

# 2SA683, 2SA684

## Silicon PNP epitaxial planer type

For low-frequency power amplification and driver amplification

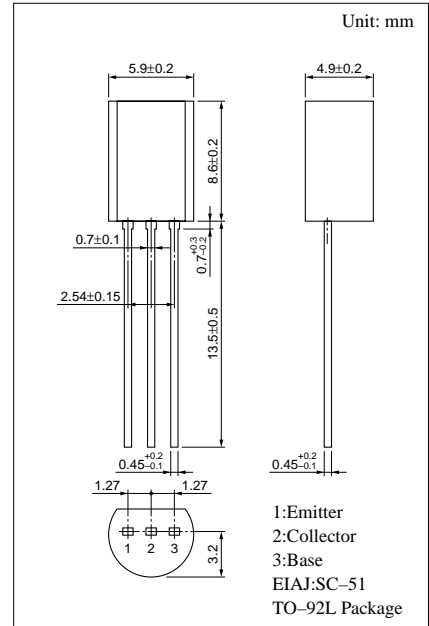
Complementary to 2SC1383 and 2SC1384

### Features

- Complementary pair with 2SC1383 and 2SC1384.
- Allowing supply with the radial taping.

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

Parameter		Symbol	Rated	Unit
Collector to base voltage	2SA683	V <sub>CB0</sub>	-30	V
	2SA684		-60	
Collector to emitter voltage	2SA683	V <sub>CEO</sub>	-25	V
	2SA684		-50	
Emitter to base voltage		V <sub>EBO</sub>	-5	V
Peak collector current		I <sub>CP</sub>	-1.5	A
Collector current		I <sub>C</sub>	-1	A
Collector power dissipation		P <sub>C</sub>	1	W
Junction temperature		T <sub>j</sub>	150	°C
Storage temperature		T <sub>stg</sub>	-55 ~ +150	°C



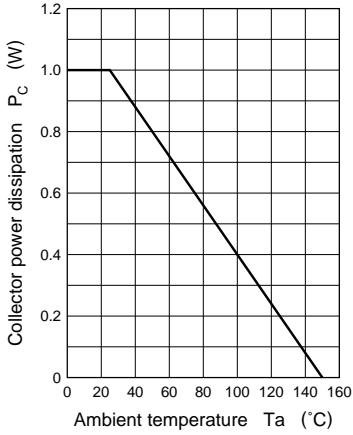
### Electrical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	min	typ	max	Unit
Collector cutoff current		I <sub>CB0</sub>	V <sub>CB</sub> = -20V, I <sub>E</sub> = 0			-0.1	μA
Collector to base voltage	2SA683	V <sub>CB0</sub>	I <sub>C</sub> = -10μA, I <sub>E</sub> = 0	-30			V
	2SA684			-60			
Collector to emitter voltage	2SA683	V <sub>CEO</sub>	I <sub>C</sub> = -2mA, I <sub>B</sub> = 0	-25			V
	2SA684			-50			
Emitter to base voltage		V <sub>EBO</sub>	I <sub>E</sub> = -10μA, I <sub>C</sub> = 0	-5			V
Forward current transfer ratio		h <sub>FE1</sub> *	V <sub>CE</sub> = -10V, I <sub>C</sub> = -500mA	85		340	
		h <sub>FE2</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -1A	50			
Collector to emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> = -500mA, I <sub>B</sub> = -50mA		-0.2	-0.4	V
Base to emitter saturation voltage		V <sub>BE(sat)</sub>	I <sub>C</sub> = -500mA, I <sub>B</sub> = -50mA		-0.85	-1.2	V
Transition frequency		f <sub>T</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 50mA, f = 200MHz		200		MHz
Collector output capacitance		C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz		20	30	pF

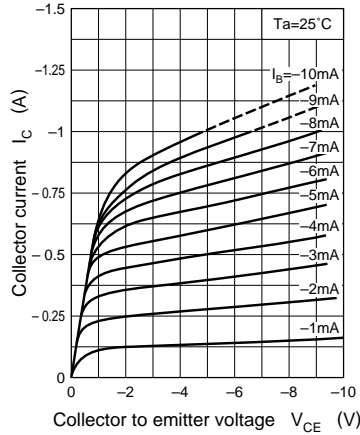
\*h<sub>FE1</sub> Rank classification

Rank	Q	R	S
h <sub>FE1</sub>	85 ~ 170	120 ~ 240	170 ~ 340

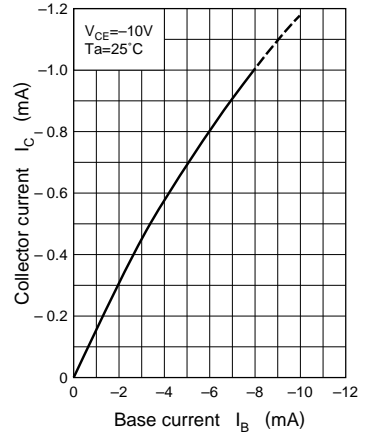
$P_C - T_a$



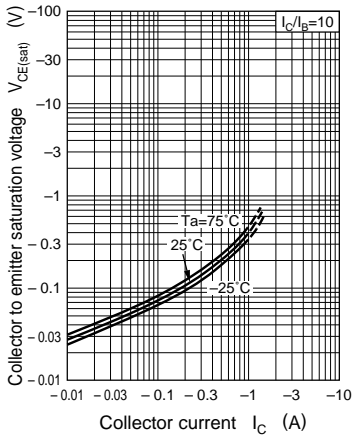
$I_C - V_{CE}$



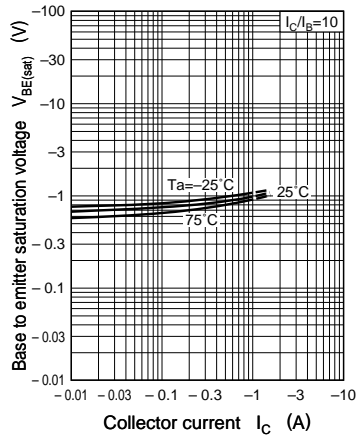
$I_C - I_B$



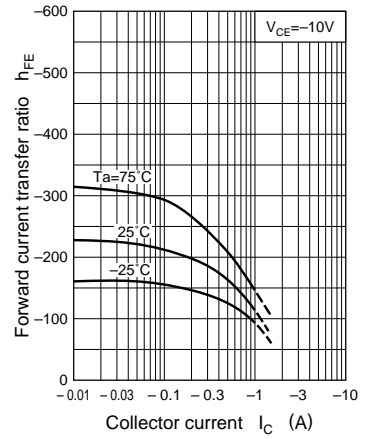
$V_{CE(sat)} - I_C$



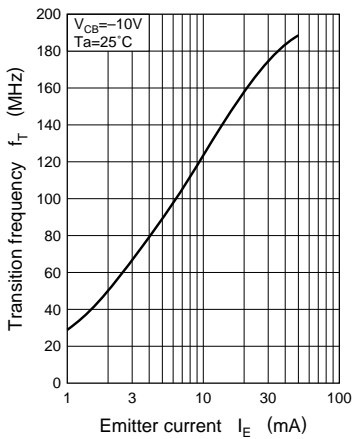
$V_{BE(sat)} - I_C$



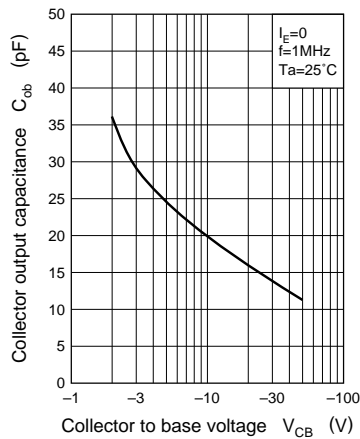
$h_{FE} - I_C$



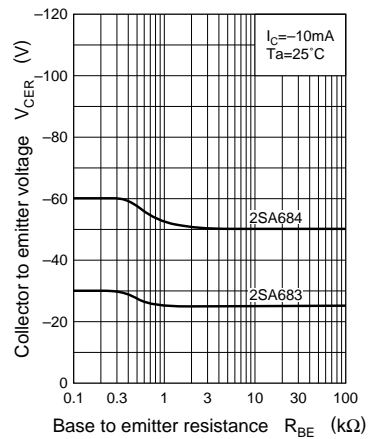
$f_T - I_E$



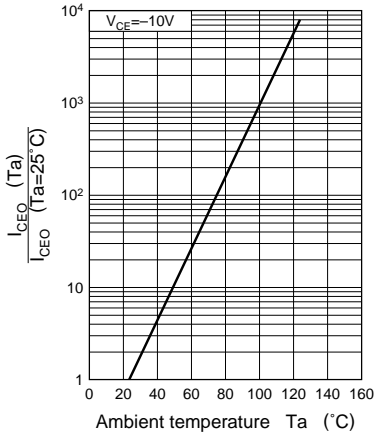
$C_{ob} - V_{CB}$



$V_{CER} - R_{BE}$



$I_{CEO} - T_a$



Area of safe operation (ASO)

