



2SB1449/2SD2198

50V/5A Switching Applications

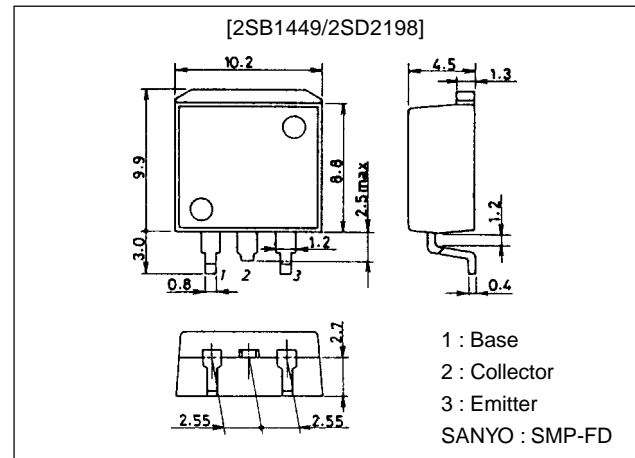
Features

- Surface mount type device making the following possible.
- Reduction in the number of manufacturing processes for 2SB1449/2SD2198-applied equipment.
- High density surface mount applications.
- Small size of 2SB1449/2SD2198-applied equipment.
- Low collector-to-emitter saturation voltage.

Package Dimensions

unit:mm

2069B



() : 2SB1449

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)60	V
Collector-to-Emitter Voltage	V_{CEO}		(-)50	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	$^\circ\text{C}$
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}	$V_{CB}=(-)40\text{V}, I_E=0$			(-)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	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$		30		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		100		pF
				(160)		pF

* : The 2SB1449/2SD2198 are classified by 1A h_{FE} as follows :

70	Q	140	100	R	200	140	S	280
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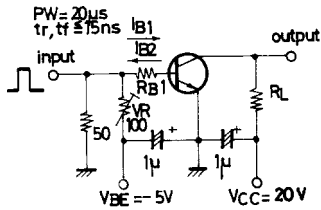
SANYO Electric Co., Ltd. Semiconductor Business Headquarters

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2SB1449/2SD2198

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3A, I_B=(-)0.3A$			(-)0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			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.		0.1		μs
Storage Time	t_{stg}	See specified test circuit.		(0.7)		μs
				1.4		μs
Fall Time	t_f	See specified test circuit.		0.2		μs

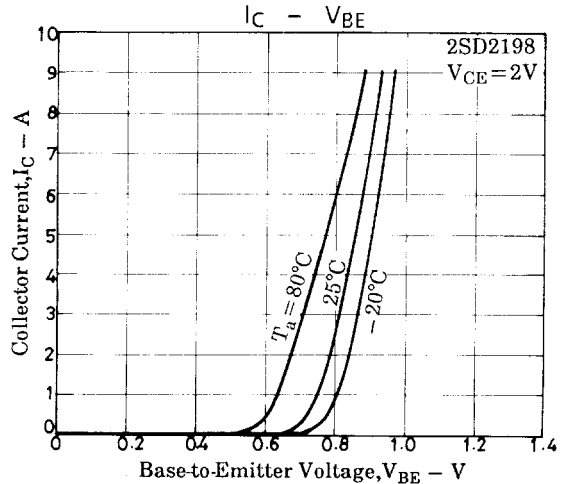
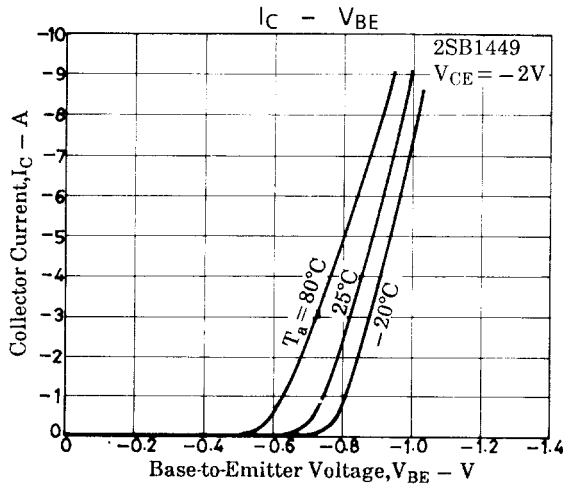
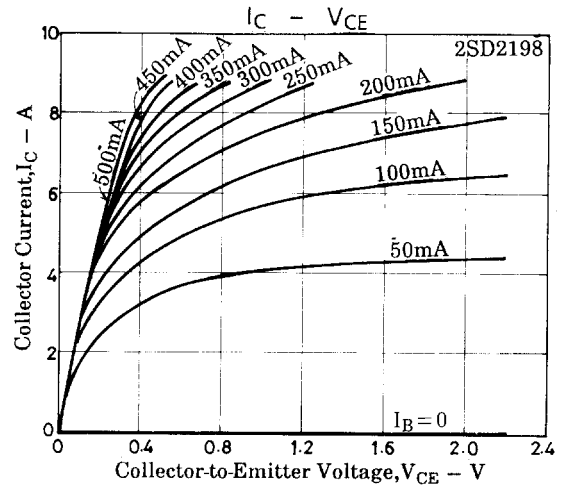
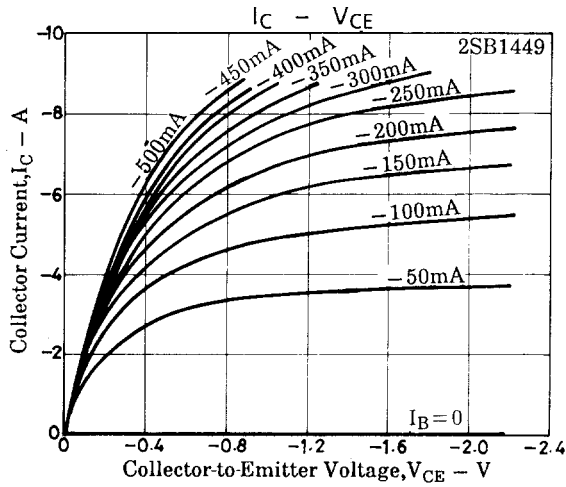
Switching Time Test Circuit



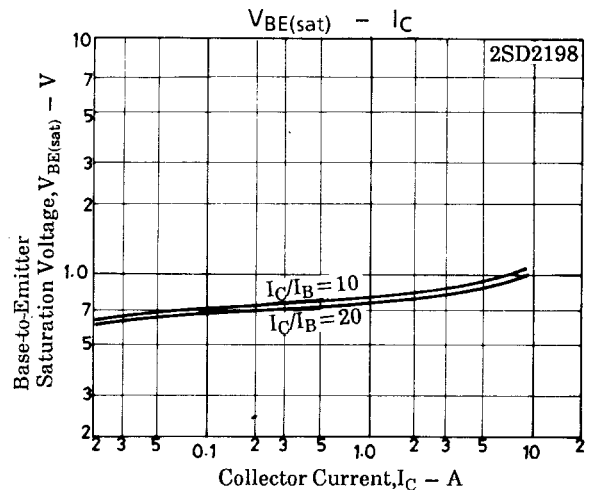
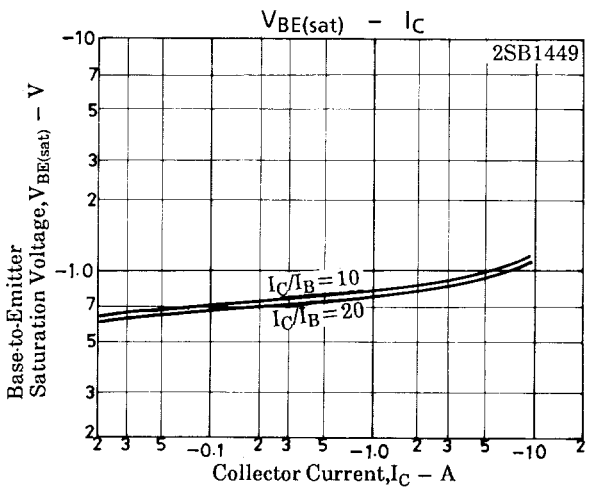
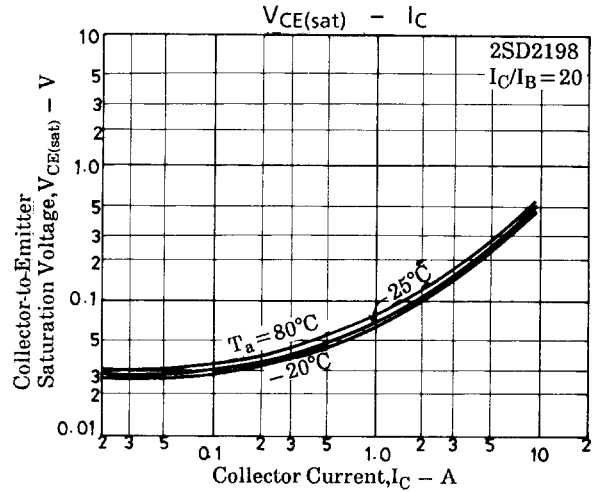
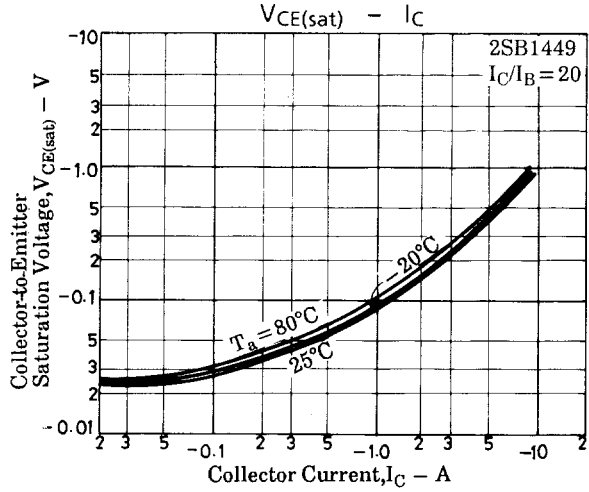
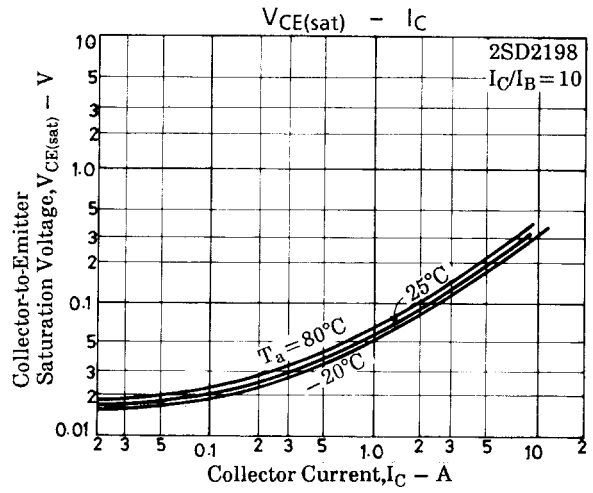
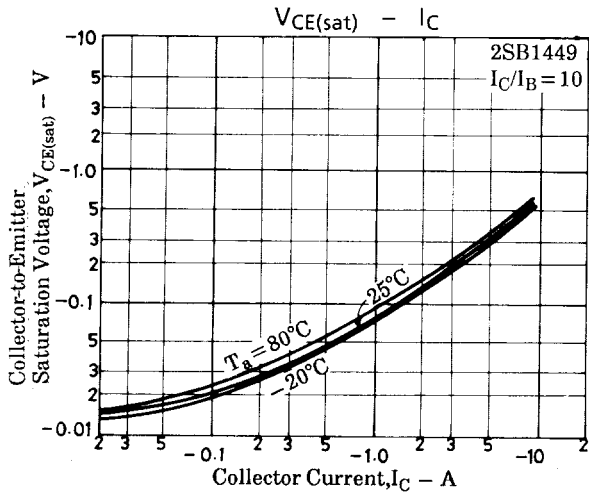
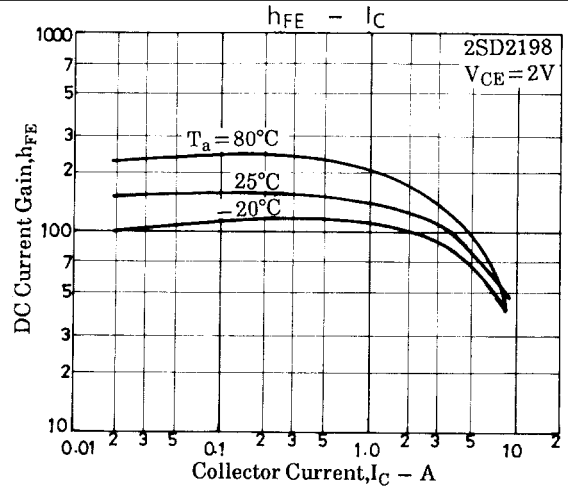
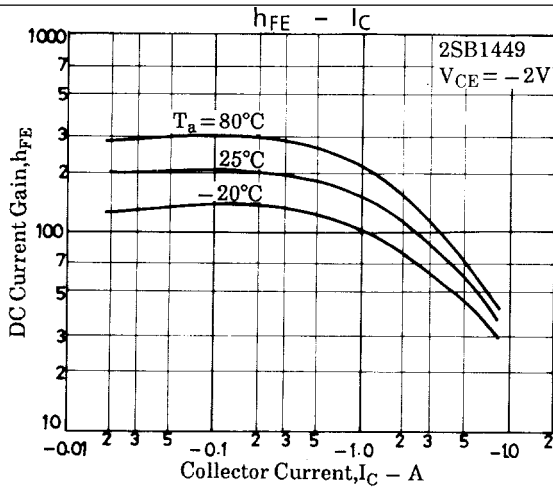
$10 I_{B1} = -10 I_{B2} = I_C = 2A$

For PNP, the polarity is reversed.

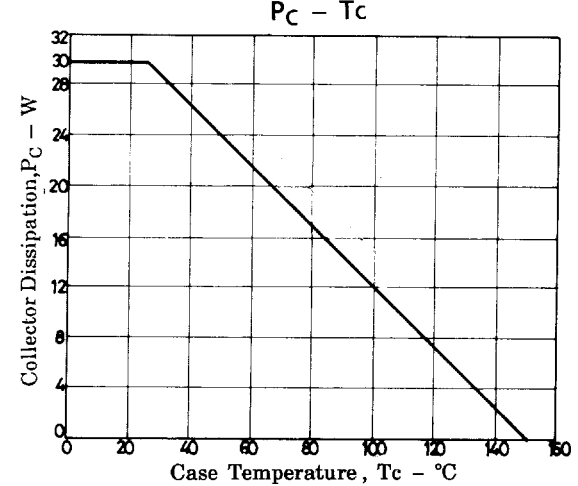
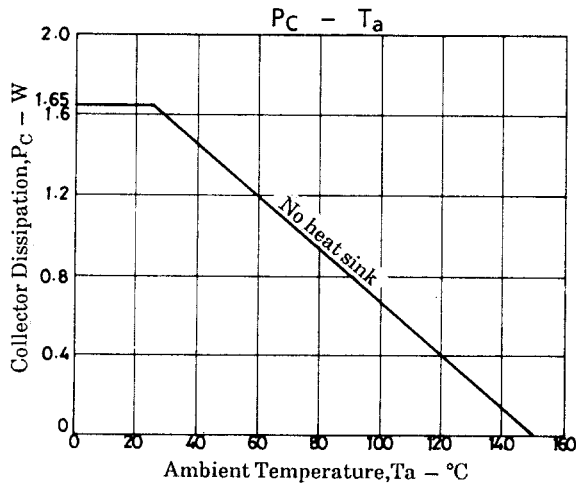
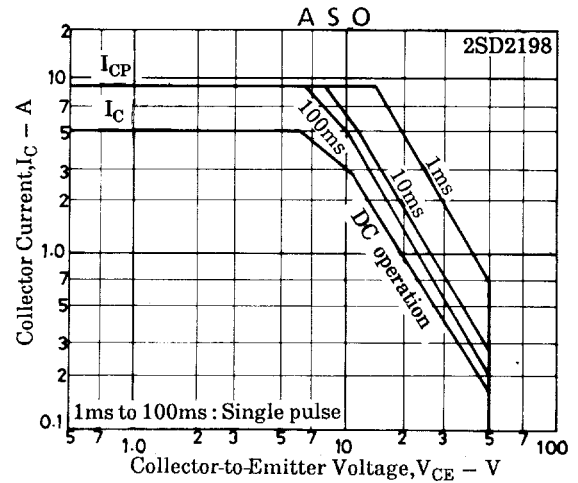
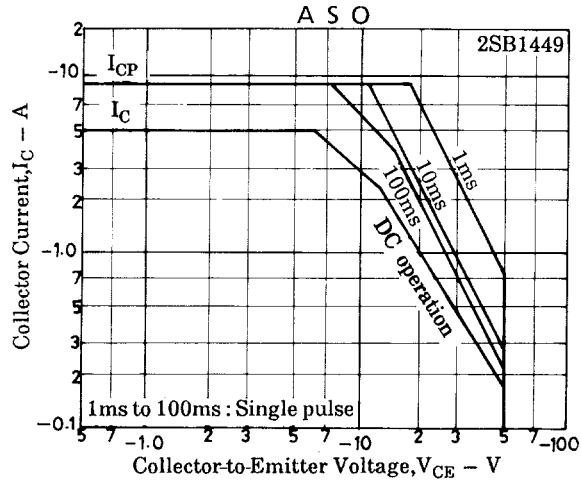
Unit (resistance : Ω , capacitance : F)



2SB1449/2SD2198



2SB1449/2SD2198



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