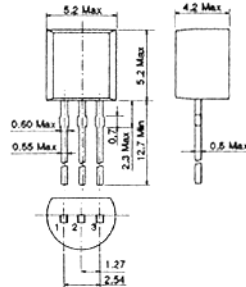


## 2SA1031, 2SA1032

SILICON PNP EPITAXIAL

LOW FREQUENCY LOW NOISE AMPLIFIER

Complementary pair with 2SC458 (LG) and 2SC2310



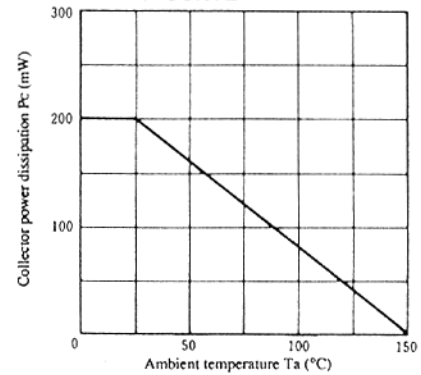
(JEDEC TO-92)

1. Emitter
  2. Collector
  3. Base
- (Dimensions in mm)

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SA1031	2SA1032	Unit
Collector to base voltage	V <sub>CB0</sub>	-30	-55	V
Collector to emitter voltage	V <sub>CE0</sub>	-30	-50	V
Emitter to base voltage	V <sub>EBO</sub>	-5	-5	V
Collector current	I <sub>C</sub>	-100	-100	mA
Emitter current	I <sub>E</sub>	100	100	mA
Collector power dissipation	P <sub>C</sub>	300	300	mW
Junction temperature	T <sub>j</sub>	150	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	-55 to +150	°C

### MAXIMUM COLLECTOR DISSIPATION CURVE



### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

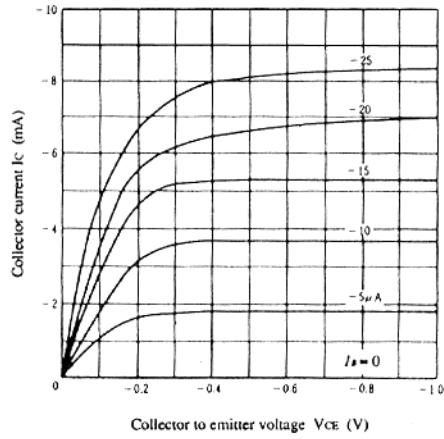
Item	Symbol	Test Condition	2SA1031			2SA1032			Unit
			min.	typ.	max.	min.	typ.	max.	
Collector to base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -10μA, I <sub>E</sub> = 0	-30	—	—	-55	—	—	V
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA, R <sub>BE</sub> = ∞	-30	—	—	-50	—	—	V
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -10μA, I <sub>C</sub> = 0	-5	—	—	-5	—	—	V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = -18V, I <sub>E</sub> = 0	—	—	-0.5	—	—	-0.5	μA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = -2V, I <sub>C</sub> = 0	—	—	-0.5	—	—	-0.5	μA
DC current transfer ratio	h <sub>FE</sub> *	V <sub>CE</sub> = -12V, I <sub>C</sub> = -2mA	100	—	500	100	—	320	
Base to emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = -12V, I <sub>C</sub> = -2mA	—	—	-0.8	—	—	-0.8	V
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -10mA, I <sub>B</sub> = -1mA	—	—	-0.2	—	—	-0.2	V
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = -12V, I <sub>C</sub> = -2mA	200	280	—	200	280	—	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz	—	3.3	4.0	—	3.3	4.0	pF
Noise figure	NF	V <sub>CE</sub> = -6V, I <sub>C</sub> = -0.1mA, R <sub>g</sub> = 500Ω, f = 120Hz	—	—	5	—	—	5	dB

\* The 2SA1031 and 2SA1032 are grouped by h<sub>FE</sub> as follows.

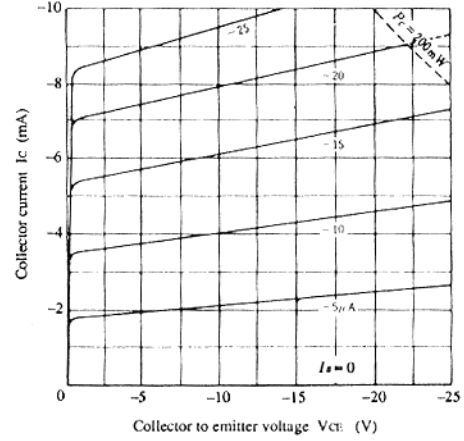
	B	C	D
2SA1031	100 to 200	160 to 320	250 to 500
2SA1032	100 to 200	160 to 320	—

## 2SA1031, 2SA1032

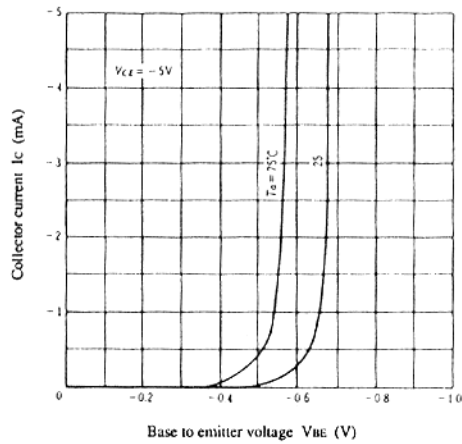
TYPICAL OUTPUT CHARACTERISTICS (1)



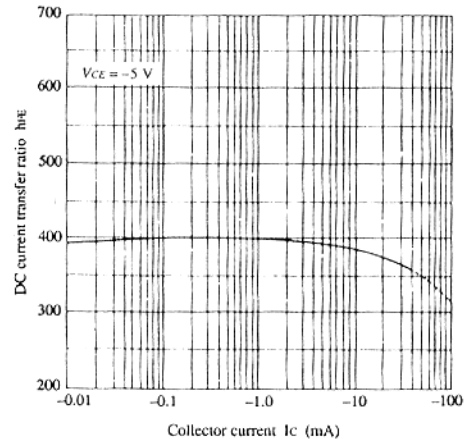
TYPICAL OUTPUT CHARACTERISTICS (2)



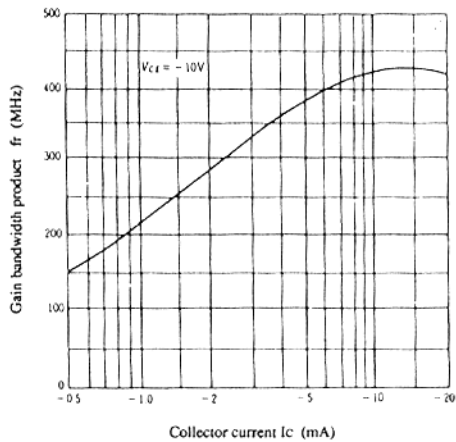
TYPICAL TRANSFER CHARACTERISTICS



DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT

