



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 Ta=25°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°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} =(-)40V, I _E =0A			(-)0.1	mA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0A			(-)0.1	mA
DC Current Gain	h _{FE1}	V _{CE} =(-)2V, I _C =(-)1A	70*		280*	
	h _{FE2}	V _{CE} =(-)2V, I _C =(-)3A	30			
Gain-Bandwidth Product	f _T	V _{CE} =(-)5V, I _C =(-)1A		30		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(160)100		pF

Continued on next page.

* : The 2SBB1449 / 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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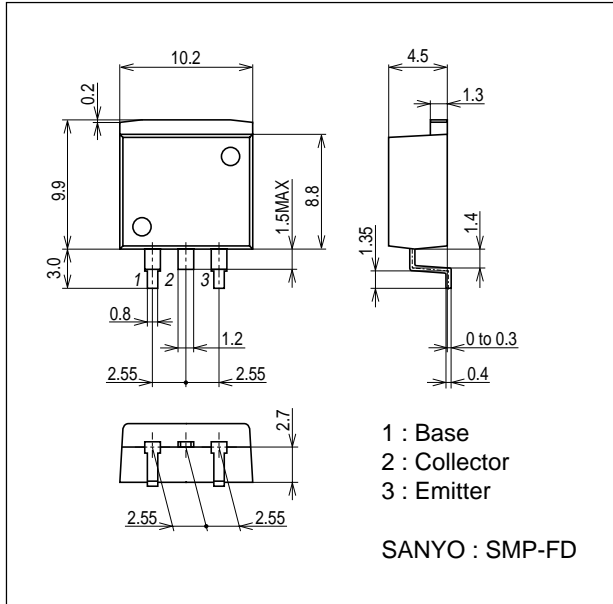
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3A, I_B=(-)0.3A$			(-)0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0A$	(-)60			V
Collector-to-Emitter 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

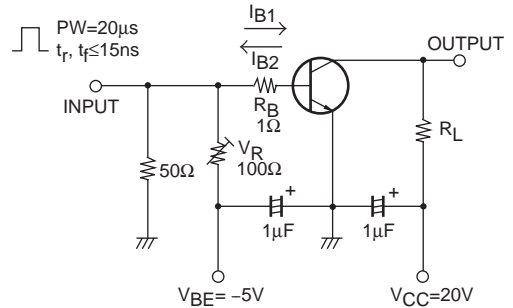
Package Dimensions

unit : mm (typ)

7001-002

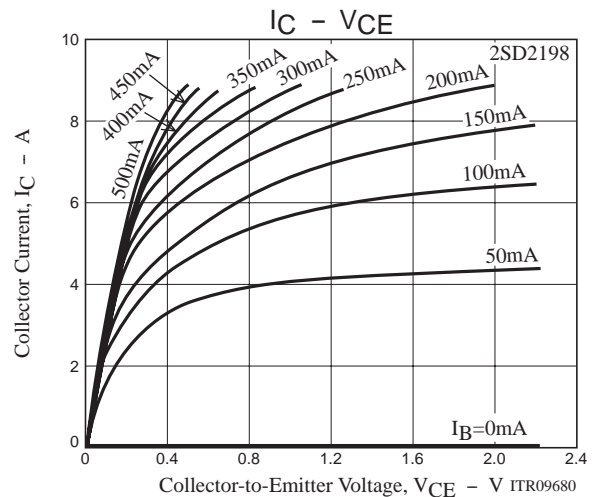
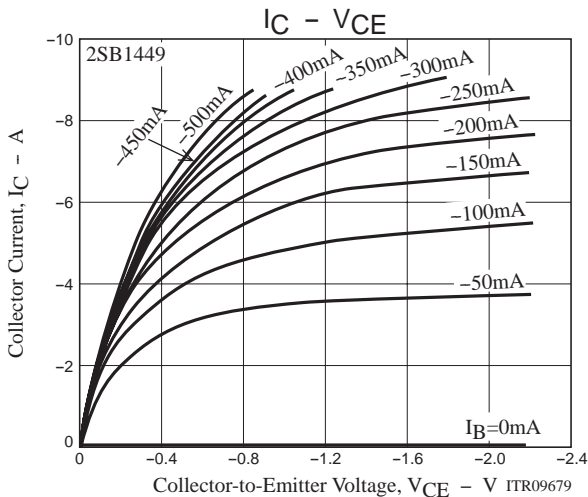


Switching Time Test Circuit

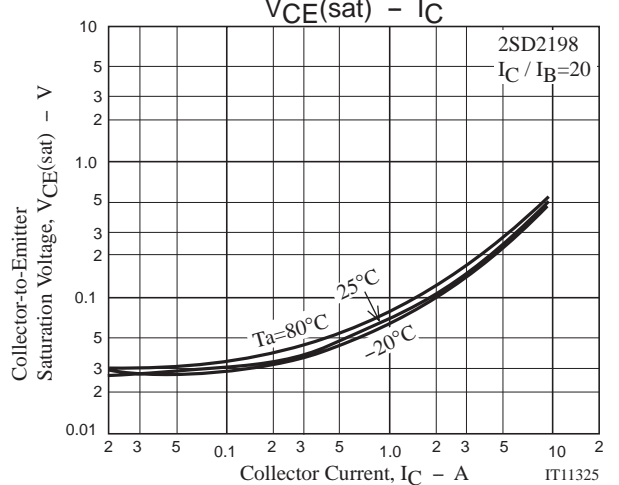
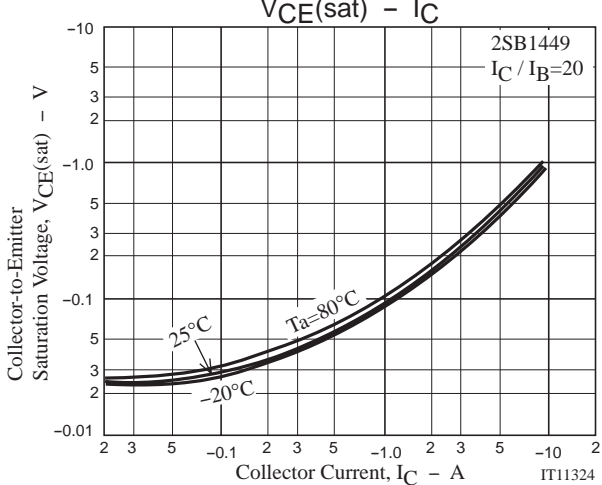
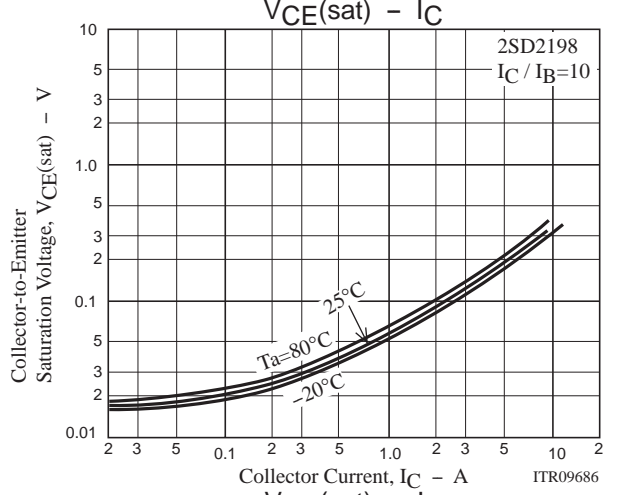
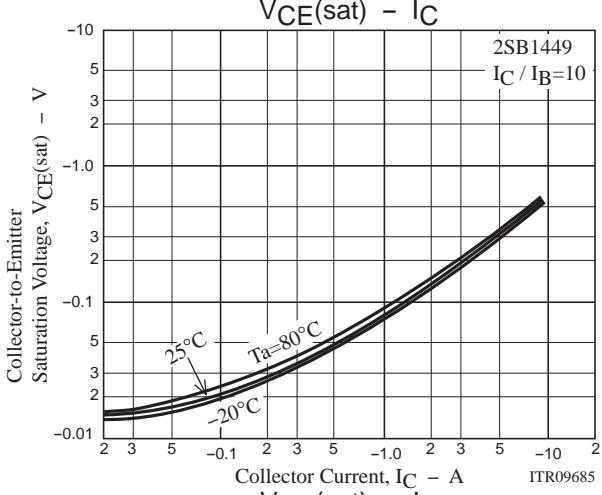
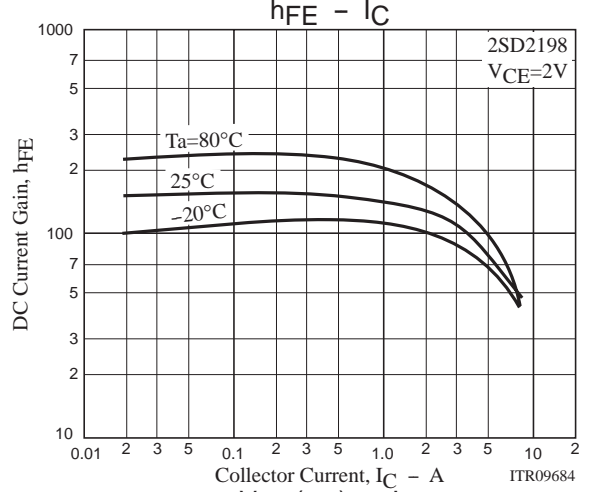
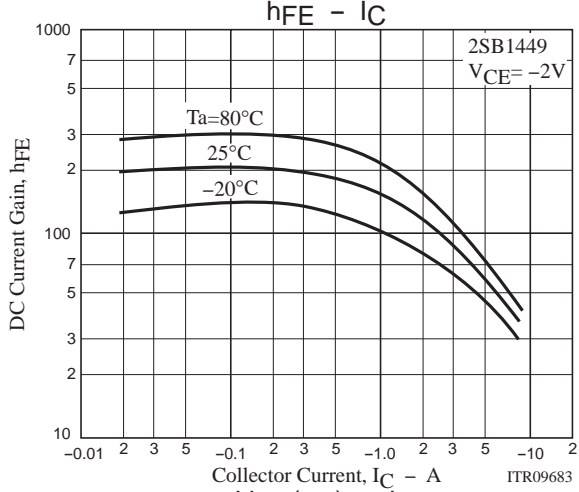
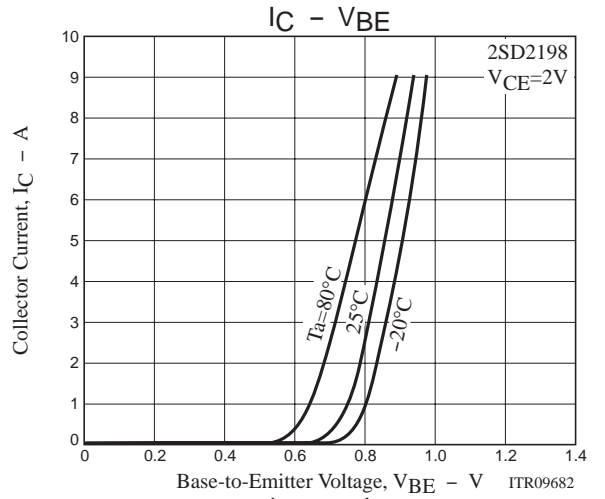
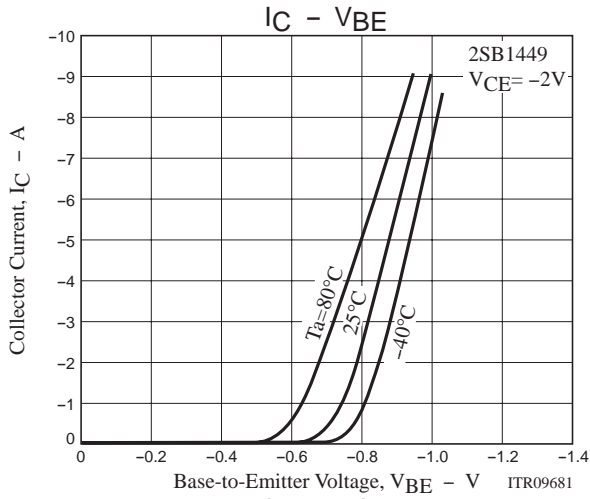


$$10I_{B1} = -10I_{B2} = I_C = 2A$$

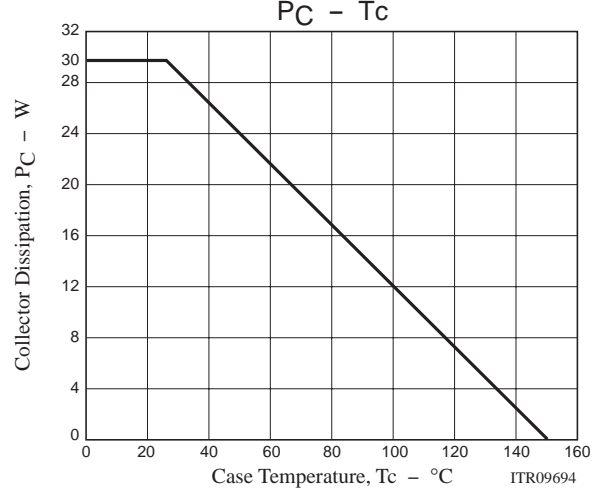
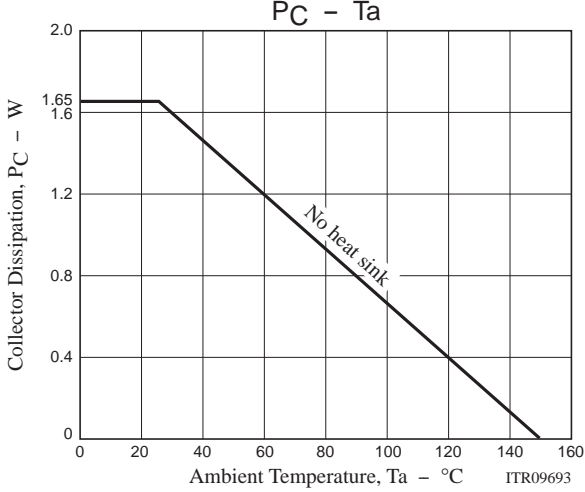
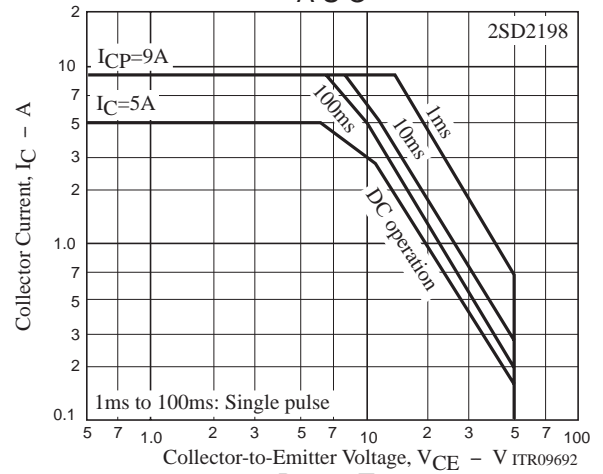
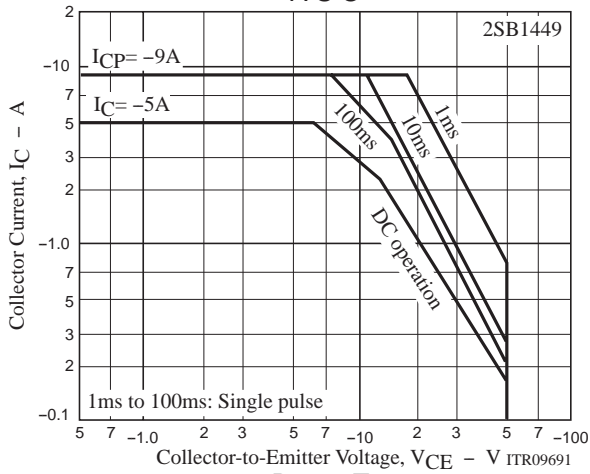
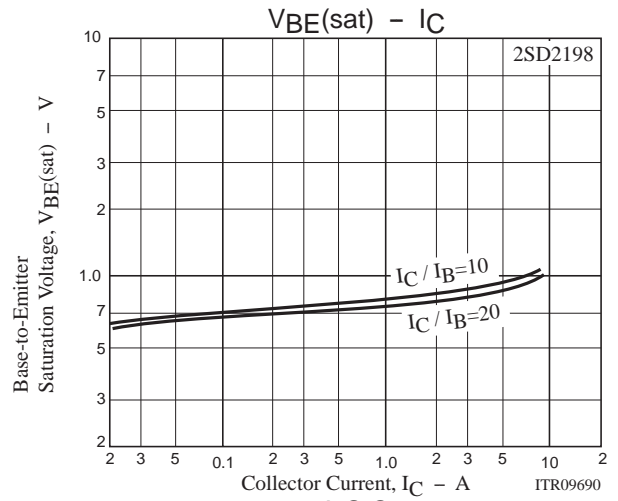
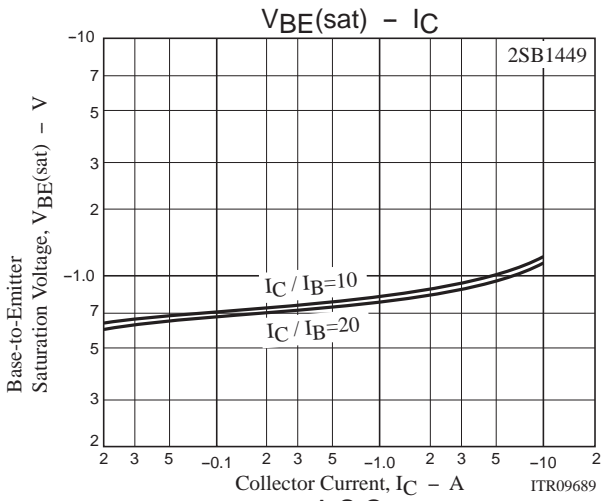
For PNP, the polarity is reversed.



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