

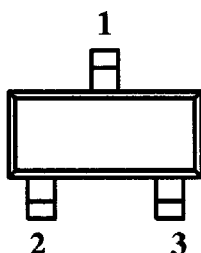
Silicon NPN Planar RF Transistor

Applications

In high gain IF-amplifiers for surface acoustic wave filters.

Features

- High power gain
- Low noise figure



94 9280

BF799 Marking: G2

Plastic case (SOT 23)

1= Collector; 2= Base; 3= Emitter

Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	3	V
Collector current	I_C	35	mA
Collector peak current $f \geq 1$ MHz	I_{CM}	50	mA
Base current $f \geq 1$ MHz	I_{BM}	15	mA
Total power dissipation $T_{amb} = 25^\circ\text{C}$	P_{tot}	280	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-65 to +150	$^\circ\text{C}$

Maximum Thermal Resistance

Parameters	Symbol	Value	Unit
Junction ambient on glass fibre printed board (25 x 20 x 1.5) mm ³ plated with 35 μm Cu	R_{thJA}	450	K/W

BF 799

Electrical DC Characteristics

$T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector cut-off current $V_{CB} = 20\text{ V}$	I_{CBO}			100	nA
Collector-base breakdown voltage $I_C = 10\ \mu\text{A}$	$V_{(BR)CBO}$	30			V
Collector-emitter breakdown voltage $I_C = 3\text{ mA}$	$V_{(BR)CEO}$	20			V
Emitter-base breakdown voltage $I_E = 10\ \mu\text{A}$	$V_{(BR)EBO}$	3			V
Collector saturation voltage $I_C = 30\text{ mA}$, $I_B = 2\text{ mA}$	V_{CEsat}			1	V
DC forward current transfer ratio $V_{CE} = 1\text{ V}$, $I_C = 5\text{ mA}$ $V_{CE} = 1\text{ V}$, $I_C = 20\text{ mA}$	h_{FE} h_{FE}	35 40	85		

Electrical AC Characteristics

$T_{amb} = 25^{\circ}\text{C}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Gain bandwidth product $V_{CB} = 10\text{ V}$, $I_C = 20\text{ mA}$, $f = 300\text{ MHz}$ $V_{CB} = 5\text{ V}$, $I_C = 30\text{ mA}$, $f = 300\text{ MHz}$	f_T f_T		1.4 1.4		GHz GHz
Output capacitance $V_{CB} = 10\text{ V}$, $I_C = 0\text{ mA}$, $f = 1\text{ MHz}$	C_{ob}		1.0		pF
Collector-base capacitance $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{CB}		0.7		pF
Noise figure $V_{CE} = 10\text{ V}$, $I_C = 5\text{ mA}$, $Z_G = 50\ \Omega$, $f = 500\text{ MHz}$	F		3		dB
Short circuit output conductance in common emitter configuration $V_{CE} = 10\text{ V}$, $I_C = 20\text{ mA}$, $f = 35\text{ MHz}$	g_{sse}		0.06		mS

Dimensions in mm

