

Silicon PNP planar RF transistor

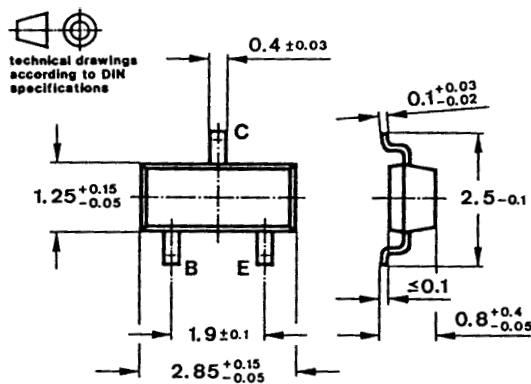
Applications

Oscillator in VHF tuner.

Features

- Especially suitable for VHF oscillators
- SMD package

Dimensions in mm



Case 23 A 3 DIN 41 869 (SOT 23) Marking: GA
Weight max. 0.01 g

Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Collector-base voltage	$-V_{CBO}$	40	V
Collector-emitter voltage	$-V_{CEO}$	30	V
Emitter-base voltage	$-V_{EBO}$	4	V
Collector current	$-I_C$	25	mA
Total power dissipation $T_{amb} = 60^\circ\text{C}$	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	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 $T_{amb} = 25^{\circ}\text{C}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector cut-off current $-V_{CB} = 20\text{ V}, I_E = 0\text{ A}$	$-I_{CBO}$			50	nA
Collector-base breakdown voltage $-I_C = 10\text{ }\mu\text{A}, I_E = 0\text{ A}$	$-V_{(BR)CBO}$	40			V
Collector-emitter breakdown voltage $-I_C = 1\text{ mA}, I_B = 0\text{ A}$	$-V_{(BR)CEO}$	30			V
Emitter-base breakdown voltage $-I_E = 10\text{ }\mu\text{A}, I_C = 0\text{ A}$	$-V_{(BR)EBO}$	4			V
DC forward current transfer ratio $-V_{CE} = 10\text{ V}, -I_C = 3\text{ mA}$	h_{FE}	50	90		

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

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Gain bandwidth product $-V_{CE} = 10\text{ V}, f = 100\text{ MHz}, -I_C = 5\text{ mA}$	f_T	440	550		MHz
Collector-base capacitance $-V_{CB} = 10\text{ V}, V_{BE} = 0\text{ V}, f = 1\text{ MHz}$	C_{cb}		0.4		pF
Collector-emitter capacitance $-V_{CE} = 10\text{ V}, V_{BE} = 0\text{ V}, f = 1\text{ MHz}$	C_{ce}		0.17		pF
Emitter-base capacitance $-V_{EB} = 0.5\text{ V}, I_E = 0\text{ A}, f = 1\text{ MHz}$	C_{eb}		1.3		pF

Two Port Characteristics $T_{amb} = 25^{\circ}\text{C}$ Common emitter configuration $-V_{CE} = 7.5\text{ V}, -I_C = 1\text{ mA}, f = 10\text{ MHz}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Short circuit input capacitance	C_{ie}	8		18	pF
Short circuit input impedance	g_{ie}			750	μS
Short circuit output capacitance	C_{oe}	0.50		1.5	pF
Short circuit output admittance	g_{oe}			12	μS

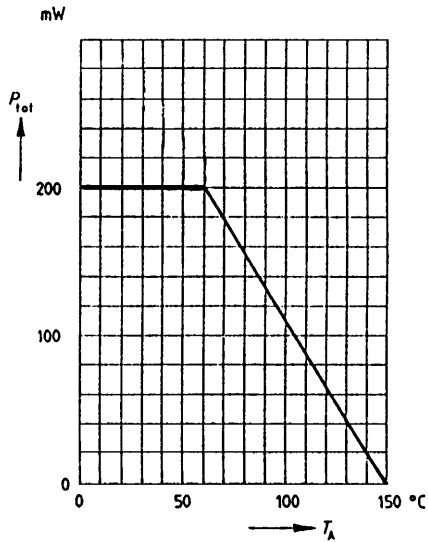


Figure 1 Total power dissipation $P_{tot} = f(T_A)$
 Package mounted on PCB
 (25 x 20 x 1.5) mm³ with 35 μm Cu

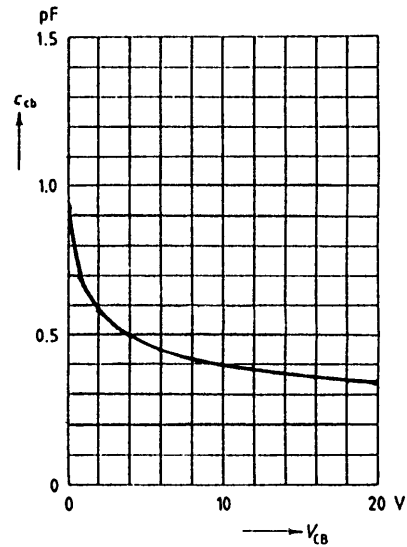


Figure 3 Collector-base capacitance
 $C_{cb} = f(V_{CB}), f = 1 \text{ MHz}$

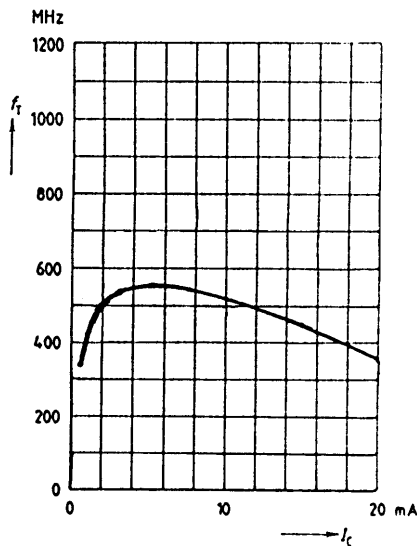


Figure 2 Transition frequency $f_T = f(I_c)$
 $V_{CE} = 10 \text{ V}, f = 100 \text{ MHz}$

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