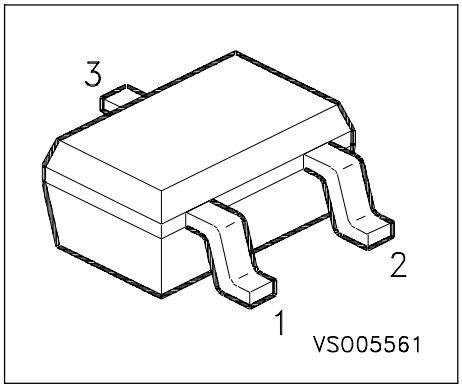
NPN Silicon RF Transistor

- 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 $T_S \leq 107$ °C	P_{tot}	280	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	- 65 ... - 150	
Thermal Resistance			
Junction - soldering point	R_{thJS}	≤ 155	K/W

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

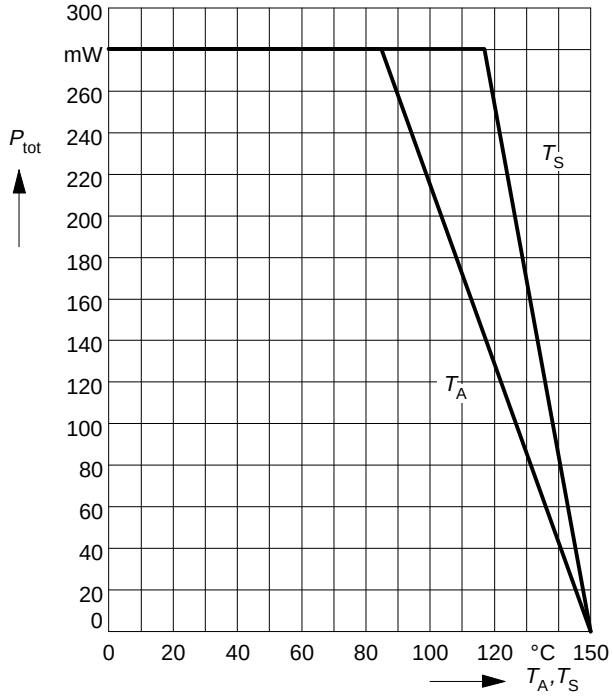
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage I_C = 1 mA, I_B = 0	$V_{(BR)CEO}$	20	-	-	V
Collector-base breakdown voltage I_C = 10 µA, I_E = 0	$V_{(BR)CBO}$	30	-	-	
Base-emitter breakdown voltage I_E = 10 µA, I_C = 0	$V_{(BR)EBO}$	3	-	-	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

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

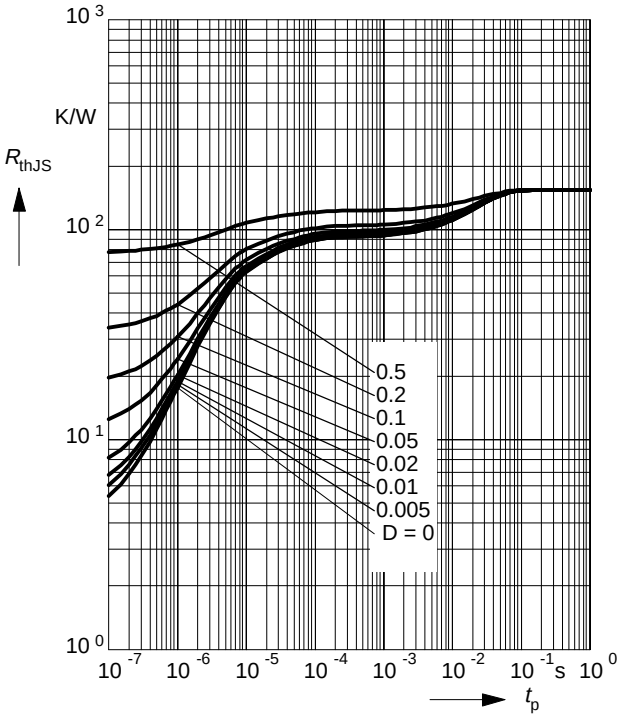
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Transition frequency	f_T				MHz
I_C = 5 mA, V_{CE} = 10 V, f = 100 MHz		-	800	-	
I_C = 20 mA, V_{CE} = 8 V, f = 100 MHz		-	1100	-	
Collector-base capacitance	C_{cb}				pF
V_{CB} = 10 V, V_{BE} = v_{be} = 0 , f = 1 MHz		-	0.7	-	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

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

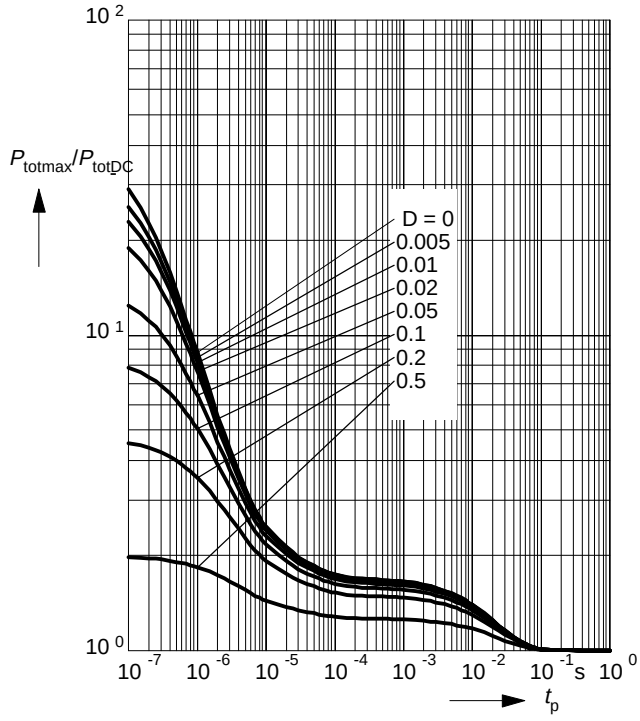
* Package mounted on epoxy



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



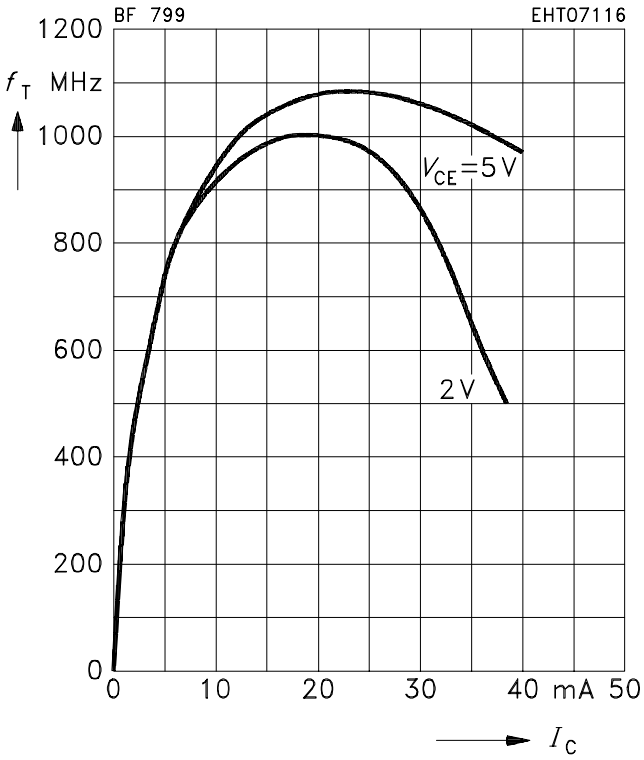
Permissible Pulse Load $P_{totmax}/P_{totDC} = f(t_p)$



Transition frequency $f_T = f(I_C)$

f = 100MHz

V_{CE} = Parameter



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

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