

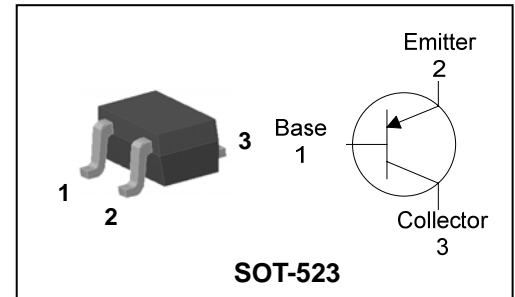
Description

- General small signal amplifier


Features

- Low collector saturation voltage : $V_{CE(sat)} = -0.3V(\text{Max.})$
- Low output capacitance : $C_{ob} = 4pF(\text{Typ.})$
- Complementary pair with 2SC5343E

PIN Connection



Ordering Information

Type NO.	Marking	Package Code
2SA1980E	 ① ② ③	SOT-523

① Device Code ② hFE Rank ③ Year&Week Code

Absolute maximum ratings

($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	V_{CBO}	-50	V
Collector-Emitter voltage	V_{CEO}	-50	V
Emitter-Base voltage	V_{EBO}	-5	V
Collector current	I_C	-150	mA
Collector dissipation	P_C	150	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ 150	$^\circ\text{C}$

Electrical Characteristics

($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C = -100\mu\text{A}, I_E = 0$	-50	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}, I_B = 0$	-50	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E = -10\mu\text{A}, I_C = 0$	-5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$	-	-	-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-0.1	μA
DC current gain	h_{FE}^*	$V_{CE} = -6\text{V}, I_C = -2\text{mA}$	70	-	700	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$	-	-	-0.3	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	80	-	-	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	4	7	pF
Noise figure	NF	$V_{CE} = -6\text{V}, I_C = -0.1\text{mA}$ $f = 1\text{KHz}, R_g = 10\text{K}\Omega$	-	-	10	dB

*: h_{FE} rank / O : 70~140, Y : 120~240, G : 200~400, L : 300~700

Electrical Characteristic Curves

Fig. 1 P_C - T_a

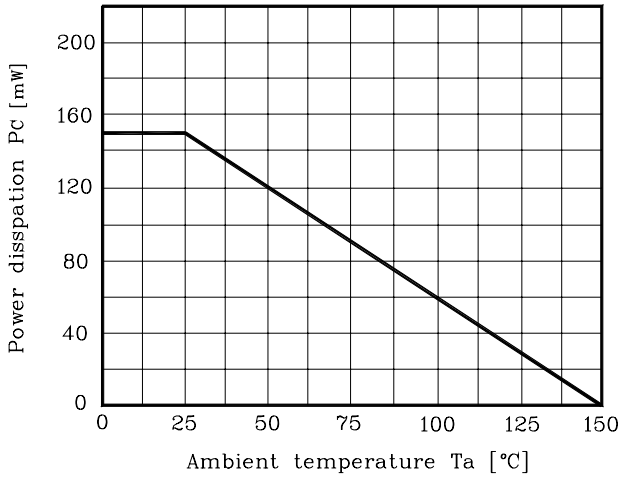


Fig. 2 I_C - V_{BE}

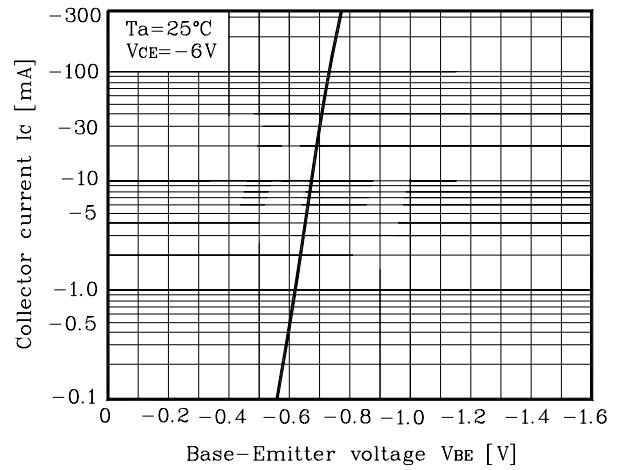


Fig. 3 I_C - V_{CE}

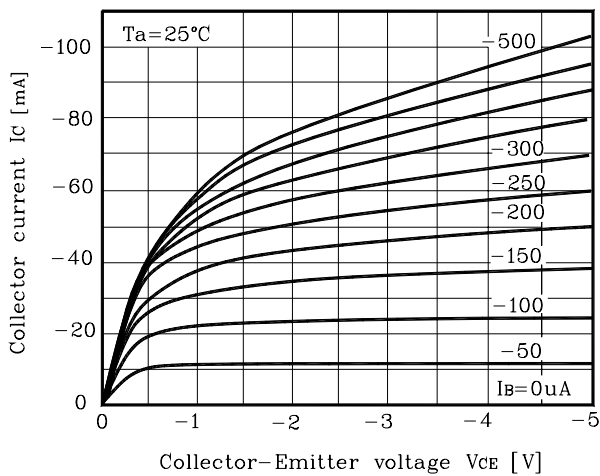


Fig. 4 h_{FE} - I_C

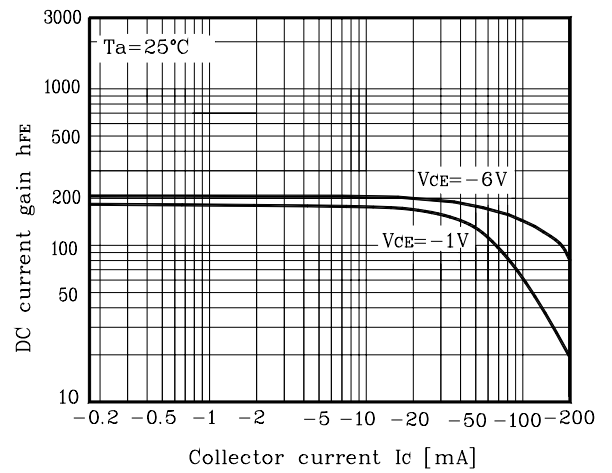
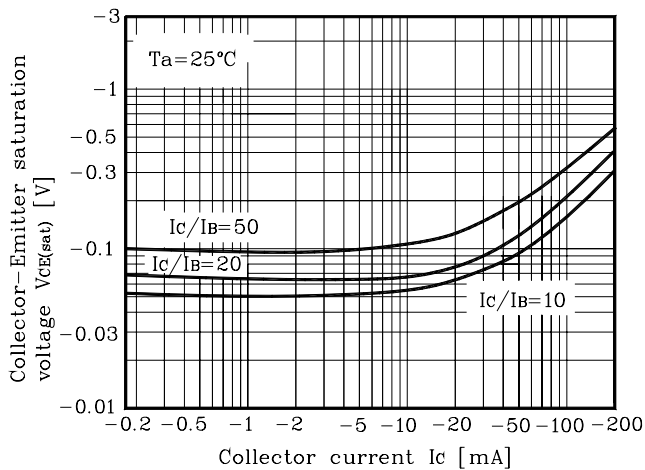
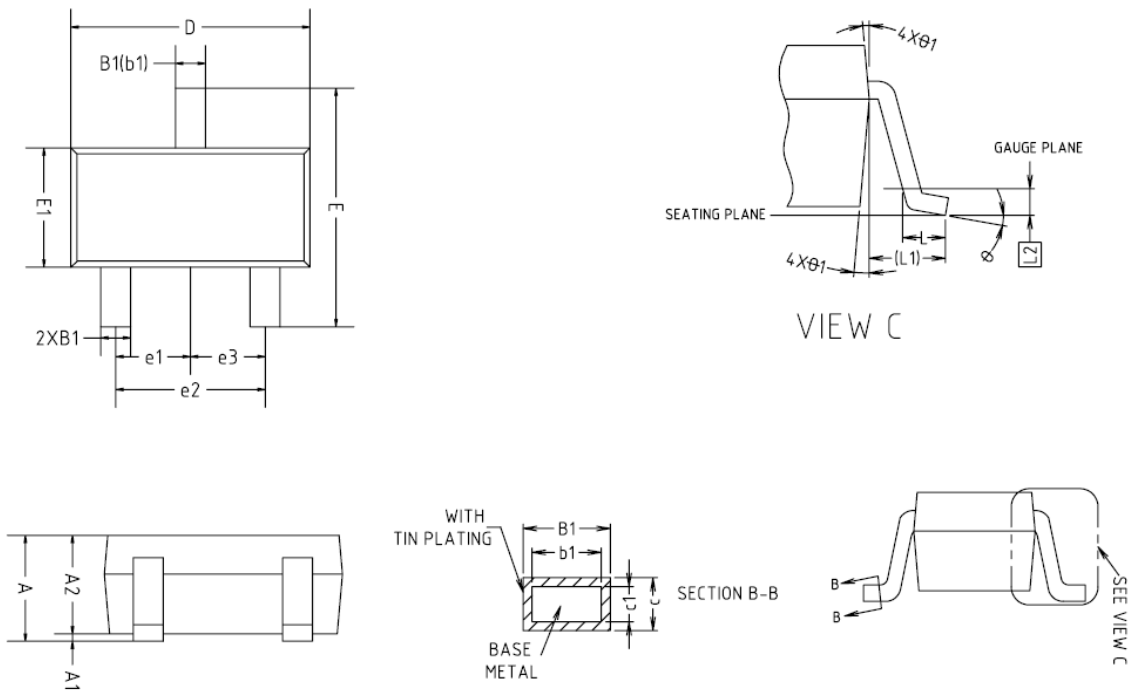


Fig. 5 $V_{CE(sat)}$ - I_C

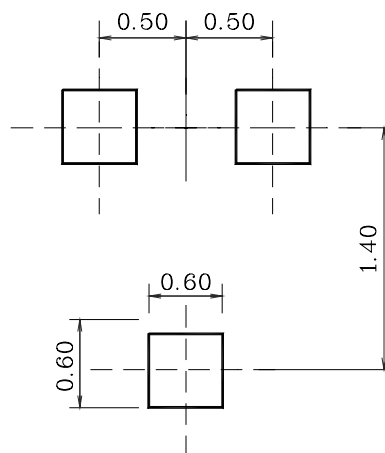


Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	—	—	0.80	
A1	0.00	—	0.10	
A2	0.65	0.70	0.75	
B1	0.19	—	0.24	
b1	0.17	—	0.21	
c	0.13	—	0.15	
c1	0.10	—	0.12	
D	1.48	1.58	1.68	
E	1.50	1.60	1.70	
E1	0.66	0.76	0.86	
e1	0.50 BSC			
e2	1.00 BSC			
e3	0.50 BSC			
L	0.15	0.205	0.30	
L1	0.40 REF			
L2	0.15 BSC			
φ	0°	—	8°	
θ1	4°	—	10°	

※Recommend PCB solder land [Unit: mm]



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