

2SA2009

Silicon PNP epitaxial planer type

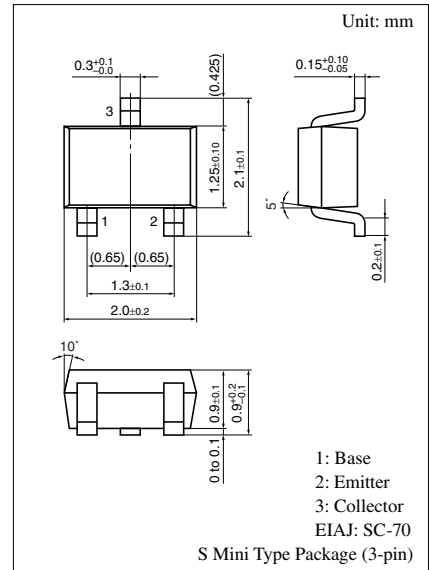
For low-frequency high breakdown voltage amplification

■ Features

- High collector to emitter voltage V_{CEO}
- Low noise voltage NV

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	-120	V
Collector to emitter voltage	V_{CEO}	-120	V
Emitter to base voltage	V_{EBO}	-5	V
Peak collector current	I_{CP}	-50	mA
Collector current	I_C	-20	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



Marking Symbol: AR

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -50\text{ V}, I_E = 0$			-100	nA
	I_{CEO}	$V_{CE} = -50\text{ V}, I_B = 0$			-1	μA
Collector to base voltage	V_{CBO}	$I_C = -10\ \mu\text{A}, I_E = 0$	-120			V
Collector to emitter voltage	V_{CEO}	$I_C = -1\ \text{mA}, I_B = 0$	-120			V
Emitter to base voltage	V_{EBO}	$I_E = -10\ \mu\text{A}, I_C = 0$	-5			V
Forward current transfer ratio *	h_{FE}	$V_{CE} = -5\ \text{V}, I_C = -2\ \text{mA}$	180		700	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -20\ \text{mA}, I_B = -2\ \text{mA}$			-0.6	V
Noise voltage	NV	$V_{CE} = -40\ \text{V}, I_C = -1\ \text{mA}, G_v = 80\ \text{dB}$ $R_g = 100\ \text{k}\Omega, \text{Function} = \text{FLAT}$		130		mV
Transition frequency	f_T	$V_{CB} = -5\ \text{V}, I_E = 2\ \text{mA}, f = 200\ \text{MHz}$		120		MHz

Note) *: Rank classification

Rank	R	S	T
h_{FE}	180 to 360	260 to 520	360 to 700