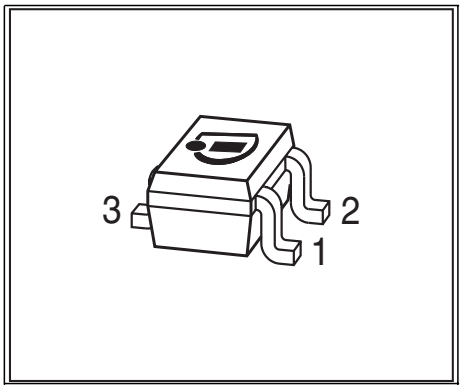
NPN Silicon RF Transistor



- For linear broadband amplifier application up to 500 MHz
- SAW filter driver in TV tuners
- Pb-free (RoHS compliant) package

RoHS

Type	Marking	Pin Configuration			Package
BF799W	LKs	1 = B	2 = E	3 = C	SOT323

Maximum Ratings

Parameter	Symbol	Value	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 = 107 °C	P_{tot}	280	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

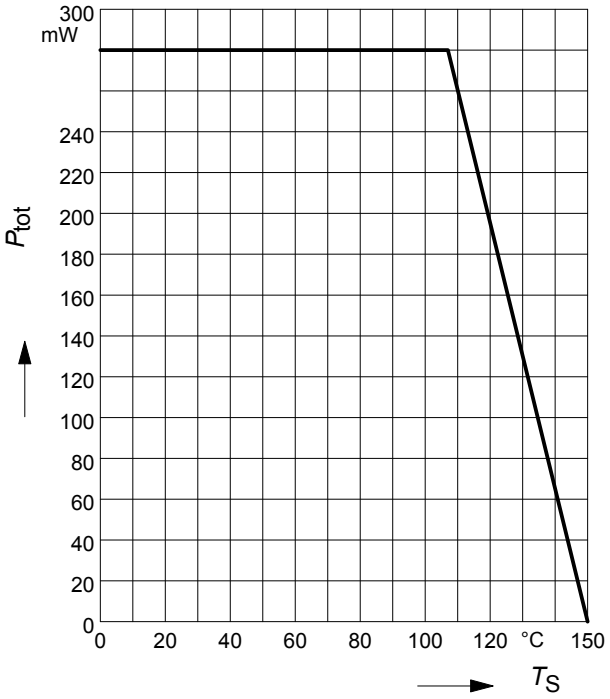
Junction - soldering point[1)]	R_{thJS}	≤ 155	K/W

[1]For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

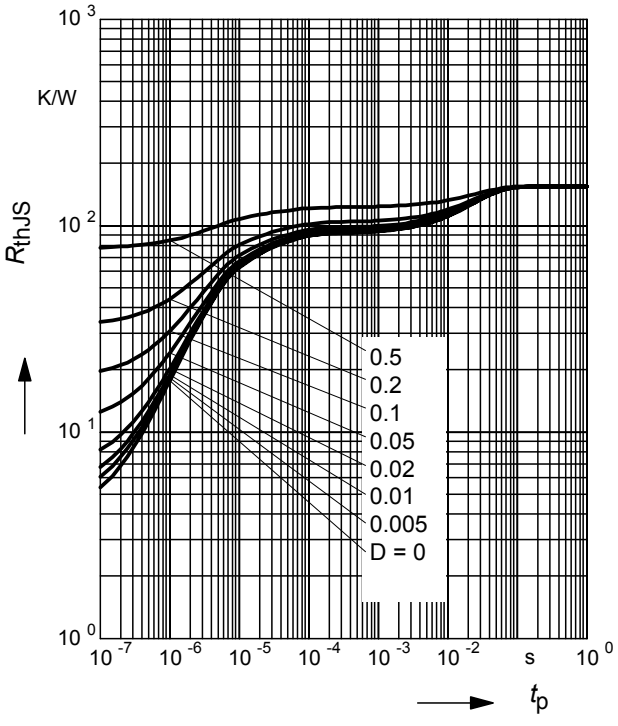
Electrical Characteristics at T_A = 25 °C, unless otherwise specified.

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}	-	0.1	0.3	V
Base-emitter saturation voltage I_C = 20 mA, I_B = 2 mA	V_{BEsat}	-	-	0.95	
AC characteristics					
Transition frequency I_C = 5 mA, V_{CE} = 10 V, f = 100 MHz I_C = 20 mA, V_{CE} = 8 V, f = 100 MHz	f_T	 - -	 800 1100	 - -	MHz
Output capacitance V_{CB} = 10 V, I_E = 0 mA, f = 1 MHz	C_{ob}	-	0.96	-	pF
Collector-base capacitance V_{CB} = 10 V, f = 1 MHz	C_{cb}	-	0.7	-	
Collector-emitter capacitance V_{CE} = 10 V, f = 1 MHz	C_{ce}	-	0.28	-	
Noise figure I_C = 5 mA, V_{CE} = 10 V, f = 100 MHz, Z_S = 50 Ω	F	-	3	-	dB
Output conductance I_C = 20 mA, V_{CE} = 10 V, f = 35 MHz	g_{22e}	-	60	-	µS

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

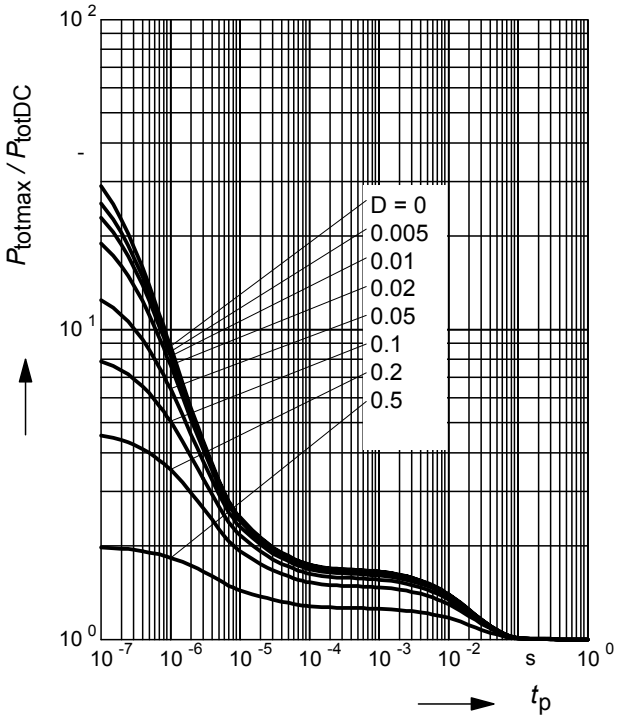


Permissible Pulse Load $R_{thJS} = f(t_p)$



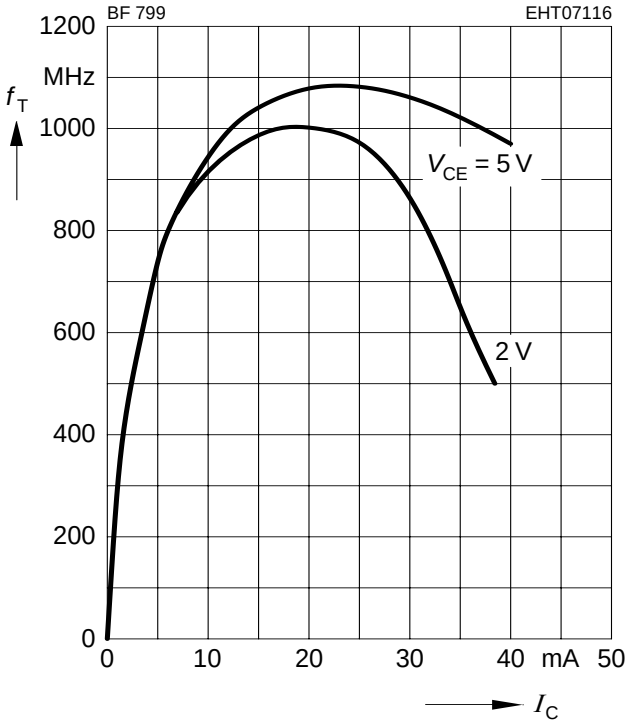
Permissible Pulse Load

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



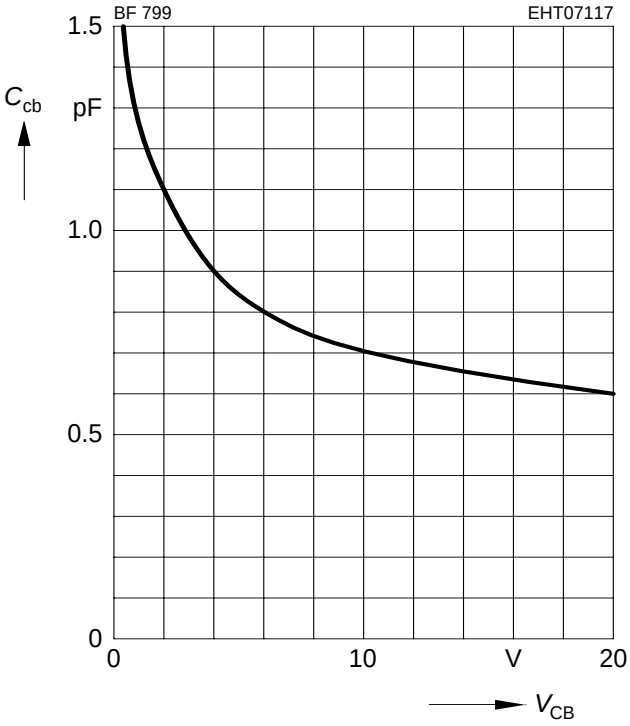
Transition frequency $f_T = f(I_C)$

f = 100MHz

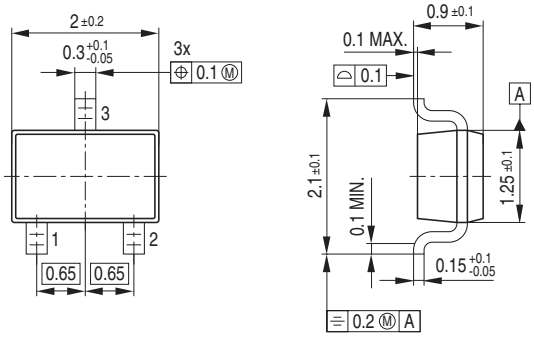


Collector-base capacitance $C_{cb} = f(V_{CB})$

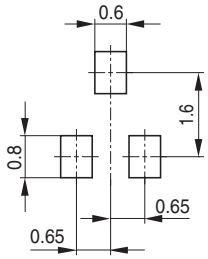
f = 1 MHz



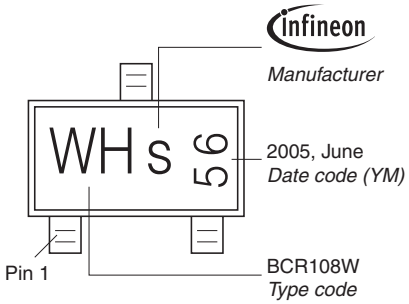
Package Outline



Foot Print

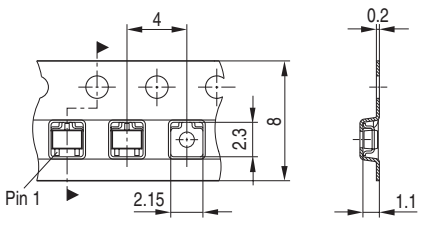


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



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