

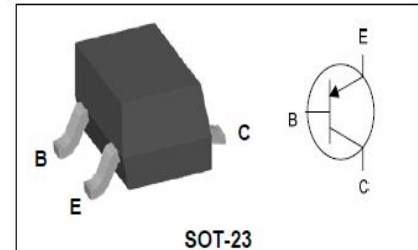
## Description

- General small signal amplifier

## PIN Connection

## Features

- Low collector saturation voltage:  
 $V_{CE(sat)} = -0.3V(\text{Max.})$
- Low output capacitance :  $C_{ob} = 4pF(\text{Typ.})$
- Complementary pair with KC5343S



## Ordering Information

Type NO.	Marking	Package Code
KA1980S	CA □ □ ① ② ③	SOT-23

① Device Code ② HFE Grade ③ Year & Week Code • Dalian

## Absolute Maximum Ratings

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

Characteristic	Symbol	Ratings	Unit
<b>Collector-base voltage</b>	$V_{CBO}$	-50	V
Collector-emitter voltage	$V_{CEO}$	-50	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-150	mA
Collector power dissipation	$P_C^*$	350	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55~150	$^\circ\text{C}$

\* Package mounted on 99.5% alumina  $10 \times 8 \times 0.6\text{mm}$

## Electrical Characteristics

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

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C = -1\text{mA}, I_B = 0$	-50	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -50\text{V}, I_E = 0$	-	-	-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-0.1	$\mu\text{A}$
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	-	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  $P_C - T_a$

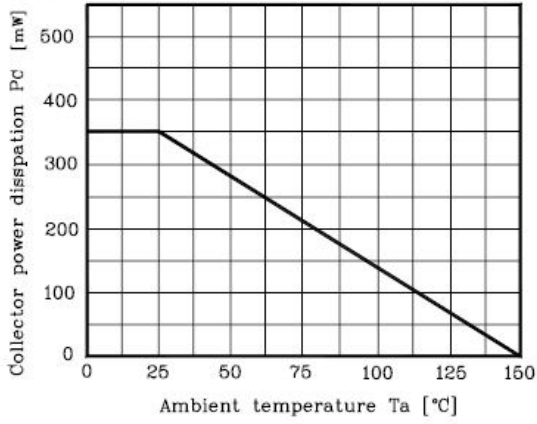


Fig. 2  $I_C - V_{BE}$

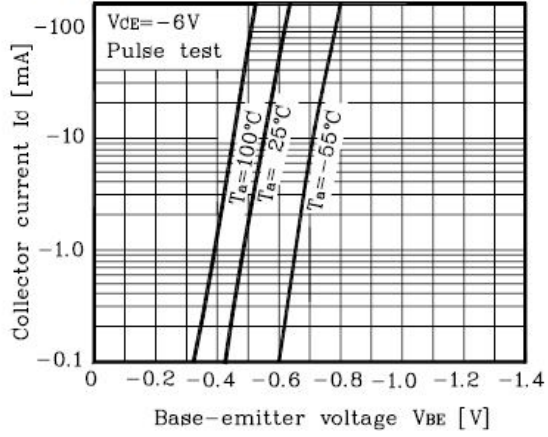


Fig. 3  $I_C - V_{CE}$

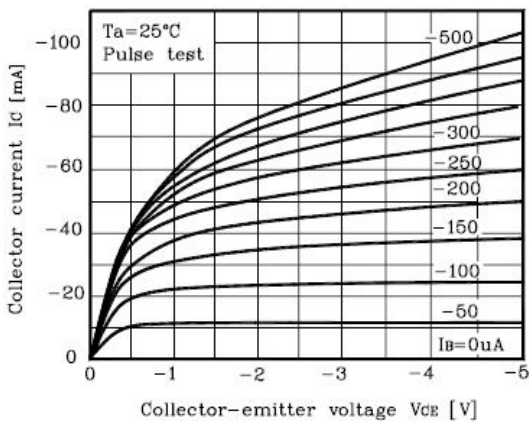


Fig. 4  $h_{FE} - I_C$

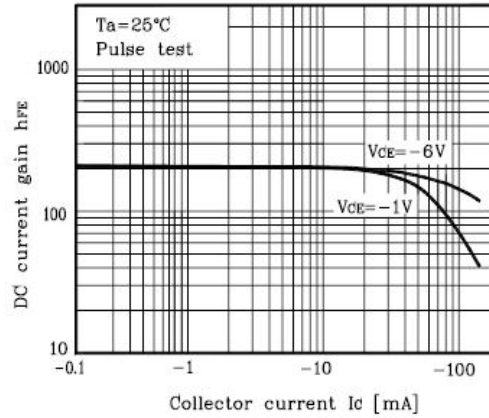
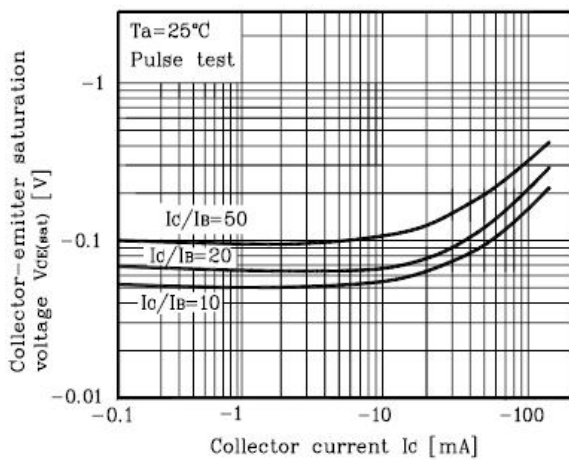
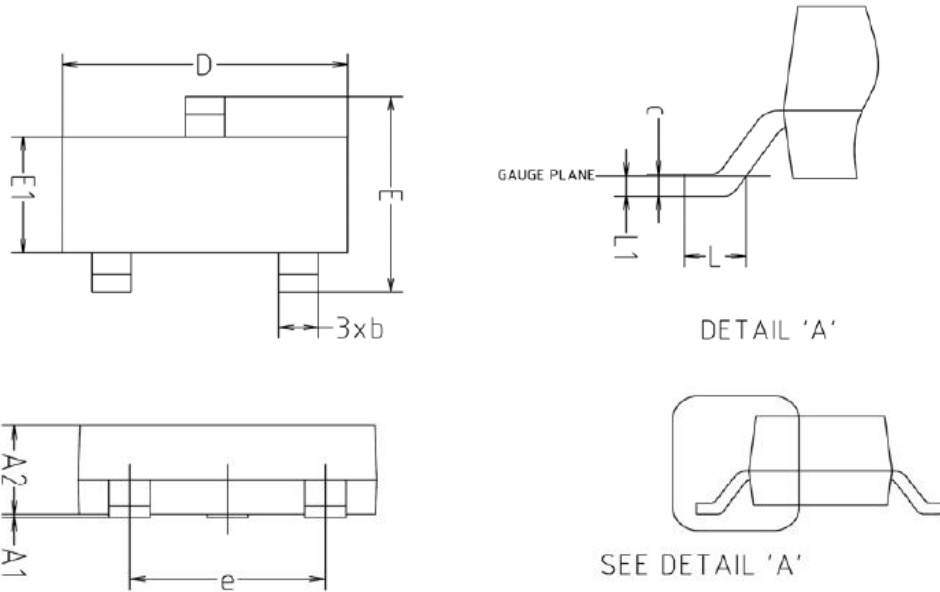


Fig. 5  $V_{CE(sat)} - I_C$

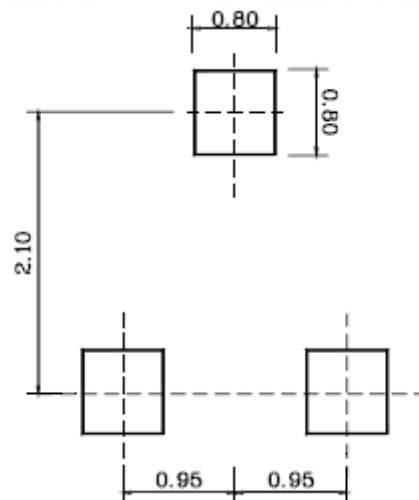


## Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.00	-	0.10	
A2	0.82	-	1.02	
b	0.39	0.42	0.45	
c	0.09	0.12	0.15	
D	2.80	2.90	3.00	
E	2.20	2.40	2.60	
E1	1.20	1.30	1.40	
e	1.90BSC			
L	0.20	-	-	
L1	0.12BSC			

※Recommend PCB solder land [Unit: mm]



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