

2SB1409(L)/(S)

Silicon PNP Epitaxial

HITACHI

ADE-208-877 (Z)

1st. Edition

Sep. 2000

Application

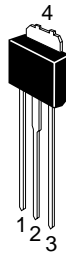
Low frequency power amplifier complementary Pair with 2SD2123(L)/(S)

Outline

DPAK



S Type



L Type

1. Base
2. Collector
3. Emitter
4. Collector

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	$I_{C(peak)}$	-3	A
Collector power dissipation	P_C^{*1}	18	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

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

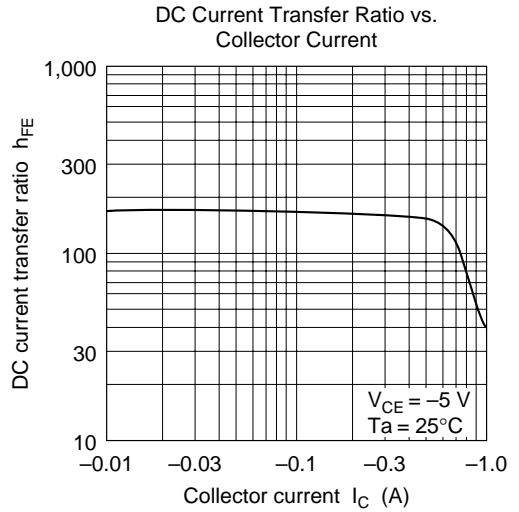
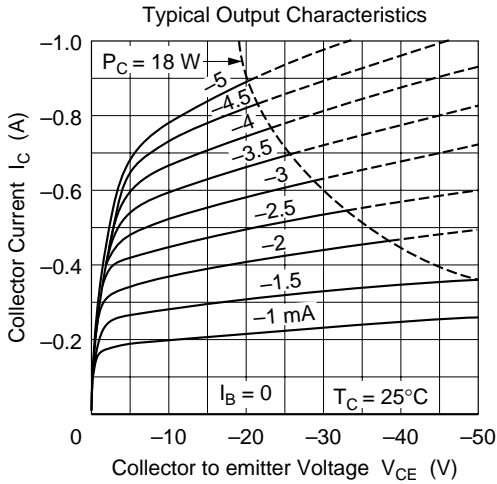
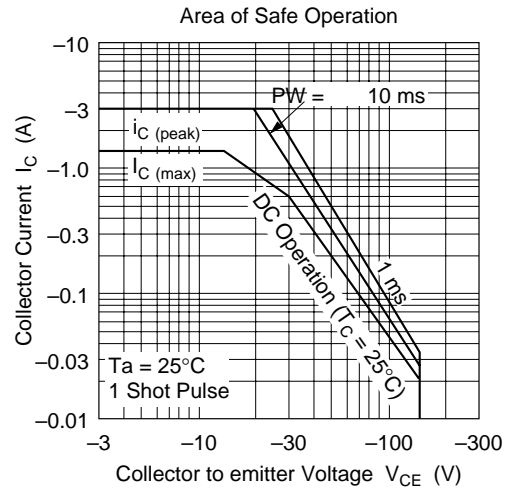
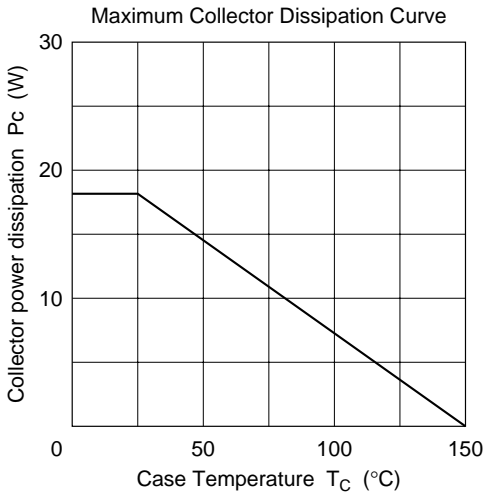
Electrical Characteristics (Ta = 25°C)

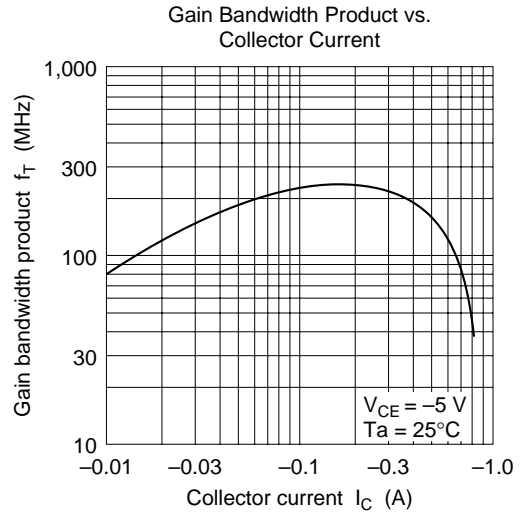
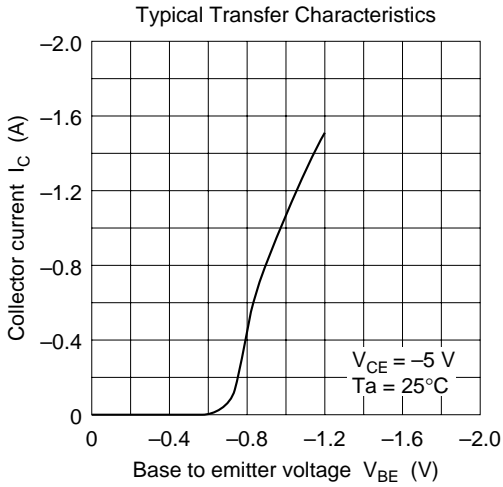
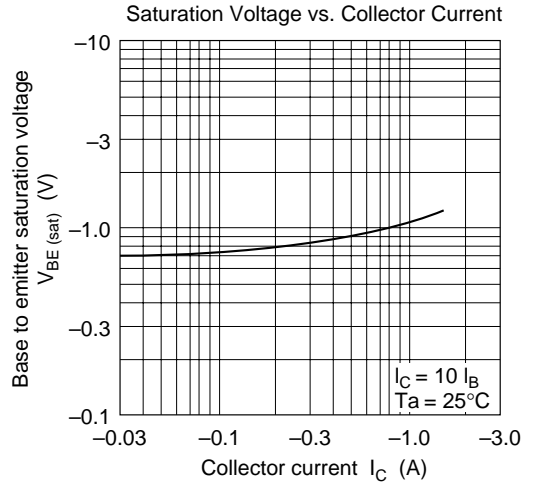
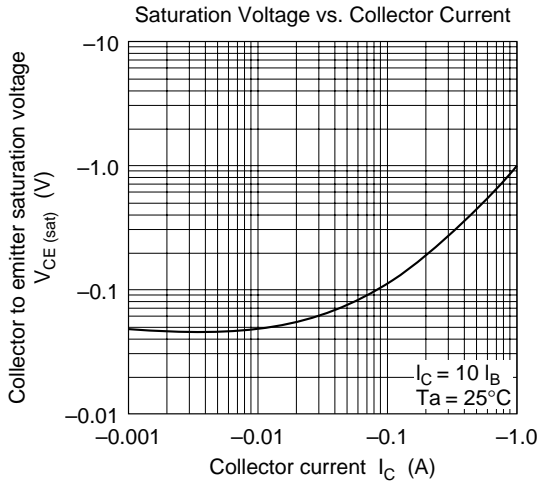
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-180	—	—	V	$I_C = -1 \text{ mA}$, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-160	—	—	V	$I_C = -10 \text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -1 \text{ mA}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	-10	μA	$V_{CB} = -160 \text{ V}$, $I_E = 0$
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	$V_{CE(sat)}$	—	—	-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	$V_{CB} = -10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$

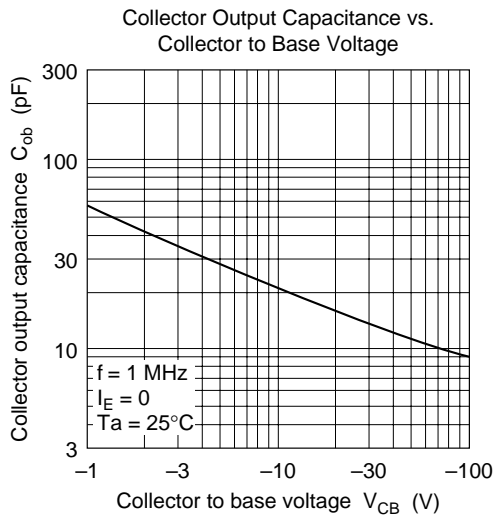
Notes: 1. The 2SB1409(L)/(S) is grouped by h_{FE1} as follows.

B	C
60 to 120	100 to 200

2. Pulse test.

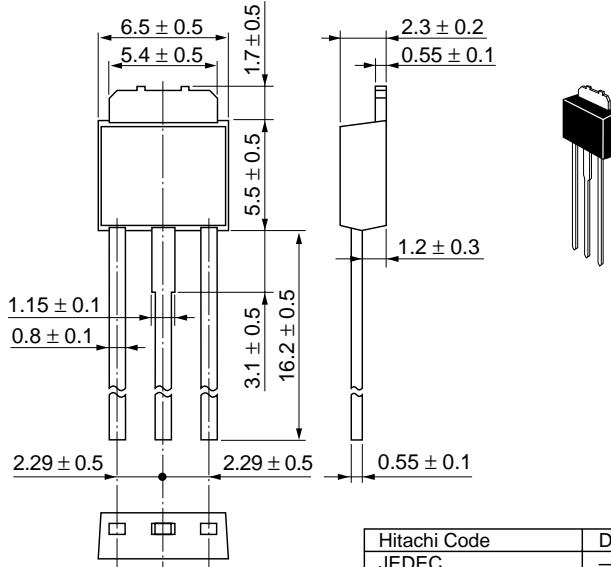






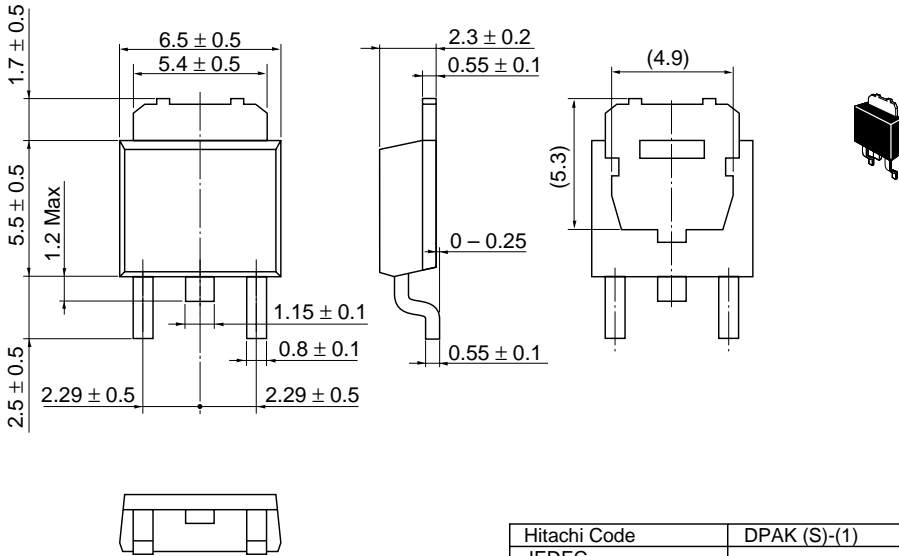
Package Dimensions

Unit: mm



Hitachi Code	DPAK (L)-(1)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.42 g

Unit: mm



Hitachi Code	DPAK (S)-(1)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.28 g

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