

# UNR2154 (UN2154)

## Silicon PNP epitaxial planar type

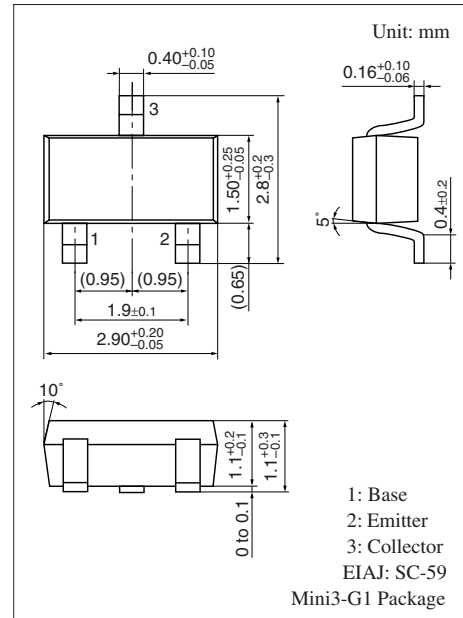
For digital circuits

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts
- Mini type package allowing easy automatic insertion through tape packing and magazine packing

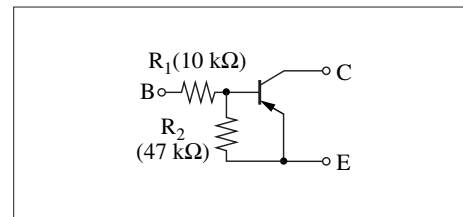
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	-30	V
Collector-emitter voltage (Base open)	$V_{CEO}$	-30	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: EV

Internal Connection

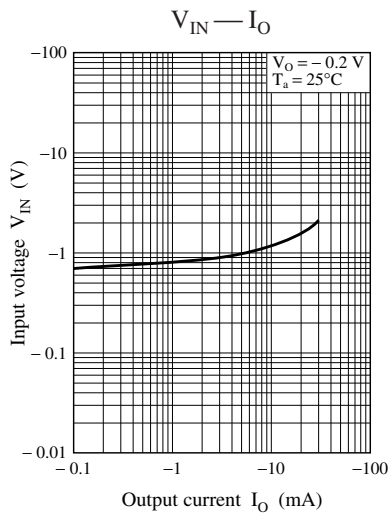
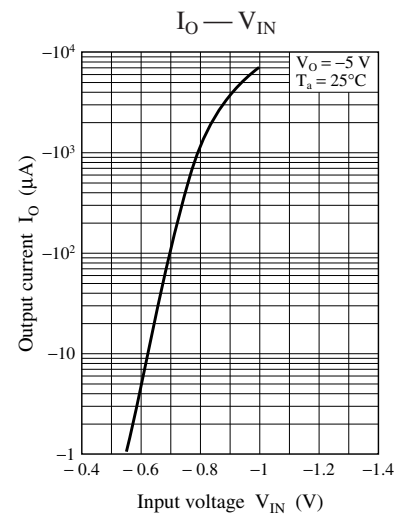
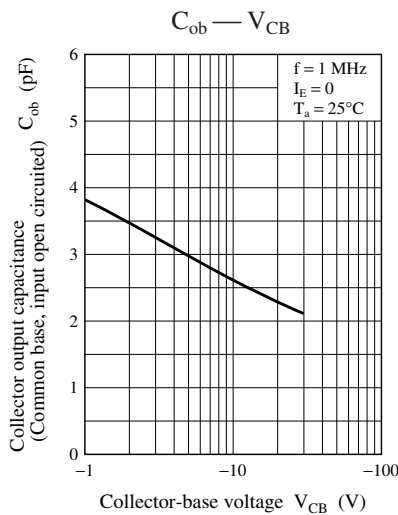
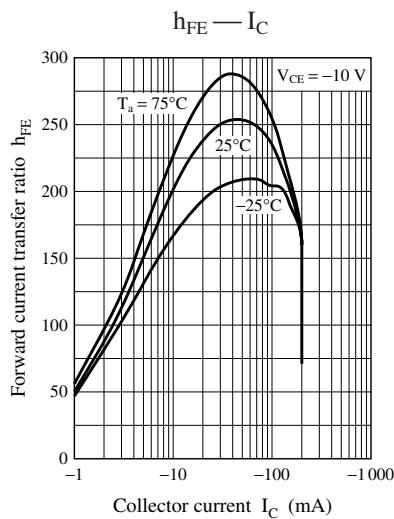
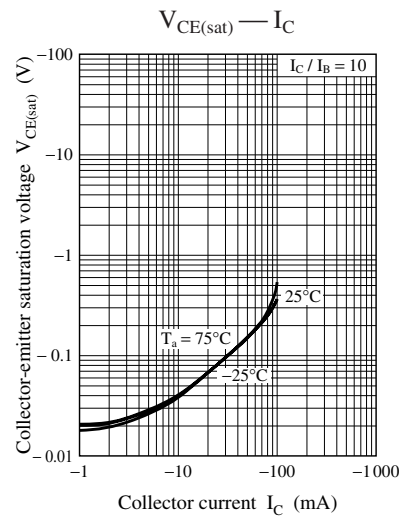
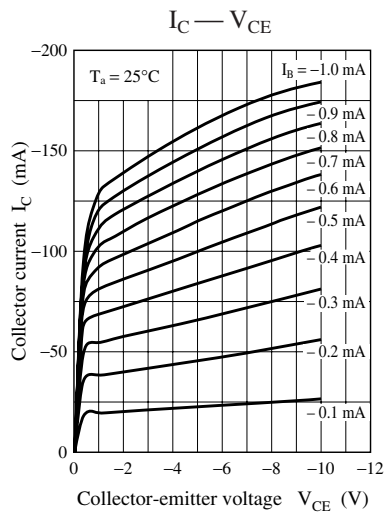
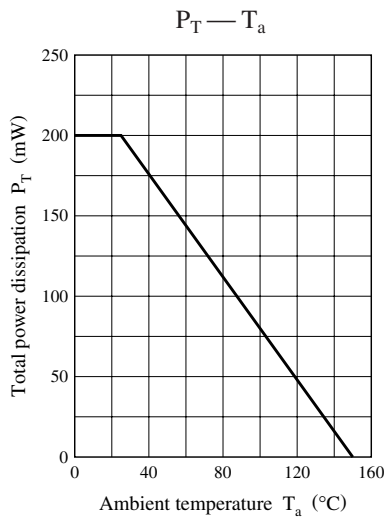


### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = -10 \mu\text{A}$ , $I_E = 0$	-30			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = -2 \text{mA}$ , $I_B = 0$	-30			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = -30 \text{V}$ , $I_E = 0$			-0.1	$\mu\text{A}$
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = -30 \text{V}$ , $I_B = 0$			-0.5	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = -3 \text{V}$ , $I_C = 0$			-0.1	mA
Forward current transfer ratio	$h_{FE}$	$V_{CE} = -10 \text{V}$ , $I_C = -5 \text{mA}$	80			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50 \text{mA}$ , $I_B = -0.33 \text{mA}$		-0.5	-1.2	V
Output voltage high-level	$V_{OH}$	$V_{CC} = -5 \text{V}$ , $V_B = -0.5 \text{V}$ , $R_L = 1 \text{k}\Omega$	-4.9			V
Output voltage low-level	$V_{OL}$	$V_{CC} = -5 \text{V}$ , $V_B = -2.5 \text{V}$ , $R_L = 1 \text{k}\Omega$			-0.2	V
Transition frequency	$f_T$	$V_{CB} = -10 \text{V}$ , $I_E = 1 \text{mA}$ , $f = 200 \text{MHz}$		80		MHz
Input resistance	$R_1$		-30%	10	+30%	$\text{k}\Omega$
Resistance ratio	$R_1/R_2$			0.213		

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

Note) The part numbers in the parenthesis show conventional part number.



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