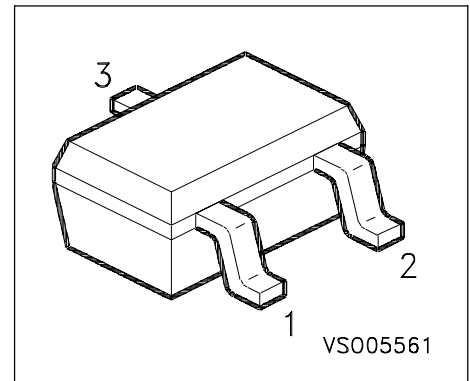


NPN Silicon RF Transistor

- For linear broadband amplifier applications up to 500MHz
- SAW filter driver in TV tuners



Type	Marking	Ordering Code	Pin Configuration			Package
BF 799W	LKs	Q62702-F1571	1 = B	2 = E	3 = C	SOT-323

Maximum Ratings

Parameter	Symbol	Values	Unit
Collector-emitter voltage	V_{CEO}	20	V
Collector-emitter voltage	V_{CES}	30	
Collector-base voltage	V_{CBO}	30	
Emitter-base voltage	V_{EBO}	3	
Collector current	I_C	35	mA
Base current	I_B	10	
Total power dissipation $T_S \leq 107^\circ\text{C}$	P_{tot}	280	mW
Junction temperature	T_j	150	
Storage temperature	T_{stg}	- 65 ... - 150	°C

Thermal Resistance

Junction - soldering point	R_{thJS}	≤ 155	K/W
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Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

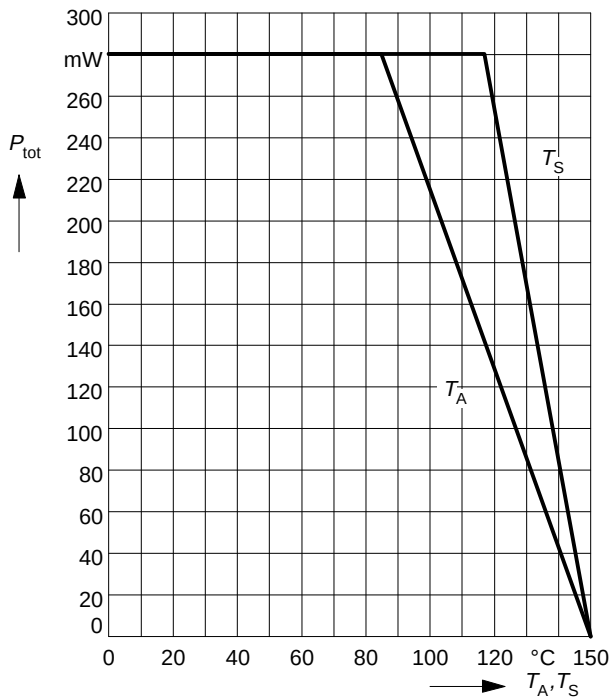
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 1\text{ mA}, I_B = 0$	$V_{(BR)CEO}$	20	-	-	V
Collector-base breakdown voltage $I_C = 10\text{ }\mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	30	-	-	
Base-emitter breakdown voltage $I_E = 10\text{ }\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	3	-	-	
Collector-base cutoff current $V_{CB} = 20\text{ V}, I_E = 0$	I_{CBO}	-	-	100	nA
DC current gain $I_C = 5\text{ mA}, V_{CE} = 10\text{ V}$ $I_C = 20\text{ mA}, V_{CE} = 10\text{ V}$	h_{FE}	35 40	95 100	- 250	-
Collector-emitter saturation voltage $I_C = 20\text{ mA}, I_B = 2\text{ mA}$	V_{CEsat}	-	0.15	0.5	V
Base-emitter saturation voltage $I_C = 20\text{ mA}, I_B = 2\text{ mA}$	V_{BEsat}	-	-	0.95	

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

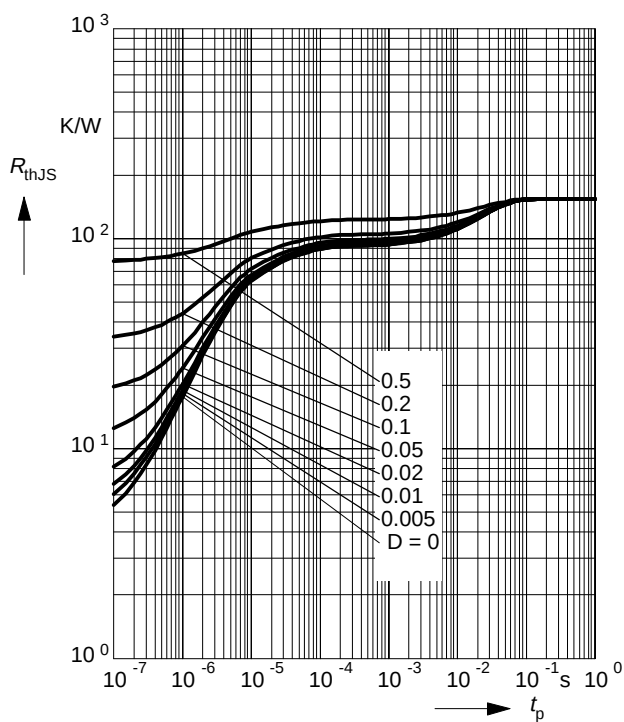
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency $I_C = 5\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$ $I_C = 20\text{ mA}$, $V_{CE} = 8\text{ V}$, $f = 100\text{ MHz}$	f_T	- -	800 1100	- -	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}$, $V_{BE} = v_{be} = 0$, $f = 1\text{ MHz}$	C_{cb}	-	0.7	-	pF
Collector-emitter capacitance $V_{CE} = 10\text{ V}$, $V_{BE} = v_{be} = 0$, $f = 1\text{ MHz}$	C_{ce}	-	0.28	-	
Output capacitance $V_{CB} = 10\text{ V}$, $I_E = 0\text{ mA}$, $f = 1\text{ MHz}$	C_{ob}	-	0.96	-	
Noise figure $I_C = 5\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$ $Z_S = 50\text{ }\Omega$	F	-	3	-	dB
Output conductance $I_C = 20\text{ mA}$, $V_{CE} = 10\text{ V}$, $f = 35\text{ MHz}$	g_{22e}	-	60	-	μS

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

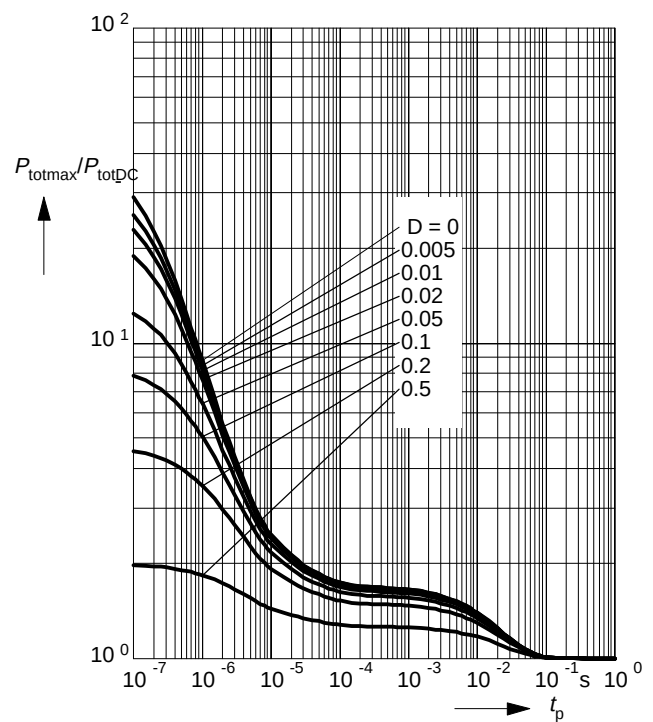
* Package mounted on epoxy



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



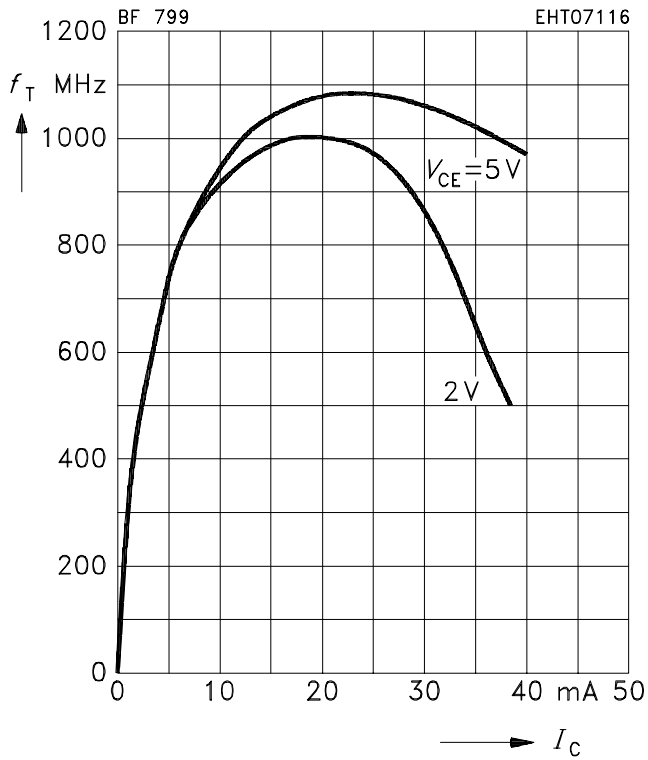
Permissible Pulse Load $P_{\text{totmax}}/P_{\text{totDC}} = f(t_p)$



Transition frequency $f_T = f(I_C)$

$f = 100\text{MHz}$

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



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

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

