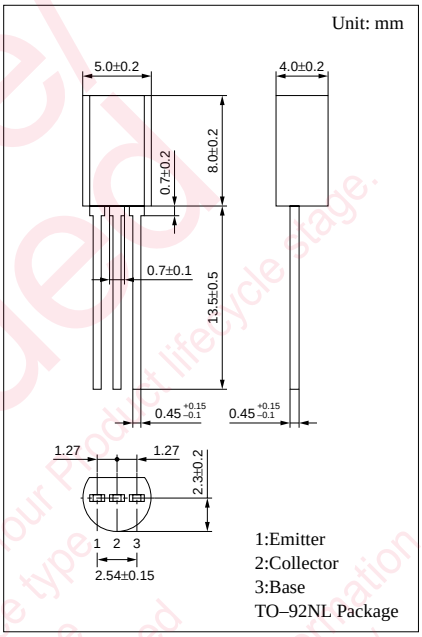
2SC4767

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=175MHz).

Absolute Maximum Ratings (Ta=25˚C)

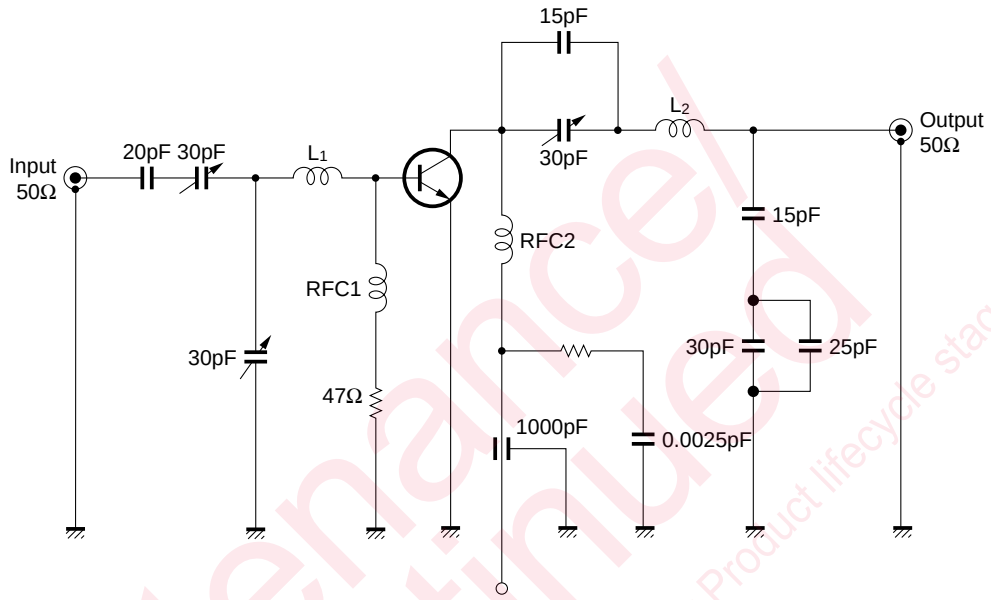
Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	36	V
Collector to emitter voltage	V_{CEO}	16	V
Emitter to base voltage	V_{EBO}	3	V
Peak collector current	I_{CP}	0.5	A
Collector current	I_C	0.3	A
Collector power dissipation	P_C	1	W
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–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**		50		
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 10mA			1	V
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 measurment circuit ** Pulse measurement

The high-frequency output measurement circuit at 175MHz



Circuit constants

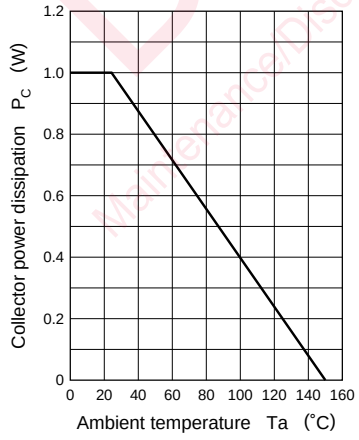
L_1: ϕ2mm silver plated copper wire, 0.5T, D = 15

L_2: ϕ1.5mm silver plated copper wire, 2T, D = 15

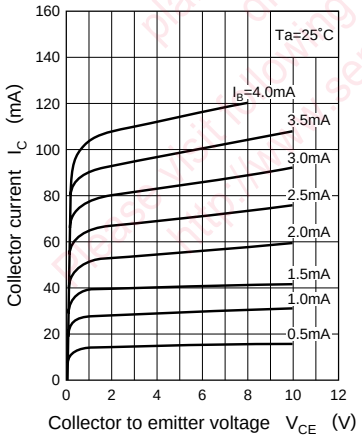
RFC1: ϕ1.0mm enameled, 15T, D = 7

RFC2: ϕ1.5mm silver plated copper wire, 5T, D = 8

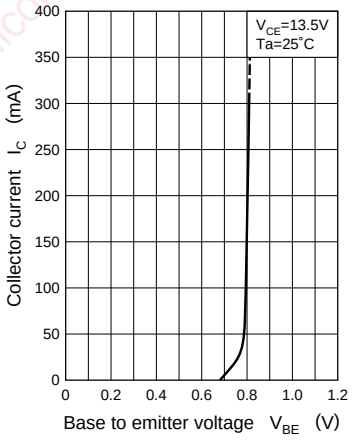
P_C — Ta



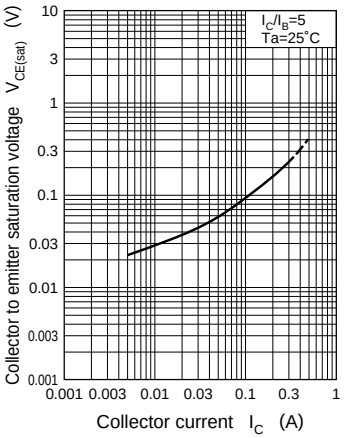
I_C — V_{CE}



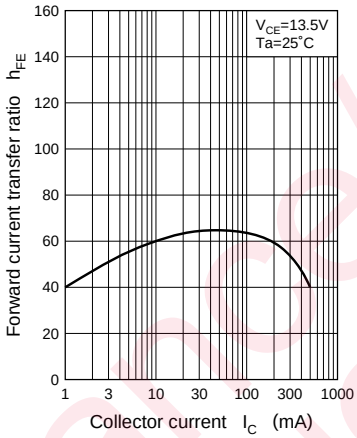
I_C — V_{BE}



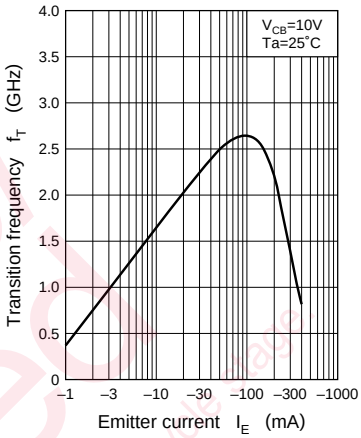
$V_{CE(sat)}$ — I_C



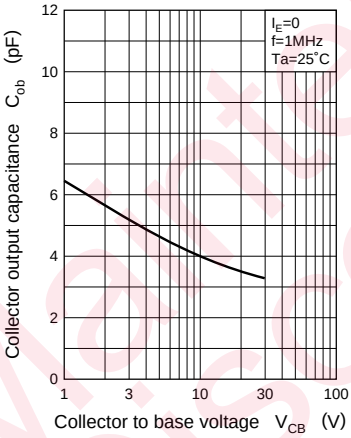
h_{FE} — I_C



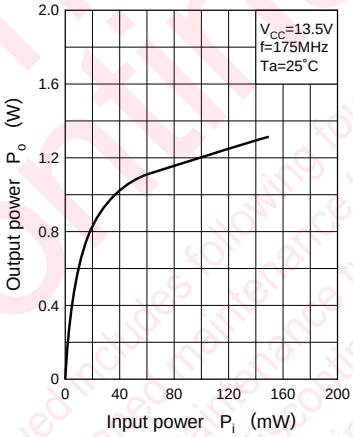
f_T — I_E



C_{ob} — V_{CB}



P_O — P_i



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