

# 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 (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	2SD874 2SD874A	30 60	V
Collector to emitter voltage	2SD874 2SD874A	25 50	V
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	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C

\* Printed circuit board: Copper foil area of 1cm<sup>2</sup> or more, and the board thickness of 1.7mm for the collector portion

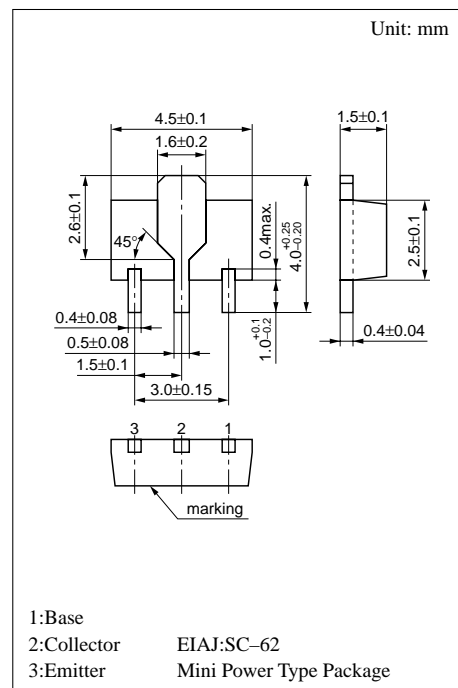
### Electrical Characteristics (Ta=25°C)

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

\*1  $h_{FE1}$  Rank classification

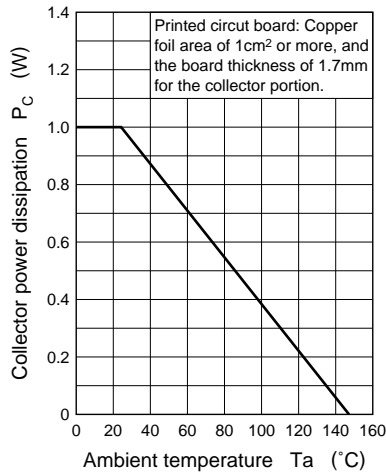
\*2 Pulse measurement

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

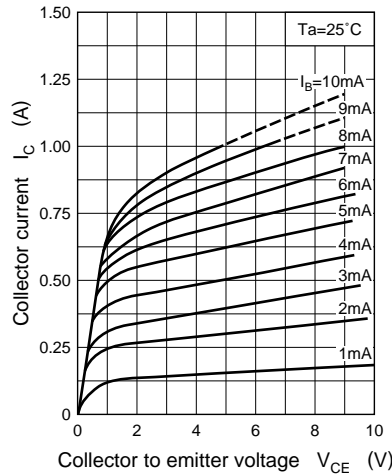


Marking symbol : Z(2SD874)  
Y(2SD874A)

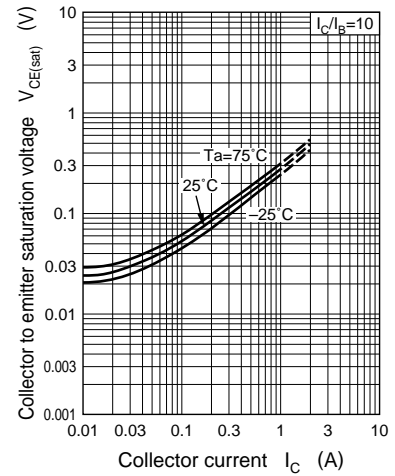
$P_C - T_a$



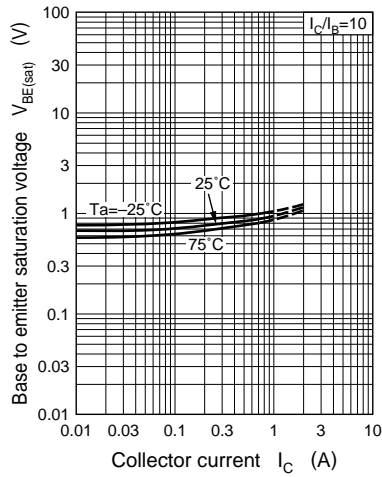
$I_C - V_{CE}$



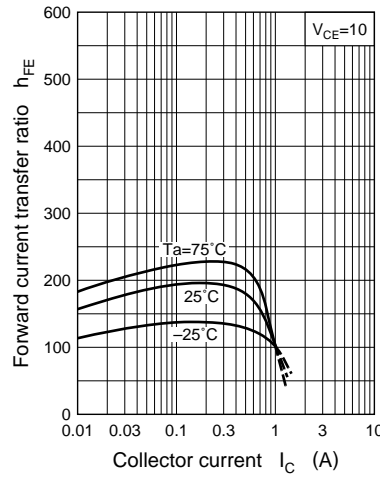
$V_{CE(sat)} - I_C$



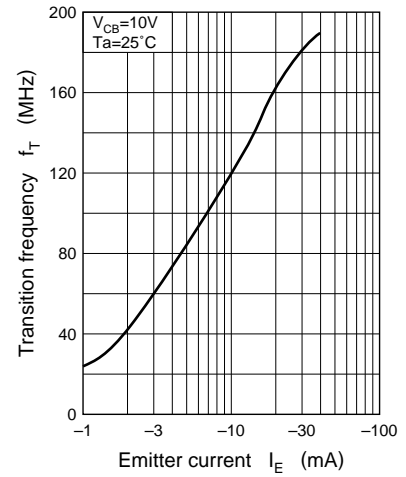
$V_{BE(sat)} - I_C$



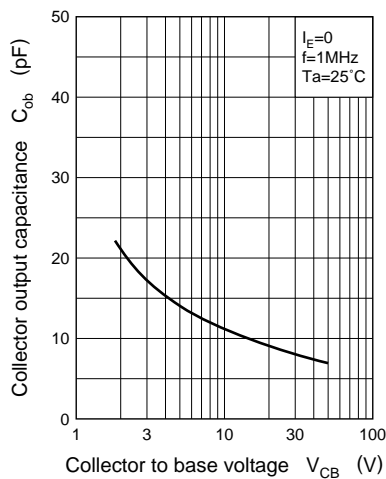
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)

