

2SC2988

Silicon NPN Epitaxial Planar Type

RF Power Amplifier

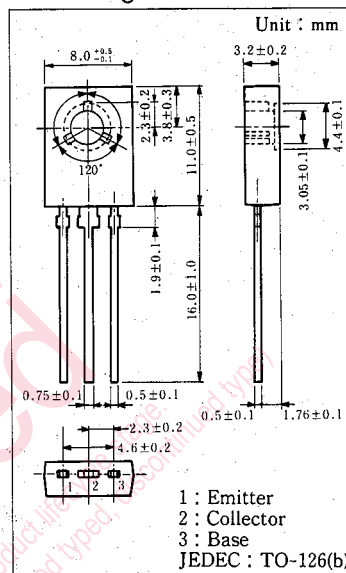
■ Features

- Power output 1.8W on VHF band ($f=175\text{MHz}$)
- High gain 10dB

■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CB0}	36	V
Collector-emitter voltage	V_{CE0}	16	V
Emitter-base voltage	V_{EB0}	3	V
Peak collector current	I_{CP}	1	A
Collector current	I_C	0.5	A
Collector power dissipation ($T_c=25^\circ\text{C}$)	P_C	5	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

■ Package Dimensions

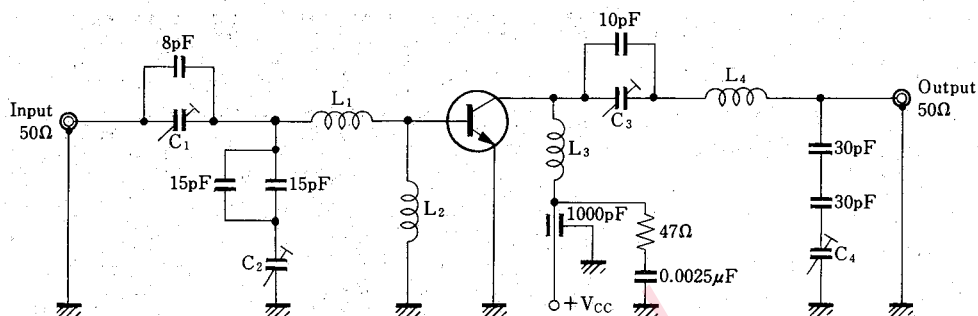


■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

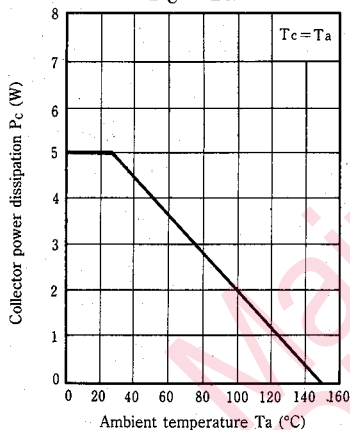
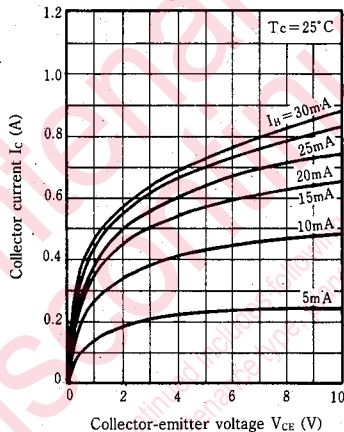
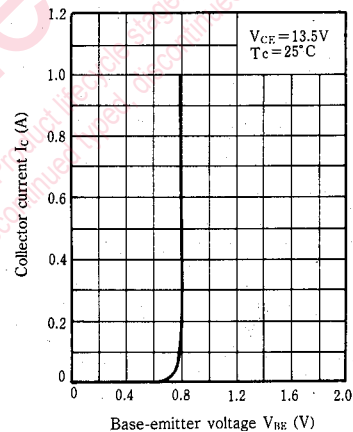
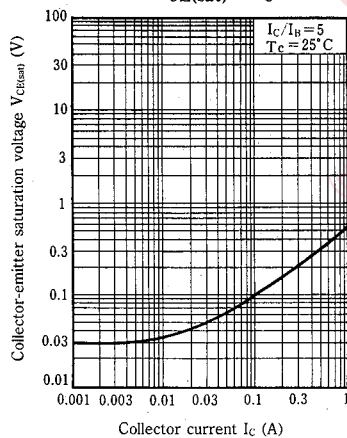
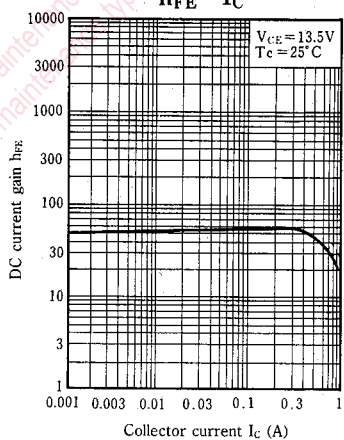
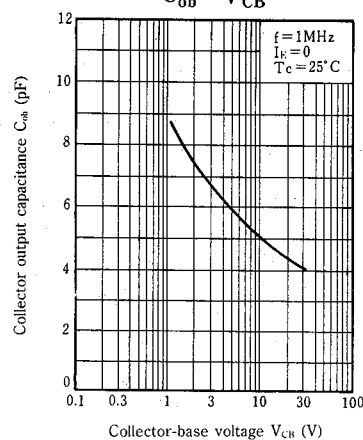
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CB0}	$V_{CB}=20\text{V}, I_E=0$			10	μA
Emitter cutoff current	I_{EB0}	$V_{CE}=13.5\text{V}, I_C=200\text{mA}^*$	20	50		
Transition frequency	f_T	$V_{CB}=10\text{V}, I_E=-100\text{mA}^*, f=200\text{MHz}$	600	1000		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		6	10	pF
Overall efficiency characteristics	P_O	$V_{CC}=13.5\text{V}, P_{in}=0.2\text{W}, f=175\text{MHz}$	1.8	2.2		W
Output power	η_c	$V_{CC}=13.5\text{V}, P_{in}=0.2\text{W}, f=175\text{MHz}$		50		%

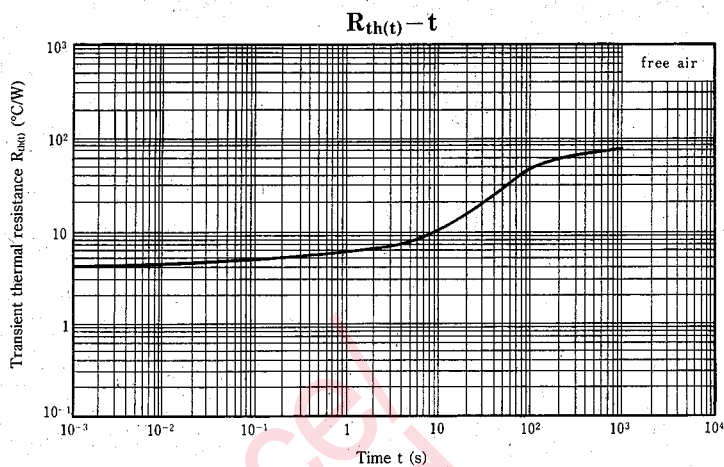
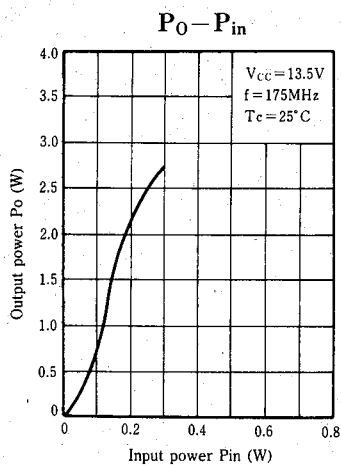
* パルス測定

Measurement circuit for output power



Circuit Constant

 $C_1: 40\text{pF}$ $C_2: 30\text{pF}$ $C_3: 30\text{pF}$ $C_4: 30\text{pF}$ $L_1: \text{Ag/Cu}, 2\text{mm } \phi, L=18\text{mm}$ $L_2: \text{Ag/Cu}, 1\text{mm } \phi, 7.5\text{t}, \text{ID}=8\text{mm}$ $L_3: \text{Ag/Cu}, 1\text{mm } \phi, 1.5\text{t}, \text{ID}=7.5\text{mm}$ $L_4: \text{Ag/Cu}, 1.5\text{mm } \phi, 2\text{t}+10\text{mm} \times 2, \text{ID}=11\text{mm}, \text{Pitch } 5$ $P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $C_{ob} - V_{CB}$ 



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