

UNR221W

Silicon NPN epitaxial planer type

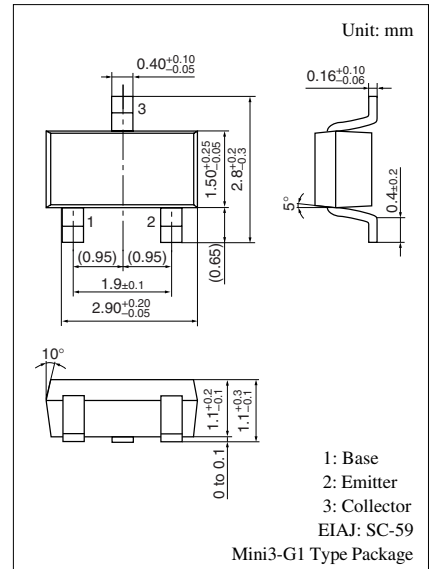
For digital circuit

■ Features

- $R_{EB} = 100 \text{ k}\Omega$, without R_B , built-in high-resistor between emitter and base.
- Mini-type package, allowing downsizing of the equipment.
- Allowing automatic insertion through tape packing.

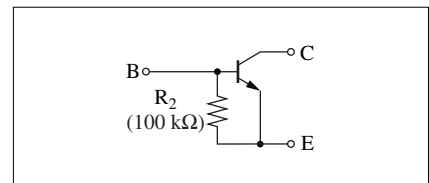
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	50	V
Collector to emitter voltage	V_{CEO}	50	V
Collector current	I_C	100	mA
Total power dissipation	P_T	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



Marking Symbol: 9F

Internal Connection



■ 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}	$V_{CB} = 50 \text{ V}, I_E = 0$			0.1	μA
	I_{CEO}	$V_{CE} = 50 \text{ V}, I_B = 0$			0.5	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 6 \text{ V}, I_C = 0$			100	μA
Collector to base voltage	V_{CBO}	$I_C = 10 \mu\text{A}, I_E = 0$	50			V
Collector to emitter voltage	V_{CEO}	$I_C = 2 \text{ mA}, I_B = 0$	50			V
Forward current transfer ratio	h_{FE}	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	80			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 0.3 \text{ mA}$			0.25	V
Input resistance	R_2		-30%	100	+30%	k Ω
Transition frequency	f_T	$V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$		100		MHz

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