

2SC2851

Silicon NPN epitaxial planer type

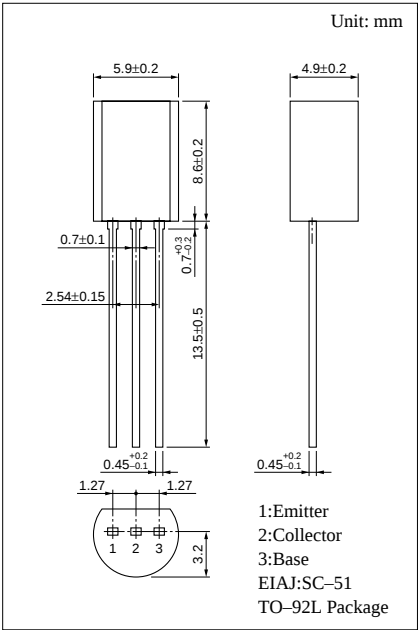
For high-frequency power amplification

■ Features

- High transition frequency f_T .
- Output of 0.6W is obtained in the VHF band ($f = 175\text{MHz}$).

■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	36	V
Collector to emitter voltage	V_{CEO}	16	V
Emitter to base voltage	V_{EBO}	3	V
Peak collector current	I_{CP}	0.5	A
Collector current	I_C	0.3	A
Collector power dissipation	P_C	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

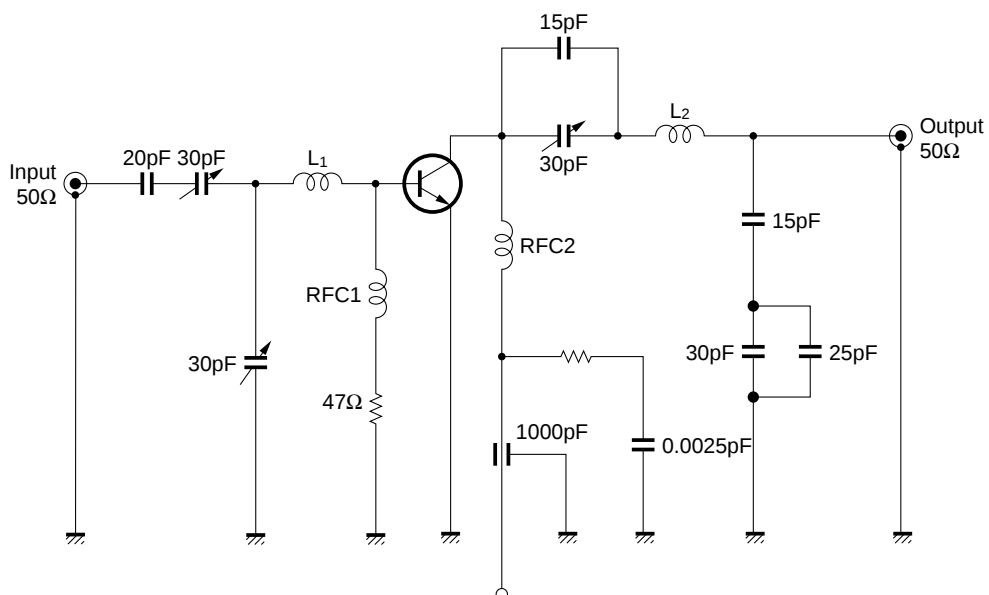


■ Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20V, I_E = 0$			10	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 13.5V, I_C = 100mA$	20	50		
Transition frequency	f_T	$V_{CB} = 10V, I_E = -100mA, f = 200MHz$	1.5	2		GHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		4	8	pF
High-frequency output	P_O^*	$V_{CC} = 13.5V, P_i = 0.03W, f = 175MHz$	0.6	0.9		W
Overall efficiency	η	$V_{CC} = 13.5V, P_i = 0.03W, f = 175MHz$		60		%

*Refer to the P_O measurement circuit

The high-frequency output measurement circuit at 175MHz



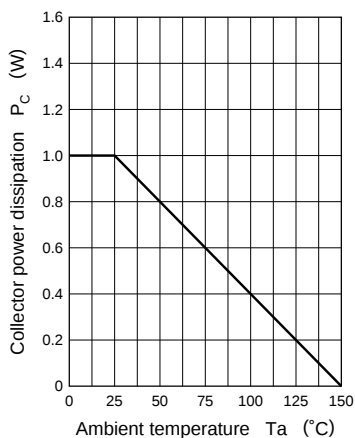
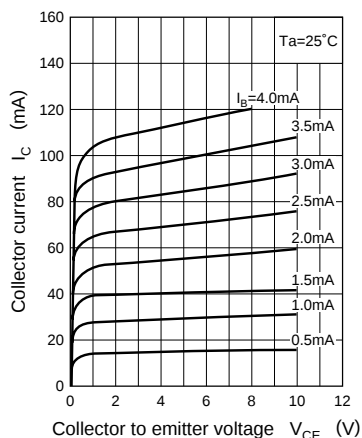
Circuit constants

L_1 : $\phi 2\text{mm}$ silver plated copper wire, 0.5T, $D = 15$

L_2 : $\phi 1.5\text{mm}$ silver plated copper wire, 2T, $D = 15$

RFC1: $\phi 1.0\text{mm}$ enameled, 15T, $D = 7$

RFC2: $\phi 1.5\text{mm}$ silver plated copper wire, 5T, $D = 8$

 $P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$ 