

# 2SA0683, 2SA0684 (2SA683, 2SA684)

## Silicon PNP epitaxial planar type

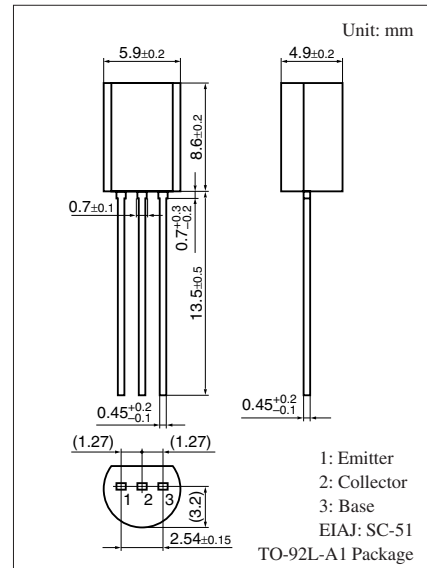
For low-frequency power amplification and driver amplification  
Complementary to 2SC1383, 2SC1384

### ■ Features

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

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	2SA0683	$V_{\text{CBO}}$	-30	V
	2SA0684		-60	
Collector-emitter voltage (Base open)	2SA0683	$V_{\text{CEO}}$	-25	V
	2SA0684		-50	
Emitter-base voltage (Collector open)	$V_{\text{EBO}}$	-5	V	
Collector current	$I_{\text{C}}$	-1	A	
Peak collector current	$I_{\text{CP}}$	-1.5	A	
Collector power dissipation	$P_{\text{C}}$	1	W	
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$	
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$	



### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	2SA0683	$I_{\text{C}} = -10 \mu\text{A}, I_{\text{E}} = 0$	-30			V
	2SA0684		-60			
Collector-emitter voltage (Base open)	2SA0683	$I_{\text{C}} = -2 \text{ mA}, I_{\text{B}} = 0$	-25			V
	2SA0684		-50			
Emitter-base voltage (Collector open)	$V_{\text{EBO}}$	$I_{\text{E}} = -10 \mu\text{A}, I_{\text{C}} = 0$	-5			V
Collector-base cutoff current (Emitter open)	$I_{\text{CBO}}$	$V_{\text{CB}} = -20 \text{ V}, I_{\text{E}} = 0$			-0.1	$\mu\text{A}$
Forward current transfer ratio *1	$h_{\text{FE1}}$ *2	$V_{\text{CE}} = -10 \text{ V}, I_{\text{C}} = -500 \text{ mA}$	85		340	—
	$h_{\text{FE2}}$	$V_{\text{CE}} = -5 \text{ V}, I_{\text{C}} = -1 \text{ A}$	50			
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = -500 \text{ mA}, I_{\text{B}} = -50 \text{ mA}$		-0.2	-0.4	V
Base-emitter saturation voltage	$V_{\text{BE(sat)}}$	$I_{\text{C}} = -500 \text{ mA}, I_{\text{B}} = -50 \text{ mA}$		-0.85	-1.2	V
Transition frequency	$f_{\text{T}}$	$V_{\text{CB}} = -10 \text{ V}, I_{\text{E}} = 50 \text{ mA}, f = 200 \text{ MHz}$		200		MHz
Collector output capacitance (Common base, input open circuited)	$C_{\text{ob}}$	$V_{\text{CB}} = -10 \text{ V}, I_{\text{E}} = 0, f = 1 \text{ MHz}$		20	30	pF

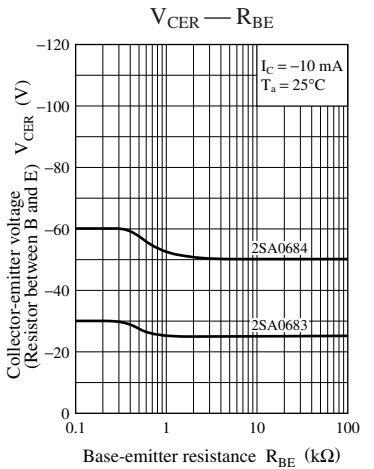
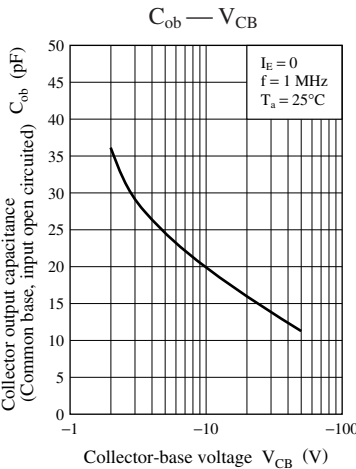
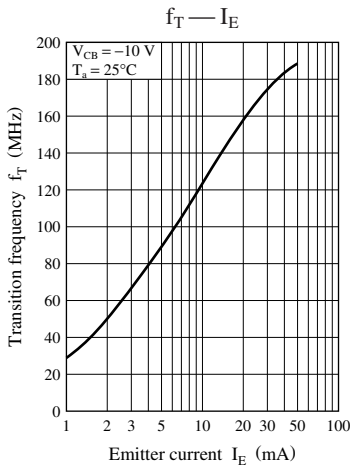
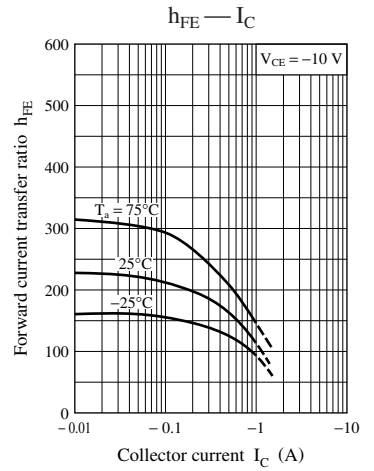
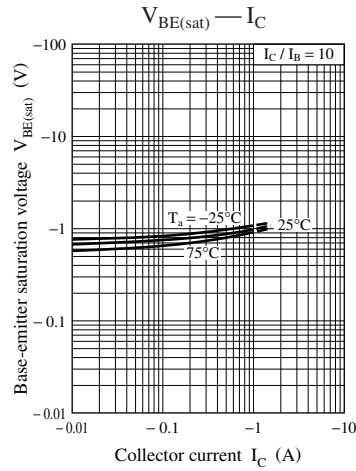
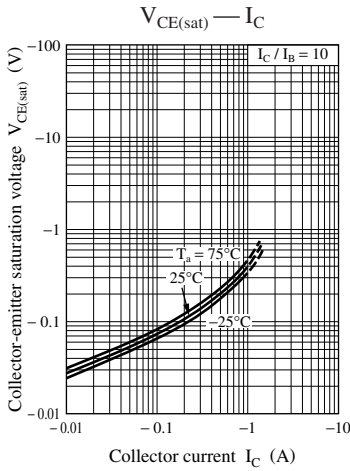
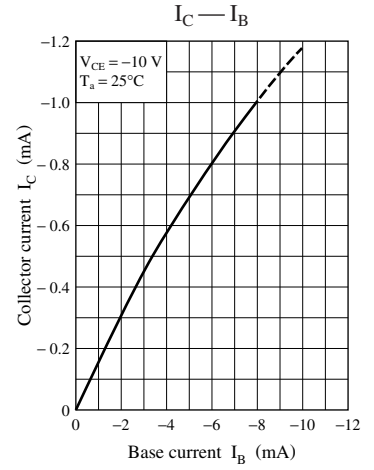
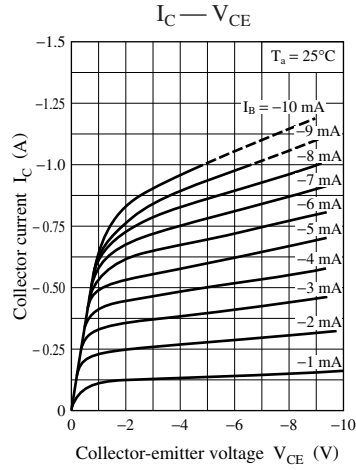
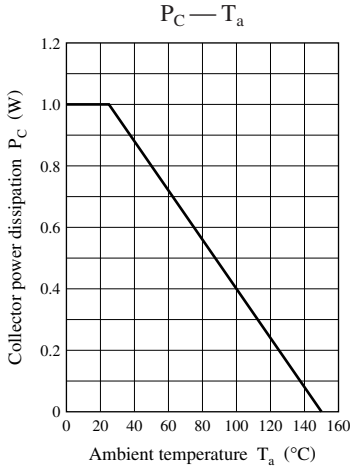
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

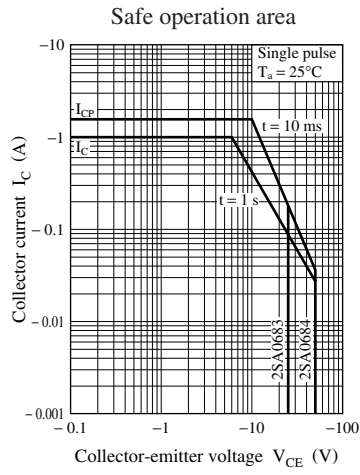
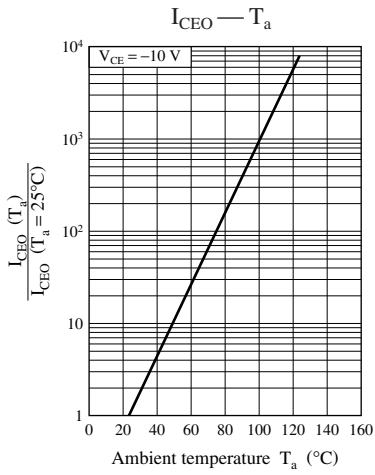
2. \*1: Pulse measurement

\*2: Rank classification

Rank	Q	R	S
$h_{\text{FE}}$	85 to 170	120 to 240	170 to 340

Note) The part numbers in the parenthesis show conventional part number.





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