



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SB1450 / 2SD2199 — PNP / NPN Epitaxial Planar Silicon Transistors 50V/7A Switching Applications

Features

- Surface mount type device making the following possible.
 - Reduction in the number of manufacturing processes for 2SB1450/2SD2199-applied equipment.
 - High density surface mount applications.
 - Small size of 2SB1450/2SD2199-applied equipment.
- Low collector-to-emitter saturation voltage.
- Highly resistant to breakdown because of wide ASO.

Specifications () : 2SB1450

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		(-)7	A
Collector Current (Pulse)	I _{CP}		(-)12	A
Collector Dissipation	P _C		1.65	W
		T _c =25°C	40	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 _{CB0}	V _{CB} =(-)40V, I _E =0A			(-)0.1	mA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0A			(-)0.1	mA

Continued on next page.

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2SB1450 / 2SD2199

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE1}	$V_{CE}=(-)2V, I_C=(-)1A$	70*		280*	
	h_{FE2}	$V_{CE}=(-)2V, I_C=(-)5A$	30			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5V, I_C=(-)1A$		10		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)4A, I_B=(-)0.4A$			(-)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.		0.2		μs
Storage Time	t_{stg}	See specified Test Circuit.		(0.7)0.9		μs
Fall Time	t_f	See specified Test Circuit.		(0.1)0.3		μs

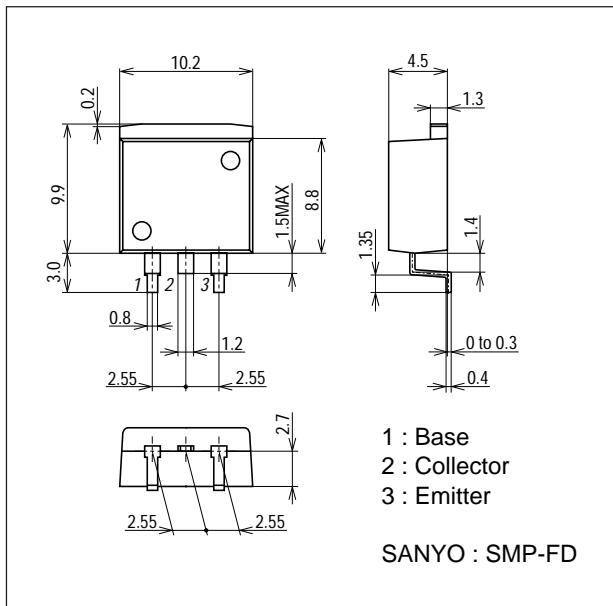
* : The 2SBB1450 / 2SD2199 are classified by 1A h_{FE} as follows :

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

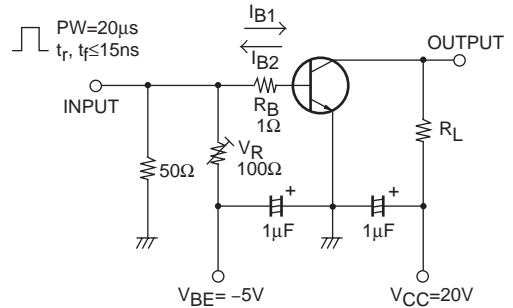
Package Dimensions

unit : mm (typ)

7001-002

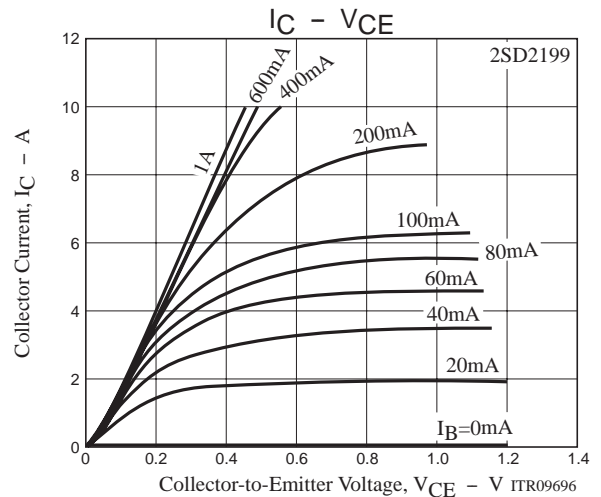
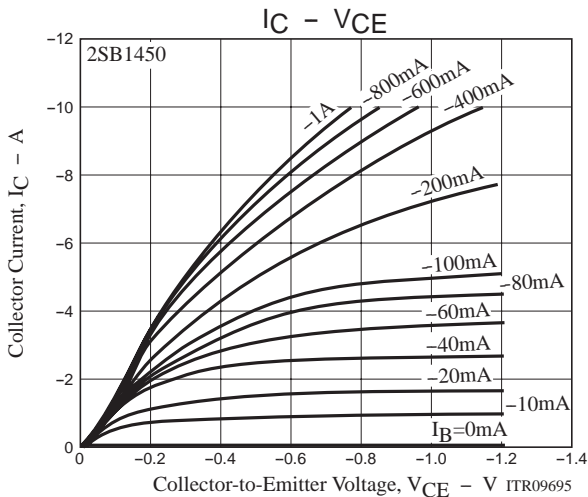


Switching Time Test Circuit

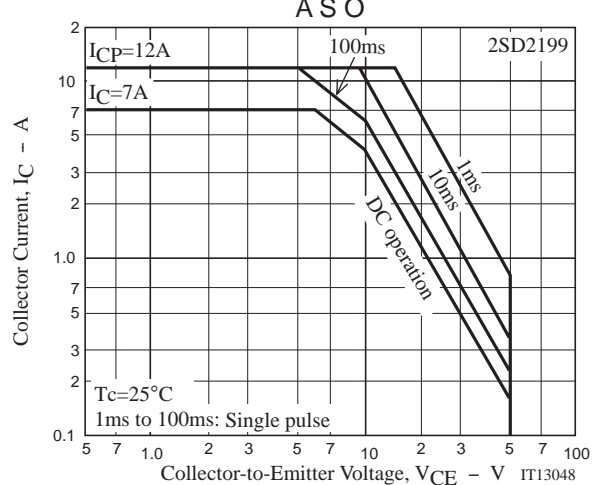
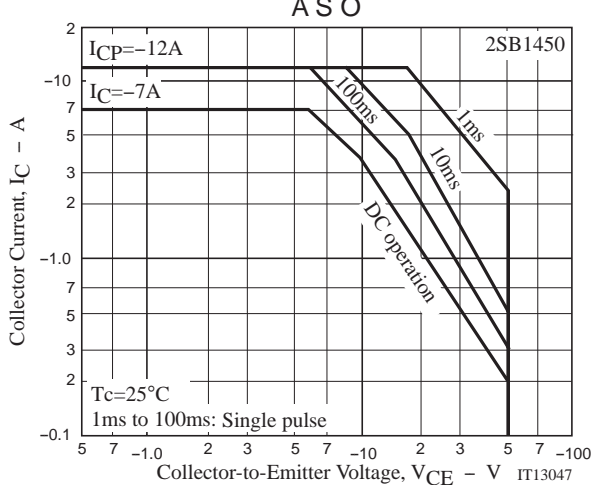
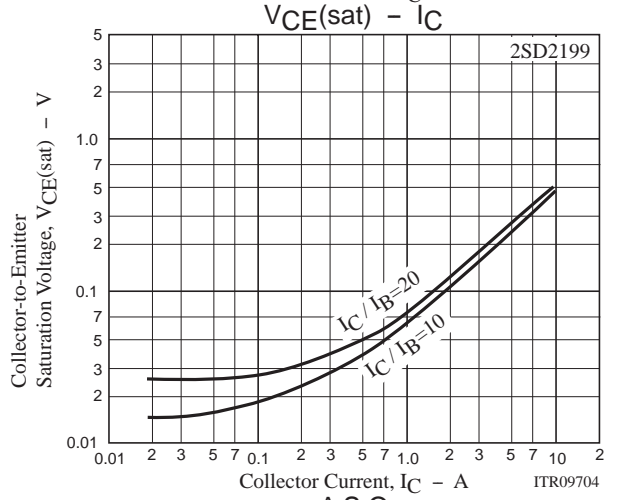
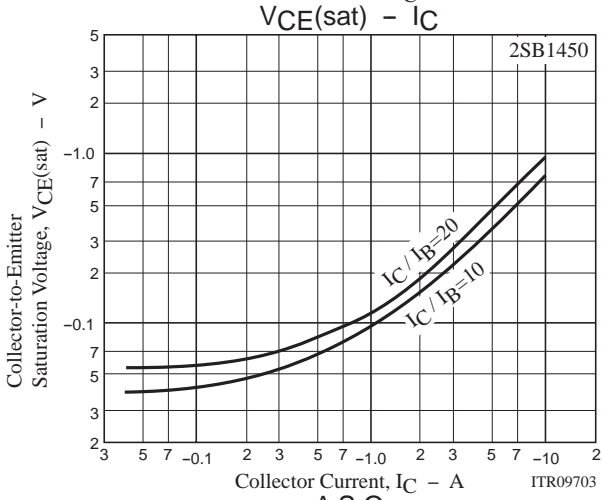
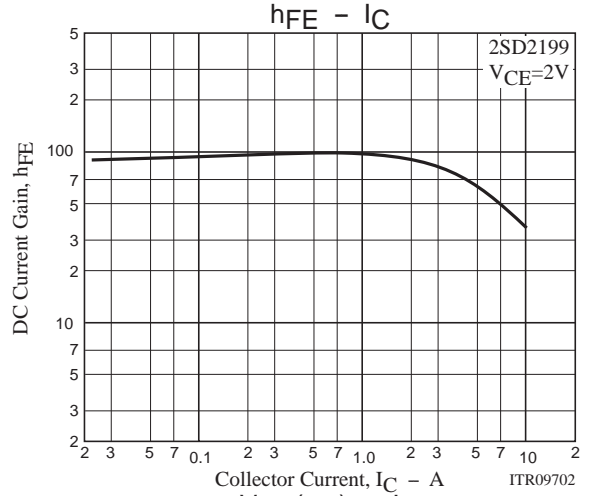
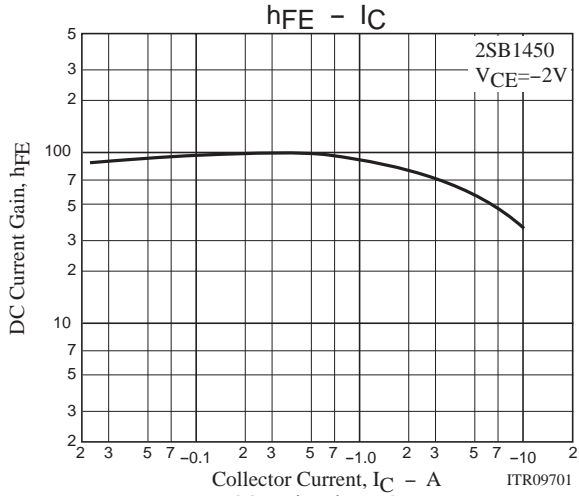
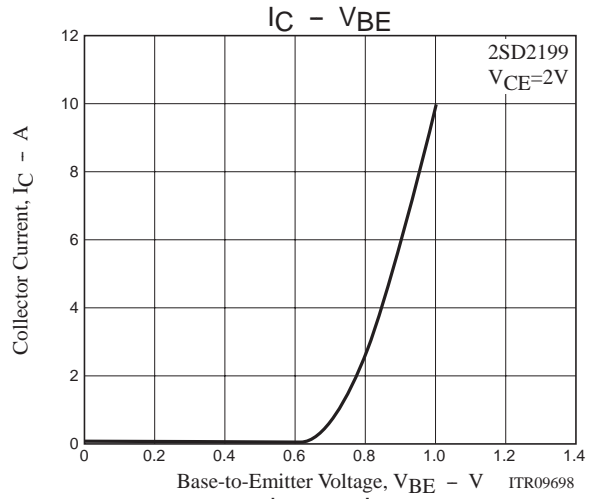
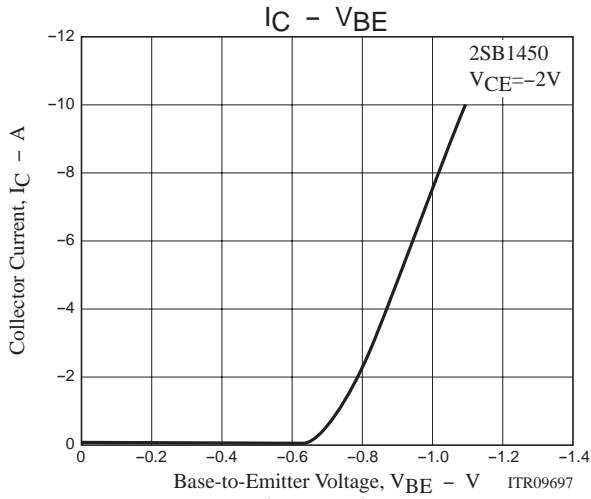


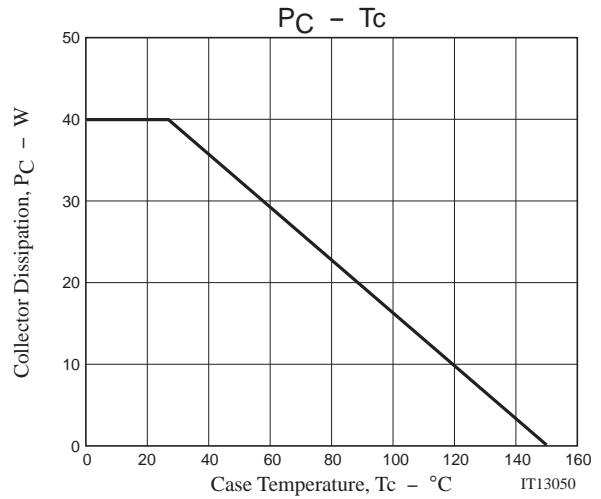
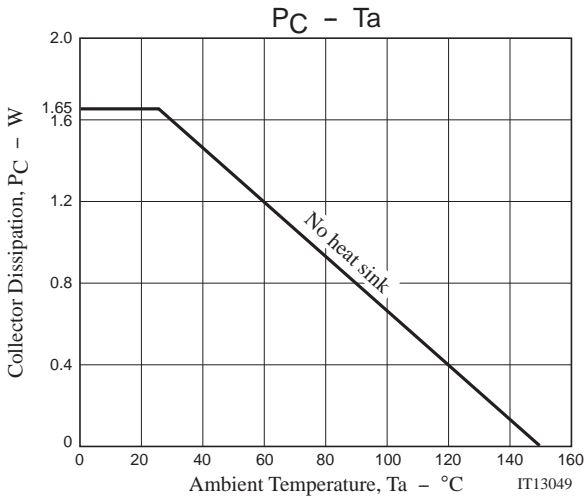
$$I_C = 10I_{B1} = -10I_{B2} = 2A$$

For PNP, the polarity is reversed.



2SB1450 / 2SD2199





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