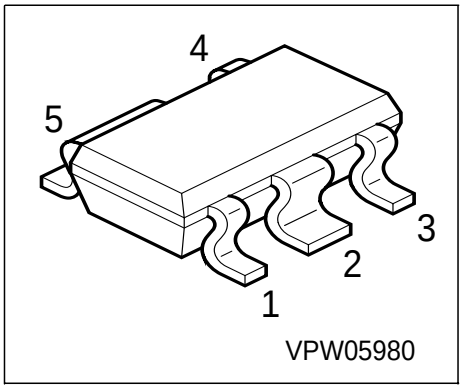
NPN Silicon AF Power Transistor

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, $T_S \leq 94$ °C	P_{tot}	1.7	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65...+150	

Thermal Resistance

Junction ambient [1)]	R_{thJA}	≤ 88	K/W
Junction - soldering point	R_{thJS}	≤ 33	

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

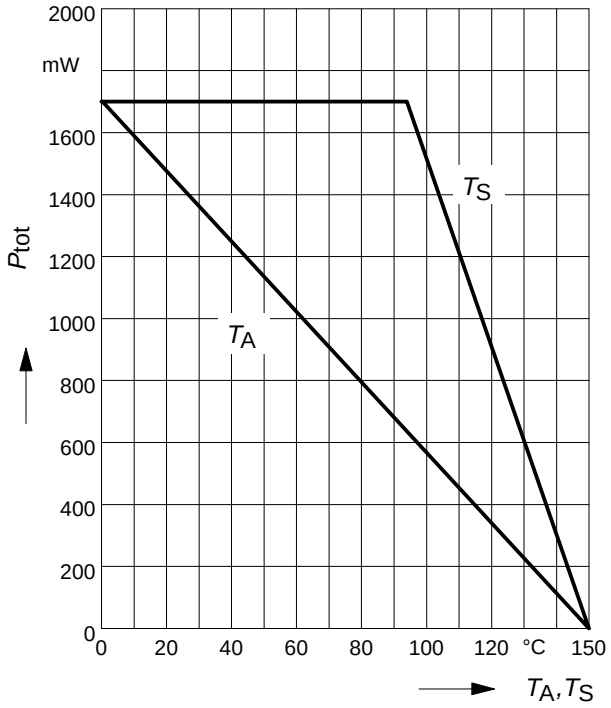
Electrical Characteristics at T_A = 25°C, unless otherwise specified.

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

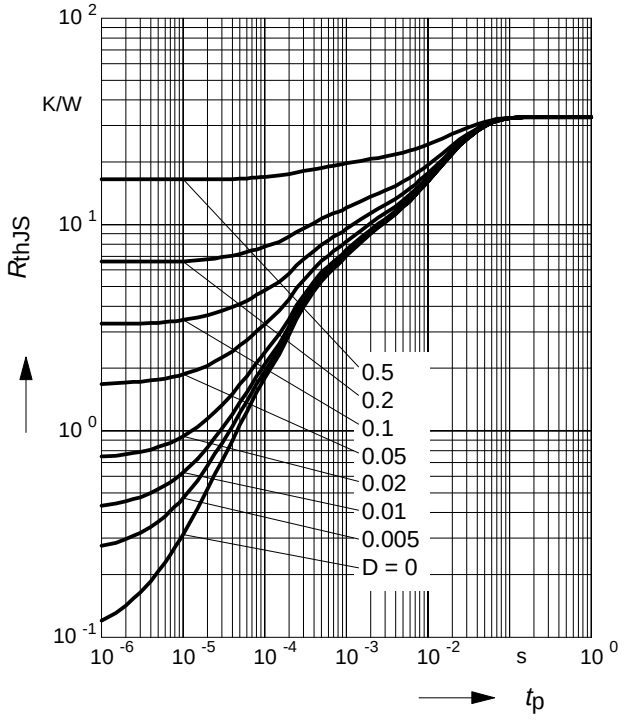
1) Pulse test: t < 300µs; D < 2%

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

* Package mounted on epoxy

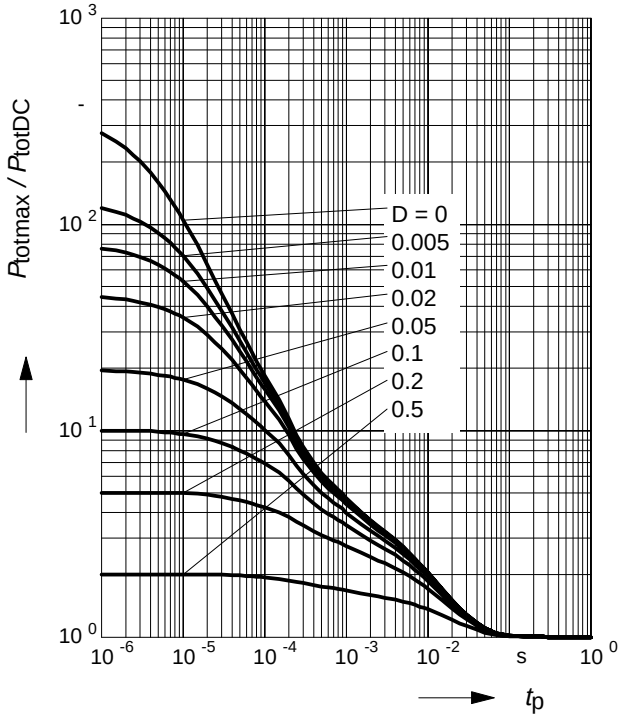


Permissible Pulse Load $R_{thJS} = f(t_p)$



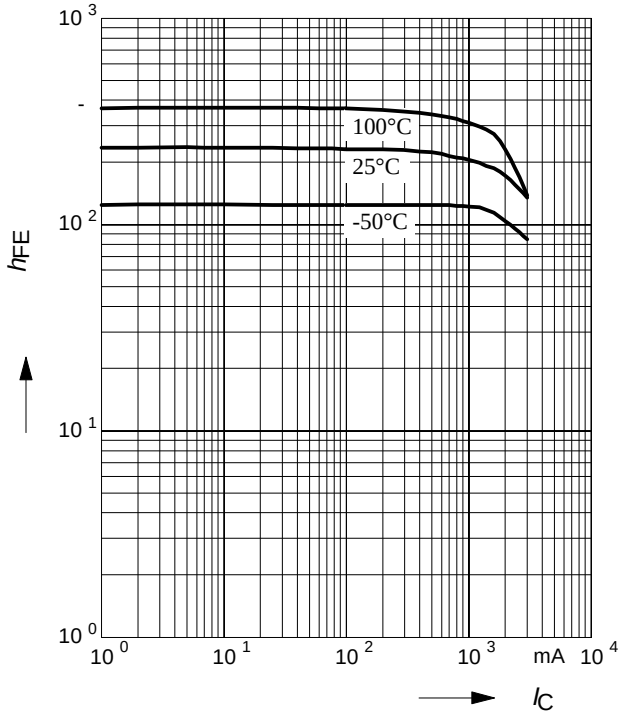
Permissible Pulse Load

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



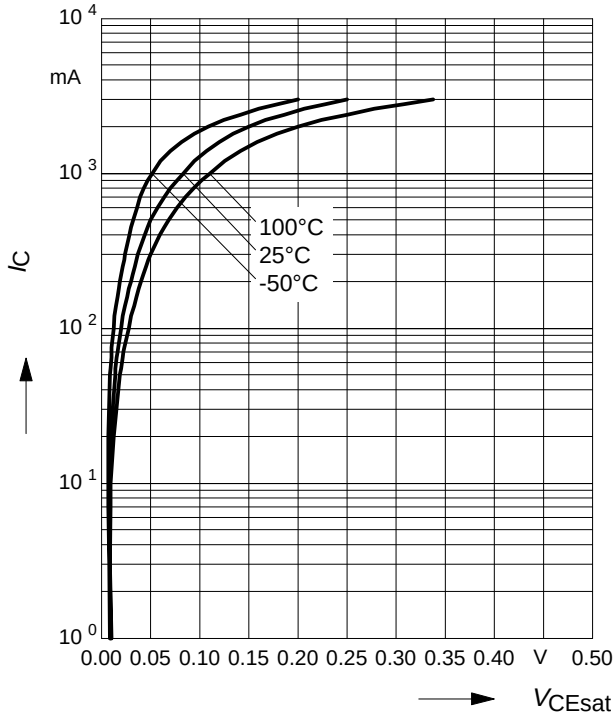
DC current gain $h_{FE} = f(I_C)$

V_{CE} = 2V



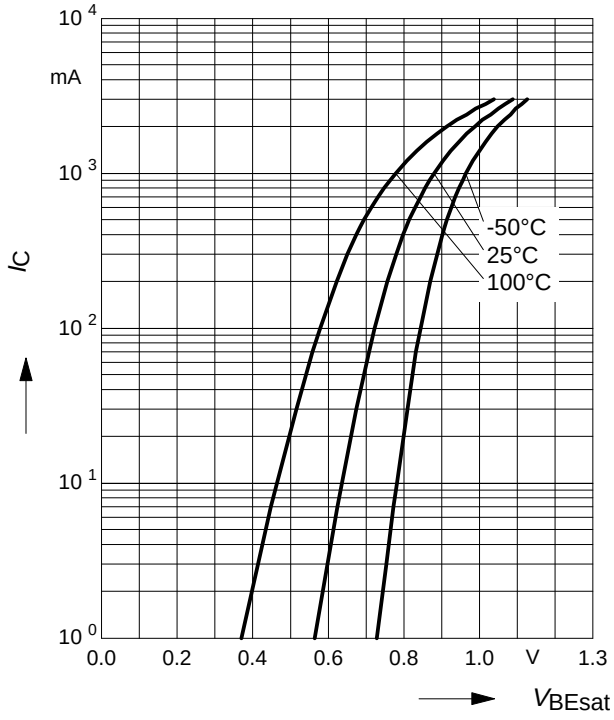
Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$, 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