



2SB1451/2SD2200

80V/5A Switching Applications

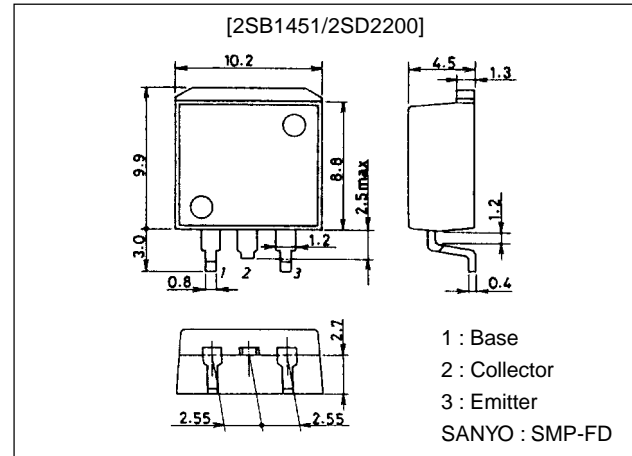
Features

- Surface mount type device making the following possible.
- Reduction in the number of manufacturing processes for 2SB1451/2SD2200-applied equipment.
- High density surface mount applications.
- Small size of 2SB1451/2SD2200-applied equipment.
- Low collector-to-emitter saturation voltage.
- Large current capacity.

Package Dimensions

unit:mm

2069B



() : 2SB1451

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)90	V
Collector-to-Emitter Voltage	V_{CEO}		(-)80	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)5	A
Collector Current (Pulse)	I_{CP}		(-)9	A
Collector Dissipation	P_C		1.65	W
		$T_c=25^\circ\text{C}$	30	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)80\text{V}, I_E=0$			(-)0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)0.1	mA
DC Current Gain	h_{FE1}	$V_{CE}=(-)2\text{V}, I_C=(-)1\text{A}$	70*		280*	
	h_{FE2}	$V_{CE}=(-)2\text{V}, I_C=(-)3\text{A}$	30			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3\text{A}, I_B=(-)0.3\text{A}$			0.4	V
					(-)0.5	V

* : The 2SB1451/2SD2200 are classified by $I_A h_{FE}$ as follows :

70	Q	140	100	R	200	140	S	280
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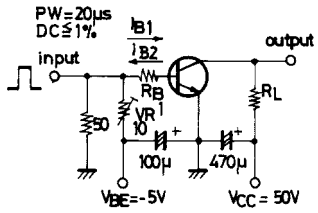
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N1098HA (KT)/7039MO, TS N0.3151-1/4

2SB1451/2SD2200

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0$	(-)90			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)80			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)1mA, I_C=0$	(-)6			V
Turn-ON Time	t_{on}	See specified test circuit.		(0.2)		μs
Storage Time	t_{stg}	See specified test circuit.		0.1		μs
Fall Time	t_f	See specified test circuit.		(0.7)		μs
				1.2		μs
Fall Time	t_f	See specified test circuit.		(0.2)		μs
				0.4		μs

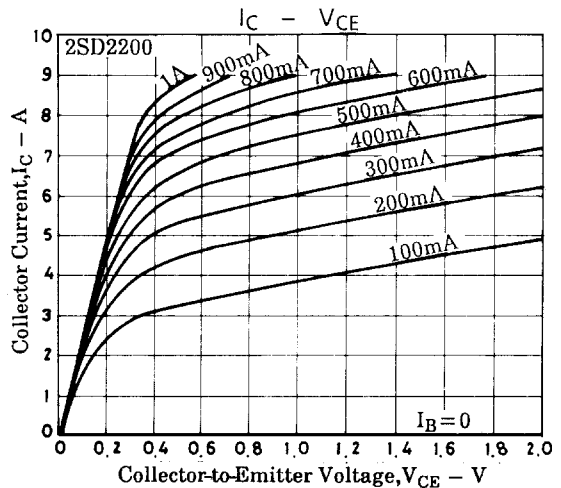
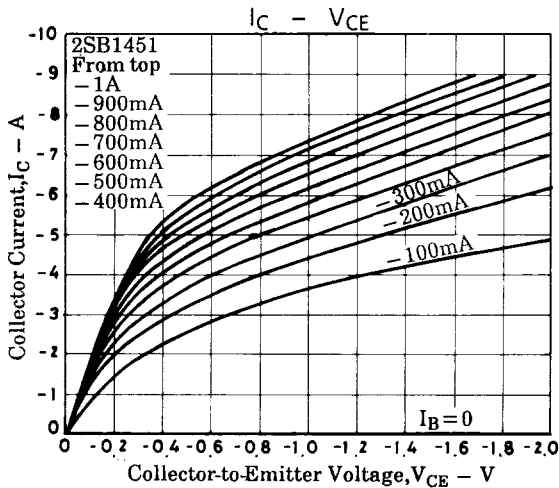
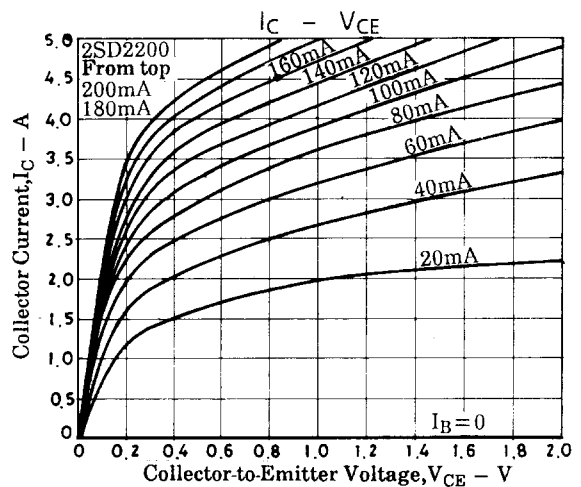
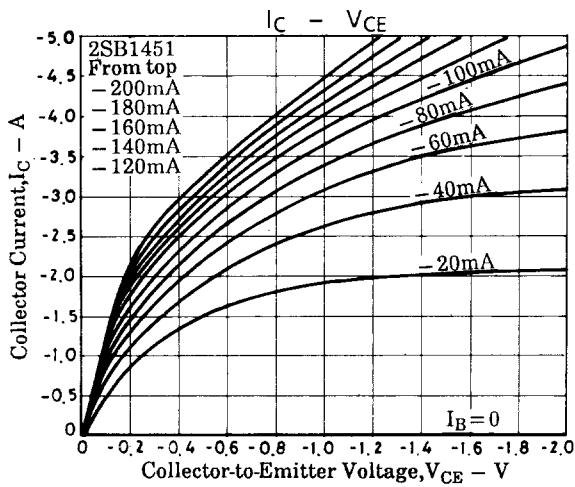
Switching Time Test Circuit



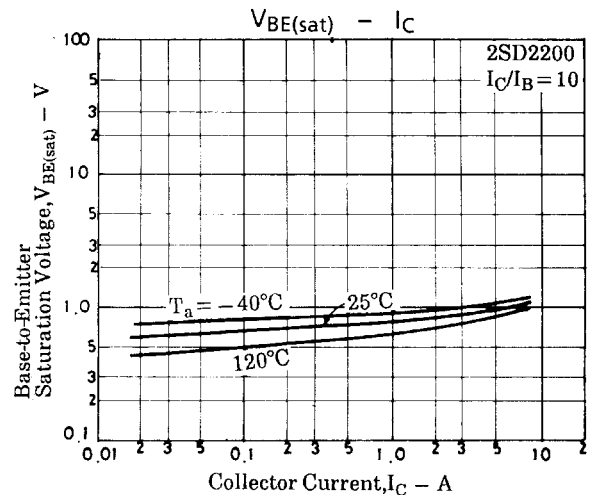
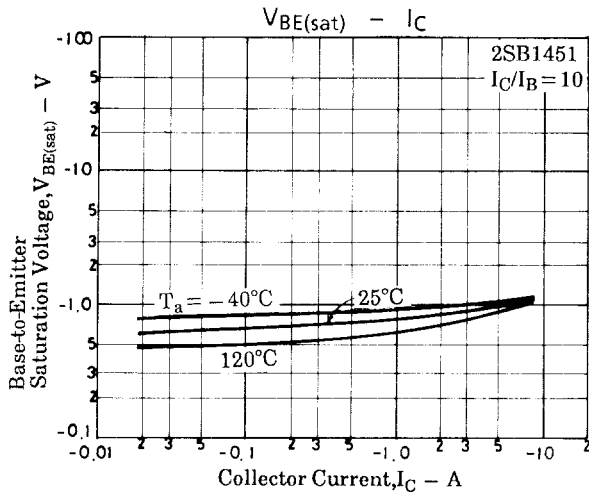
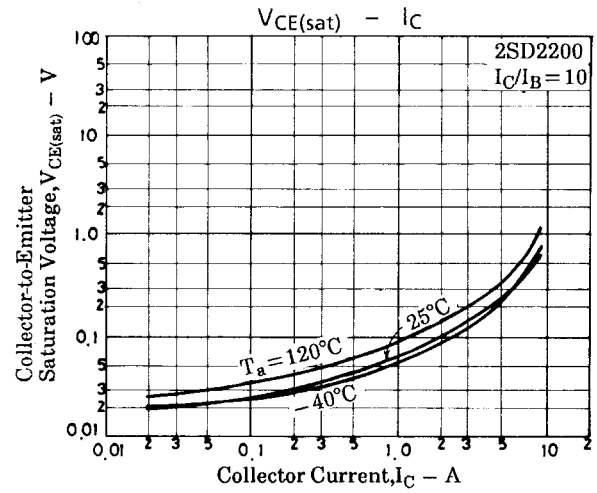
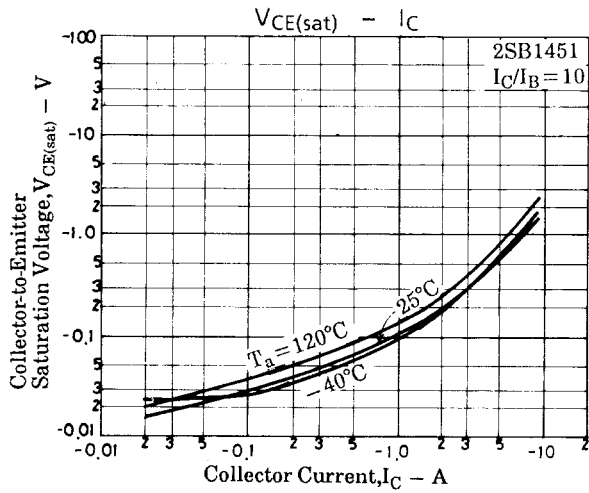
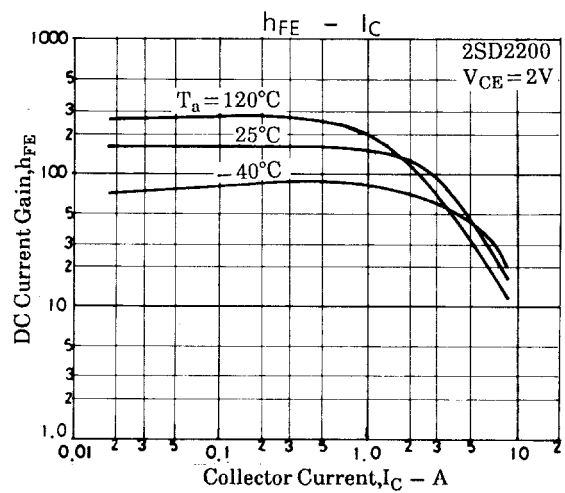
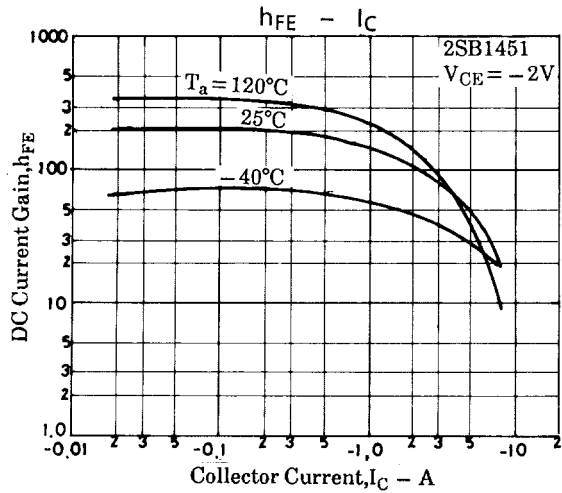
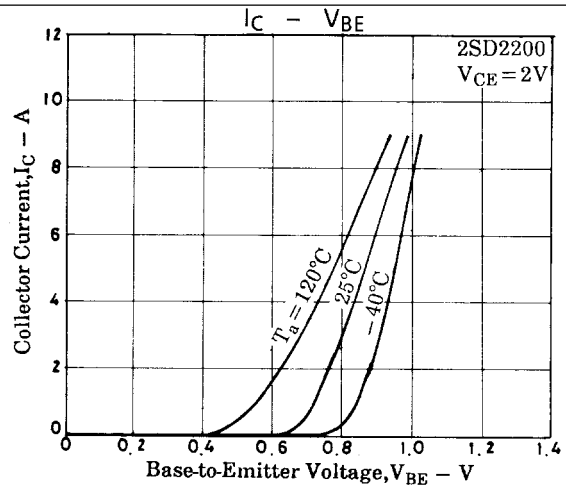
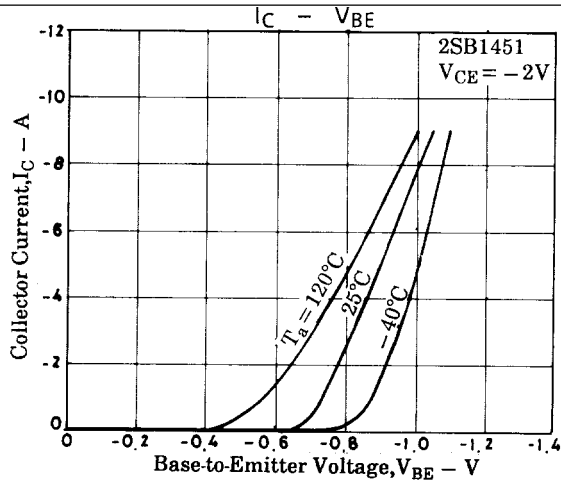
$10 I_{B1} = 10 I_{B2} = I_C = 2A$

For PNP, the polarity is reversed.

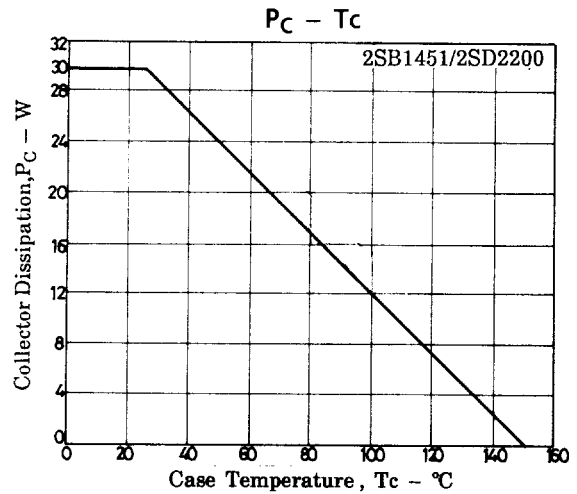
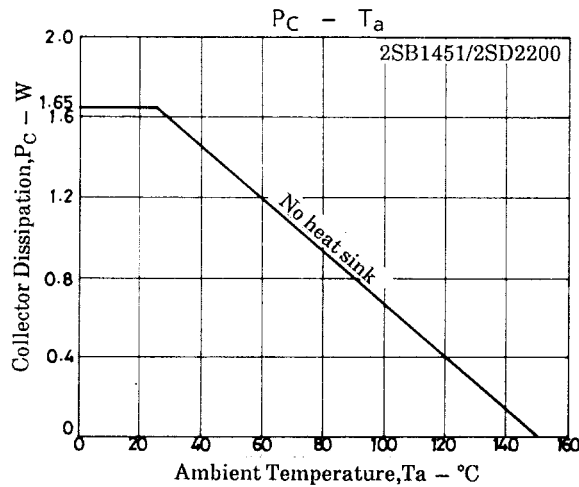
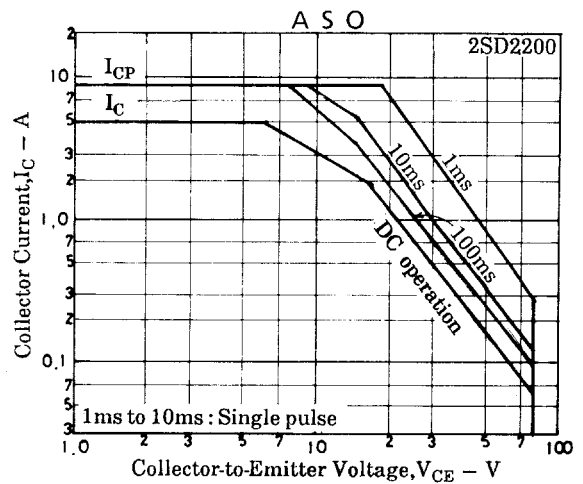
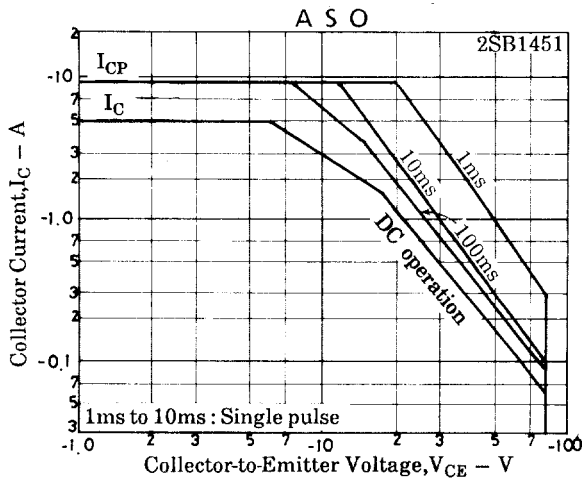
Unit (resistance : Ω , capacitance : F)



2SB1451/2SD2200



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