# Power Transistor (-100V, -2A) 2SB1580 / 2SB1316

### Features

- 1) Darlington connection for high DC current gain.
- 2) Built-in resistor between base and emitter.
- 3) Built-in damper diode.
- 4) Complements the 2SD2195 / 2SD1980.

### ● Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit		
Collector-base voltage		Vсво	-100	V		
Collector-emitter voltage		Vceo	-100	V		
Emitter-base voltage		V <sub>E</sub> BO	-8	V		
Collector current		lc	-2	A(DC)		
			-3	A(Pulse) *1		
Collector	2SB1580		2	w *2		
	2SB1316	Pc	1	W *2		
dissipation			10	W(Tc=25°C)		
Junction temperature		Tj	150	°C		
Storage temperature		Tstg	-55 to +150	°C		

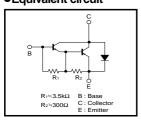
<sup>\*1</sup> Single pulse Pw=100ms \*2 When mounted on a 40 x 40 x 0.7 mm ceramic board.

## ●Packaging specifications and hFE

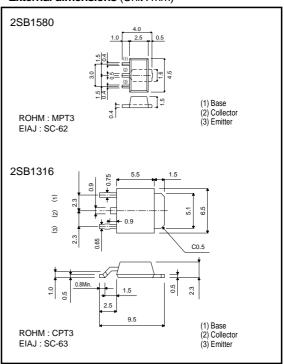
Туре	2SB1580	2SB1316	
Package	MPT3	CPT3	
hfe	1k to 10k	1k to 10k	
Marking	BN∗	-	
Code	T100	TL	
Basic ordering unit (pieces)	1000	2500	

<sup>\*</sup> Denotes hre

# ●Equivalent circuit



### ●External dimensions (Unit : mm)



# ●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions	
Collector-base breakdown voltage	ВУсво	-100	-	-	V	Ic=-50μA	
Collector-emitter breakdown voltage	BVceo	-100	-	-	V	Ic=-5mA	
Emitter-base breakdown voltage	ВVево	-10	-	-	V	I <sub>E</sub> = -5mA	
Collector cutoff current	Ісво	-	-	-10	μΑ	VcB = -100V	
Emitter cutoff current	Ієво	-	-	-3	mA	V <sub>EB</sub> = -7V	
Collector-emitter saturation voltage	VCE(sat)	-	-	-1.5	V	Ic/I <sub>B</sub> = -1A/-1mA	*
DC current transfer ratio	hfe	1000	-	10000	-	Vce = -2V , Ic = -1A	*
Transition frequency	f⊤	-	50	-	MHz	Vce = -5V , Ie =0.1A , f = 30MHz	
Output capacitance	Cob	-	35	-	pF	Vcb = -10V , IE = 0A , f = 1MHz	

<sup>\*</sup>Measured using pulse current.

### •Electrical characteristics curve

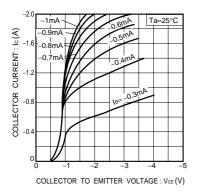


Fig.1 Grounded emitter output characteristics

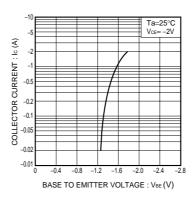


Fig.2 Grounded emitter propagation characteristics

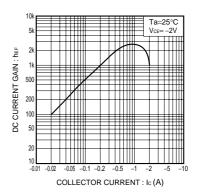


Fig.3 DC current gain vs. collector current

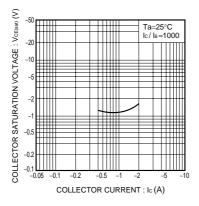


Fig.4 Collector-emitter saturation voltage vs. collector current

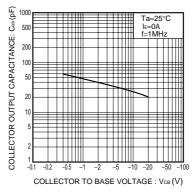
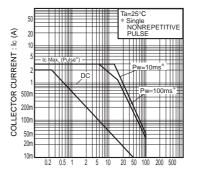
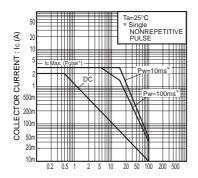


Fig.5 Collector output capacitance vs. collector-base voltage



COLLECTOR TO EMITTER VOLTAGE: VcE (V)

Fig.6 Safe Operating area (2SB1580)



COLLECTOR TO EMITTER VOLTAGE: Vce (V)

Fig.7 Safe Operating area (2SB1316)

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