

NP0A456

Silicon PNP epitaxial planar transistor

For High speed switching

■ Features

- Suitable for high-density mounting and downsizing of the equipment
- Automatic insertion with the taping is possible

■ Basic Part Number of Element

- 2SA2082 × 2 elements

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

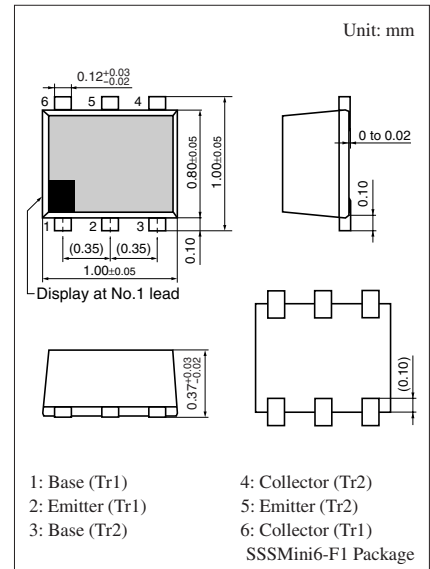
	Parameter	Symbol	Rating	Unit
Rating of element	Collector-base voltage (Emitter open)	V_{CBO}	-15	V
	Collector-emitter voltage (Base open)	V_{CEO}	-15	V
	Emitter-base voltage (Collector open)	V_{EBO}	-4	V
	Collector current	I_C	-50	mA
	Peak collector current	I_{CP}	-100	mA
Overall	Total power dissipation *	P_T	125	mW
	Junction temperature	T_j	125	$^\circ\text{C}$
	Storage temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

Note) *: Measuring on substrate at 17 mm × 10 mm × 1 mm

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

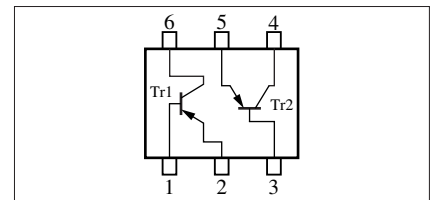
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -8\text{ V}, I_E = 0$			- 0.1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -3\text{ V}, I_C = 0$			- 0.1	μA
Forward current transfer ratio	h_{FE1}	$V_{CE} = -1\text{ V}, I_C = -10\text{ mA}$	50		150	—
	h_{FE2}	$V_{CE} = -1\text{ V}, I_C = -1\text{ mA}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{ mA}, I_B = -1\text{ mA}$		- 0.1	- 0.2	V
Transition frequency	f_T	$V_{CB} = -10\text{ V}, I_E = 10\text{ mA}, f = 200\text{ MHz}$	800	1500		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -5\text{ V}, I_E = 0, f = 1\text{ MHz}$		1		pF
Turn-on time	t_{on}	Refer to the switching time measurement circuit		12		ns
Turn-off time	t_{off}			20		ns
Storage time	f_{stg}			19		ns

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



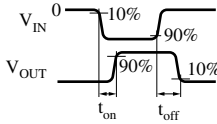
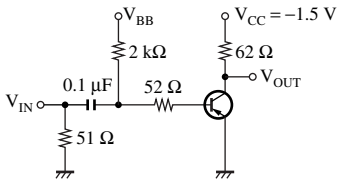
Marking Symbol: 3E

Internal Connection



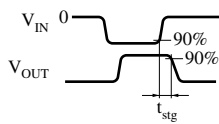
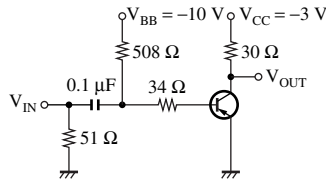
Switching time measurement circuit

t_{on} , t_{off} test circuit



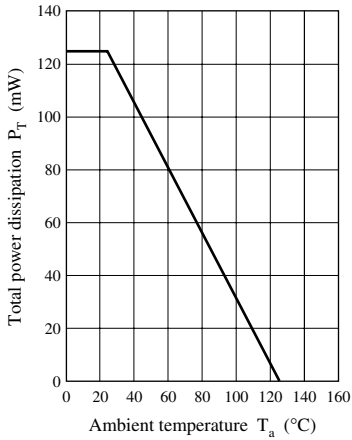
$V_{IN} = -5.8 \text{ V}$ $V_{IN} = 9.8 \text{ V}$
 $V_{BB} = \text{Ground}$ $V_{BB} = -8.0 \text{ V}$

t_{stg} test circuit

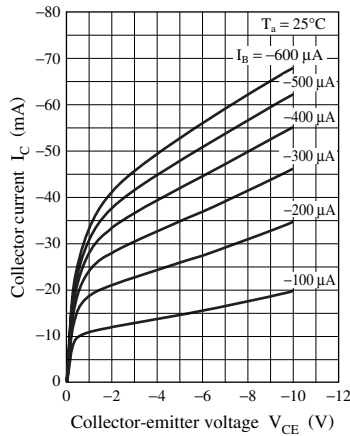


$V_{IN} = 9.0 \text{ V}$

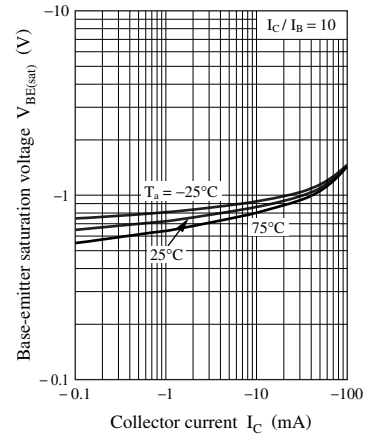
$P_T - T_a$



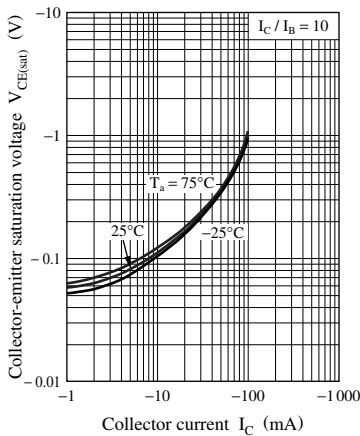
$I_C - V_{CE}$



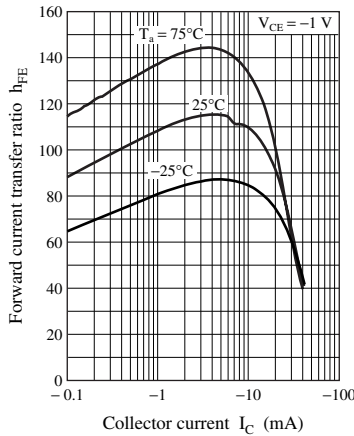
$V_{BE(sat)} - I_C$



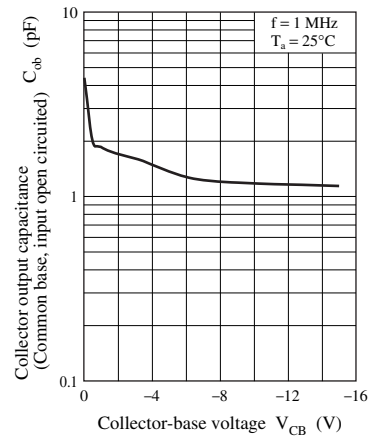
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$C_{ob} - V_{CB}$



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