

# **Large-Current Driving Applications**

## **Applications**

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

### **Features**

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

(): 2SB985

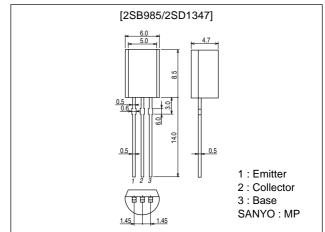
## **Specifications**

## **Absolute Maximum Ratings** at Ta = 25°C

## **Package Dimensions**

unit:mm

2006B



Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>СВО</sub>		(–)60	V
Collector-to-Emitter Voltage	VCEO		(–)50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(–)6	V
Collector Current	IC		(–)3	Α
Collector Current (Pulse)	I <sub>CP</sub>		(–)6	Α
Collector Dissipation	PC		1	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

#### **Electrical Characteristics** at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
	Symbol		min	typ	max	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0			(-)1.0	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(–)1.0	μA
DC Current Gain	h <sub>FE</sub> 1	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)100mA	100*		560*	
	h <sub>FE</sub> 2	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)3A	40			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)50mA		150		MHz
Common Base Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		25(39)		pF

<sup>\*:</sup> The 2SB985/2SD1347 are classified by 100mA h<sub>FE</sub> as follows:

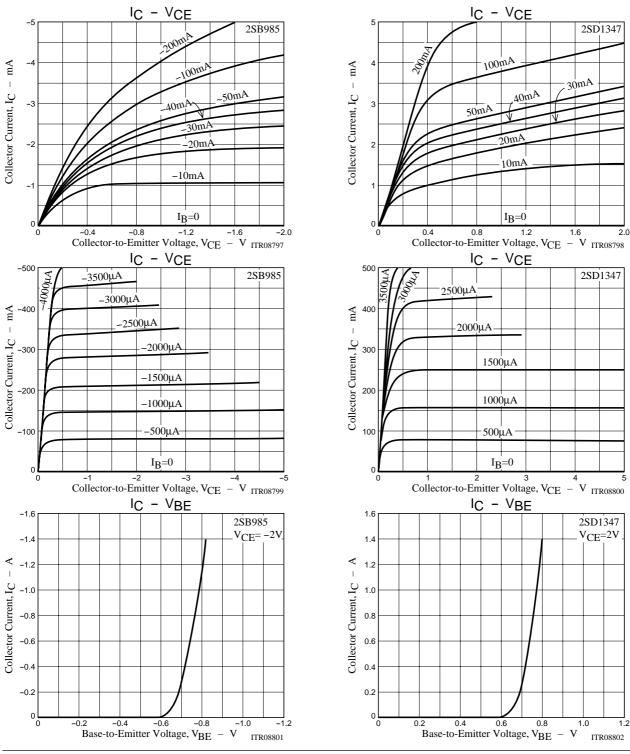
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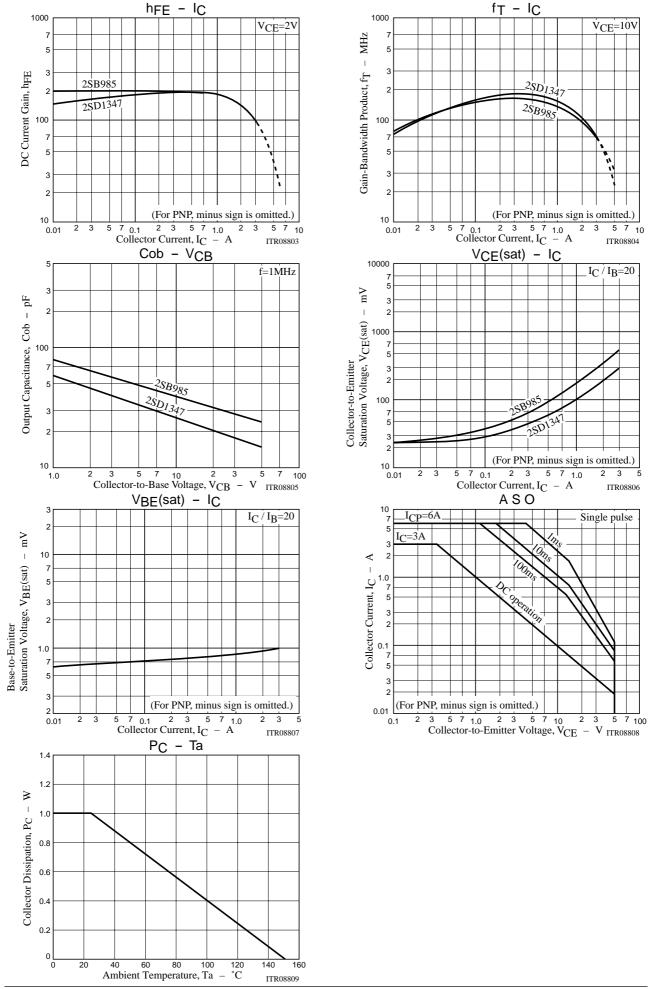
Rank	R	S	Т	U
hFF	100 to 200	140 to 280	200 to 400	280 to 560

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	l Oille
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)100mA		0.19	0.5	V
				(-0.35)	(-0.7)	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)100mA		(-)0.94	(-)1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =(-)10μA, I <sub>E</sub> =0	(-)60			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I <sub>C</sub> =(−)1mA, R <sub>BE</sub> =∞	(-)50			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	$I_{E}=(-)10\mu A I_{C}=0$	(–)6			V





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