



SANYO Semiconductors

## DATA SHEET

# 2SB986 / 2SD1348

PNP / NPN Epitaxial Planar Silicon Transistors

50V / 4A Switching Applications

## Applications

- Power supplies, relay drivers, lamp drivers, electrical equipment.

## Features

- Adoption of FBET and MBIT processes.
- Low saturation voltage.
- Large current capacity and wide ASO.

## Specifications ( ) : 2SB986

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	$V_{EB0}$		(-)6	V
Collector Current	$I_C$		(-)4	A
Collector Current (Pulse)	$I_{CP}$		(-)6	A
Collector Dissipation	$P_C$		1.2	W
		$T_c=25^\circ\text{C}$	10	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	$I_{CBO}$	$V_{CB}=-40\text{V}, I_E=0\text{A}$			(-)1.0	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0\text{A}$			(-)1.0	mA

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# 2SB986 / 2SD1348

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	hFE1	$V_{CE}=(-)2V, I_C=(-)100mA$	100*		560*	
	hFE2	$V_{CE}=(-)2V, I_C=(-)3A$	40			
Gain-Bandwidth Product	fT	$V_{CE}=(-)10V, I_C=(-)50mA$		150		MHz
Output Capacitance	Cob	$V_{CB}=(-)10V$		(39)25		pF
Collector-to-Emitter Saturation Voltage	$V_{CE}(sat)$	$I_C=(-)2A, I_B=(-)100mA, Pulse$		(-0.35)0.19	(-0.7)0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE}(sat)$	$I_C=(-)2A, I_B=(-)100mA, Pulse$		(-0.94)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-60)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-50)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-6)			V

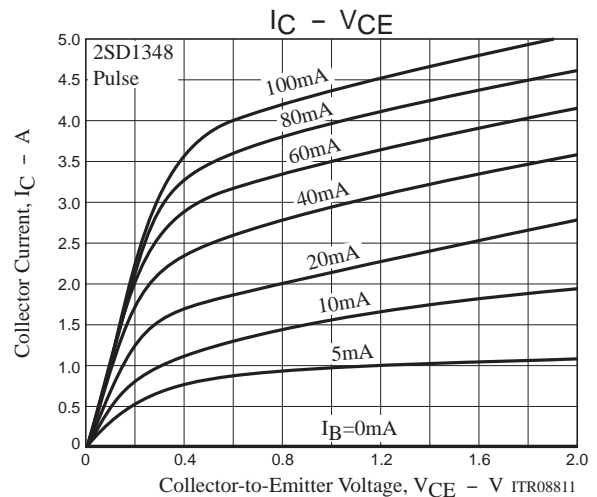
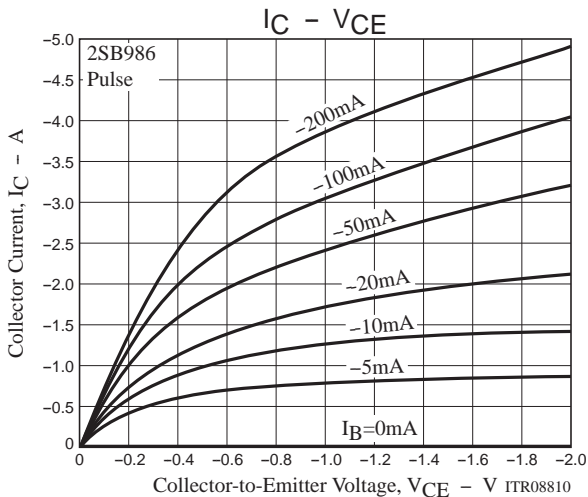
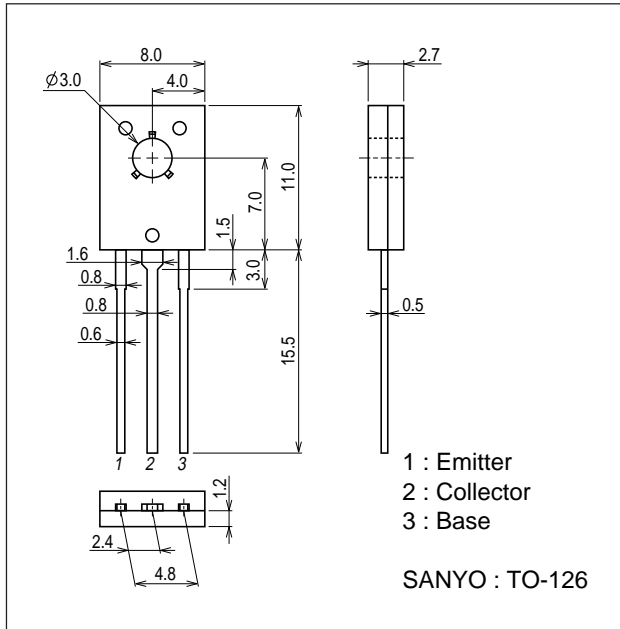
\* : The 2SB986 / 2SD1348 are classified by 100mA hFE as follows :

Rank	R	S	T	U
hFE	100 to 200	140 to 280	200 to 400	280 to 560

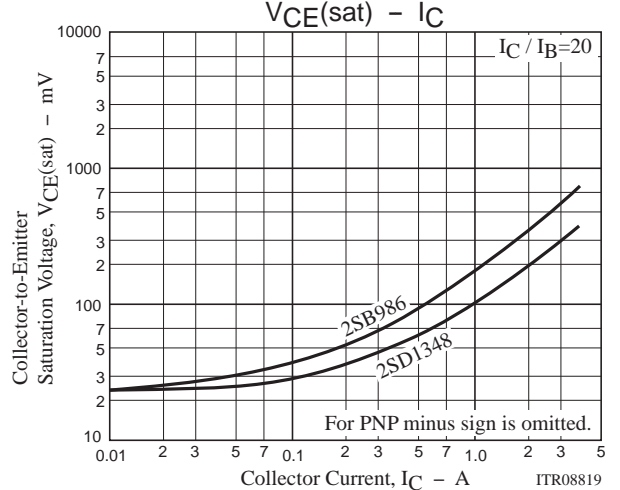
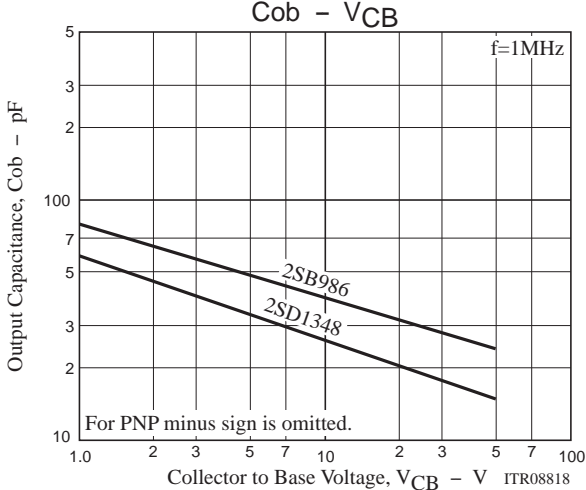
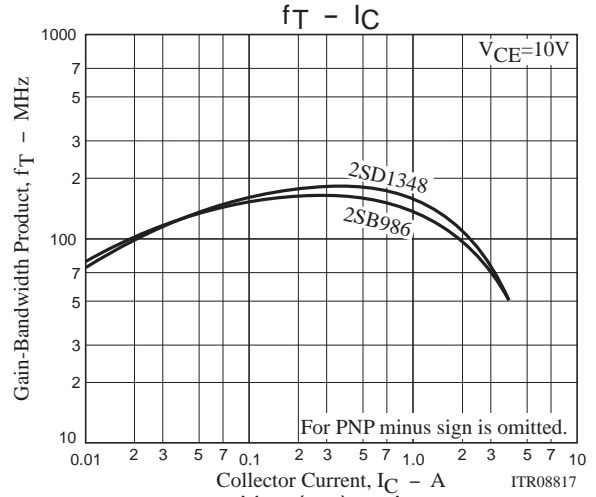
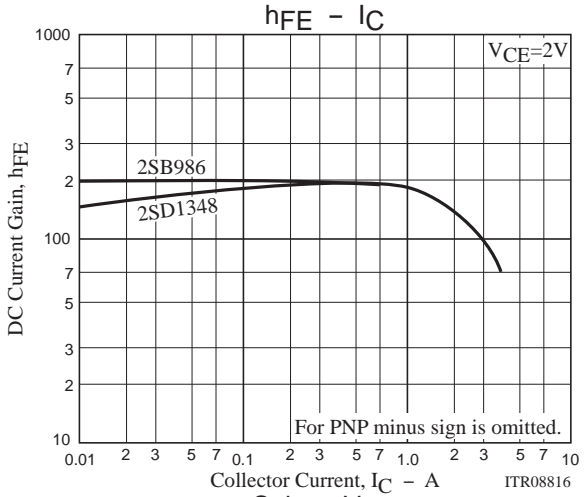
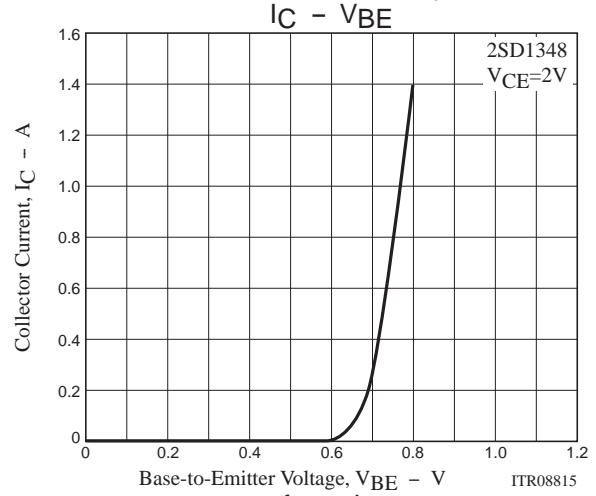
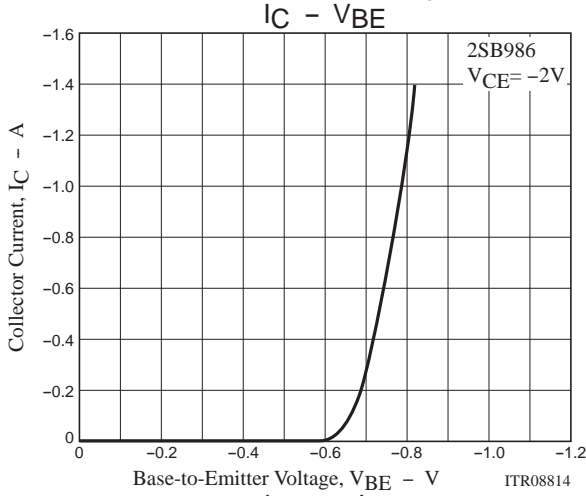
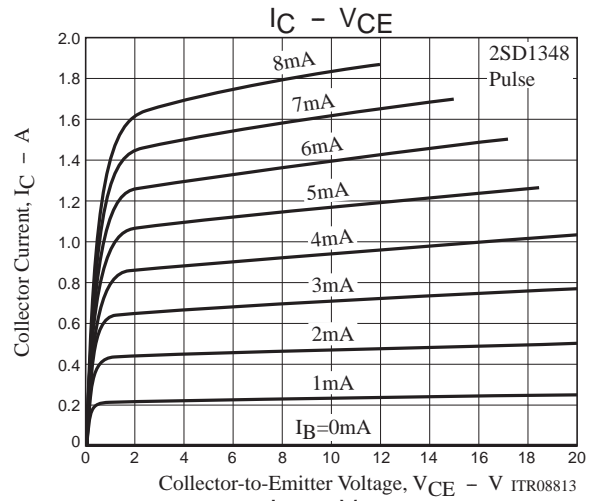
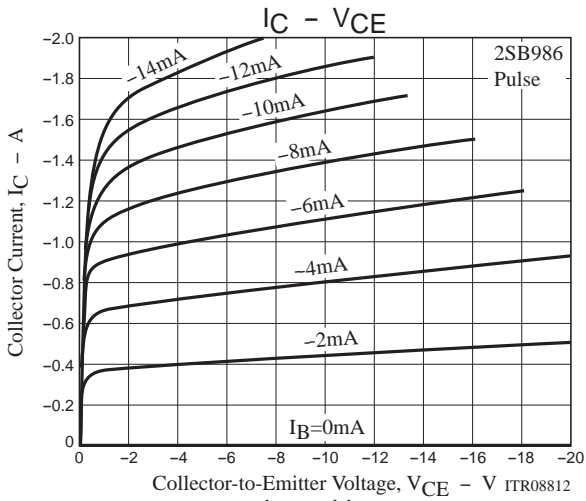
## Package Dimensions

unit : mm (typ)

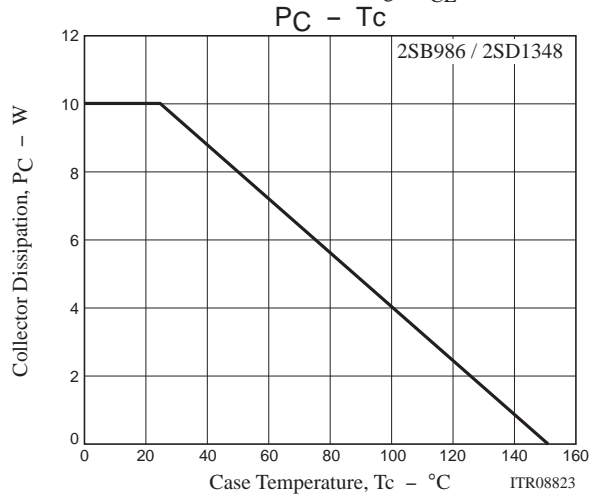
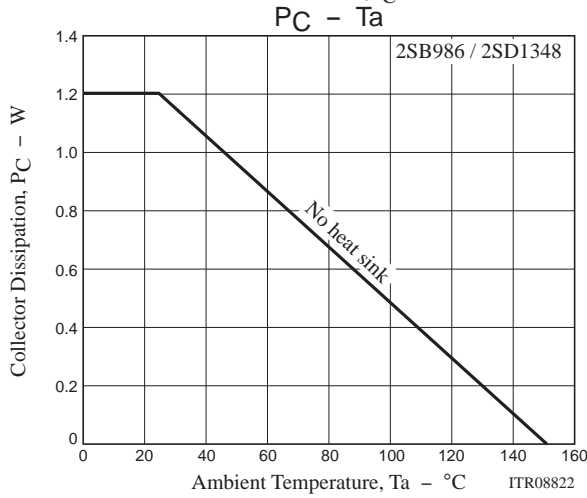
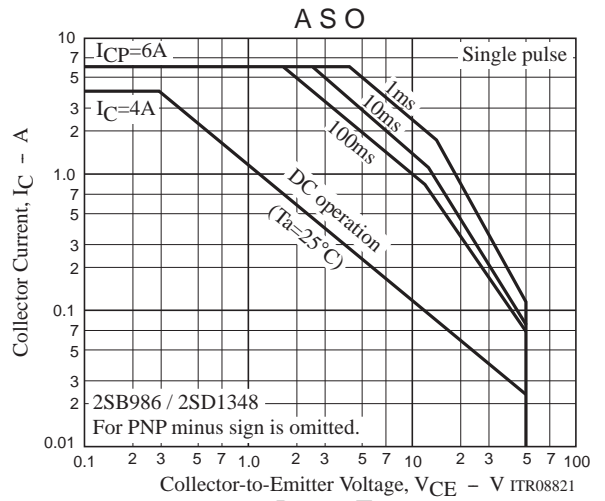
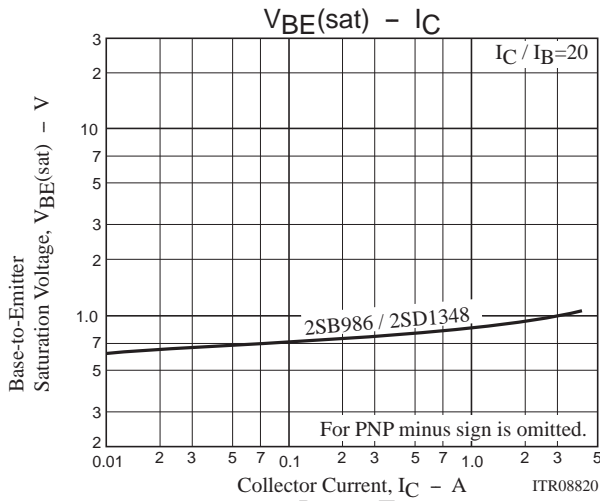
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2SB986 / 2SD1348



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