

# 2SD2441

## Silicon NPN epitaxial planar type

For low-frequency output amplification

### ■ Features

- Mini Power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{\text{CBO}}$	10	V
Collector-emitter voltage (Base open)	$V_{\text{CEO}}$	10	V
Emitter-base voltage (Collector open)	$V_{\text{EBO}}$	7	V
Collector current	$I_{\text{C}}$	1.5	A
Peak collector current	$I_{\text{CP}}$	2	A
Collector power dissipation *	$P_{\text{C}}$	1	W
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

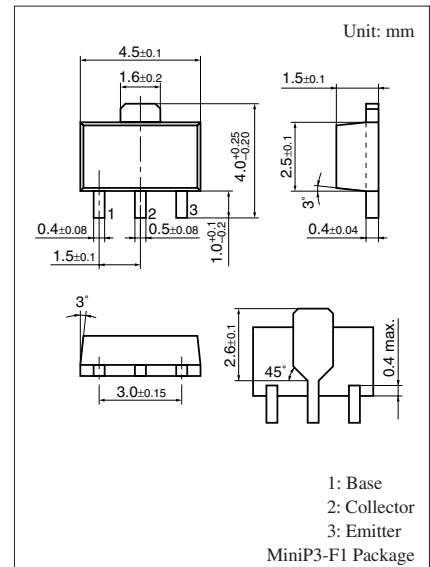
Note) \*: Printed circuit board: Copper foil area of 1 cm<sup>2</sup> or more, and the board thickness of 1.7 mm for the collector portion

### ■ 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)	$V_{\text{CBO}}$	$I_{\text{C}} = 10 \mu\text{A}$ , $I_{\text{E}} = 0$	10			V
Collector-emitter voltage (Base open)	$V_{\text{CEO}}$	$I_{\text{C}} = 1 \text{ mA}$ , $I_{\text{B}} = 0$	10			V
Emitter-base voltage (Collector open)	$V_{\text{EBO}}$	$I_{\text{E}} = 10 \mu\text{A}$ , $I_{\text{C}} = 0$	7			V
Collector-base cutoff current (Emitter open)	$I_{\text{CBO}}$	$V_{\text{CB}} = 7 \text{ V}$ , $I_{\text{E}} = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{\text{FE}}$	$V_{\text{CE}} = 1 \text{ V}$ , $I_{\text{C}} = 400 \text{ mA}$	200		700	—
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = 1 \text{ A}$ , $I_{\text{B}} = 25 \text{ mA}$		0.17	0.25	V
Transition frequency	$f_{\text{T}}$	$V_{\text{CB}} = 6 \text{ V}$ , $I_{\text{E}} = -50 \text{ mA}$ , $f = 200 \text{ MHz}$		190		MHz
Collector output capacitance (Common base, input open circuited)	$C_{\text{ob}}$	$V_{\text{CB}} = 10 \text{ V}$ , $I_{\text{E}} = 0$ , $f = 1 \text{ MHz}$		50		pF
Forward voltage *	$V_{\text{F}}$	$I_{\text{F}} = 500 \text{ mA}$			1.3	pF

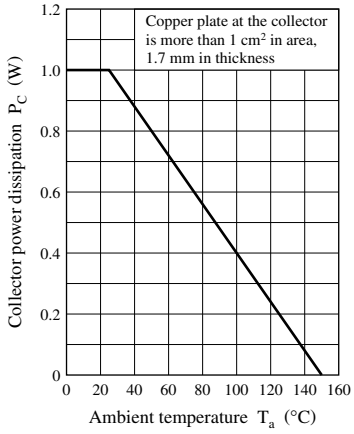
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Applicable to the built-in diode.

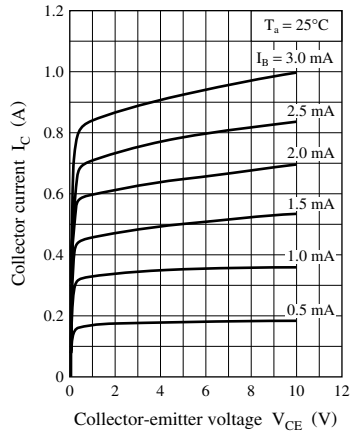


Marking Symbol: 1V

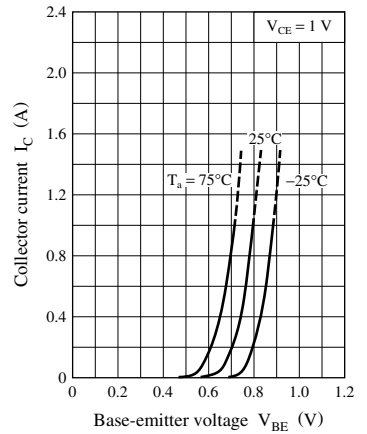
$P_C - T_a$



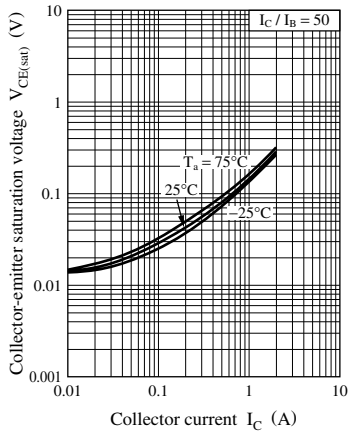
$I_C - V_{CE}$



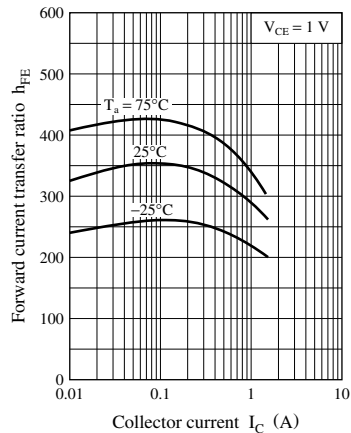
$V_{CE(sat)} - I_C$



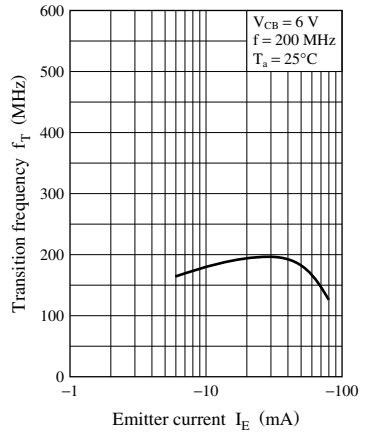
$V_{BE(sat)} - I_C$



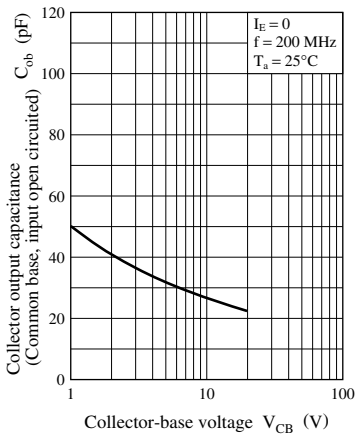
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



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