


Silicon NPN Planar RF Transistor

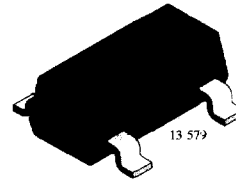
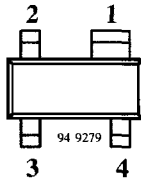
Electrostatic sensitive device.
Observe precautions for handling. 

Applications

For low-noise and high-gain broadband amplifiers at collector currents from 1 mA to 20 mA.

Features

- Low power applications
- Low noise figure
- High transition frequency



Marking: 82 P
Plastic case (SOT 143)
1 = Collector; 2 = Emitter; 3 = Base; 4 = Emitter

Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	15	V
Collector-emitter voltage	V_{CEO}	10	V
Emitter-base voltage	V_{EBO}	2	V
Collector current	I_C	35	mA
Total power dissipation $T_{amb} \leq 60^\circ\text{C}$	P_{tot}	200	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	Maximum	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

Electrical DC Characteristics

T_{amb} = 25°C

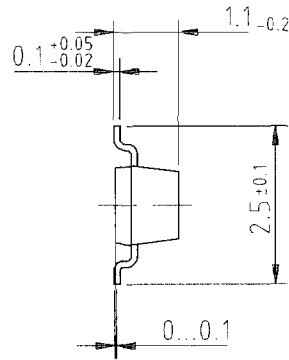
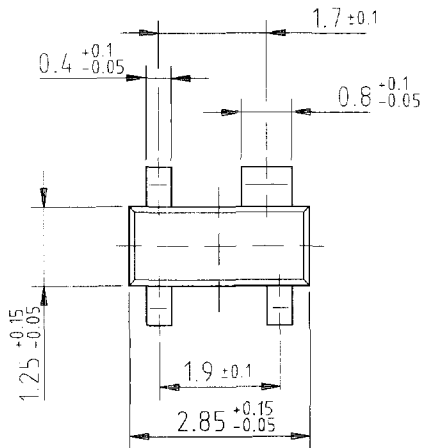
Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector emitter cut-off current V _{CE} = 15 V, V _{BE} = 0	I _{CES}			100	μA
Collector-base cut-off current V _{CB} = 10 V, I _E = 0	I _{CBO}			100	nA
Emitter-base cut-off current V _{EB} = 1 V, I _C = 0	I _{EBO}			1	μA
Collector-emitter breakdown voltage I _C = 1 mA, I _B = 0	V _{(BR)CEO}	10			V
Collector-emitter saturation voltage I _C = 15 mA, I _B = 1.5 mA	V _{CEsat}		0.1	0.4	V
DC forward current transfer ratio V _{CE} = 6 V, I _C = 5 mA V _{CE} = 8 V, I _C = 20 mA	h _{FE} h _{FE}	50	90 100	150	

Electrical AC Characteristics

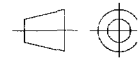
T_{amb} = 25°C

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Transition frequency V _{CE} = 6 V, I _C = 5 mA, f = 500 MHz V _{CE} = 8 V, I _C = 20 mA, f = 500 MHz	f _T f _T		5.5 7.5		GHz GHz
Collector-base capacitance V _{CB} = 10 V, f = 1 MHz	C _{cb}		0.3		pF
Collector-emitter capacitance V _{CE} = 8 V, f = 1 MHz	C _{ce}		0.2		pF
Emitter-base capacitance V _{EB} = 0.5 V, f = 1 MHz	C _{eb}		0.7		pF
Noise figure V _{CE} = 6 V, I _C = 5 mA, Z _S = Z _{Sopt} f = 900 MHz f = 1.75 GHz	F F		1.5 2.0		dB dB
Power gain V _{CE} = 8 V, I _C = 20 mA, Z _S = 50 Ω, Z _L = Z _{Lopt} f = 900 MHz f = 1.75 GHz	G _{pe} G _{pe}		18 12		dB dB
Transducer gain V _{CE} = 8 V, I _C = 20 mA, f = 900 MHz, Z ₀ = 50 Ω	S _{21e} ²		15		dB

Dimensions in mm



96 12240



technical drawings
according to DIN
specifications

