

# 2SD1119

## Silicon NPN epitaxial planer type

For low-frequency power amplification

### Features

- Low collector to emitter saturation voltage  $V_{CE(sat)}$ .
- Satisfactory operation performances at high efficiency with the low-voltage power supply.
- Mini 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	$V_{CBO}$	40	V
Collector to emitter voltage	$V_{CEO}$	25	V
Emitter to base voltage	$V_{EBO}$	7	V
Peak collector current	$I_{CP}$	5	A
Collector current	$I_C$	3	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

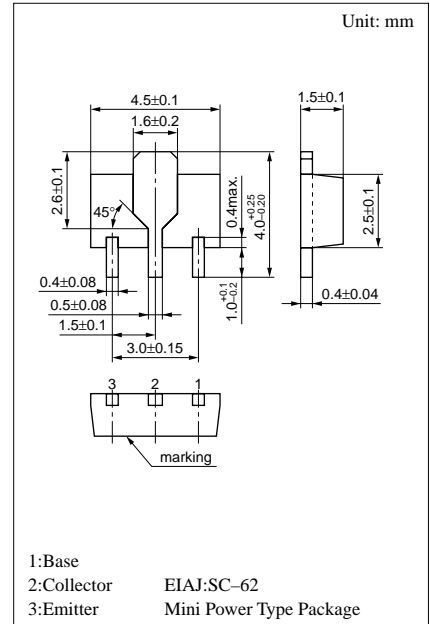
### Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 10V, I_E = 0$			0.1	μA
Collector to emitter voltage	$V_{CEO}$	$I_C = 1mA, I_B = 0$	25			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\mu A, I_C = 0$	7			V
Forward current transfer ratio	$h_{FE1}^{*1}$	$V_{CE} = 2V, I_C = 0.5A^{*2}$	230		600	
	$h_{FE2}$	$V_{CE} = 2V, I_C = 2A^{*2}$	150			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3A, I_B = 0.1A^{*2}$			1	V
Transition frequency	$f_T$	$V_{CB} = 6V, I_E = -50mA, f = 200MHz$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 20V, I_E = 0, f = 1MHz$			50	pF

\*2 Pulse measurement

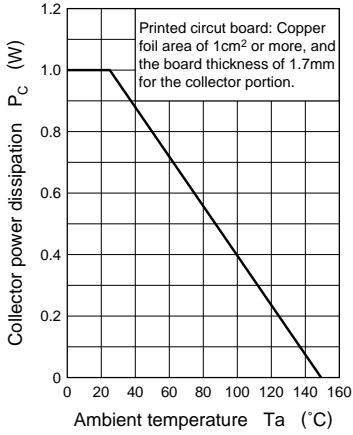
\*1  $h_{FE1}$  Rank classification

Rank	Q	R
$h_{FE1}$	230 ~ 380	340 ~ 600
Marking Symbol	TQ	TR

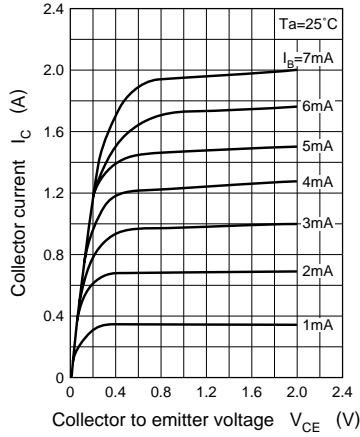


Marking symbol : T

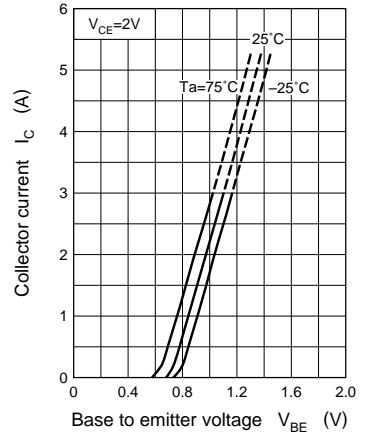
$P_C - T_a$



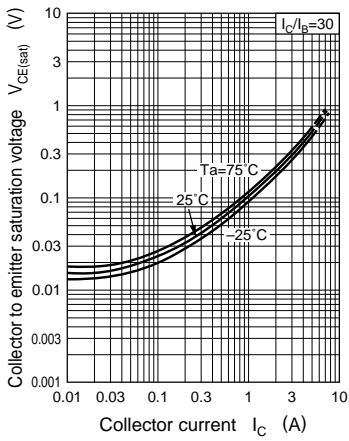
$I_C - V_{CE}$



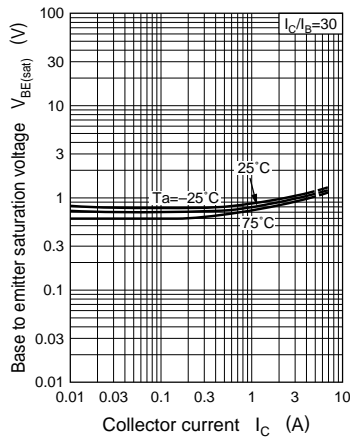
$I_C - V_{BE}$



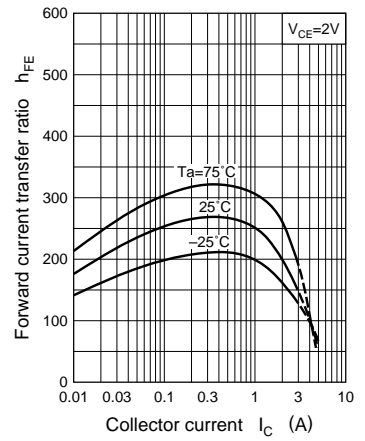
$V_{CE(sat)} - I_C$



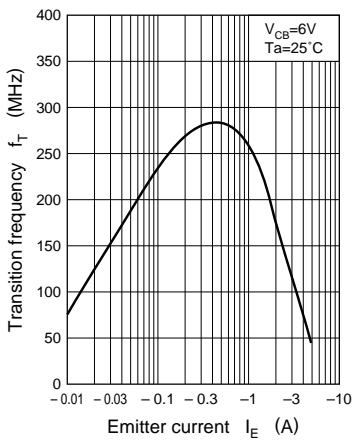
$V_{BE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

