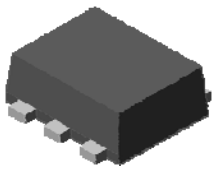
SUT510EF

Epitaxial planar PNP/NPN silicon transistor

Description

- Complex type bipolar transistor



Package : SOT-563F

Feature

- Very small package save PCB area
- Reduce quantity of parts and mounting cost
- Both 2SA1980 chip and 2SC5343 chip in SOT-563F package

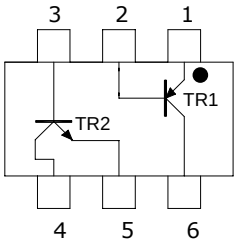
Ordering Information

Type NO.	Marking	Package Code
SUT510EF	4X□	SOT-563F

□ : Year & Week Code

Equivalent circuit & PIN Connections

- **Equivalent Circuit**



PIN Connections

1. Emitter 1
2. Base 1
3. Base 2
4. Collector 2
5. Emitter 2
6. Collector 1

Absolute Maximum Ratings [Tr1, Tr2] (Ta=25°C)

Characteristic	Symbol	Rating		Unit
		Tr1	Tr2	
Collector-base voltage	V_{CBO}	-50	60	V
Collector-emitter voltage	V_{CEO}	-50	50	V
Emitter-base voltage	V_{EBO}	-5	5	V
Collector current	I_C	-150	150	mA
Collector Power dissipation	P_C※	150		mW
Junction temperature	T_J	150		°C
Storage temperature range	T_{stg}	-55~150		°C

※: Total rating

Electrical Characteristics [Tr1]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	BV_{CEO}	I_C=-1mA, I_B=0	-50	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=-50V, I_E=0	-	-	-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-0.1	μA
DC current gain	h_{FE}	V_{CE}=-6V, I_C=-2mA	120	-	400	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-100mA, I_B=-10mA	-	-	-0.3	V
Base-emitter voltage	V_{BE}	V_{CE}=-6V, I_C=-2mA	-	-0.65	-	V
Transition frequency	f_T	V_{CE}=-10V, I_C=-10mA	-	200	-	MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	4	-	pF

Electrical Characteristics [Tr2]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	BV_{CEO}	I_C=1mA, I_B=0	50	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0	-	-	0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	0.1	μA
DC current gain	h_{FE}	V_{CE}=6V, I_C=2mA	120	-	400	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA	-	-	0.25	V
Base-emitter voltage	V_{BE}	V_{CE}=6V, I_C=2mA	-	0.65	-	V
Transition frequency	f_T	V_{CE}=10V, I_C=10mA	-	200	-	MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	2	-	pF

Electrical Characteristic Curves

[Tr1]

Fig. 1 I_C -V_{BE}

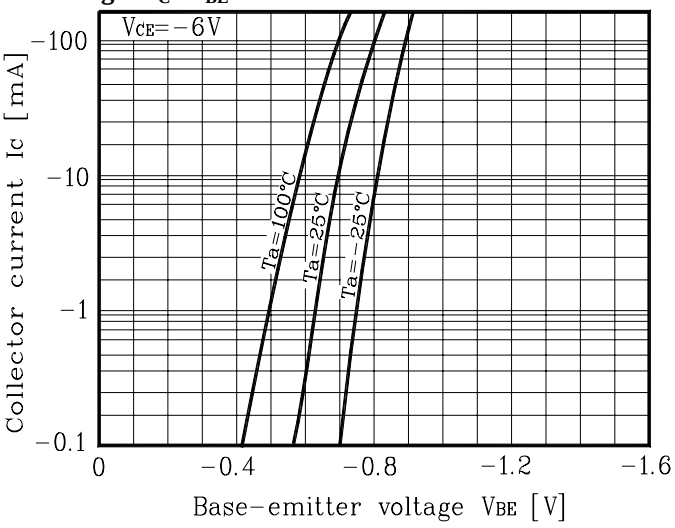


Fig. 2 I_C -V_{CE}

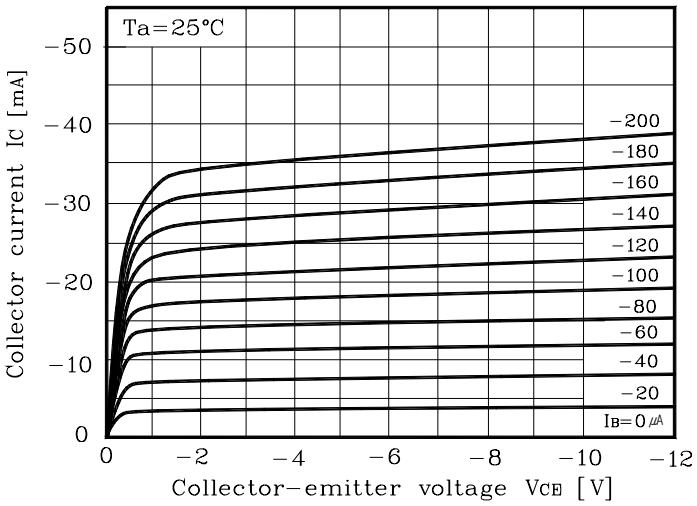


Fig. 3 h_{FE}-I_C

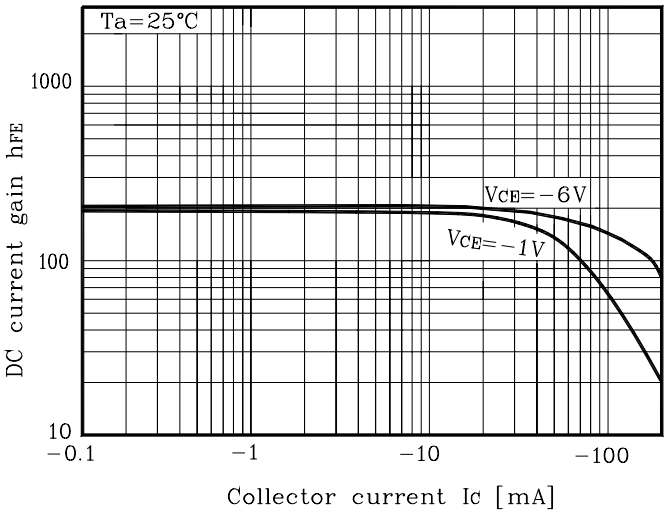
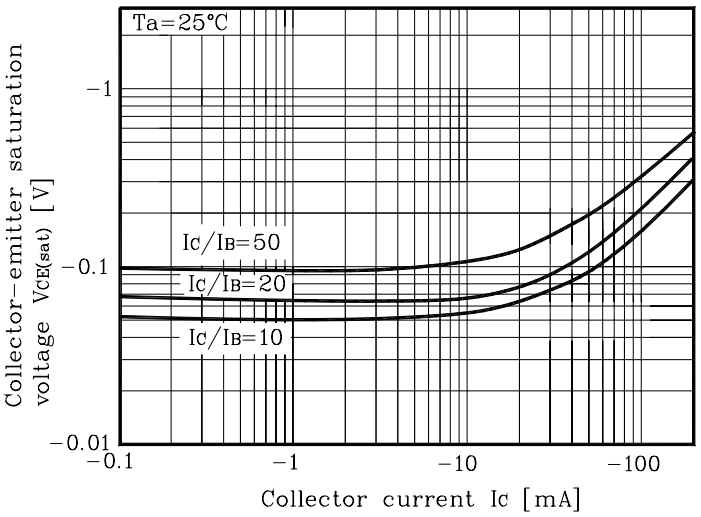


Fig. 4 $V_{CE(sat)}$-I_C



[Tr2]

Fig. 1 I_C -V_{BE}

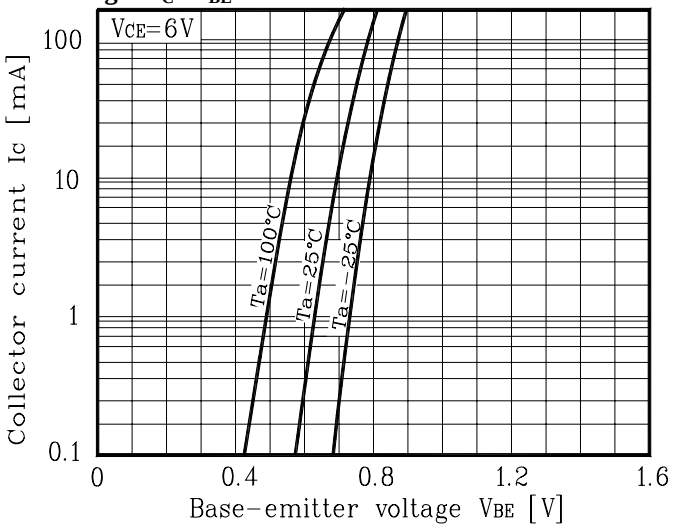
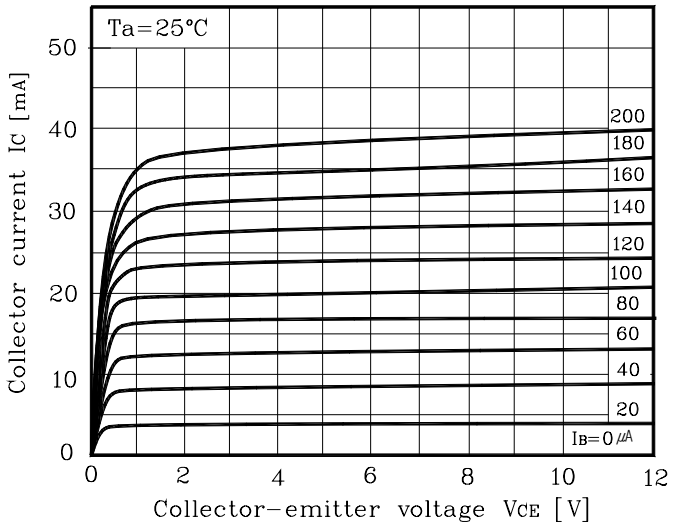


Fig. 2 I_C -V_{CE}



Electrical Characteristic Curves

Fig. 3 h_{FE}-I_C

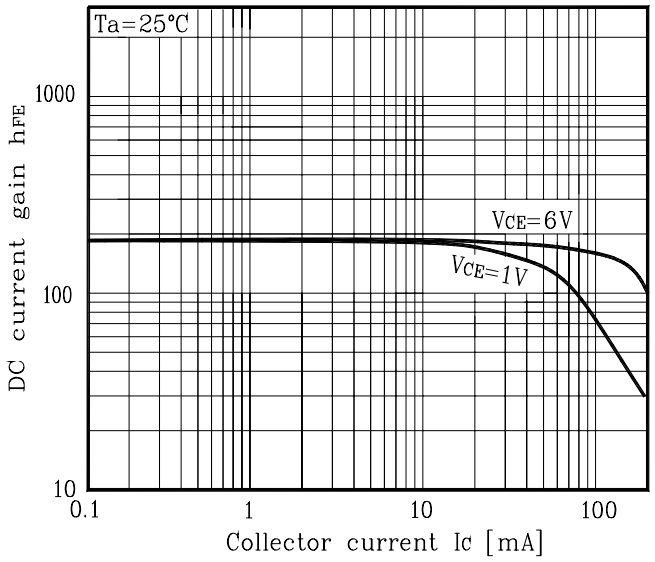
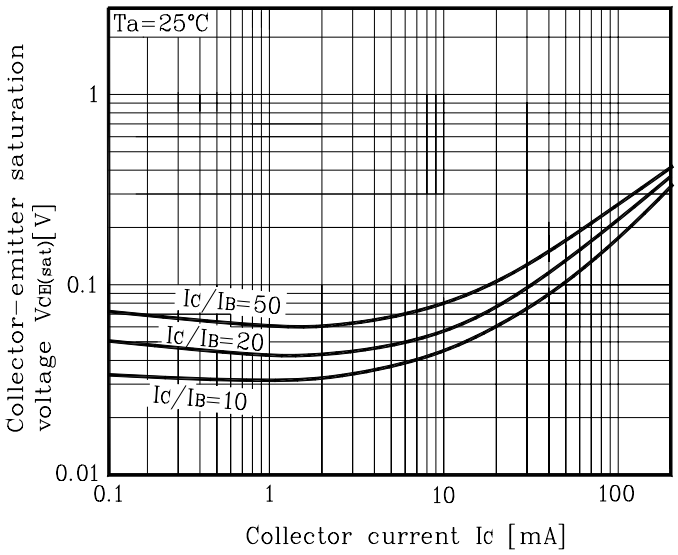
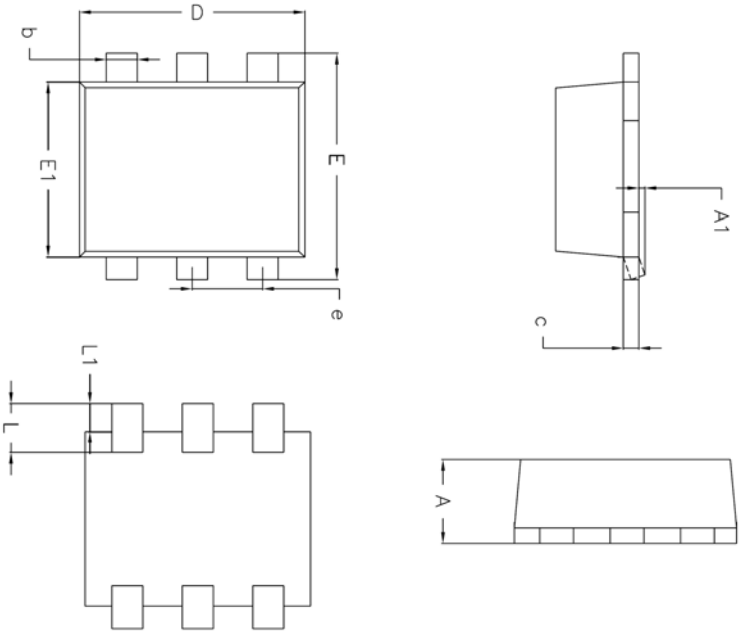


Fig. 4 $V_{CE(sat)}$-I_C

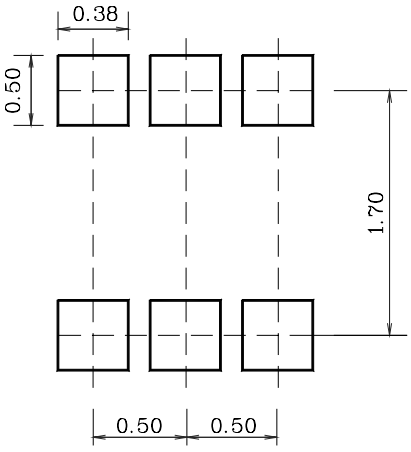


Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.53	0.58	0.62	
A1	0.00	–	0.10	
A2	–	–	–	
b	0.15	0.20	0.30	
c	0.10	0.11	0.18	
D	1.50	1.60	1.70	
E	1.50	1.60	1.70	
E1	1.10	1.20	1.30	
e	0.50 BSC			
L	0.25	0.35	0.45	
L1	0.13	0.20	0.27	

※ Recommend PCB solder land [Unit: mm]



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