UP04211G

Silicon NPN epitaxial planar type

For switching/digital circuits

■ Features

- Two elements incorporated into one package (Transistors with built-in resistor)
- Reduction of the mounting area and assembly cost by one half

■ Basic Part Number

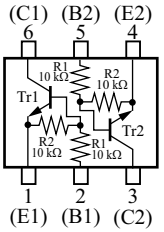
- UNR2210 × 2

■ Package

- Code
  SSMini6-F2
- Pin Name
  1: Emitter (Tr1) 4: Emitter (Tr2)
  2: Base (Tr1) 5: Base (Tr2)
  3: Collector (Tr2) 6: Collector (Tr1)

■ Marking Symbol: 9V

■ Internal Connection



■ Absolute Maximum Ratings T_a = 25°C

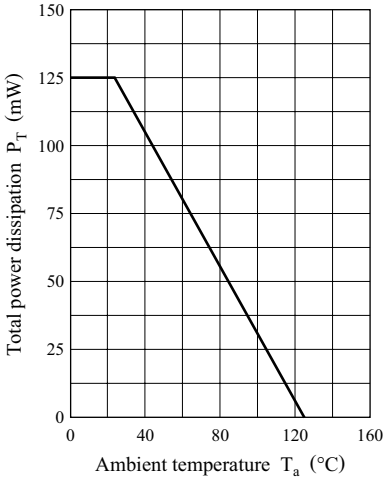
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	50	V
Collector-emitter voltage (Base open)	V_{CEO}	50	V
Collector current	I_C	100	mA
Total power dissipation	P_T	125	mW
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	–55 to +125	°C

■ Electrical Characteristics T_a = 25°C±3°C

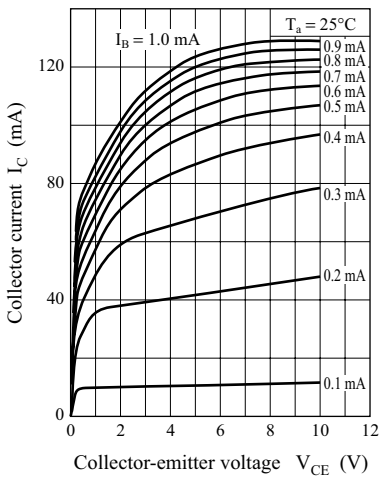
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 10 µA, I_E = 0	50			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 2 mA, I_B = 0	50			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 50 V, I_E = 0			0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 50 V, I_B = 0			0.5	µA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 6 V, I_C = 0			0.5	mA
Forward current transfer ratio	h_{FE}	V_{CE} = 10 V, I_C = 5 mA	35			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 10 mA, I_B = 0.3 mA			0.25	V
Output voltage high-level	V_{OH}	V_{CC} = 5 V, V_B = 0.5 V, R_L = 1 kΩ	4.9			V
Output voltage low-level	V_{OL}	V_{CC} = 5 V, V_B = 2.5 V, R_L = 1 kΩ			0.2	V
Input resistance	R_1		–30%	10	+30%	kΩ
Resistance ratio	R_1 / R_2		0.8	1.0	1.2	—
Transition frequency	f_T	V_{CB} = 10 V, I_E = –2 mA, f = 200 MHz		150		MHz

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

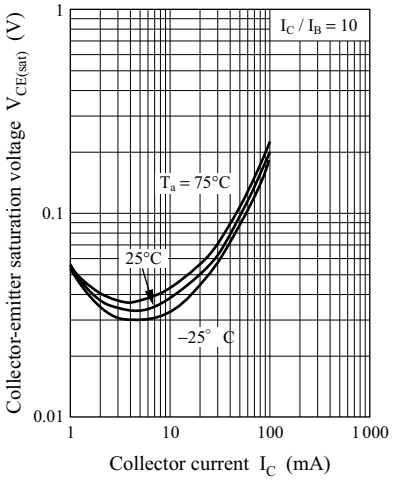
P_T — T_a



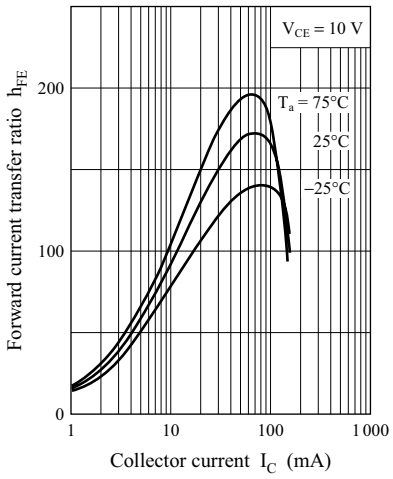
I_C — V_{CE}



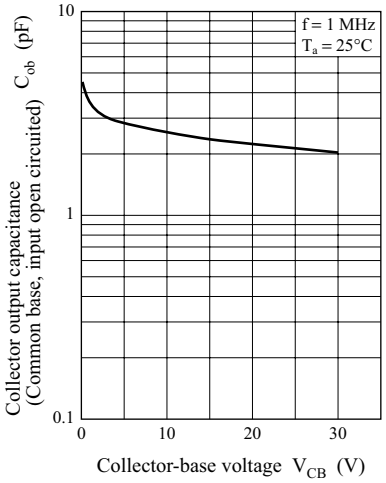
$V_{CE(sat)}$ — I_C



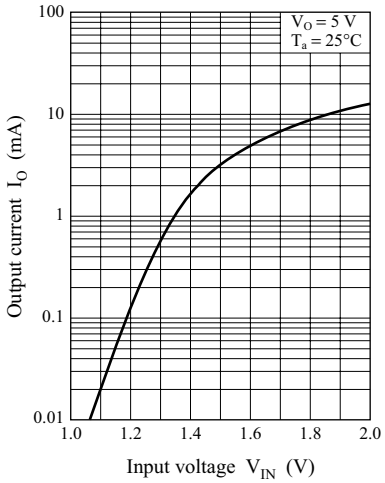
h_{FE} — I_C



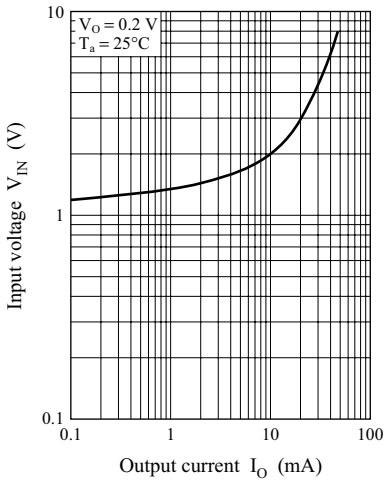
C_{ob} — V_{CB}



I_O — V_{IN}

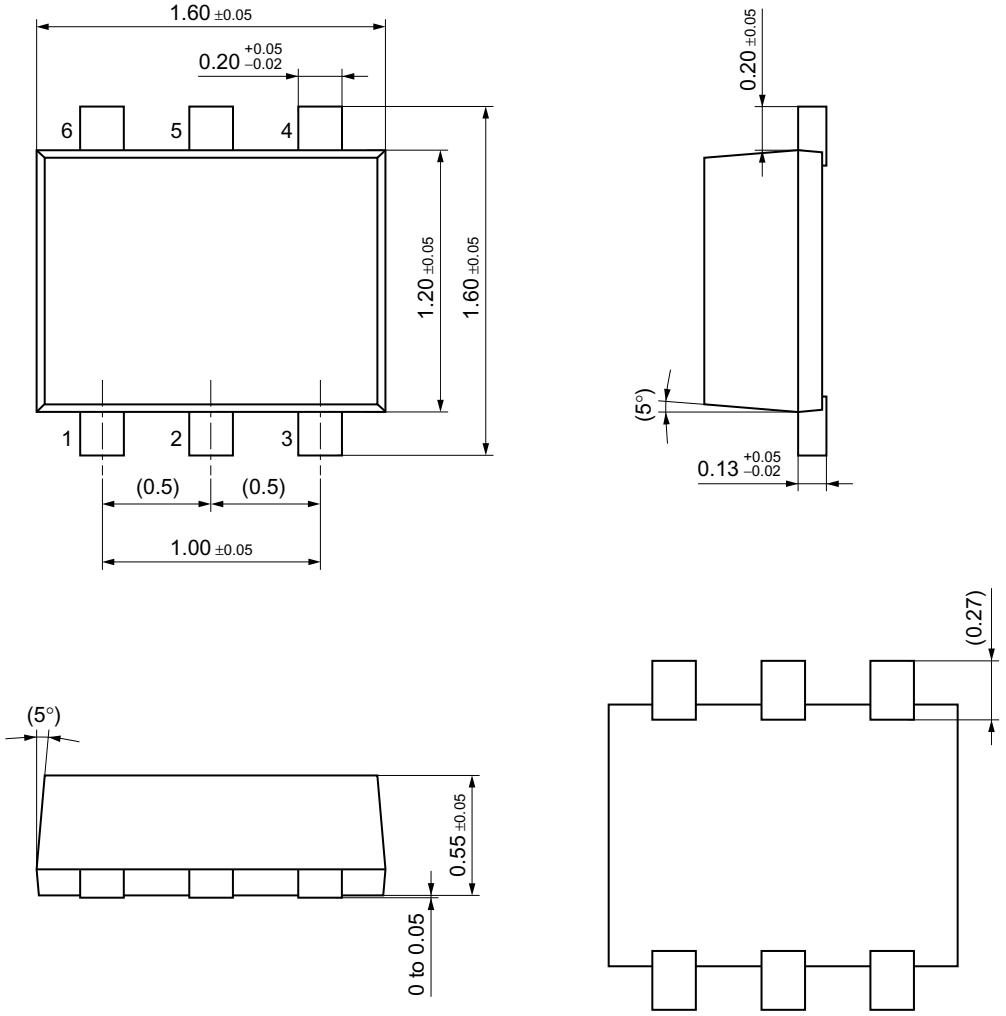


V_{IN} — I_O



SSMini6-F2

Unit: mm



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