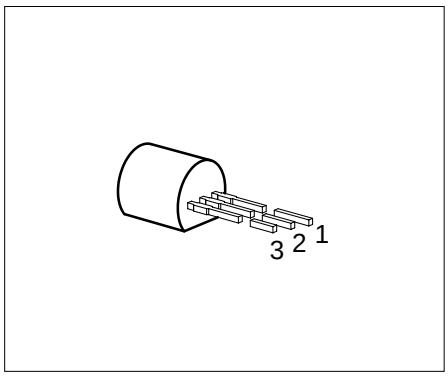
SIEMENS

PNP Silicon High-Voltage Transistors

MPSA 92
MPSA 93

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



Type	Marking	Ordering Code	Pin Configuration			Package [1]
			1	2	3	
MPSA 92 MPSA 93	MPSA 92 MPSA 93	Q68000-A5906 Q68000-A4810	E	B	C	TO-92

Maximum Ratings

Parameter	Symbol	Values		Unit
		MPSA 92	MPSA 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_C = 66 ˚C [2]	P_{tot}	625		mW
Junction temperature	T_j	150		˚C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient	$R_{th\ JA}$	≤ 200	K/W
Junction - case [2]	$R_{th\ JC}$	≤ 135	

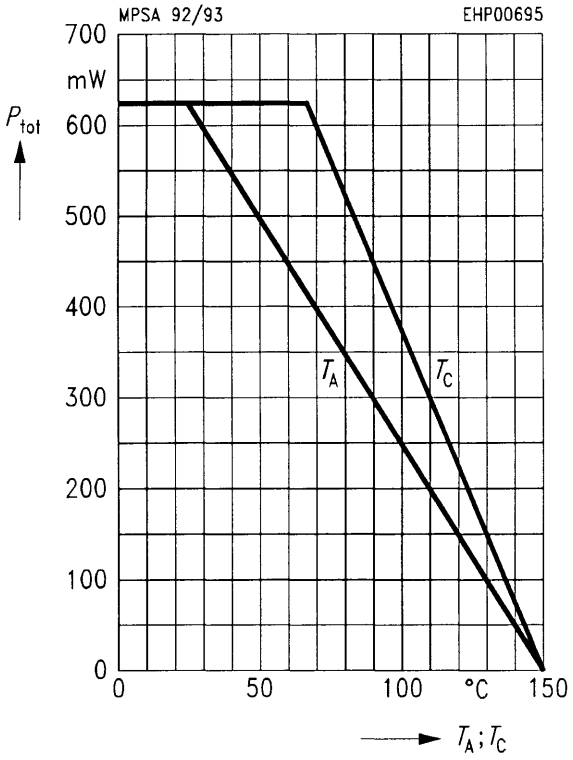
[1] For detailed information see chapter Package Outlines.
[2] Mounted on Al-heat sink 15 mm × 25 mm × 0.5 mm.

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

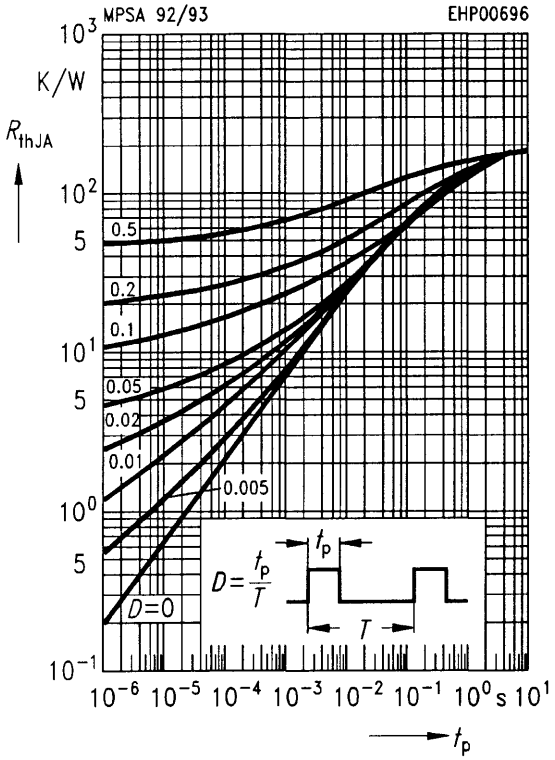
Parameter		Symbol	Limit Values			Unit
			min.	typ.	max.	
DC Characteristics						
Collector-emitter breakdown voltage		$V_{(BR)CE0}$				V
I_C = 1 mA, I_B = 0	MPSA 92		300	–	–	
	MPSA 93		200	–	–	
Collector-base breakdown voltage		$V_{(BR)CB0}$				
I_C = 100 µA, I_B = 0	MPSA 92		300	–	–	
	MPSA 93		200	–	–	
Emitter-base breakdown voltage		$V_{(BR)EB0}$	5	–	–	
I_E = 100 µA, I_B = 0						
Collector-base cutoff current		I_{CB0}				
V_{CB} = 200 V	MPSA 92		–	–	100	nA
V_{CB} = 160 V	MPSA 93		–	–	100	nA
V_{CB} = 200 V, T_A = 150 °C	MPSA 92		–	–	20	µA
V_{CB} = 160 V, T_A = 150 °C	MPSA 93		–	–	20	µA
Emitter-base cutoff current		I_{CER}	–	–	100	nA
V_{BE} = 3 V, I_C = 0						
DC current gain [1]		h_{FE}				–
I_C = 1 mA, V_{CE} = 10 V			25	–	–	
I_C = 10 mA, V_{CE} = 10 V			40	–	–	
I_C = 30 mA, V_{CE} = 10 V			25	–	–	
Collector-emitter saturation voltage [1]		V_{CEsat}				V
I_C = 20 mA, I_C = 2 mA	MPSA 92		–	–	0.5	
	MPSA 93		–	–	0.4	
Base-emitter saturation voltage [1]		V_{BEsat}	–	–	0.9	
I_C = 20 mA, I_B = 2 mA						
AC Characteristics						
Transition frequency		f_T	–	70	–	MHz
I_C = 20 mA, V_{CE} = 10 V, f = 100 MHz						
Collector-base capacitance		C_{obo}				pF
V_{CB} = 20 V, f = 1 MHz	MPSA 92		–	–	6	
	MPSA 93		–	–	8	

[1] Pulse test conditions: $t \leq 300$ µs, $D \leq 2$ %.

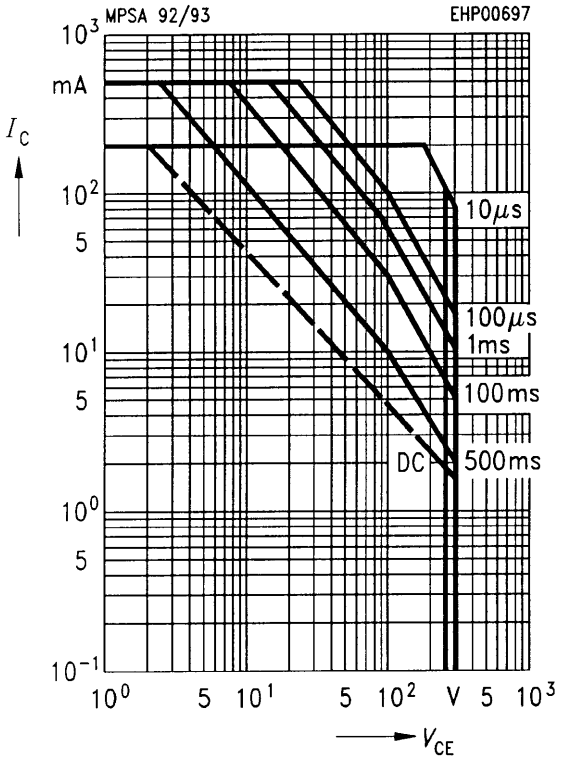
Total power dissipation $P_{tot} = f(T_A; T_C)$



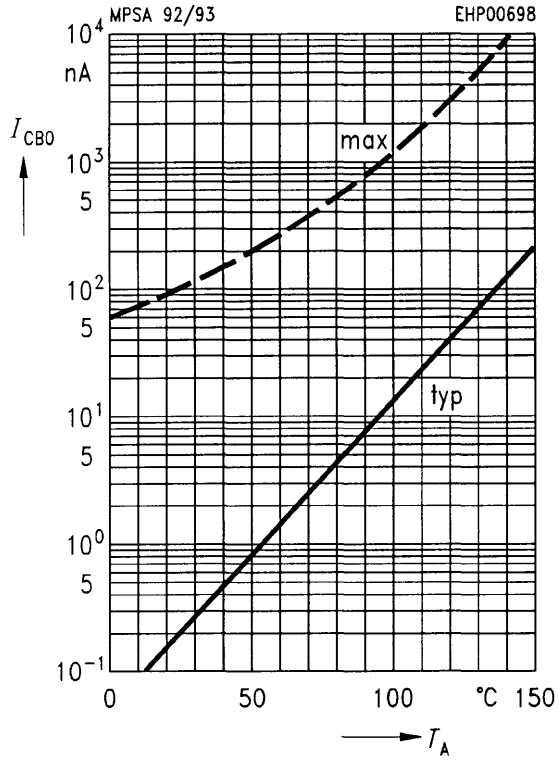
Permissible pulse load $R_{thJA} = f(t_p)$



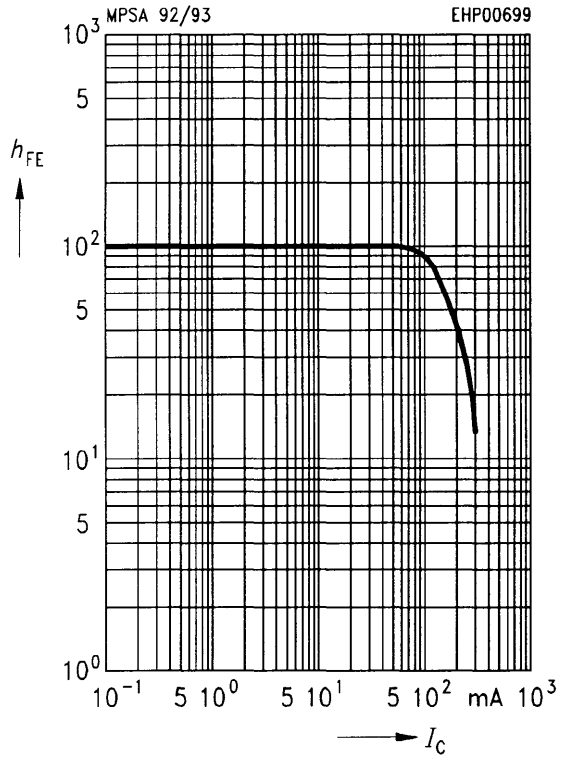
Operating range $I_c = f(V_{CE0})$
T_A = 25 °C, D = 0



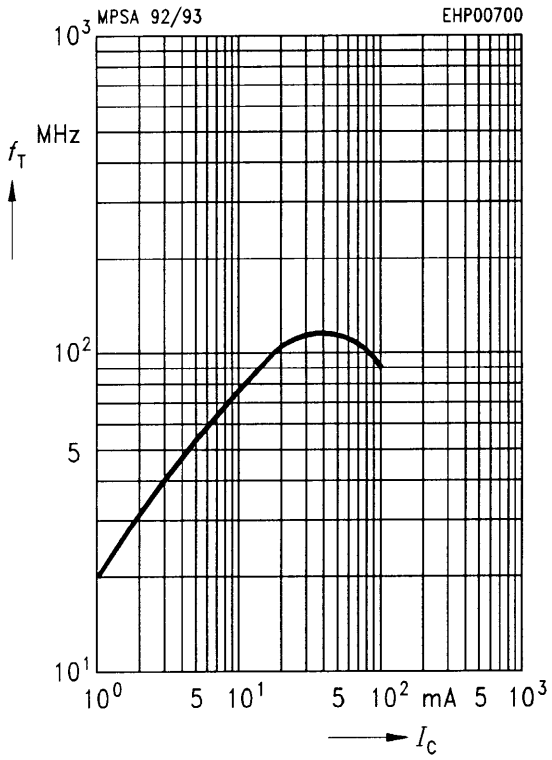
Collector cutoff current $I_{CB0} = f(T_A)$
$V_{CB} = V_{CBmax}$



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



Transition frequency $f_T = f(I_C)$
f = 20 MHz, I_C = 20 mA, V_{CE} = 10 V



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