

2SD2122 (L)/(S), 2SD2123 (L)/(S)

Silicon NPN Epitaxial
Low Frequency Power Amplifier
Complementary Pair with 2SB1409 (L)/(S)

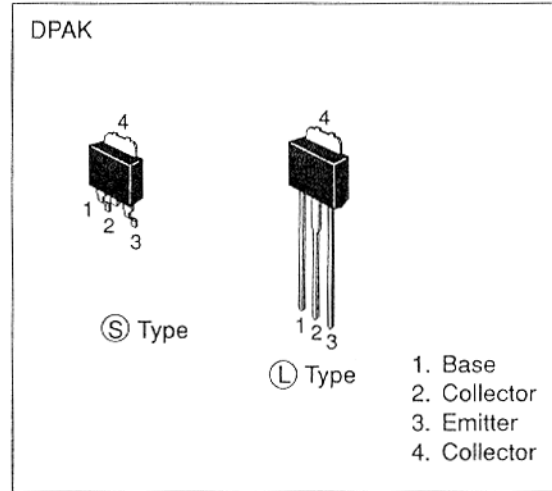
Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	2SD2122 2SD2123		Unit
		(L)/(S)	(L)/(S)	
Collector to base voltage	V_{CBO}	180	180	V
Collector to emitter voltage	V_{CEO}	120	160	V
Emitter to base voltage	V_{EBO}	5	5	V
Collector current	I_C	1.5	1.5	A
Collector peak current	$i_{C(peak)}$	3	3	A
Collector power dissipation	P_C^{*1}	18	18	W
Junction temperature	T_j	150	150	°C
Storage temperature	T_{stg}	-55 to +150	-55 to +150	°C

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

Electrical Characteristics (Ta = 25°C)

Item	Symbol	2SD2122 (L)/(S)			2SD2123 (L)/(S)			Unit	Test condition
		Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	180	—	—	180	—	—	V	$I_C = 1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	160	—	—	V	$I_C = 10 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	5	—	—	V	$I_E = 1 \text{ mA}, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	10	—	—	10	μA	$V_{CB} = 160 \text{ V}, I_E = 0$
DC current transfer ratio	h_{FE1}^{*2}	60	—	200	60	—	200	A	$V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*1}$
	h_{FE2}	30	—	—	30	—	—		$V_{CE} = 5 \text{ V}, I_C = 500 \text{ mA}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1	—	—	1	V	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}^{*1}$
Base to emitter voltage	V_{BE}	—	—	1.5	—	—	1.5	V	$V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*1}$



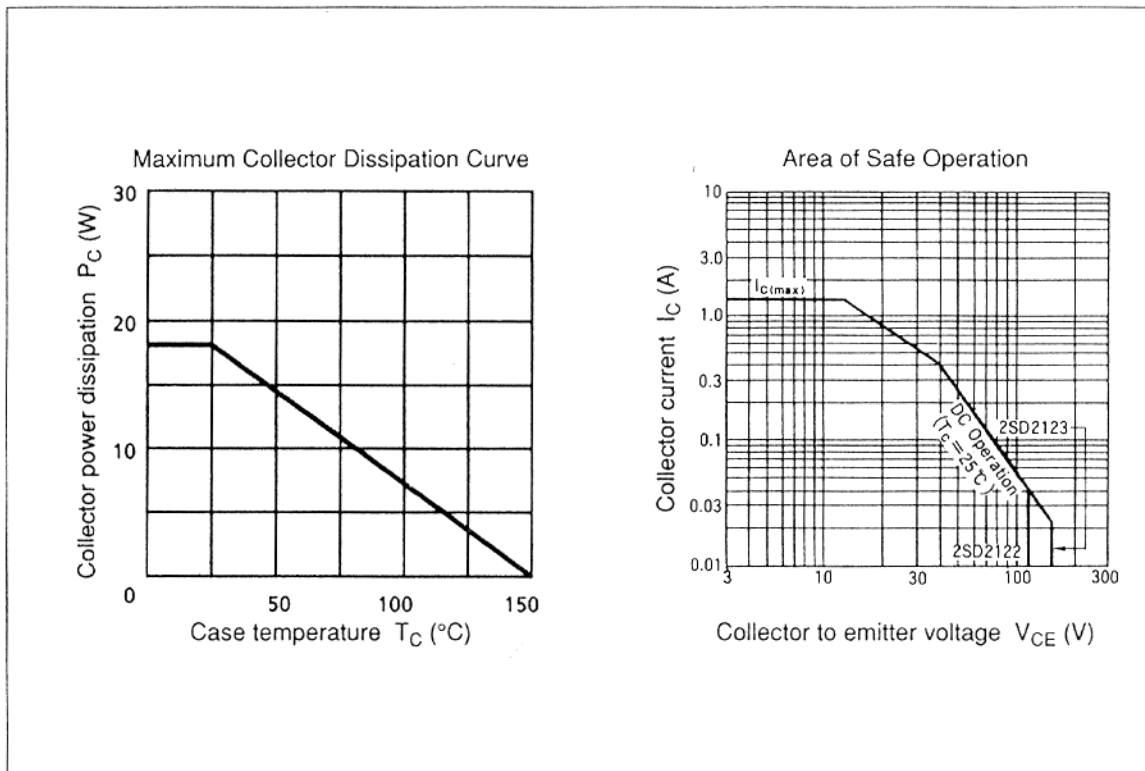
2SD2122(L/S), 2SD2123(L/S)

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

Item	Symbol	2SD2122(L/S)			2SD2123(L/S)			Unit	Test condition
		Min	Typ	Max	Min	Typ	Max		
Gain bandwidth product	f_T	—	180	—	—	180	—	MHz	$V_{CE} = 5\text{ V}, I_C = 150\text{ mA}^{-1}$
Collector output capacitance	C_{ob}	—	14	—	—	14	—	pF	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$

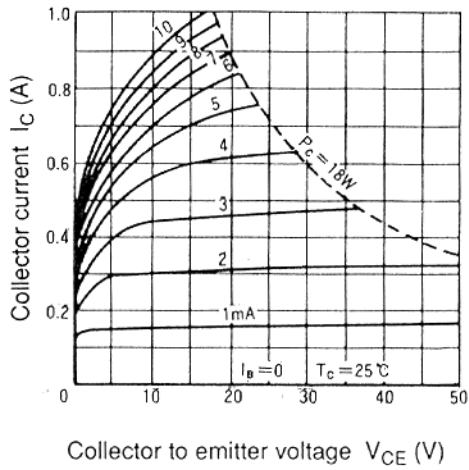
Note: 1. Pulse Test
 2. The 2SD2122(L/S) and 2SD2123(L/S) are grouped by h_{FE1} as follows.

B	C
60 to 120	100 to 200

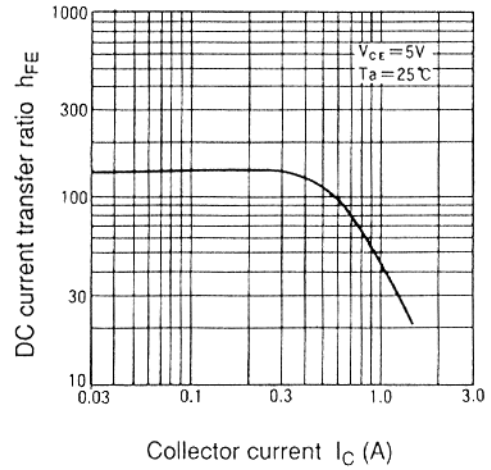


2SD2122(L/S), 2SD2123(L/S)

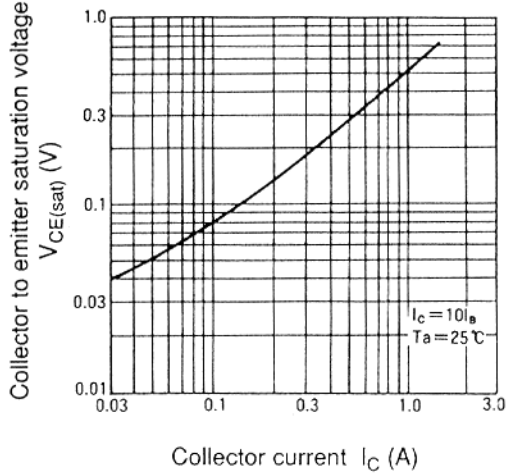
Typical Output Characteristics



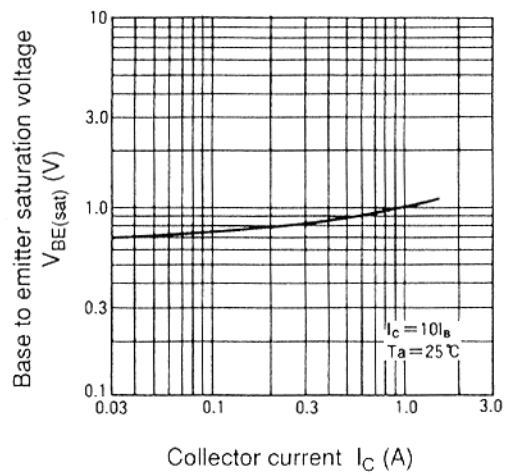
DC Current Transfer Ratio vs. Collector Current



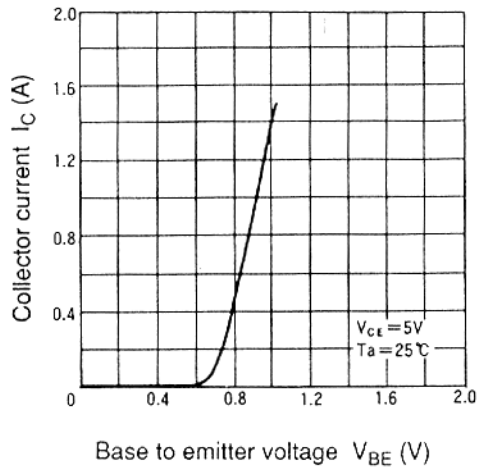
Saturation Voltage vs. Collector Current



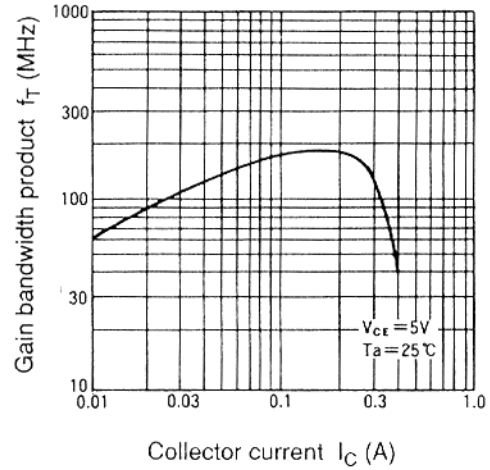
Saturation Voltage vs. Collector Current



Typical Transfer Characteristics



Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage

