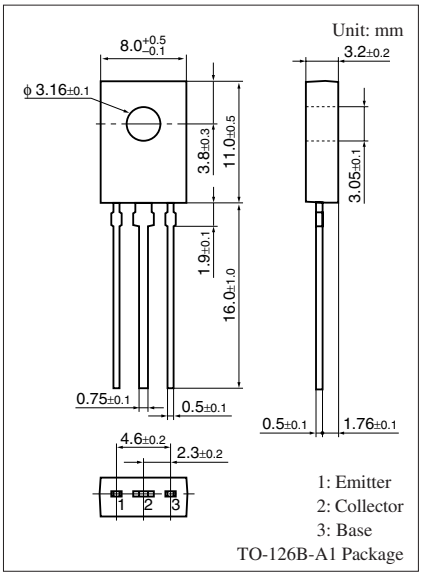
2SC3611

Silicon NPN epitaxial planar type

For video amplifier



■ Features

- High transition frequency f_T
- Small collector output capacitance (Common base, input open circuited) C_{ob}
- Wide current range
- TO-126B package which requires no insulation plate for installation to the heat sink

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	110	V
Collector-emitter voltage (Resistor between B and E)	V_{CER}	100	V
Collector-emitter voltage (Base open)	V_{CEO}	50	V
Emitter-base voltage (Collector open)	V_{EBO}	3.5	V
Collector current	I_C	150	mA
Peak collector current	I_{CP}	300	mA
Collector power dissipation	P_C	1.2	W
		4.0 *	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

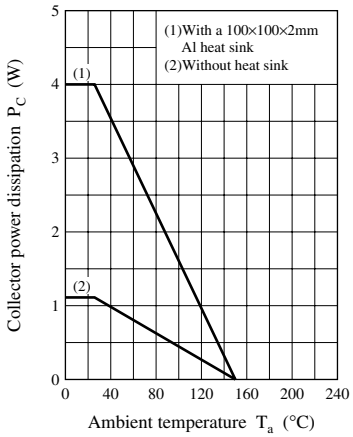
Note) *: With a 100 × 100 × 2 mm Al heat sink

■ Electrical Characteristics $T_a = 25°C \pm 3°C$

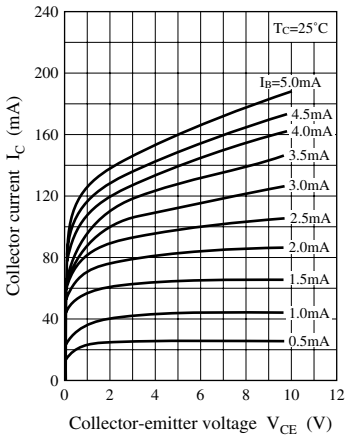
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 100 µA, I_E = 0	110			V
Collector-emitter voltage (Resistor between B and E)	V_{CER}	I_C = 500 µA, R_{BE} = 470 Ω	100			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 1 mA, I_B = 0	50			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = 100 µA, I_C = 0	3.5			V
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 35 V, I_B = 0			10	µA
Forward current transfer ratio	h_{FE}	V_{CE} = 5 V, I_C = 100 mA	20			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 150 mA, I_B = 15 mA			0.5	V
Transition frequency	f_{T1}	V_{CB} = 10 V, I_E = −10 mA, f = 200 MHz		300		MHz
	f_{T2}	V_{CB} = 10 V, I_E = −110 mA, f = 200 MHz		350		
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 30 V, I_E = 0, f = 1 MHz		3		pF

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

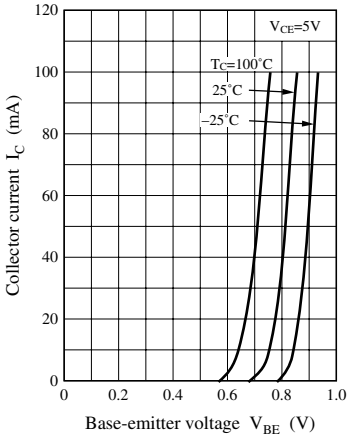
P_C — T_a



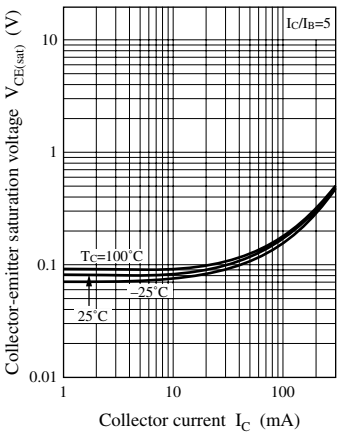
I_C — V_{CE}



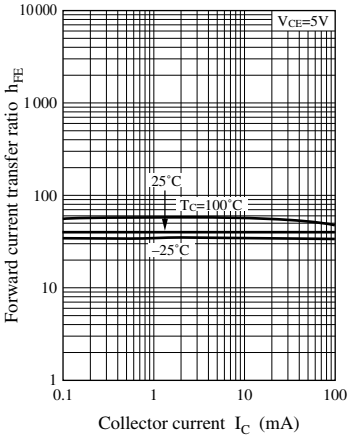
I_C — V_{BE}



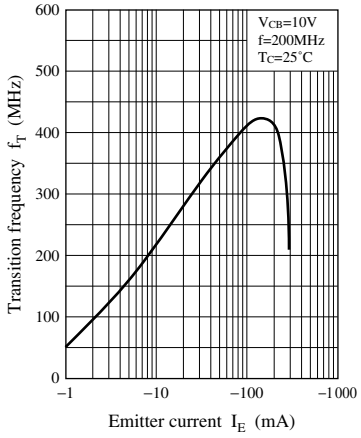
$V_{CE(sat)}$ — I_C



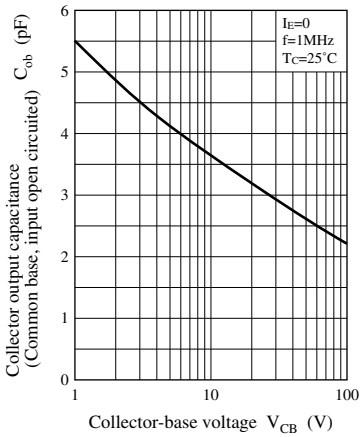
h_{FE} — I_C



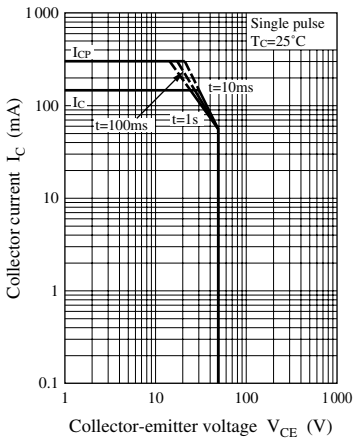
f_T — I_E

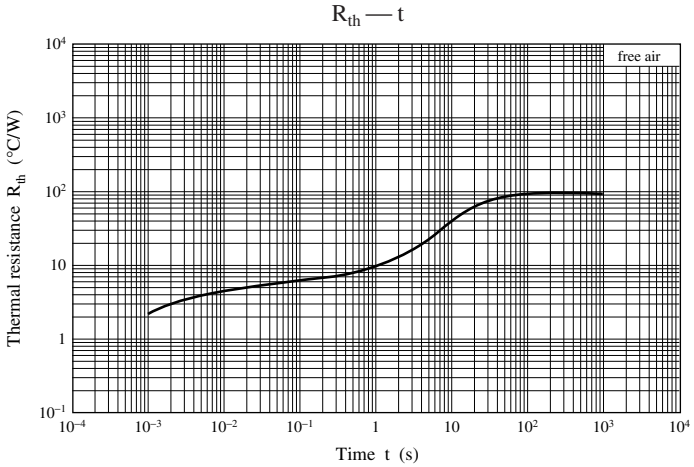


C_{ob} — V_{CB}



Safe operation area




R_{th} — t
free air
Thermal resistance R_{th} (°C/W)
10^4
10^3
10^2
10
1
10^{-1}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
1
10
10^2
10^3
10^4
Time t (s)

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