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# 2SB1409(L)/(S)

Silicon PNP Epitaxial

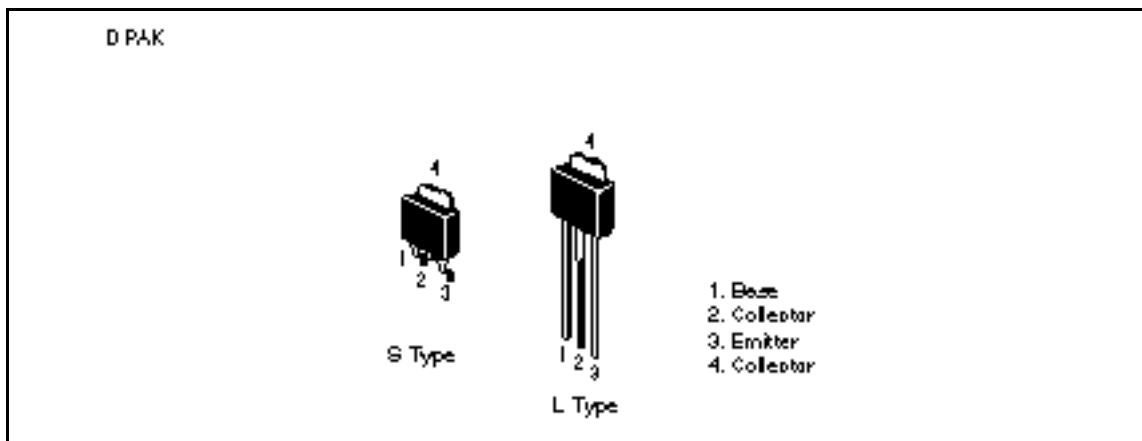
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## Application

Low frequency power amplifier complementary Pair with 2SD2123(L)/(S)

## Outline



## 2SB1409(L)/(S)

### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-180	V
Collector to emitter voltage	$V_{CEO}$	-160	V
Emitter to base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-1.5	A
Collector peak current	$I_{C(\text{peak})}$	-3	A
Collector power dissipation	$P_C^{*1}$	18	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{\text{stg}}$	-55 to +150	°C

Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

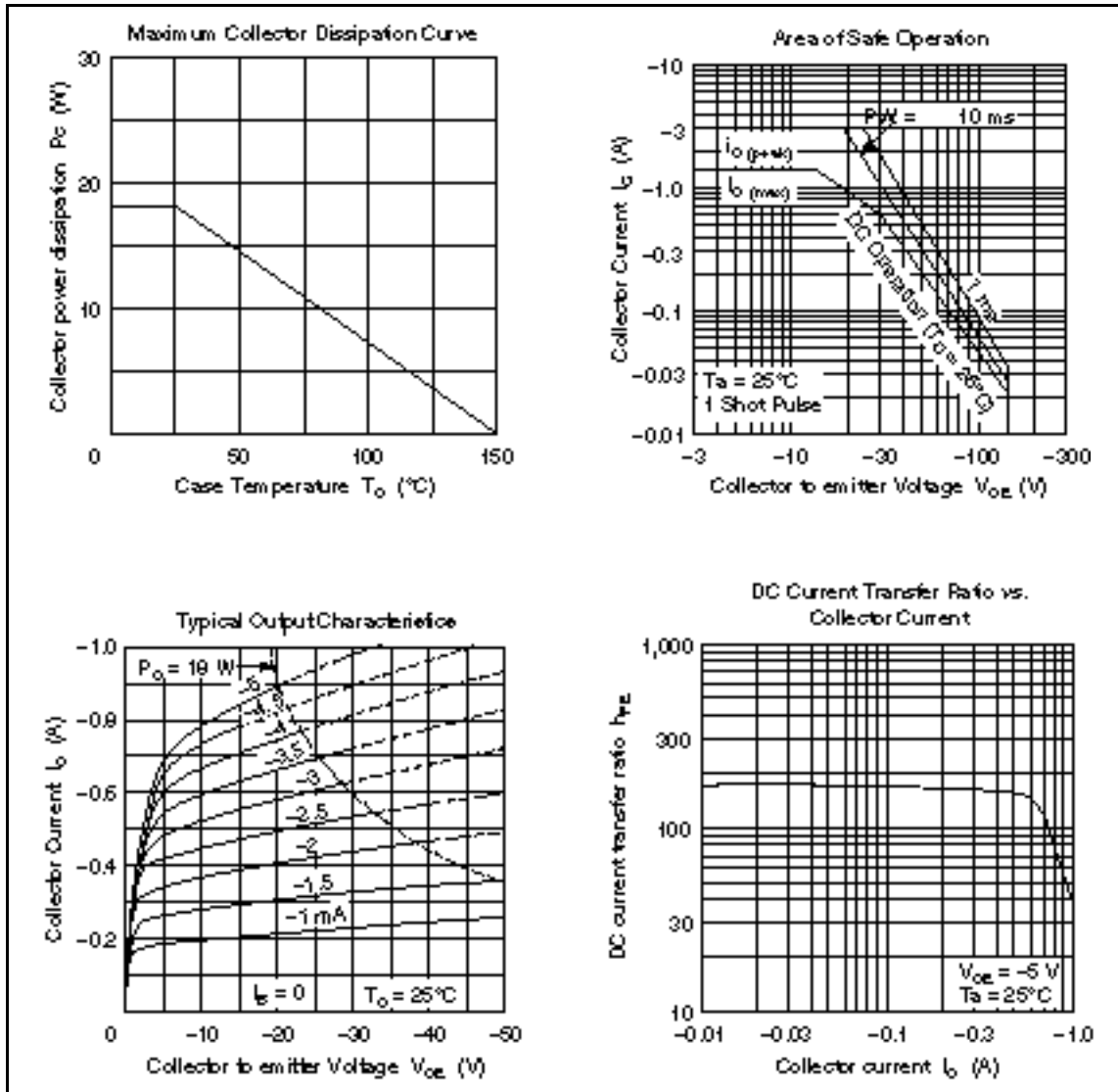
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-180	—	—	V	$I_C = -1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-160	—	—	V	$I_C = -10 \text{ mA}, R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -1 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-10	$\mu\text{A}$	$V_{CB} = -160 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	60	—	200		$V_{CE} = -5 \text{ V}, I_C = -150 \text{ mA}^{*2}$
	$h_{FE2}$	30	—	—		$V_{CE} = -5 \text{ V}, I_C = -500 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	—	—	-1	V	$I_C = -500 \text{ mA}, I_B = -50 \text{ mA}$
Base to emitter voltage	$V_{BE}$	—	—	-1.5	V	$V_{CE} = -5 \text{ V}, I_C = -150 \text{ mA}$
Gain bandwidth product	$f_T$	—	240	—	MHz	$V_{CE} = -5 \text{ V}, I_C = -150 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	25	—	pF	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$

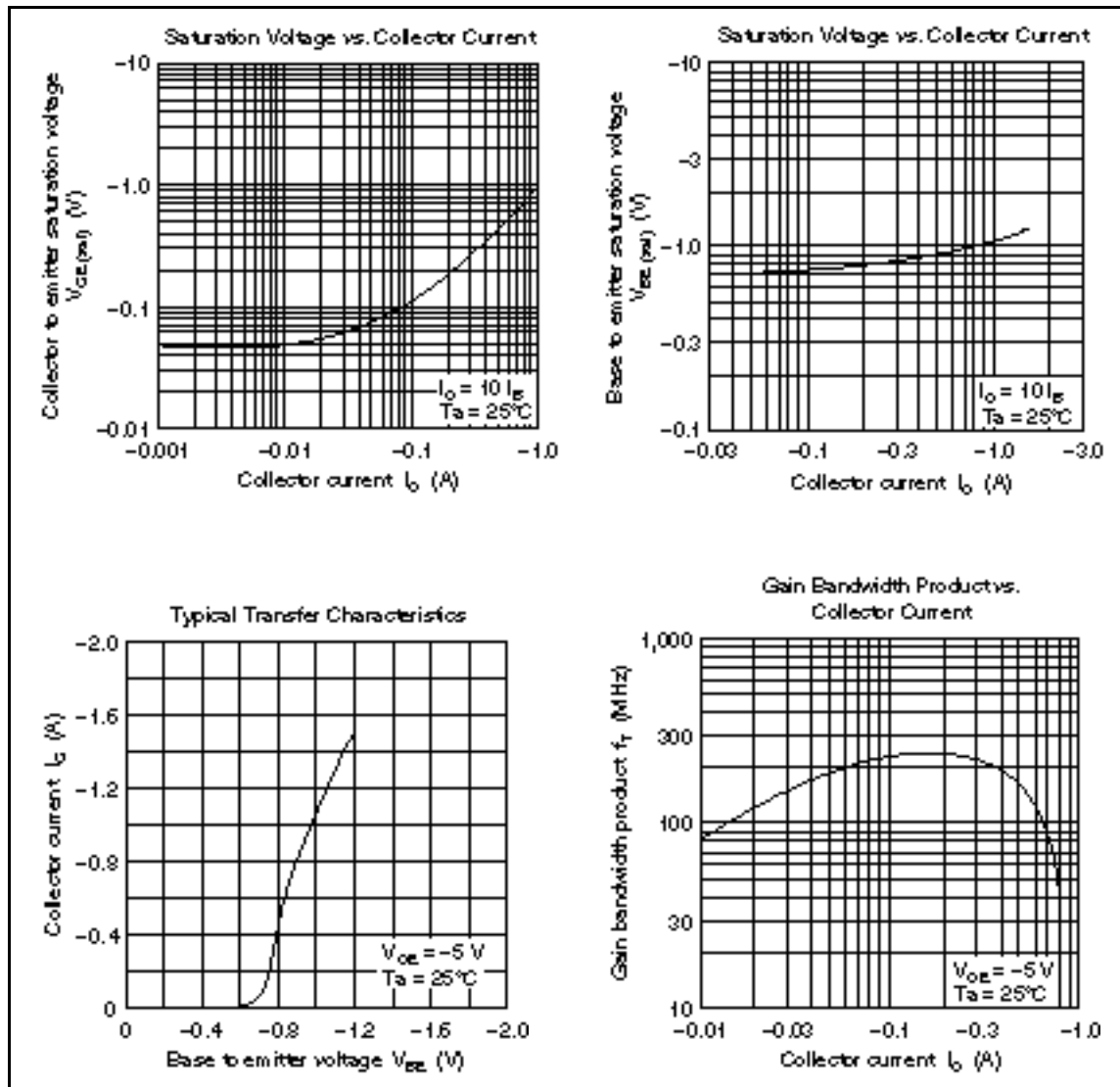
Notes: 1. The 2SB1409(L)/(S) is grouped by  $h_{FE1}$  as follows.

B	C
60 to 120	100 to 200

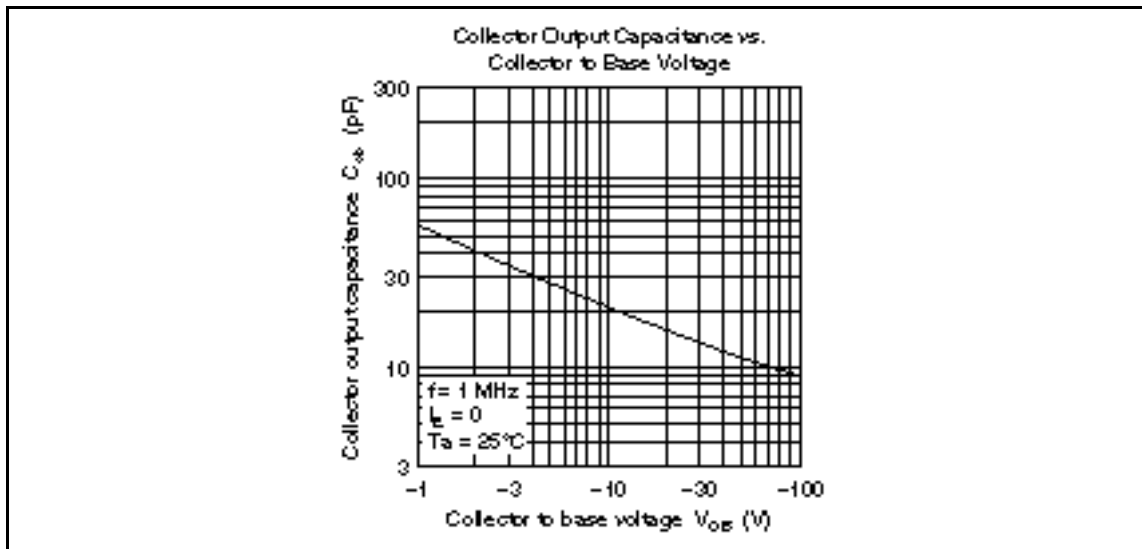
2. Pulse test.



## 2SB1409(L)/(S)



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