



SANYO Semiconductors

DATA SHEET

2SB1449 / 2SD2198 — PNP / NPN Epitaxial Planar Silicon Transistors

High-Current 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.

Specifications () : 2SB1449

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_{CE0}		(-)50	V
Emitter-to-Base Voltage	V_{EB0}		(-)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}	$V_{CB}=(-)40\text{V}$, $I_E=0\text{A}$			(-)0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}$, $I_C=0\text{A}$			(-)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}	$V_{CB}=(-)10\text{V}$, $f=1\text{MHz}$		(160)100		pF

Continued on next page.

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

Rank	Q	R	S
h_{FE}	70 to 140	100 to 200	140 to 280

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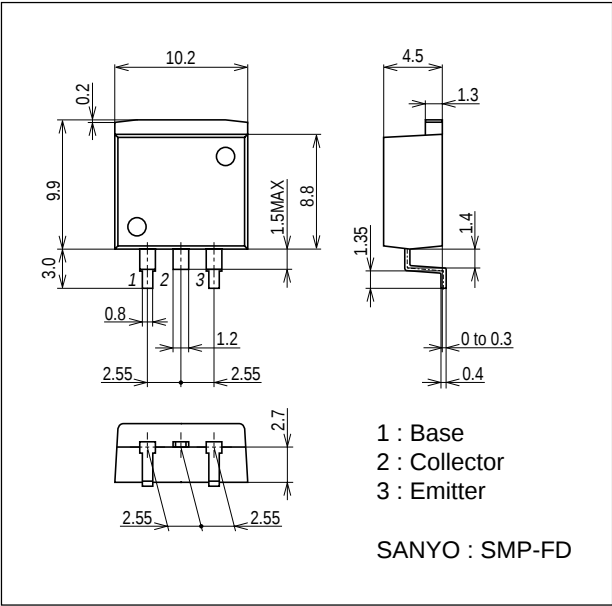
2SB1449 / 2SD2198

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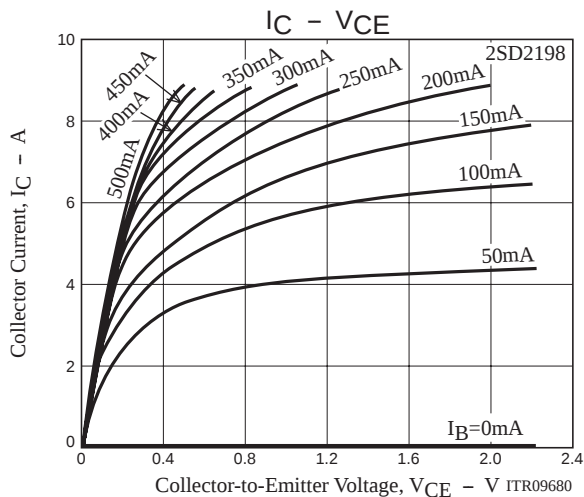
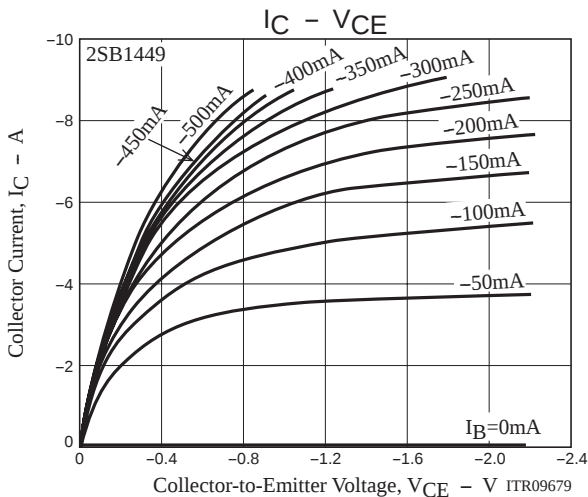
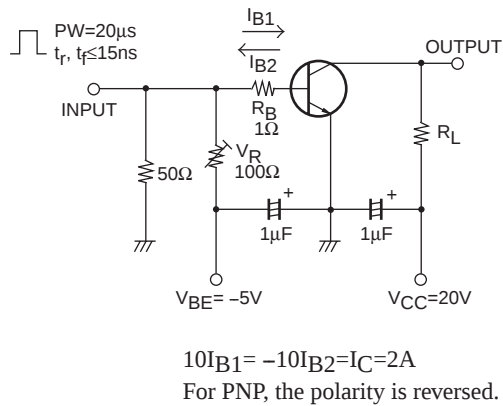
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3A, I_B=(-)0.3A$			$(-)0.4$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0A$	$(-)60$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	$(-)50$			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)1mA, I_C=0A$	$(-)6$			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.1		μs
Storage Time	t_{stg}	See specified Test Circuit.		$(0.7)1.4$		μs
Fall Time	t_f	See specified Test Circuit.		0.2		μs

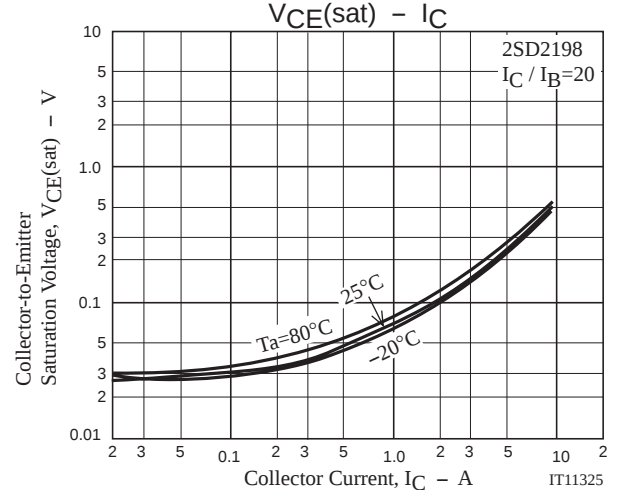
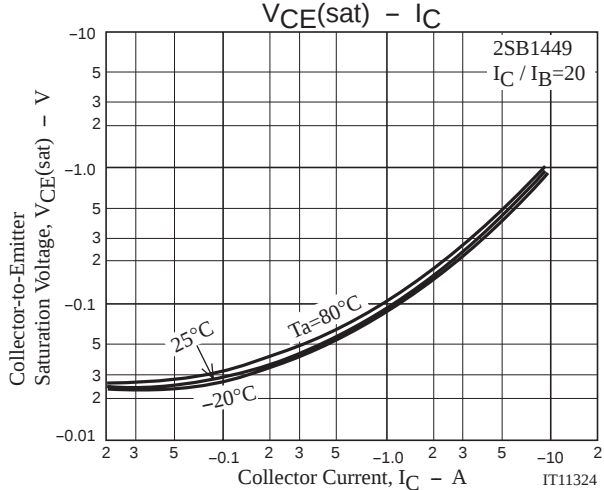
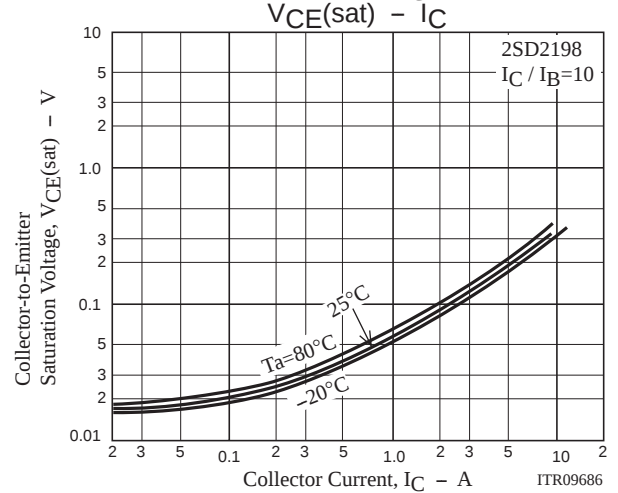
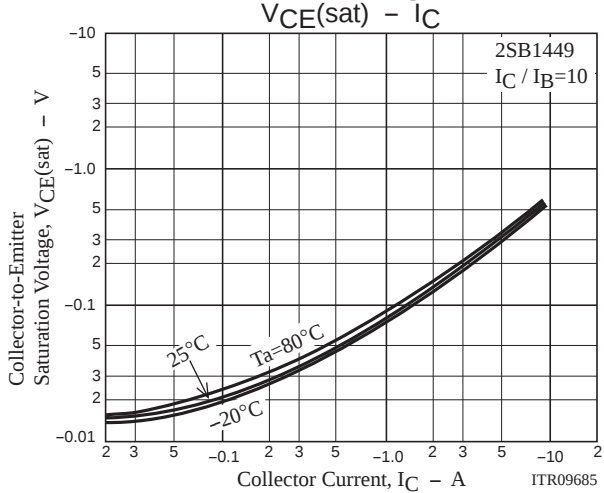
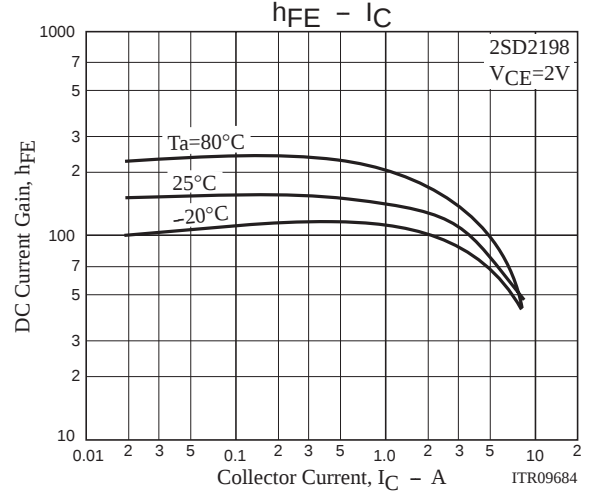
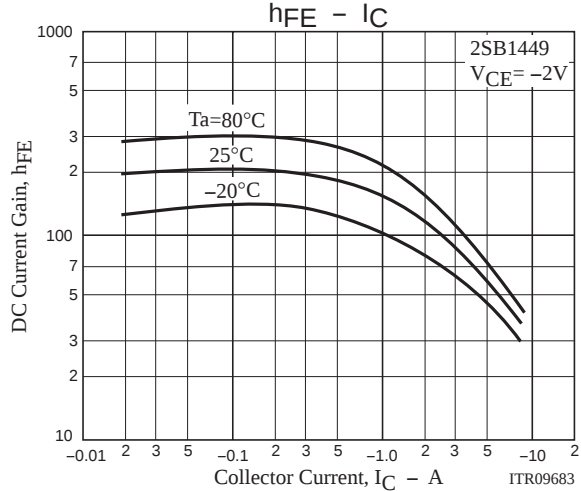
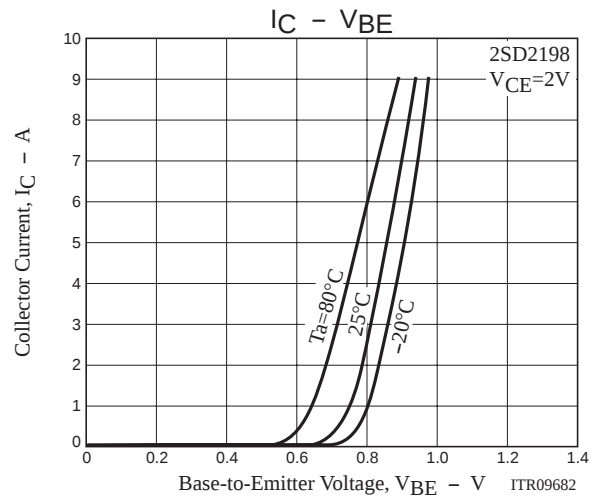
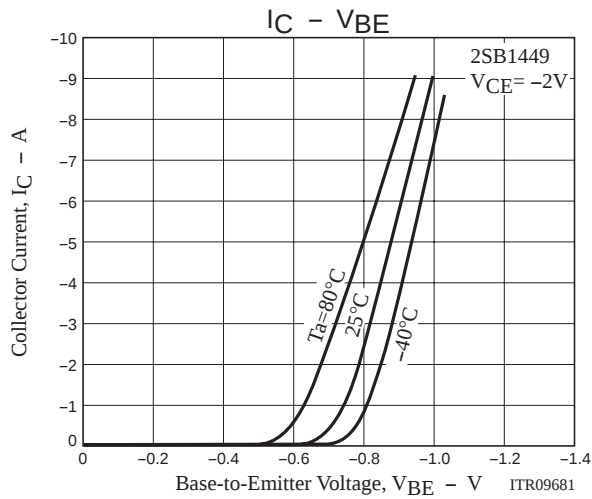
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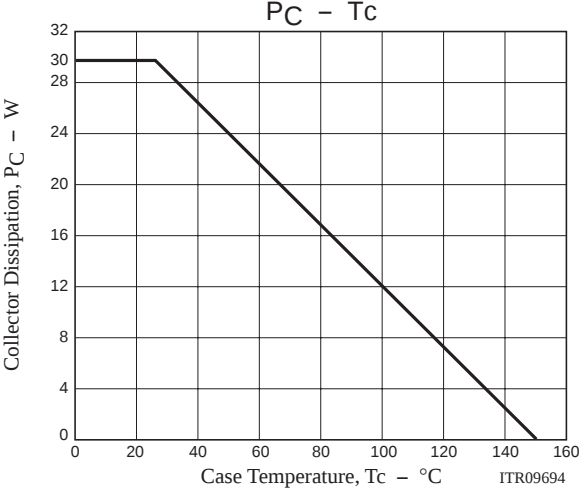
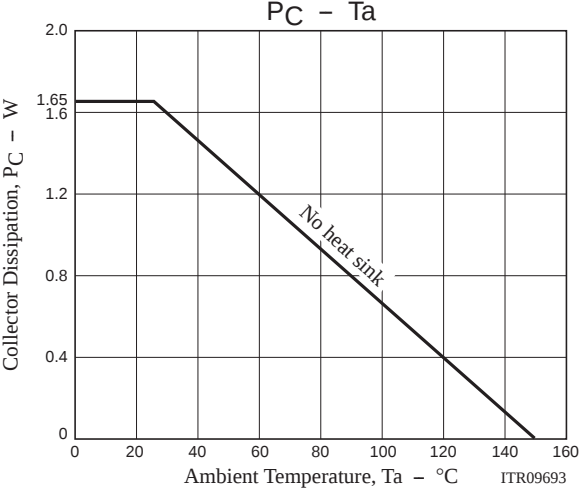
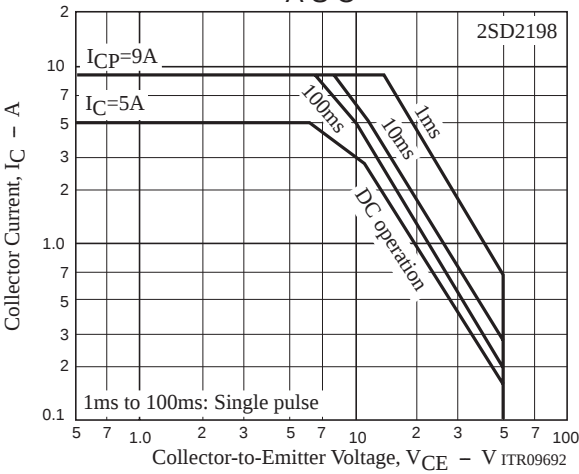
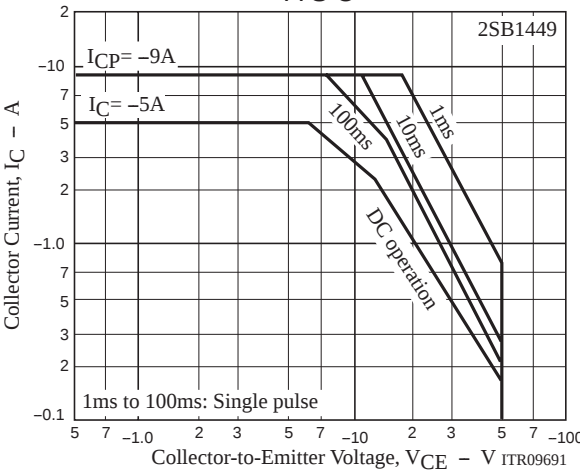
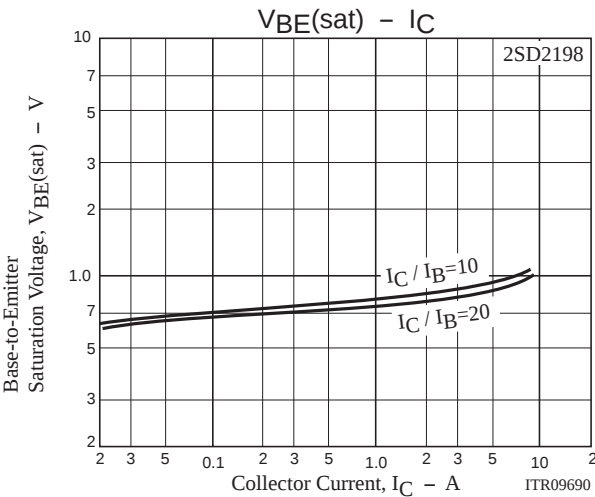
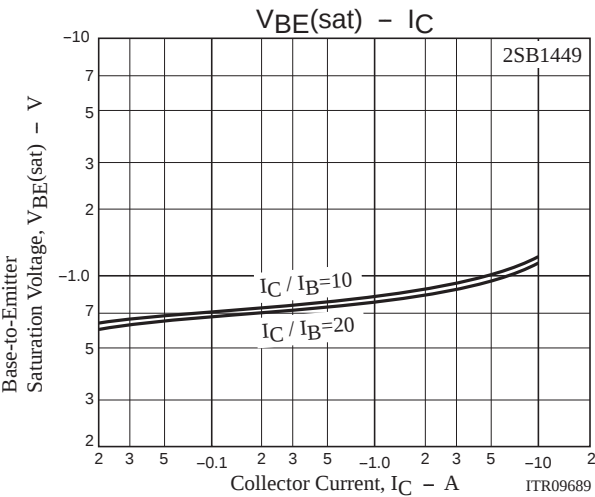
unit : mm (typ)
7001-002



Switching Time Test Circuit







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