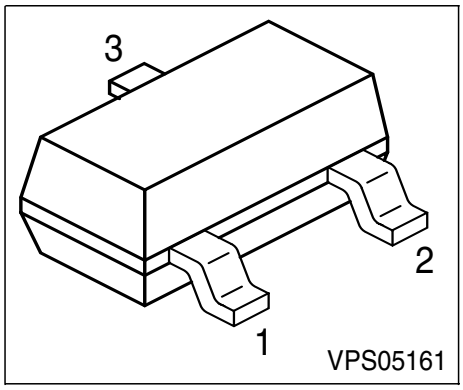
NPN Silicon RF Transistor

- For amplifier and oscillator applications in TV-tuners



Type	Marking	Pin Configuration			Package
BF 517	LRs	1 = B	2 = E	3 = C	SOT-23

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	15	V
Collector-base voltage	V_{CBO}	20	
Emitter-base voltage	V_{EBO}	2.5	
Collector current	I_C	25	mA
Peak collector current, $f \geq 10$ MHz	I_{CM}	50	
Total power dissipation, $T_S \leq 55$ °C [F)]	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	R_{thJS}	≤ 340	K/W

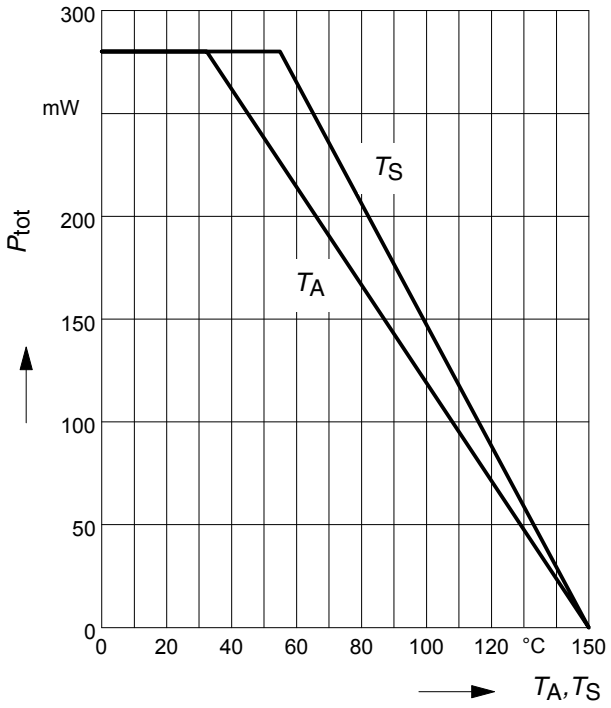
[1] T_S is measured on the collector lead at the soldering point to the pcb

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

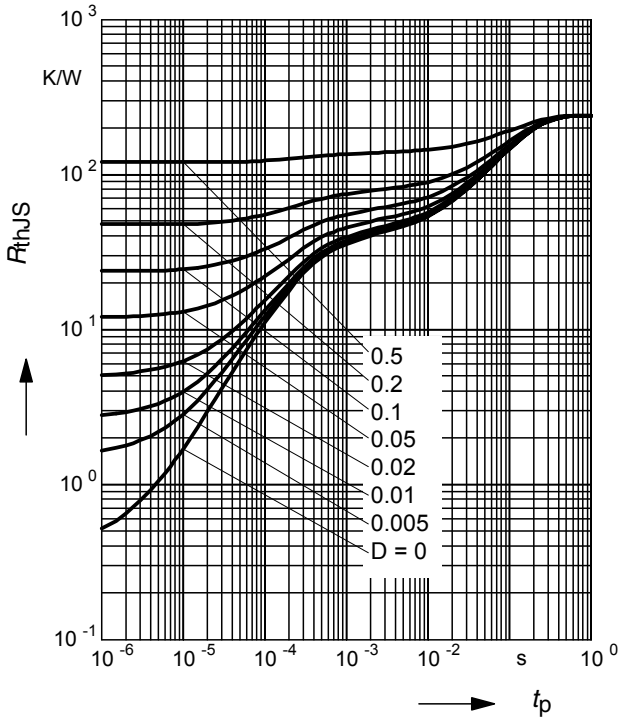
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Collector-emitter breakdown voltage I_C = 1 mA, I_B = 0	$V_{(BR)CEO}$	15	-	-	V
Collector-base cutoff current V_{CB} = 15 V, I_E = 0	I_{CBO}	-	-	50	nA
DC current gain I_C = 5 mA, V_{CE} = 10 V	h_{FE}	25	-	250	-
Collector-emitter saturation voltage I_C = 10 mA, I_B = 1 mA	V_{CEsat}	-	0.1	0.5	V
AC characteristics					
Transition frequency I_C = 5 mA, V_{CE} = 10 V, f = 200 MHz	f_T	1	2	-	GHz
Collector-base capacitance V_{CB} = 5 V, f = 1 MHz	C_{cb}	0.3	0.55	0.75	pF
Collector-emitter capacitance V_{CE} = 5 V, f = 1 MHz	C_{ce}	-	0.25	0.4	
Input capacitance V_{EB} = 0.5 V, I_C = 0 , f = 1 MHz	C_{ibo}	-	1.45	-	
Output capacitance V_{CE} = 5 V, V_{BE} = 0 , f = 1 MHz	C_{obs}	-	0.8	-	
Noise figure I_C = 5 mA, V_{CE} = 10 V, f = 100 MHz, Z_S = 75 Ω	F	-	2.5	-	dB

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

* Package mounted on epoxy

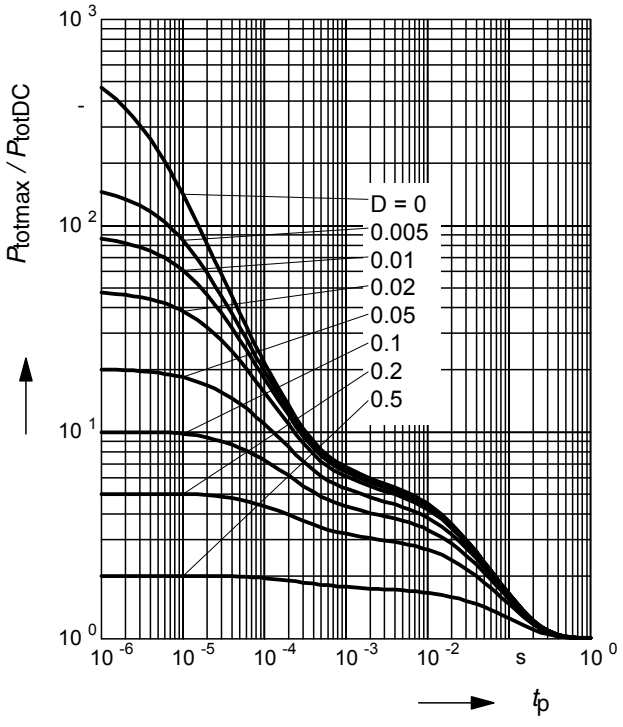


Permissible Pulse Load $R_{thJS} = f(t_p)$



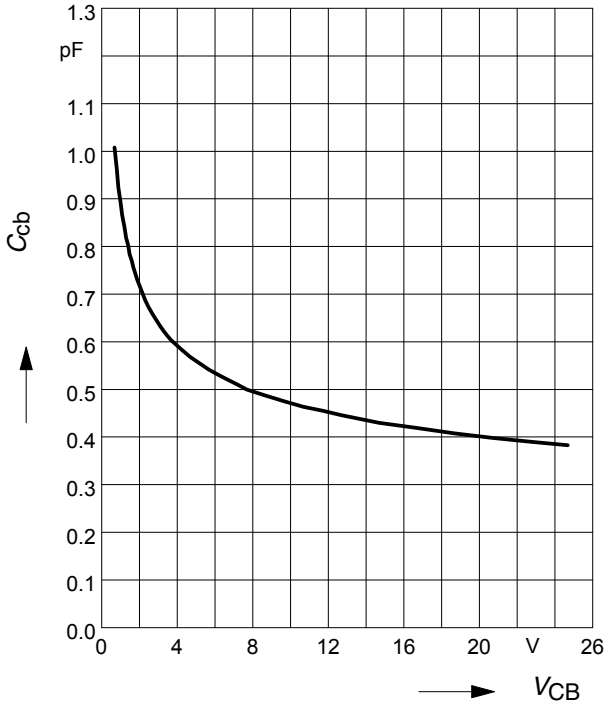
Permissible Pulse Load

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



Collector-base capacitance $C_{cb} = f(V_{CB})$

f = 1MHz



Transition frequency $f_T = f(I_C)$

V_{CE} = Parameter