

2SD874, 2SD874A

Silicon NPN epitaxial planer type

For low-frequency power amplification

Complementary to 2SB766 and 2SB766A

Features

- Large collector power dissipation P_C .
- Low collector to emitter saturation voltage $V_{CE(sat)}$.
- Mini Power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	2SD874	30	V
	2SD874A	60	
Collector to emitter voltage	2SD874	25	V
	2SD874A	50	
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	1.5	A
Collector current	I_C	1	A
Collector power dissipation	P_C^*	1	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

* Printed circuit board: Copper foil area of 1cm^2 or more, and the board thickness of 1.7mm for the collector portion

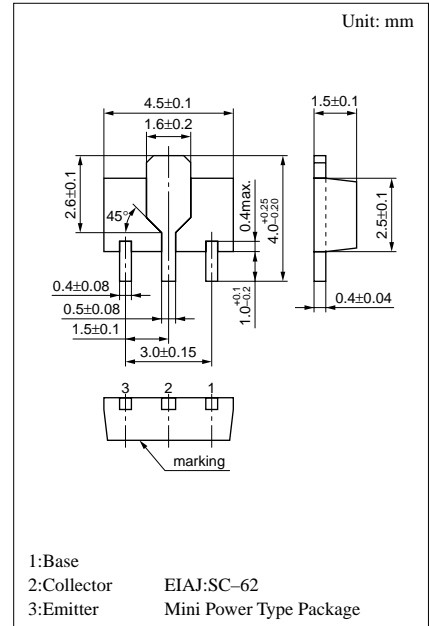
Electrical Characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20\text{V}, I_E = 0$			0.1	μA
Collector to base voltage	2SD874	$I_C = 10\mu\text{A}, I_E = 0$	30			V
	2SD874A		60			
Collector to emitter voltage	2SD874	$I_C = 2\text{mA}, I_B = 0$	25			V
	2SD874A		50			
Emitter to base voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio	h_{FE1}^{*1}	$V_{CE} = 10\text{V}, I_C = 500\text{mA}^{*2}$	85	160	340	
	h_{FE2}	$V_{CE} = 5\text{V}, I_C = 1\text{A}^{*2}$	50			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}^{*2}$		0.2	0.4	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}^{*2}$		0.85	1.2	V
Transition frequency	f_T	$V_{CB} = 10\text{V}, I_E = -50\text{mA}, f = 200\text{MHz}$		200		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$			20	pF

^{*1} h_{FE1} Rank classification

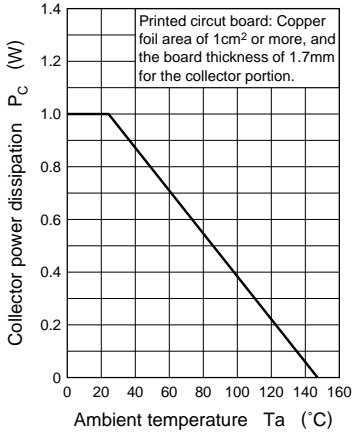
^{*2} Pulse measurement

Rank	Q	R	S
h_{FE1}	85 ~ 170	120 ~ 240	170 ~ 340
Marking	2SD874	ZQ	ZR
Symbol	2SD874A	YQ	YR

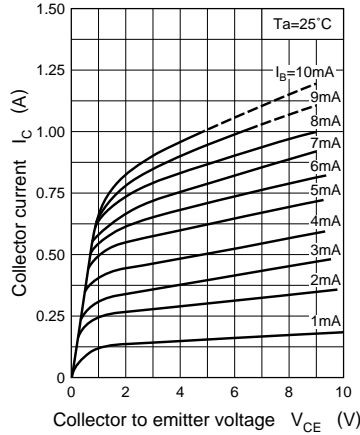


Marking symbol : Z(2SD874)
Y(2SD874A)

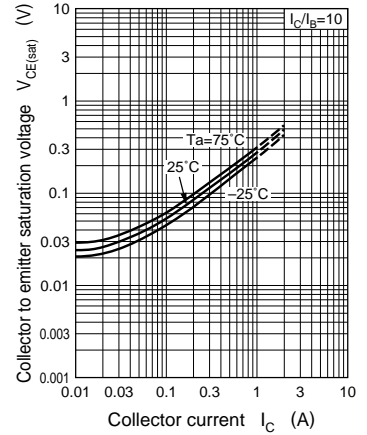
$P_C - T_a$



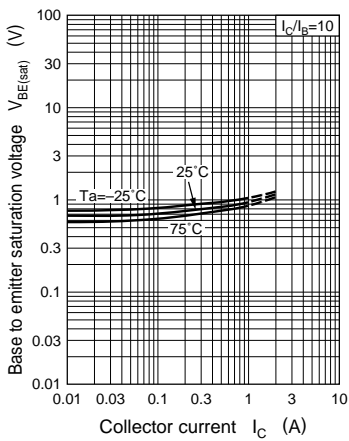
$I_C - V_{CE}$



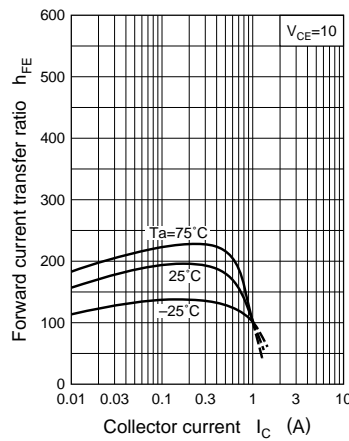
$V_{CE(sat)} - I_C$



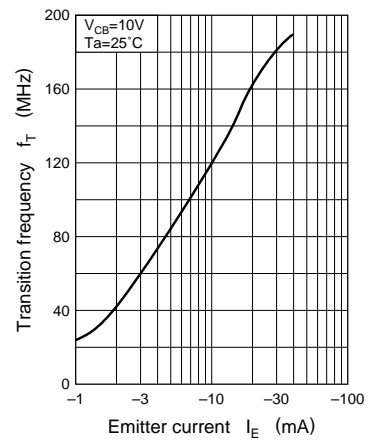
$V_{BE(sat)} - I_C$



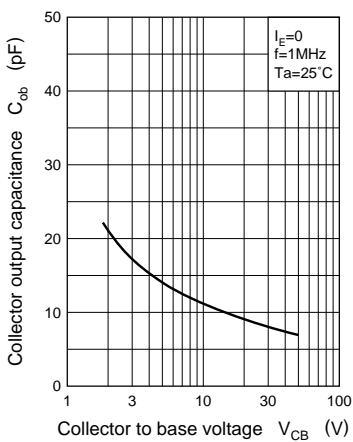
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)

