

**2SA1831**

## High-Voltage Amplifier, High-Voltage Switching Applications

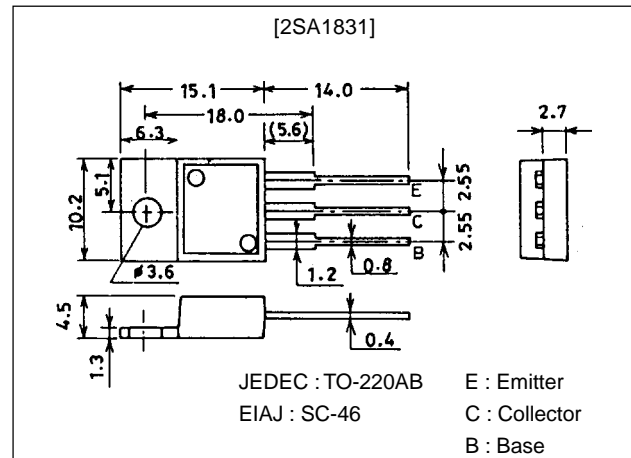
### Features

- High breakdown voltage ( $V_{CE0}$  min=-800V).
- Small  $C_{ob}$  ( $C_{ob}$  typ=1.6pF).
- High reliability (Adoption of HVP processes).

### Package Dimensions

unit:mm

2010B



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		-800	V
Collector-to-Emitter Voltage	$V_{CEO}$		-800	V
Emitter-to-Base Voltage	$V_{EBO}$		-7	V
Collector Current	$I_C$		-20	mA
Collector Current (Pulse)	$I_{CP}$		-60	mA
Collector Dissipation	$P_C$		1.75	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

#### Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-800\text{V}, I_E=0$			-1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-5\text{V}, I_C=0$			-1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=-5\text{V}, I_C=-2\text{mA}$	20		50	
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}, I_C=-2\text{mA}$		10		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-100\text{V}, f=1\text{MHz}$		1.6		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1\text{mA}, I_B=-200\mu\text{A}$			-1	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1\text{mA}, I_B=-200\mu\text{A}$			-1.5	V

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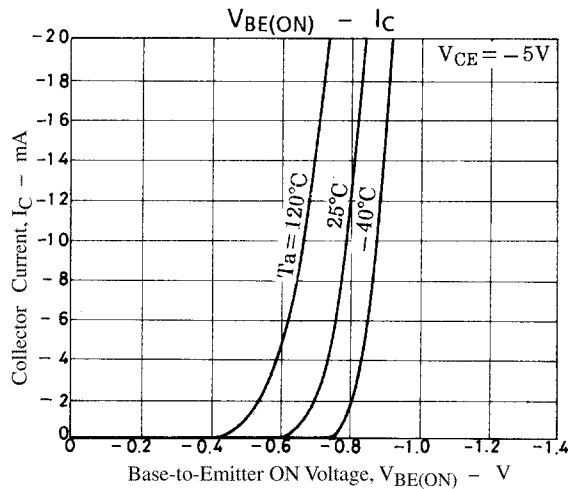
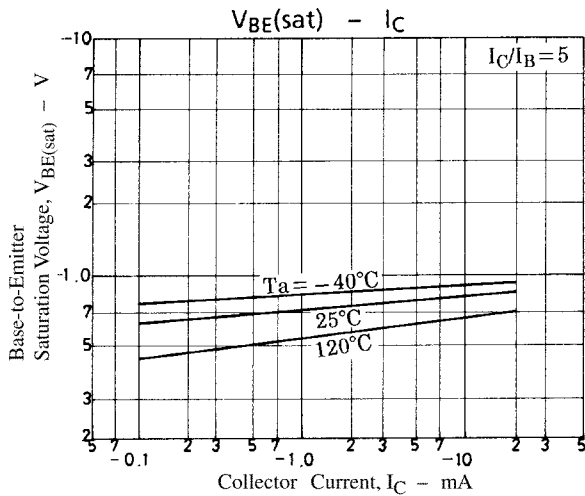
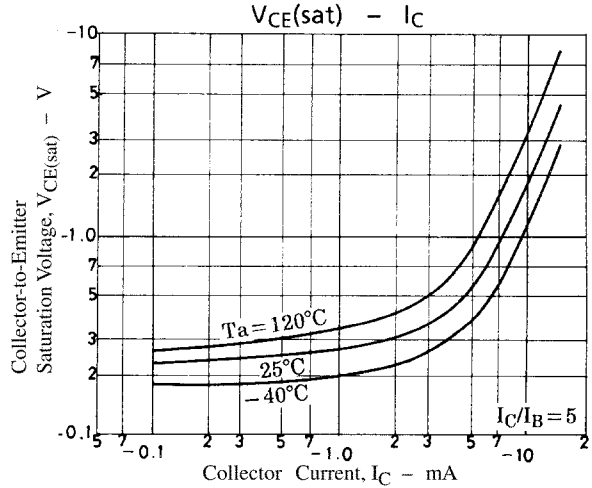
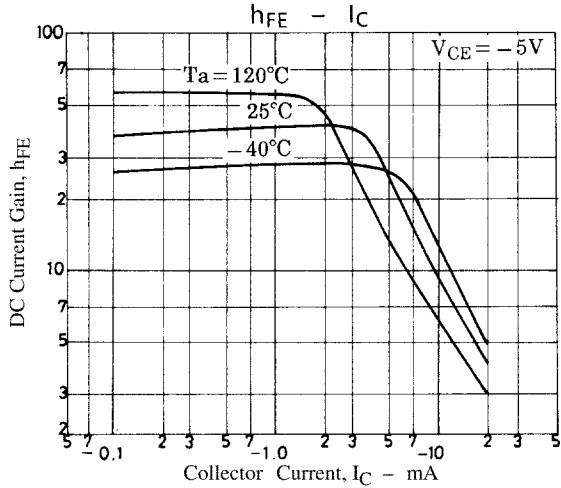
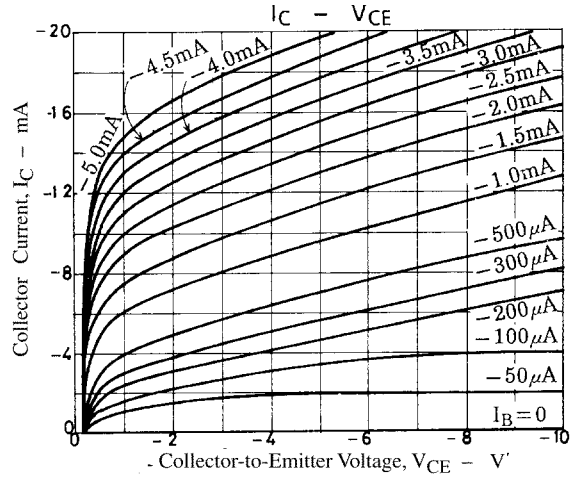
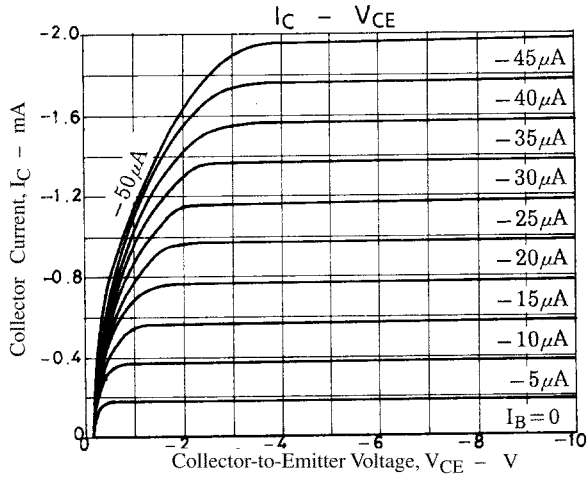
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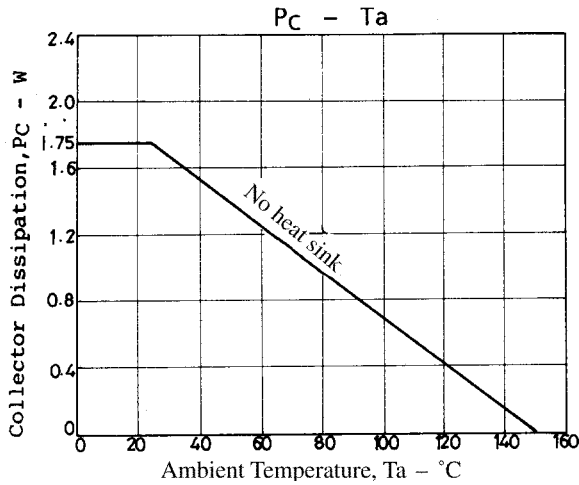
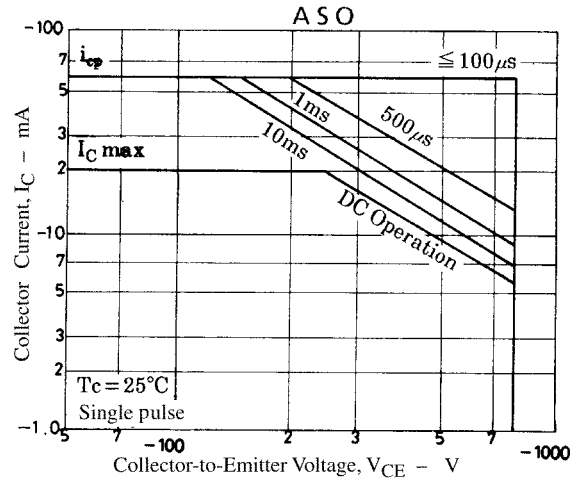
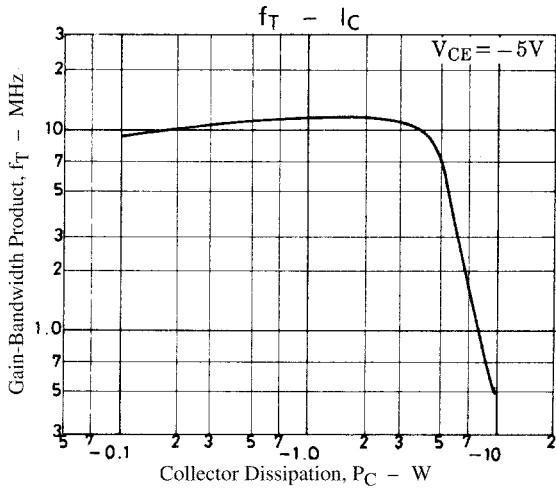
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)100\mu A, I_E = 0$	-800			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	-800			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)100\mu A, I_C = 0$	-7			V
Thermal Resistance	$R_{th(j-c)}$	Junction-Case			8.3	$^{\circ}C/W$





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