

UNR31AM

Silicon PNP epitaxial planar transistor

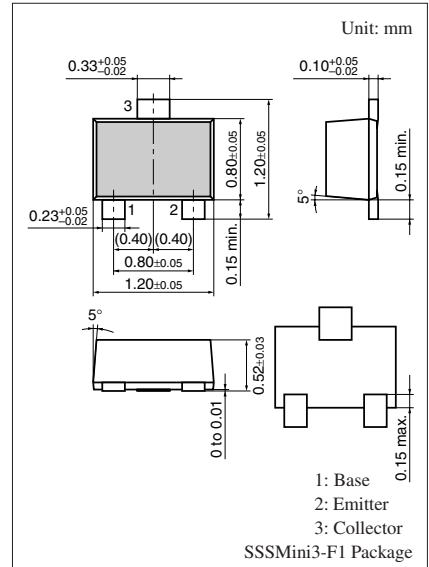
For digital circuits

■ Features

- Suitable for high density package and downsizing of the equipment
- Contribute to low power consumption

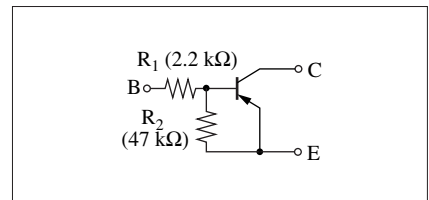
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter		Symbol	Rating	Unit
Rating of element	Collector to base voltage	V_{CBO}	-50	V
	Collector to emitter voltage	V_{CEO}	-50	V
	Collector current	I_C	-80	mA
Overall	Total power dissipation	P_T	100	mW
	Junction temperature	T_j	125	$^\circ\text{C}$
	Storage temperature	T_{stg}	-55 to +125	$^\circ\text{C}$



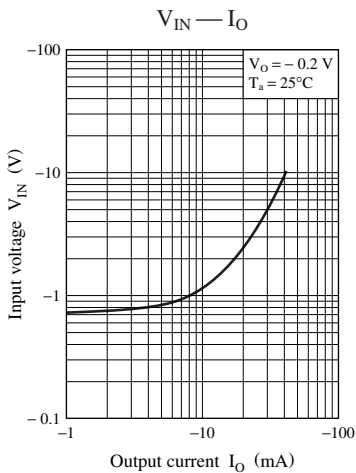
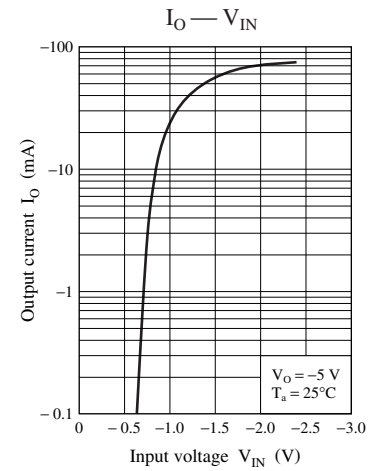
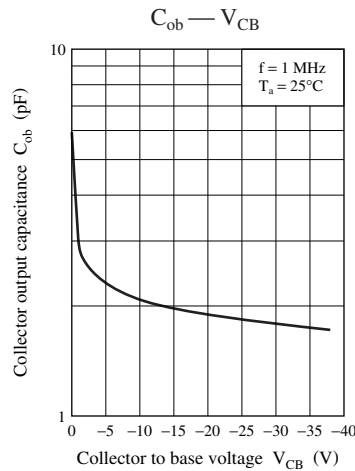
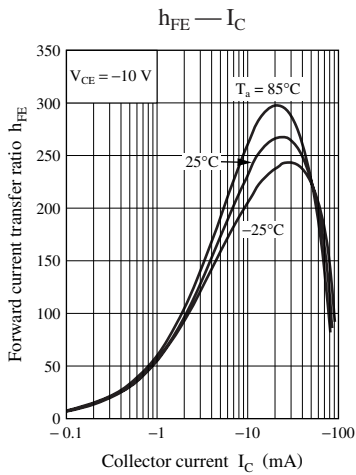
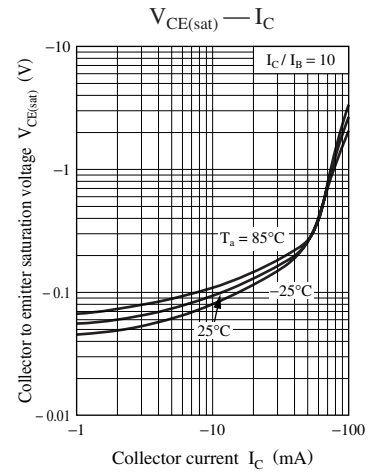
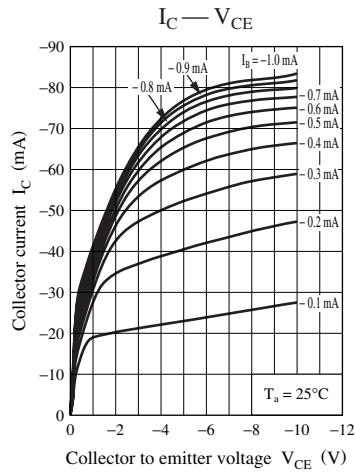
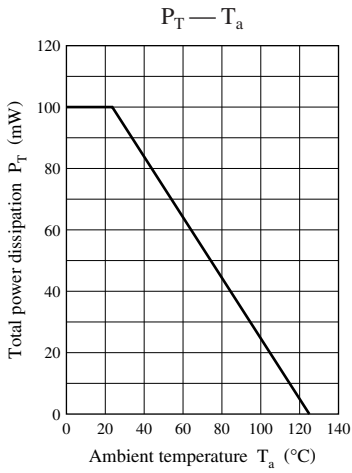
Marking Symbol: EF

Internal Connection



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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
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
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	
Emitter cutoff current	I_{EBO}	$V_{EB} = -6 \text{ V}, I_C = 0$			-0.2	mA
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
High level output voltage	V_{OH}	$V_{CC} = -5 \text{ V}, V_B = -0.5 \text{ V}, R_L = 1 \text{ k}\Omega$	-4.9			V
Low level output voltage	V_{OL}	$V_{CC} = -5 \text{ V}, V_B = -2.5 \text{ V}, R_L = 1 \text{ k}\Omega$			-0.2	V
Input resistance	R_1		-30%	2.2	+30%	k Ω
Resistance ratio	R_1 / R_2		0.037	0.047	0.057	—
Gain bandwidth product	f_T	$V_{CB} = -10 \text{ V}, I_E = 1 \text{ mA}, f = 200 \text{ MHz}$		80		MHz



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