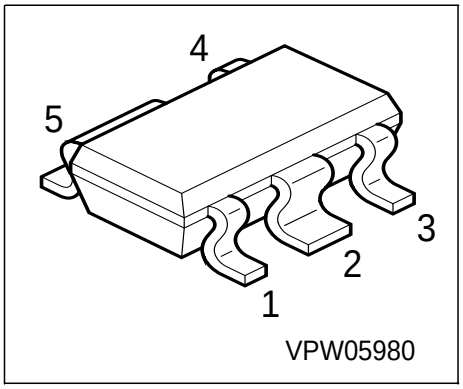
PNP Silicon High-Voltage Transistor

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary type: SMBTA 42M (NPN)



Type	Marking	Ordering Code	Pin Configuration					Package
SMBTA 92M	s2D	Q62702-A1244	1 = B	2 = C	3 = E	4=n.c.	5 = C	SCT-595

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	300	V
Collector-base voltage	V_{CBO}	300	
Emitter-base voltage	V_{EBO}	5	
DC collector current	I_C	500	mA
Base current	I_B	100	
Total power dissipation, $T_S \leq 83$ °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}	≤100	K/W
Junction - soldering point	R_{thJS}	≤45	

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 6cm^2 Cu

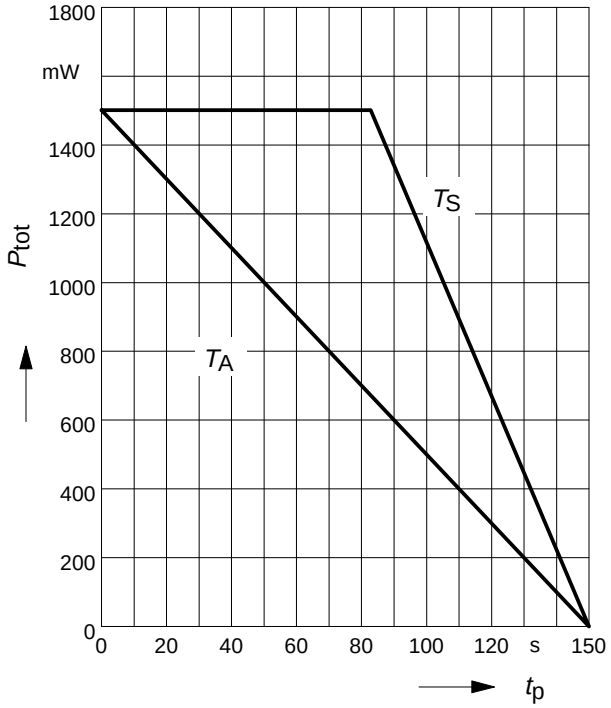
Electrical Characteristics at T_A = 25°C, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 100 µA, I_B = 0	$V_{(BR)CEO}$	300	-	-	V
Collector-base breakdown voltage I_C = 100 µA, I_B = 0	$V_{(BR)CBO}$	300	-	-	
Emitter-base breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current V_{CB} = 200 V, I_E = 0	I_{CBO}	-	-	250	nA
Collector-base cutoff current V_{CB} = 200 V, T_A = 150 °C	I_{CBO}	-	-	20	µA
Emitter cutoff current V_{EB} = 3 V, I_C = 0	I_{EBO}	-	-	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 voltage1) I_C = 20 mA, I_B = 2 mA	V_{CEsat}	-	-	0.5	V
Base-emitter saturation voltage 1) I_C = 20 mA, I_B = 2 mA	V_{BEsat}	-	-	0.9	
AC Characteristics					
Transition frequency I_C = 10 mA, V_{CE} = 20 V, f = 100 MHz	f_T	50	-	-	MHz
Collector-base capacitance V_{CB} = 20 V, f = 1 MHz	C_{cb}	-	-	6	pF

1) Pulse test: t < 300µs; D < 2%

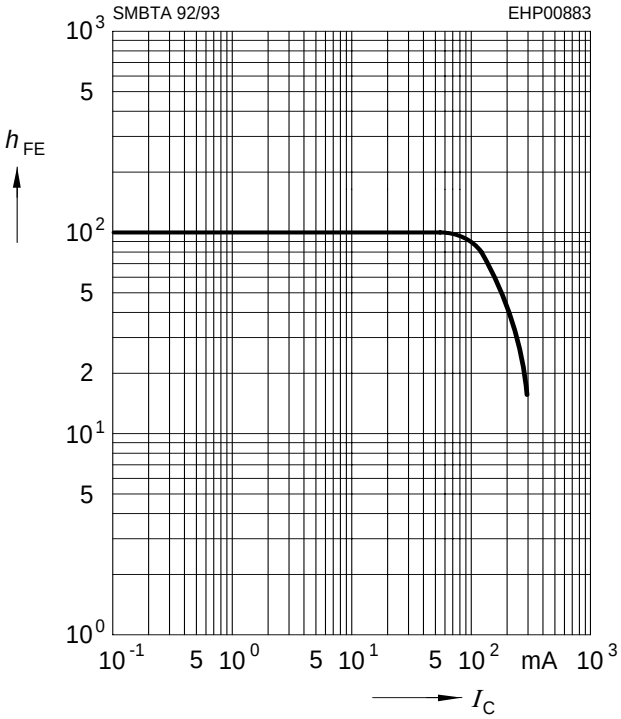
Total power dissipation $P_{tot} = f(T_A^*; T_S)$

* Package mounted on epoxy

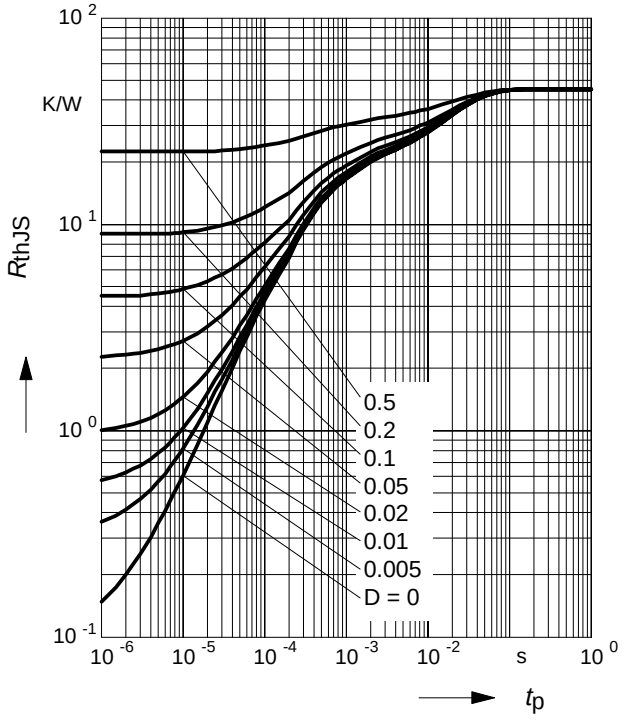


DC current gain $h_{FE} = f(I_C)$

V_{CE} = 10V

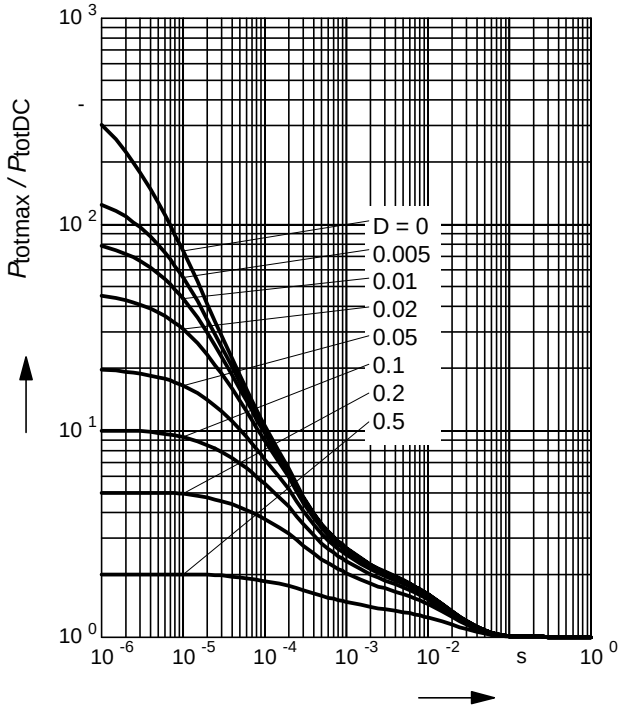


Permissible Pulse Load $R_{thJS} = f(t_p)$



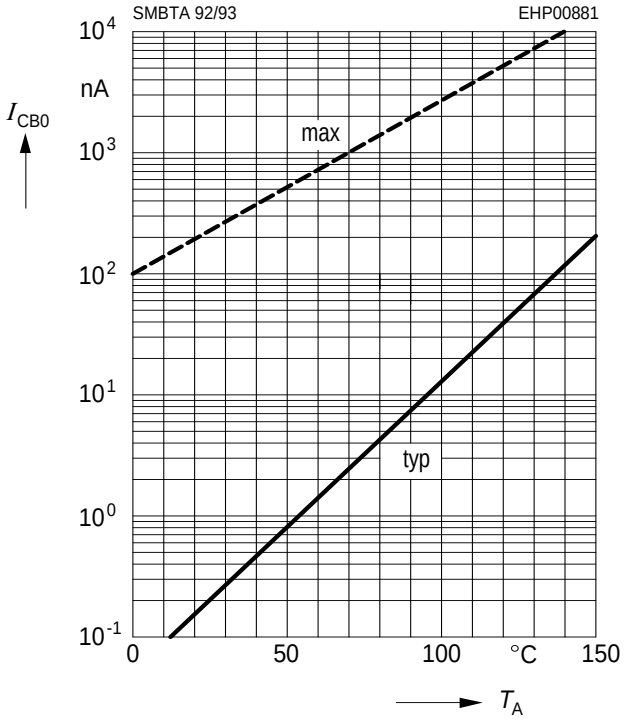
Permissible Pulse Load

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



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

V_{CB} = 160V



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

V_{CE} = 10V