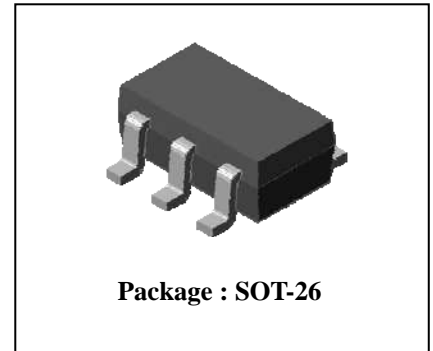


## Descriptions

- Complex type bipolar transistor

## Features

- Reduce quantity of parts and mounting cost
- High collector power dissipation:  $P_C = 500\text{mW}(\text{Max})$

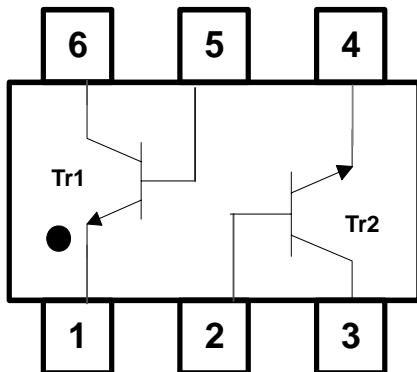


## Ordering Information

Type NO.	Marking	Package Code
SUT093N	93◇□	SOT-26

◇ : Hfe rank, □ : Year & Week Code

## PIN Assignment & Description



[Pin Assignment]

Pin	Description
1	Emitter 1
2	Base 2
3	Collector 2
4	Emitter 2
5	Base 1
6	Collector 1

## Absolute maximum ratings(TR1, TR2)

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CBO}$	100	V
Collector-Emitter voltage	$V_{CEO}$	90	V
Emitter-Base voltage	$V_{EBO}$	6	V
Collector current	$I_C$	0.3	A(DC)
	$I_{CP}^*$	0.6	A(Pulse)
Collector power dissipation	$P_{C}^{**}$	0.5	W
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55~150	°C

\* : Single pulse,  $t_p = 300 \mu s$

\*\* : Total rating(Each terminal mounted on a recommended solder land)

## Electrical Characteristics(TR1, TR2)

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	$BV_{CBO}$	$I_C = 100 \mu A, I_E = 0$	100	-	-	V
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C = 1 \text{ mA}, I_B = 0$	90	-	-	V
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_E = 10 \mu A, I_C = 0$	6	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 100V, I_E = 0$	-	-	0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 4V, I_C = 0$	-	-	0.1	$\mu A$
DC current gain	$h_{FE}^{1)}$	$V_{CE} = 5V, I_C = 10 \text{ mA}$	80	-	250	-
Collector-Emitter saturation voltage	$V_{CE(sat)(1)}^{2)}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$	-	-	0.2	V
	$V_{CE(sat)(2)}^{2)}$	$I_C = 50 \text{ mA}, I_B = 5 \text{ mA}$	-	-	0.5	V
Base-Emitter saturation voltage	$V_{BE(sat)(1)}^{2)}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$	-	-	1	V
	$V_{BE(sat)(2)}^{2)}$	$I_C = 50 \text{ mA}, I_B = 5 \text{ mA}$	-	-	1	V
Transition frequency	$f_T$	$V_{CE} = 10V, I_C = 10 \text{ mA}$	100	-	400	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1 \text{ MHz}$	-	4	-	pF

\* Note 1)  $h_{FE}$  Rank / A : 80~150, B : 130~250

\* Note 2) Pulse Tester : Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2.0\%$

Electrical Characteristic Curves(TR1, TR2)

Fig. 1  $P_C - T_a$

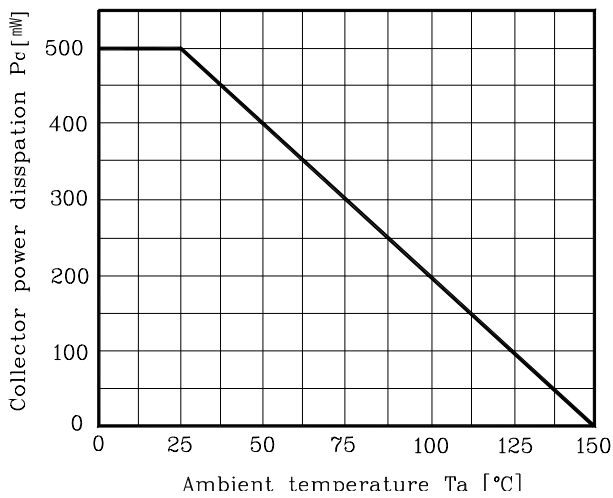


Fig. 2  $I_C - V_{BE}$

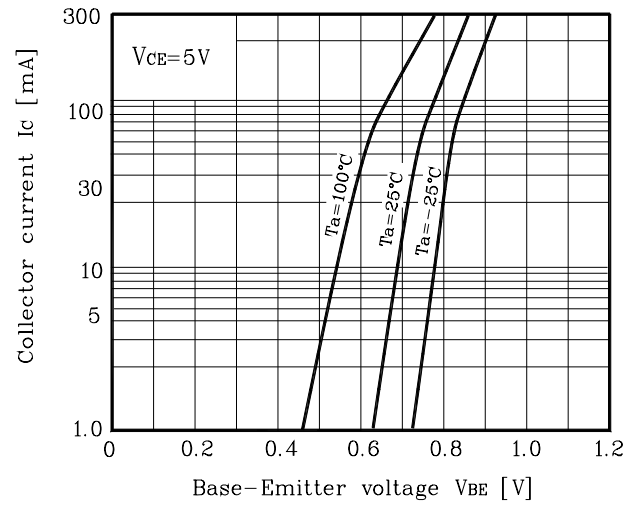


Fig. 3  $h_{FE} - I_C$

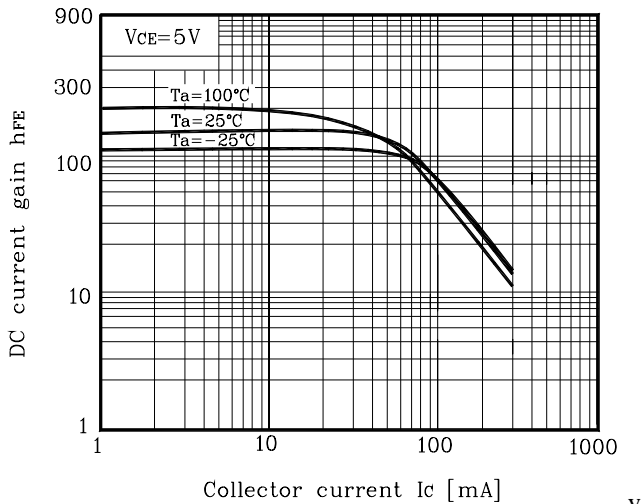


Fig. 4  $V_{CE(sat)}, V_{BE(sat)} - I_C$

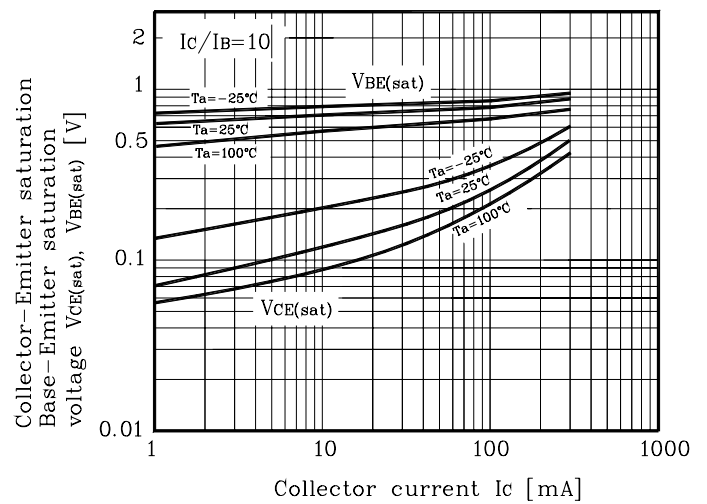


Fig. 5  $f_T - I_C$

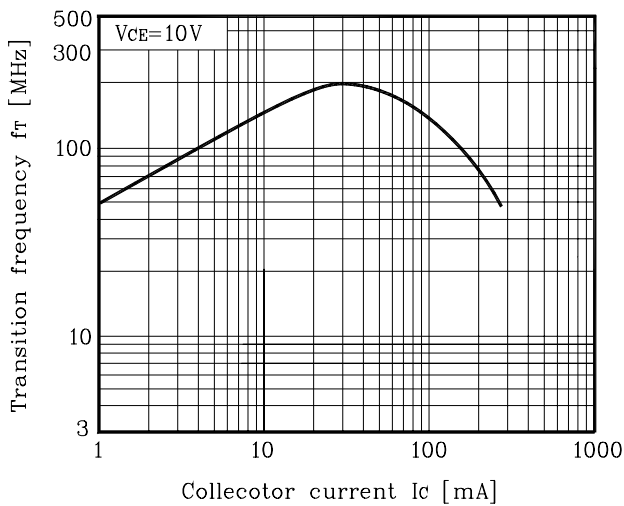
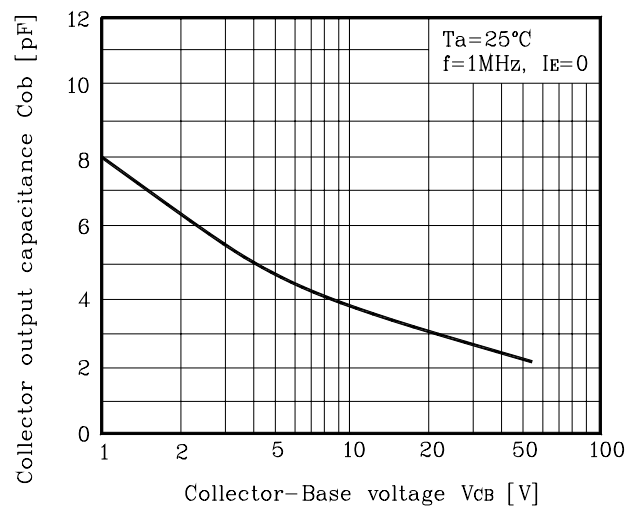
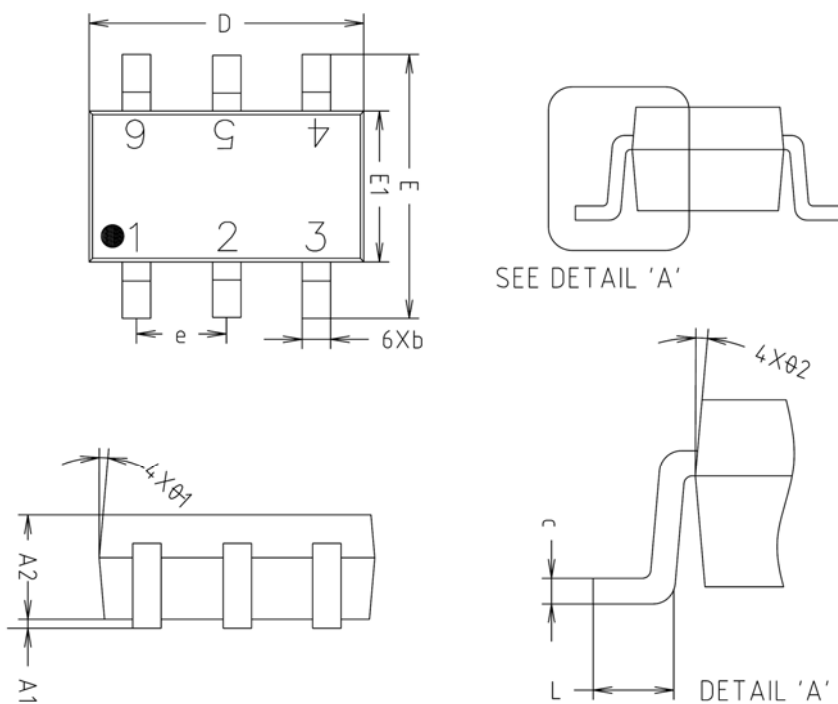


Fig. 6  $C_{ob} - V_{CB}$

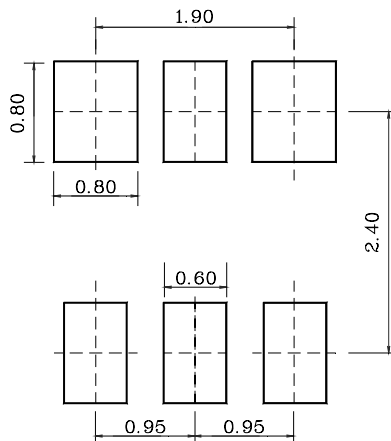


SOT-26 Outline Dimension(mm)



SYMBOL	MILLIMETERS(mm)			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.000	0.050	0.100	
A2	1.000	1.100	1.200	
b	-	0.400	0.450	
c	0.110	0.150	0.190	
D	2.800	2.900	3.000	
E	2.600	2.800	3.000	
E1	1.500	1.600	1.700	
e	0.930	0.950	0.970	
L	0.400	-	-	
Ø1	5° REF			
Ø2	5° REF			

※ Recommend PCB solder land [Unit: mm]



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