissipation $P_{\text{tot}} = f(T_A^*; T_S)$

* Package mounted on epoxy



Transition frequency $f_T = f(I_C)$

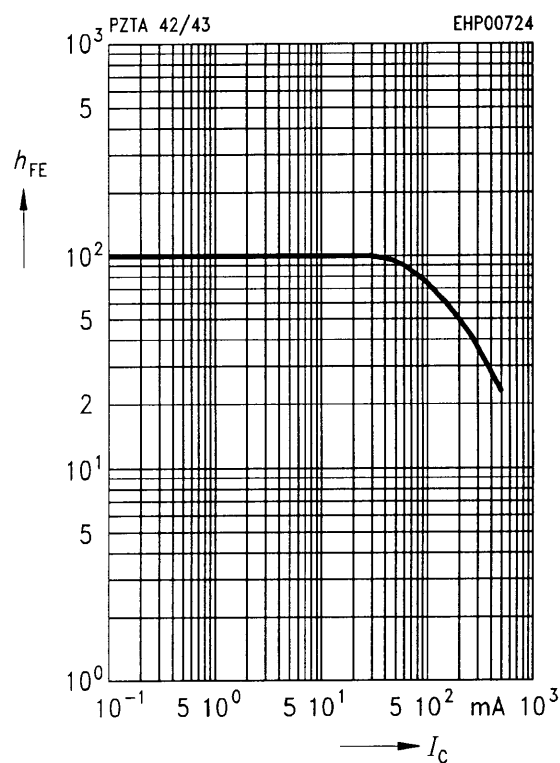
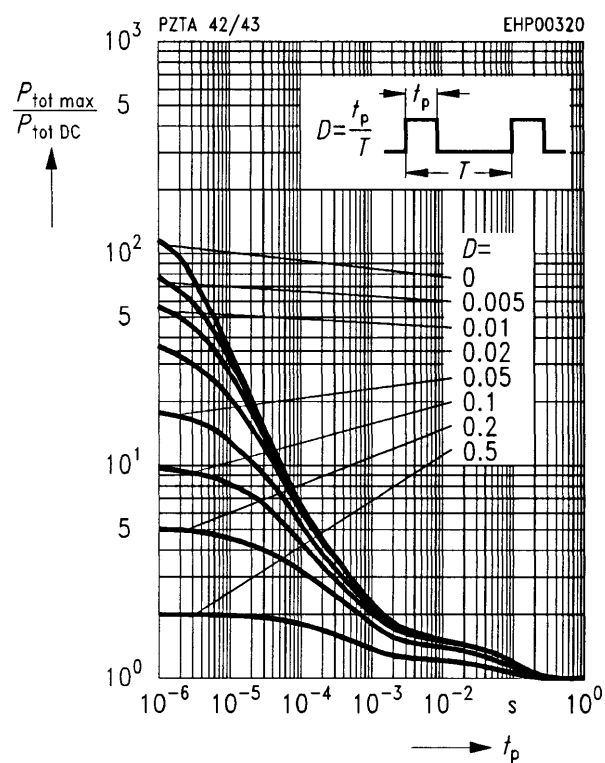
$V_{CE} = 10 \text{ V}$, $f = 100 \text{ MHz}$



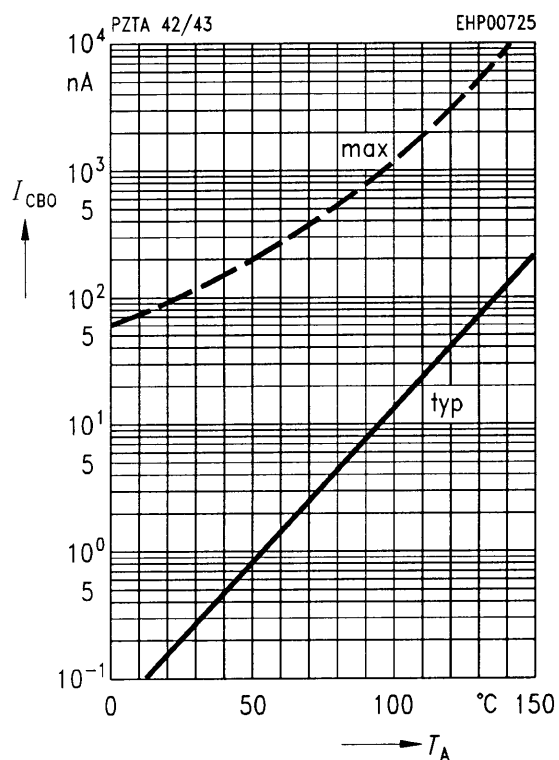
Permissible pulse load $P_{\text{tot max}} / P_{\text{tot DC}} = f(t_p)$

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

$V_{CE} = 10 \text{ V}$



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



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

