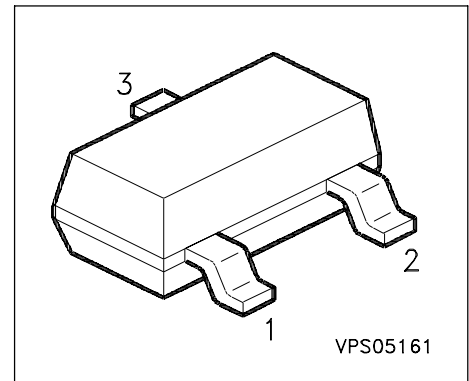


## NPN Silicon RF Transistor

- For amplifier and oscillator applications in TV-tuners



Type	Marking	Ordering Code	Pin Configuration			Package
BF 517	LRs	Q62702-F42	1 = B	2 = E	3 = C	SOT-23

### Maximum Ratings of any single Transistor

Parameter	Symbol	Values	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	$P_{tot}$	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 <sup>1)</sup>	$R_{thJS}$	$\leq 340$	K/W
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1) Package mounted on alumina 15 mm x 16,7 mm x 0,7 mm

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

### DC Characteristics

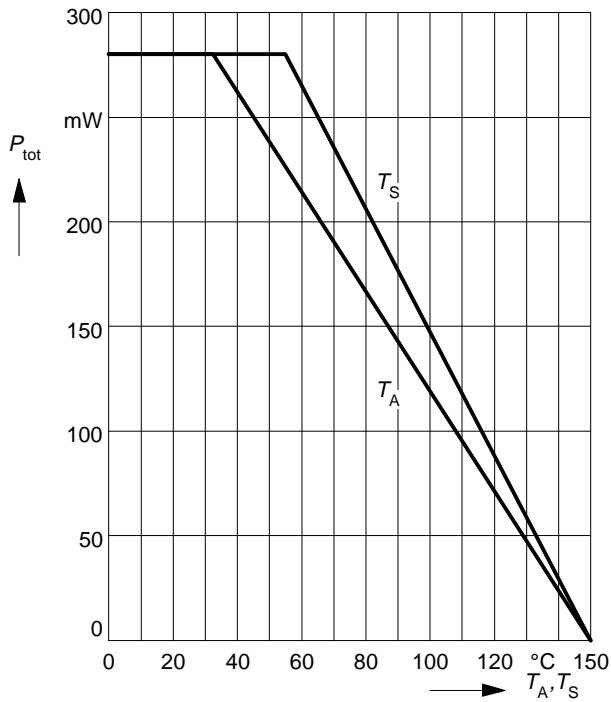
Collector-emitter breakdown voltage $I_C = 1 \text{ mA}, I_B = 0$	$V_{(BR)CEO}$	15	-	-	V
Collector-base cutoff current $V_{CB} = 15 \text{ V}, I_E = 0$	$I_{CBO}$	-	-	50	nA
DC current gain $I_C = 5 \text{ mA}, V_{CE} = 10 \text{ V}$	$h_{FE}$	25	-	250	-
Collector-emitter saturation voltage $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$	$V_{CEsat}$	-	0.1	0.5	V

### AC Characteristics of any single Transistor

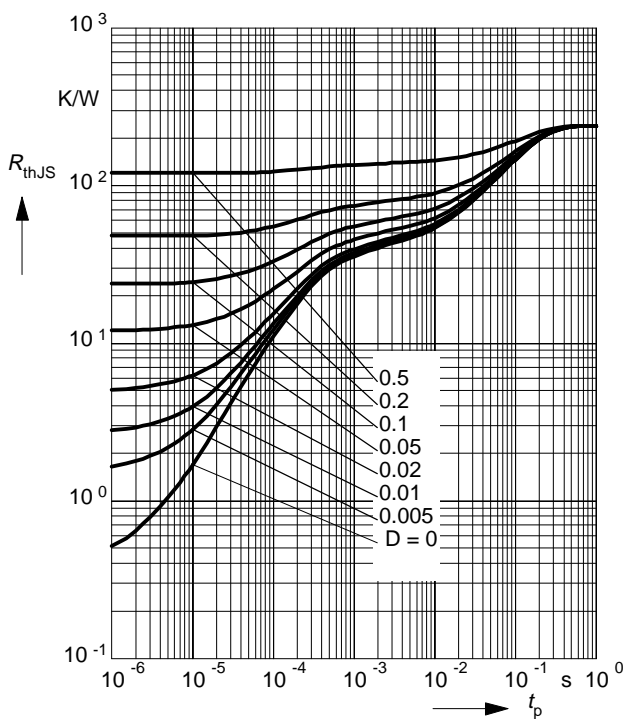
Transition frequency $I_C = 5 \text{ mA}, V_{CE} = 10 \text{ V}, f = 200 \text{ MHz}$	$f_T$	1	2	-	GHz
Collector-base capacitance $V_{CB} = 5 \text{ V}, V_{BE} = v_{be} = 0, f = 1 \text{ MHz}$	$C_{cb}$	0.3	0.55	0.75	pF
Collector-emitter capacitance $V_{CE} = 5 \text{ V}, V_{BE} = v_{be} = 0, f = 1 \text{ MHz}$	$C_{ce}$	-	0.25	0.4	
Input capacitance $V_{EB} = 0.5 \text{ V}, I_C = i_c = 0, f = 1 \text{ MHz}$	$C_{ibo}$	-	1.45	-	
Output capacitance $V_{CE} = 5 \text{ V}, V_{BE} = v_{be} = 0, f = 1 \text{ MHz}$	$C_{obs}$	-	0.8	-	
Noise figure $I_C = 5 \text{ mA}, V_{CE} = 10 \text{ V}, f = 100 \text{ MHz}$ $Z_S = 75 \Omega$	$F$	-	2.5	-	dB

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

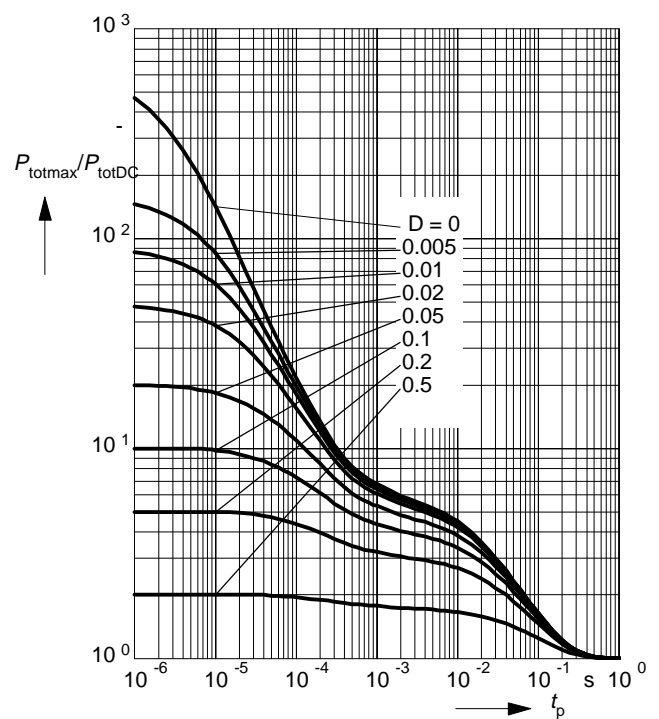
\* Package mounted on epoxy



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

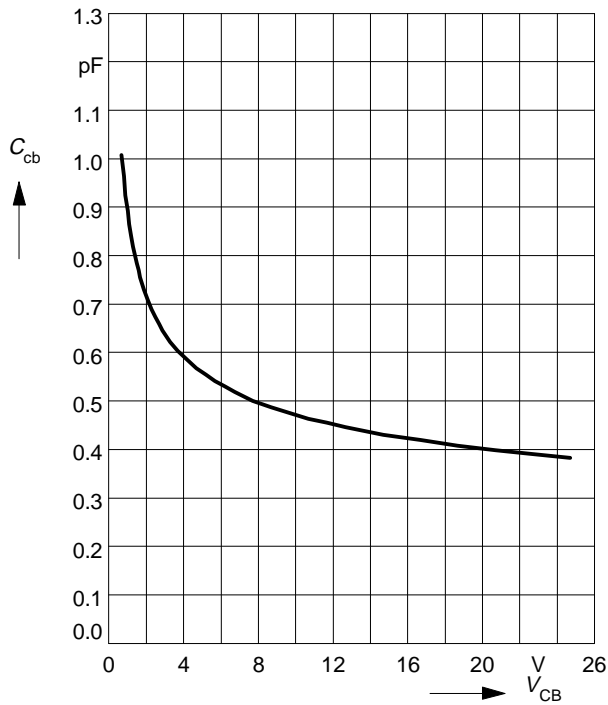


### Permissible Pulse Load $P_{totmax}/P_{totDC} = f(t_p)$



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

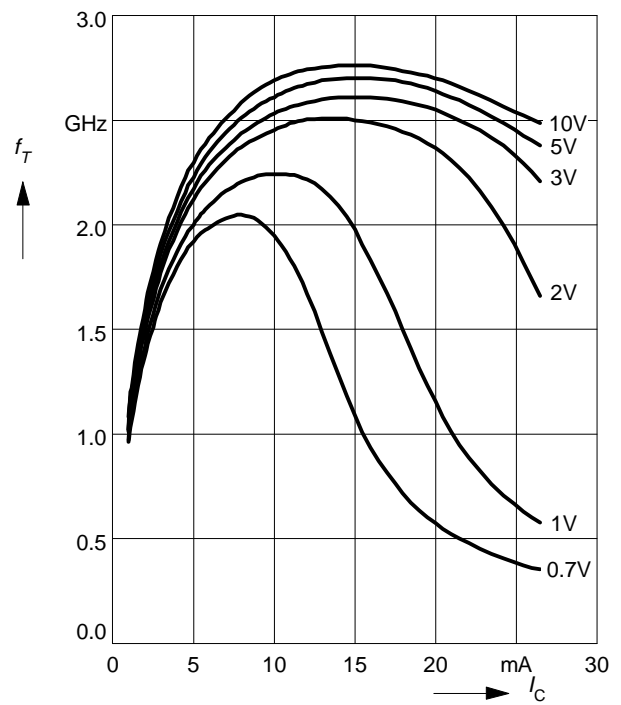
$V_{BE} = v_{be} = 0, f = 1\text{MHz}$



**Transition frequency**  $f_T = f(I_C)$

$f = 500\text{MHz}$

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



## Package

