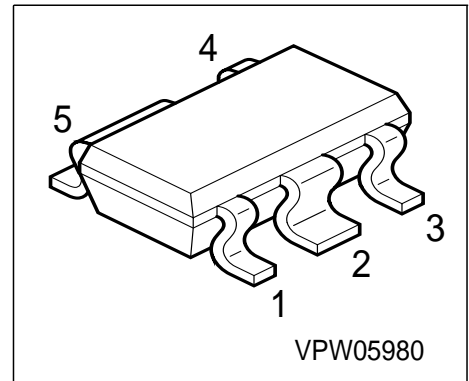


### NPN Silicon AF Power Transistor

#### Preliminary data

- Drain switch for RF power amplifier stages
- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage



Type	Marking	Ordering Code	Pin Configuration					Package
BCP 71M	PCs	Q62702-C2597	1 = E	2 = C	3 = E	4 = B	5 = C	SCT-595

#### Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{CEO}$	32	V
Collector-base voltage	$V_{CBO}$	32	
Emitter-base voltage	$V_{EBO}$	5	
DC collector current	$I_C$	3	A
Peak collector current	$I_{CM}$	6	
Base current	$I_B$	200	mA
Peak base current	$I_{BM}$	500	
Total power dissipation, $T_S \leq 94 \text{ }^\circ\text{C}$	$P_{tot}$	1.7	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-65...+150	

#### Thermal Resistance

Junction ambient <sup>1)</sup>	$R_{thJA}$	$\leq 88$	K/W
Junction - soldering point	$R_{thJS}$	$\leq 33$	

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

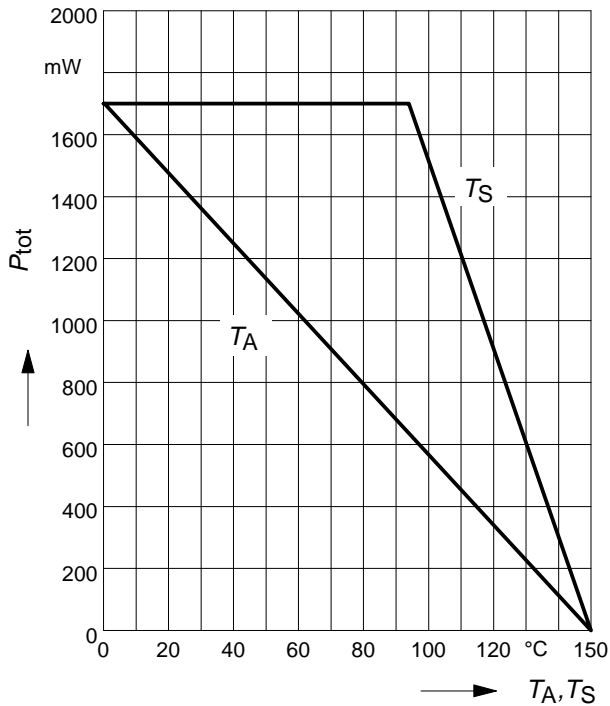
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 10\text{ mA}, I_B = 0$	$V_{(BR)CEO}$	32	-	-	V
Collector-base breakdown voltage $I_C = 100\text{ }\mu\text{A}, I_B = 0$	$V_{(BR)CBO}$	32	-	-	
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector cutoff current $V_{CB} = 8\text{ V}, I_E = 0$	$I_{CBO}$	-	-	100	nA
Collector cutoff current $V_{CB} = 8\text{ V}, I_E = 0, T_A = 150\text{ }^\circ\text{C}$	$I_{CBO}$	-	-	20	$\mu\text{A}$
Emitter cutoff current $V_{EB} = 4\text{ V}, I_C = 0$	$I_{EBO}$	-	-	100	nA
DC current gain 1) $I_C = 10\text{ mA}, V_{CE} = 5\text{ V}$ $I_C = 500\text{ mA}, V_{CE} = 1\text{ V}$ $I_C = 2\text{ A}, V_{CE} = 2\text{ V}$	$h_{FE}$	25 85 50	- - -	- 475 -	-
Collector-emitter saturation voltage1) $I_C = 2\text{ A}, I_B = 0.2\text{ A}$	$V_{CEsat}$	-	0.18	-	V
Base-emitter saturation voltage 1) $I_C = 2\text{ A}, I_B = 0.2\text{ A}$	$V_{BEsat}$	-	-	1.2	V
<b>AC Characteristics</b>					
Transition frequency $I_C = 50\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$	$f_T$	-	100	-	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	$C_{cb}$	-	80	-	pF

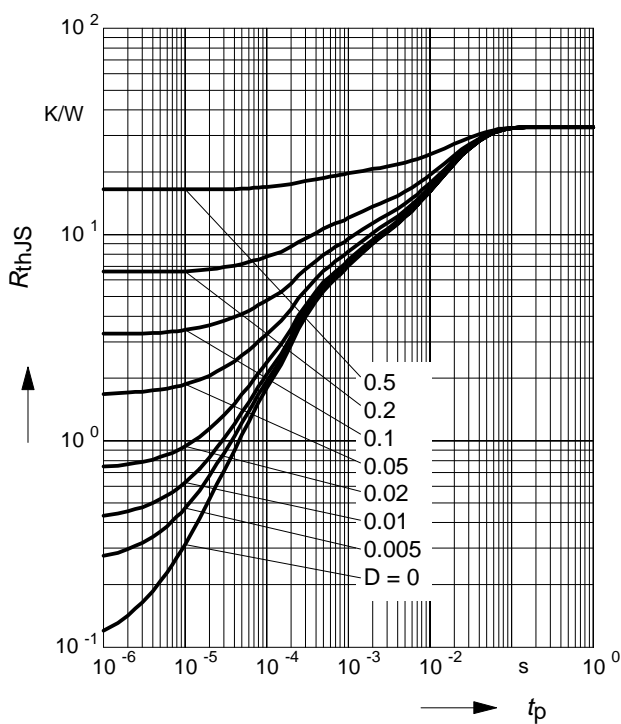
1) Pulse test:  $t < 300\mu\text{s}; D < 2\%$

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

\* Package mounted on epoxy

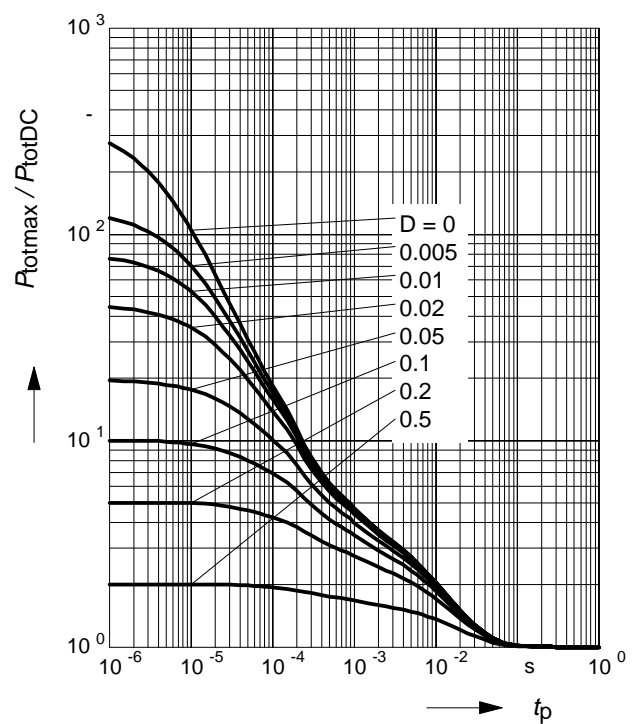


### Permissible Pulse Load $R_{thJS} = f(t_p)$



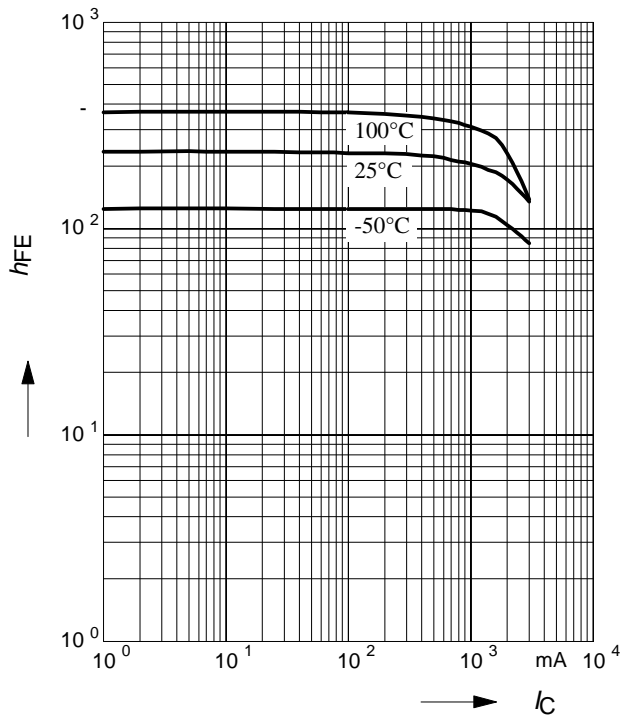
### Permissible Pulse Load

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



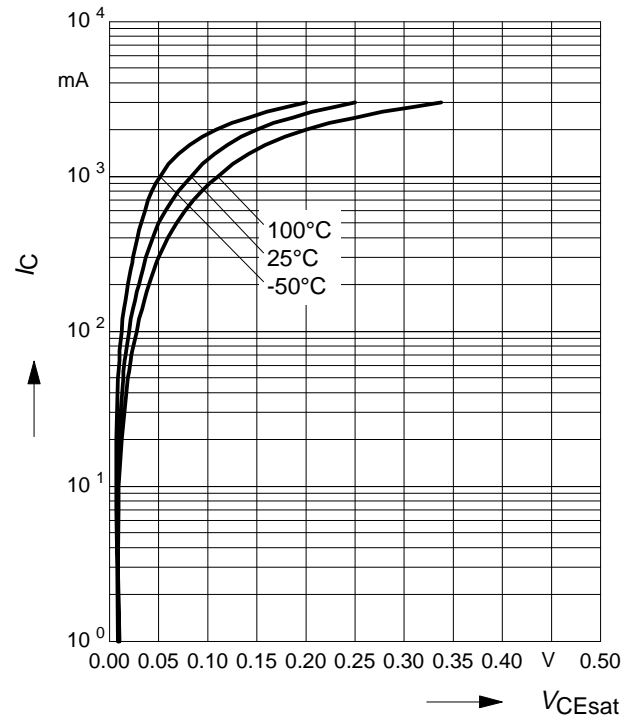
### DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 2V$



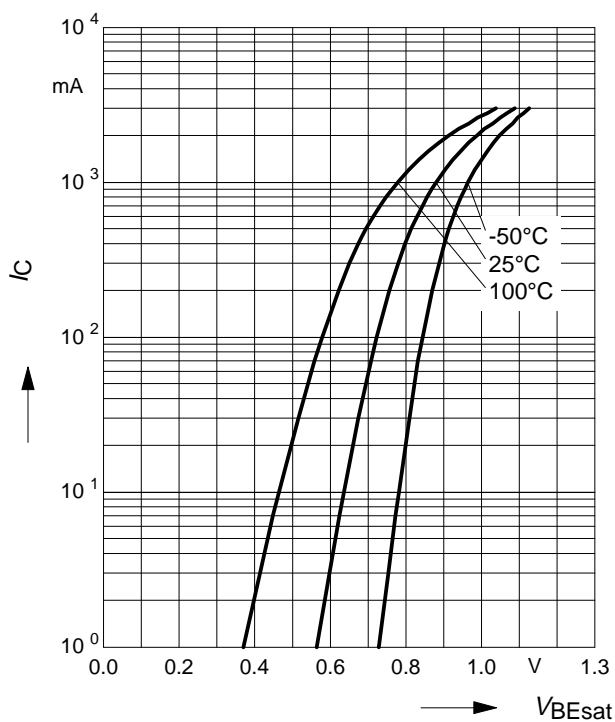
### Collector-emitter saturation voltage

$I_C = f(V_{CEsat}), h_{FE} = 10$



### Base-emitter saturation voltage

$I_C = f(V_{BEsat}), h_{FE} = 10$



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

$V_{CE} = 2V$

