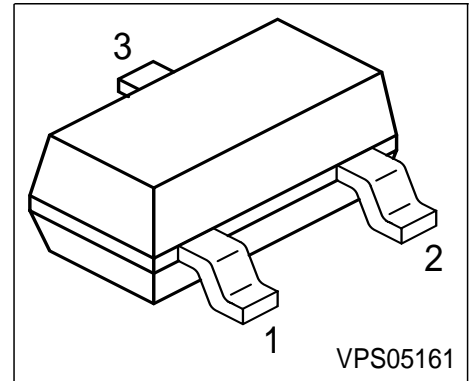


NPN Silicon RF Transistor

- For broadband amplifiers up to 1 GHz at collector currents from 1 mA to 20 mA



Type	Marking	Pin Configuration			Package
BFS17P	MCs	1 = B	2 = E	3 = C	SOT23

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	15	V
Collector-base voltage	V_{CBO}	25	
Emitter-base voltage	V_{EBO}	2.5	
Collector current	I_C	25	mA
Peak collector current, $f = 10$ MHz	I_{CM}	50	
Total power dissipation $T_S \leq 55$ °C ¹⁾	P_{tot}	280	mW
Junction temperature	T_j	150	°C
Ambient temperature	T_A	-65 ... 150	
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Junction - soldering point ²⁾	R_{thJS}	≤ 340	K/W
--	------------	------------	-----

¹⁾ T_S is measured on the collector lead at the soldering point to the pcb

²⁾ For calculation of R_{thJA} please refer to Application Note Thermal Resistance

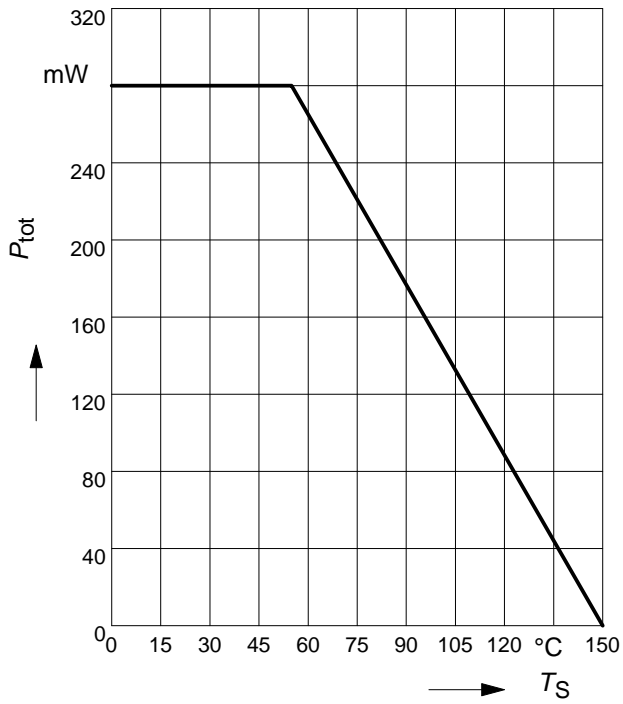
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage $I_C = 1 \text{ mA}, I_B = 0$	$V_{(BR)CEO}$	15	-	-	V
Collector-base cutoff current $V_{CB} = 10 \text{ V}, I_E = 0$ $V_{CB} = 25 \text{ V}, I_E = 0$	I_{CBO}	-	-	0.05 10	μA
Emitter-base cutoff current $V_{EB} = 2.5 \text{ V}, I_C = 0$	I_{EBO}	-	-	100	
DC current gain $I_C = 2 \text{ mA}, V_{CE} = 1 \text{ V}$ $I_C = 25 \text{ mA}, V_{CE} = 1 \text{ V}$	h_{FE}	20 20	- 70	150 -	-
Collector-emitter saturation voltage $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$	V_{CEsat}	-	0.1	0.4	V

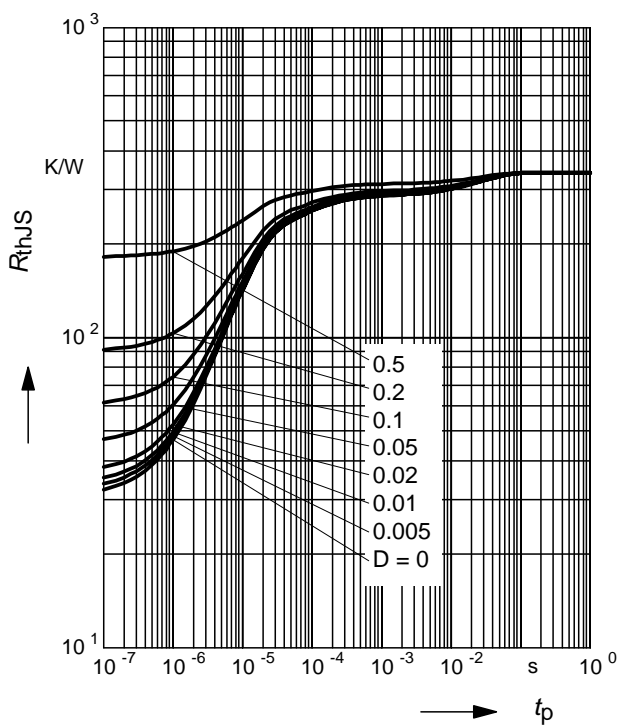
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC characteristics					
Transition frequency $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 200\text{ MHz}$ $I_C = 25\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 200\text{ MHz}$	f_T	1 1.3	1.4 2.5	- -	GHz
Collector-base capacitance $V_{CB} = 5\text{ V}$, $f = 1\text{ MHz}$	C_{cb}	-	0.55	0.8	pF
Collector-emitter capacitance $V_{CE} = 5\text{ V}$, $f = 1\text{ MHz}$	C_{ce}	-	0.25	-	
Input capacitance $V_{EB} = 0.5\text{ V}$, $I_C = 0$, $f = 1\text{ MHz}$	C_{ibo}	-	1.45	-	
Output capacitance $V_{CE} = 5\text{ V}$, $V_{BE} = 0$, $f = 1\text{ MHz}$	C_{obs}	-	-	1.5	
Noise figure $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 800\text{ MHz}$, $Z_S = 0\ \Omega$	F	-	3.5	5	dB
Transducer gain $I_C = 20\text{ mA}$, $V_{CE} = 5\text{ V}$, $Z_S = Z_L = 50\ \Omega$, $f = 500\text{ MHz}$	$ S_{21e} ^2$	-	12.7	-	
Linear output voltage $I_C = 14\text{ mA}$, $V_{CE} = 5\text{ V}$, $d_{im} = 60\text{ dB}$, $f_1 = 806\text{ MHz}$, $f_2 = 810\text{ MHz}$, $Z_S = Z_L = 50\ \Omega$	$V_{01} = V_{02}$	-	100	-	mV
Third order intercept point $I_C = 14\text{ mA}$, $V_{CE} = 5\text{ V}$, $Z_S = Z_{Sopt}$, $Z_L = Z_{Lopt}$, $f = 800\text{ MHz}$	IP_3	-	23	-	dBm

Total power dissipation $P_{tot} = f(T_S)$

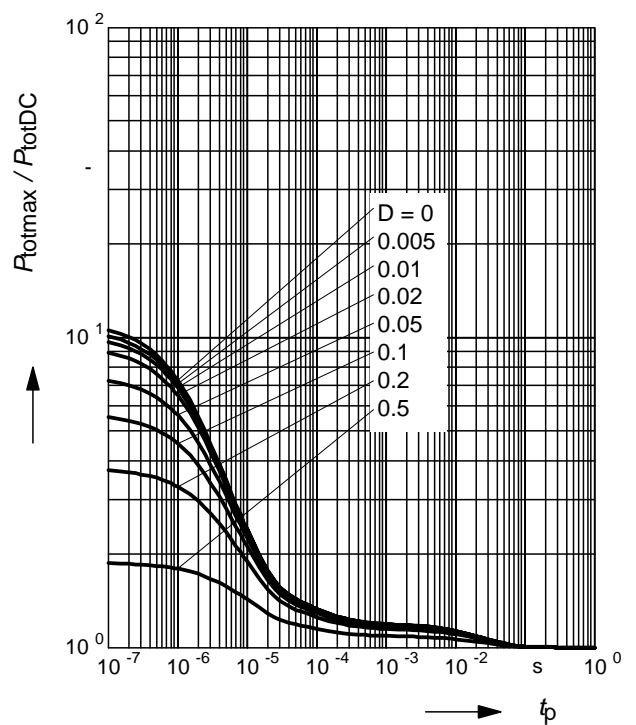


Permissible Pulse Load $R_{thJS} = f(t_p)$

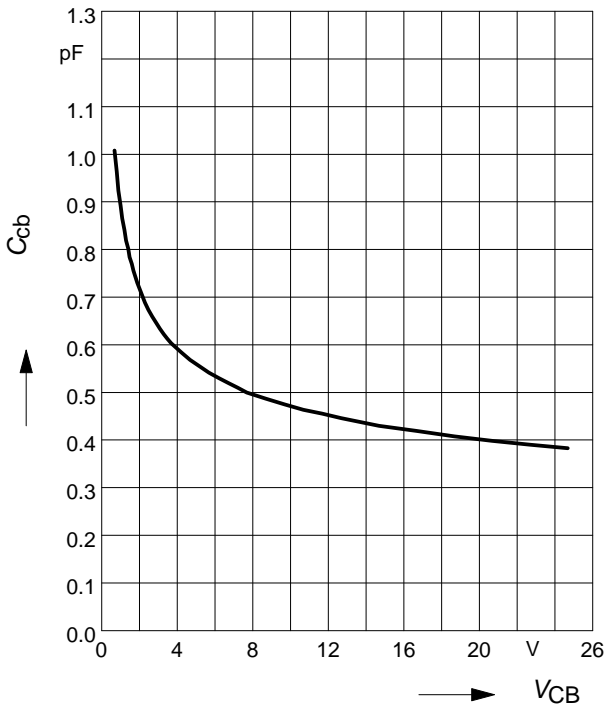


Permissible Pulse Load

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

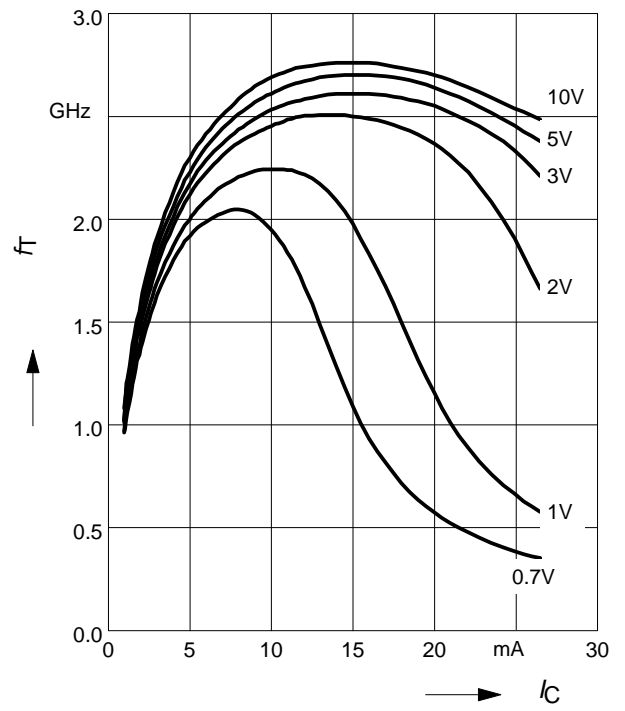


Collector-base capacitance $C_{cb} = f(V_{CB})$
 $f = 1\text{MHz}$



Transition frequency $f_T = f(I_C)$

$V_{CE} = \text{Parameter}$





LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.