

# UP01214G

## Silicon NPN epitaxial planar type

For switching circuits

For digital circuits

### ■ Features

- Two elements incorporated into one package  
(Emitter-coupled transistors with built-in resistor)
- SSMINI type package, reduction of the mounting area and assembly cost

### ■ Basic Part Number

- UNR2214 × 2

### ■ Package

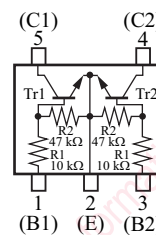
- Code  
SSMini5-F3
- Pin Name  
1: Base (Tr1)                      4: Collector (Tr2)  
2: Emitter                              5: Collector (Tr1)  
3: Baser (Tr2)

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

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

### ■ Marking Symbol: 9H

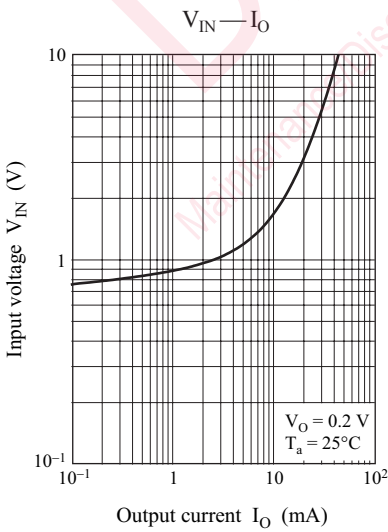
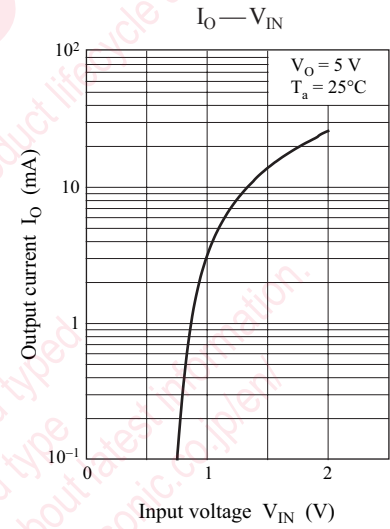
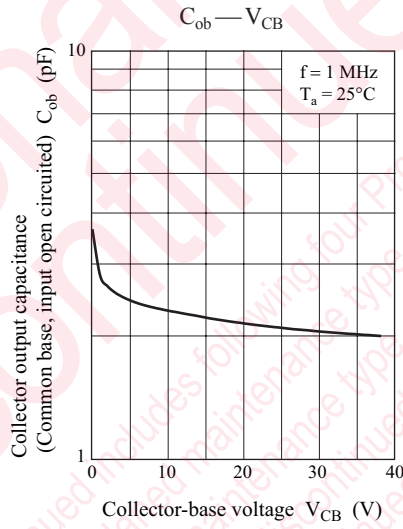
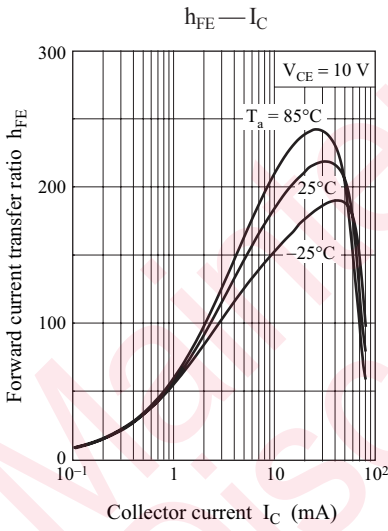
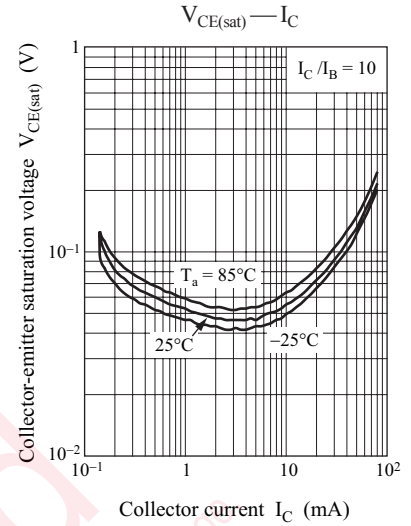
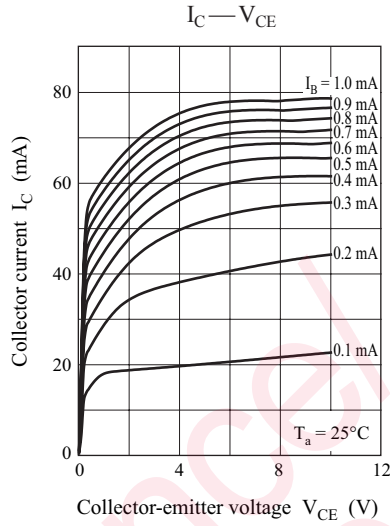
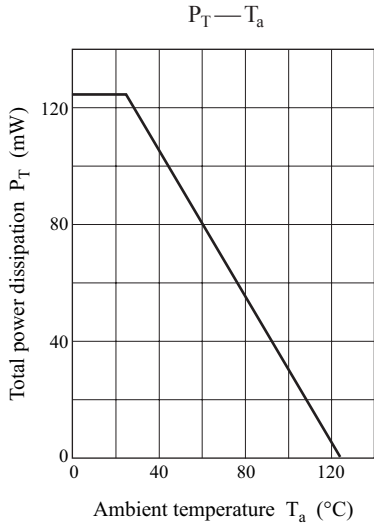
### ■ Internal Connection



### ■ 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)	$V_{CBO}$	$I_C = 10 \mu\text{A}, I_E = 0$	50			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 2 \text{ mA}, I_B = 0$	50			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 50 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 50 \text{ V}, I_B = 0$			0.5	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 6 \text{ V}, I_C = 0$			0.2	mA
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	80			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 0.3 \text{ mA}$			0.25	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
Input resistance	$R_1$		-30%	10	+30%	$\text{k}\Omega$
Resistance ratio	$R_1 / R_2$		0.17	0.21	0.25	—
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$		150		MHz

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





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