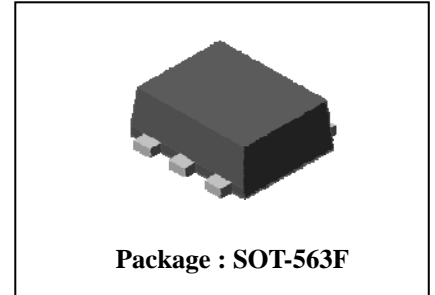


## Description

- Complex type bipolar transistor

## Feature

- Very small package save PCB area
- Reduce quantity of parts and mounting cost
- Both DN030 chip and DP030 chip in SOT-563F package

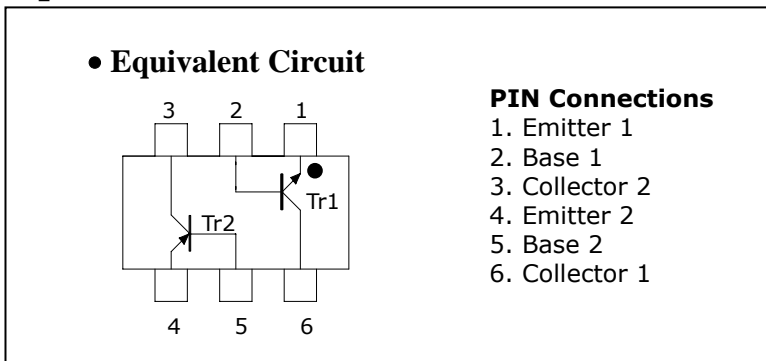


## Ordering Information

Type NO.	Marking	Package Code
SUT575EF	NX□	SOT-563F

□ : Year & Week Code

## Equivalent circuit & PIN Connections



## Absolute Maximum Ratings [Tr1, Tr2]

(Ta=25°C)

Characteristic	Symbol	Rating		Unit
		Tr1	Tr2	
Collector-base voltage	$V_{CBO}$	15	-15	V
Collector-emitter voltage	$V_{CEO}$	12	-12	V
Emitter-base voltage	$V_{EBO}$	5	-5	V
Collector current	$I_C$	500	-500	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	$BV_{CEO}$	$I_C=1mA, I_B=0$	12	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=15V, I_E=0$	-	-	0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$	-	-	0.1	$\mu A$
DC current gain	$h_{FE}^*$	$V_{CE}=2V, I_C=10mA$	200	-	450	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$	-	-	0.2	V
	$V_{CE(sat)}^*$	$I_C=300mA, I_B=30mA$	-	-	0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=10mA$	-	-	1.2	V
	$V_{BE(sat)}^*$	$I_C=300mA, I_B=30mA$	-	-	1.7	V
Transition frequency	$f_T$	$V_{CE}=5V, I_C=10mA$	-	300	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$	-	3	-	pF

\*: Pulse test:  $t_p \leq 300\mu s$ , Duty cycle  $\leq 2\%$

## Electrical Characteristics [Tr2]

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C=-1mA, I_B=0$	-12	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=-15V, I_E=0$	-	-	-0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=-5V, I_C=0$	-	-	-0.1	$\mu A$
DC current gain	$h_{FE}^*$	$V_{CE}=-2V, I_C=-10mA$	200	-	450	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-100mA, I_B=-10mA$	-	-	-0.2	V
	$V_{CE(sat)}^*$	$I_C=-300mA, I_B=-30mA$	-	-	-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-100mA, I_B=-10mA$	-	-	-1.2	V
	$V_{BE(sat)}^*$	$I_C=-300mA, I_B=-30mA$	-	-	-1.7	V
Transition frequency	$f_T$	$V_{CE}=-5V, I_C=-10mA$	-	350	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-10V, I_E=0, f=1MHz$	-	4	-	pF

\*: Pulse test:  $t_p \leq 300\mu s$ , Duty cycle  $\leq 2\%$

Electrical Characteristic Curves

[Tr1]

Fig. 1  $I_C - V_{CE}$

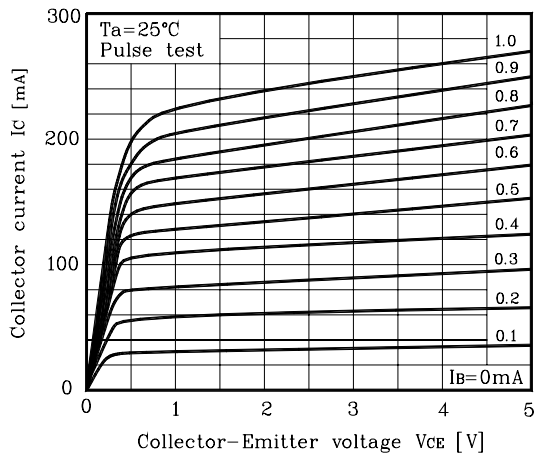


Fig. 2  $I_C - V_{BE}$

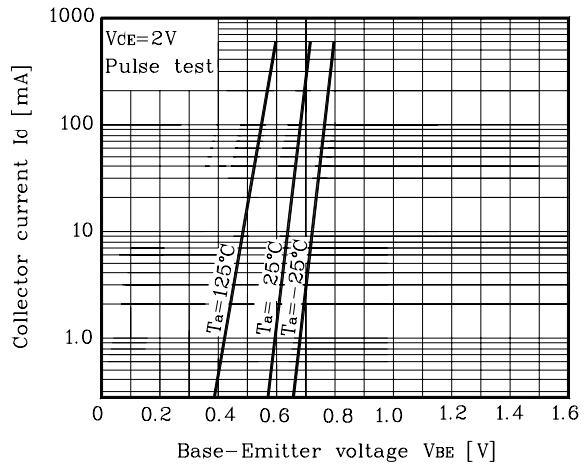


Fig. 3  $h_{FE} - I_C$

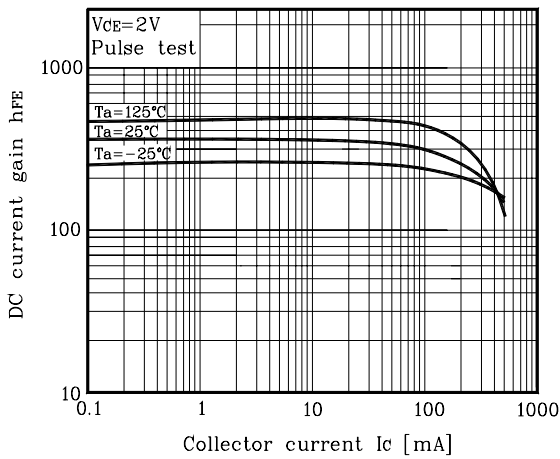
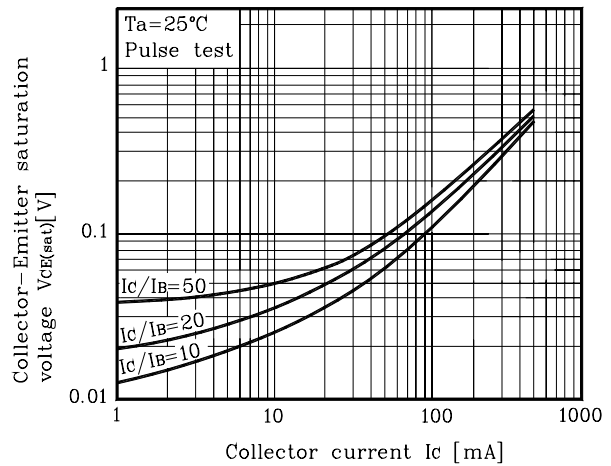


Fig. 4  $V_{CE(sat)} - I_C$



Electrical Characteristic Curves

[Tr2]

Fig. 1  $I_C$  -  $V_{CE}$

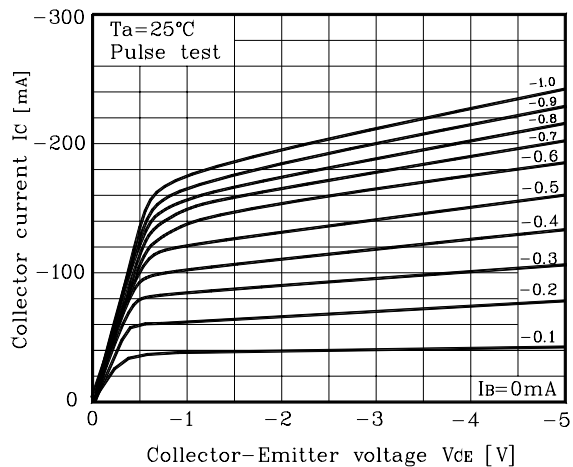


Fig. 2  $I_C$  -  $V_{BE}$

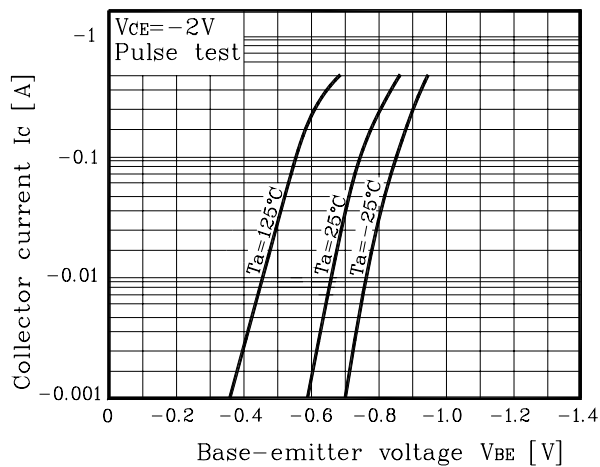


Fig. 3  $h_{FE}$  -  $I_C$

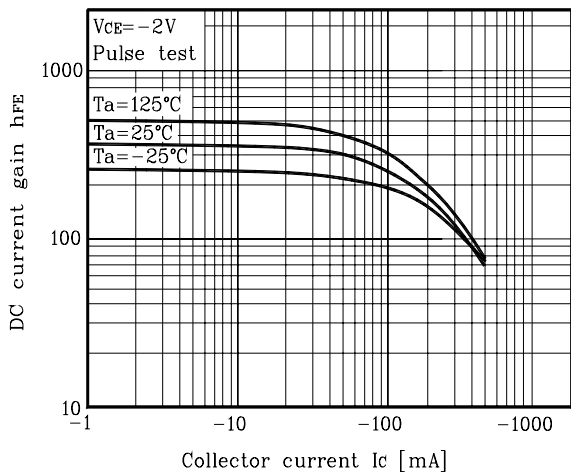
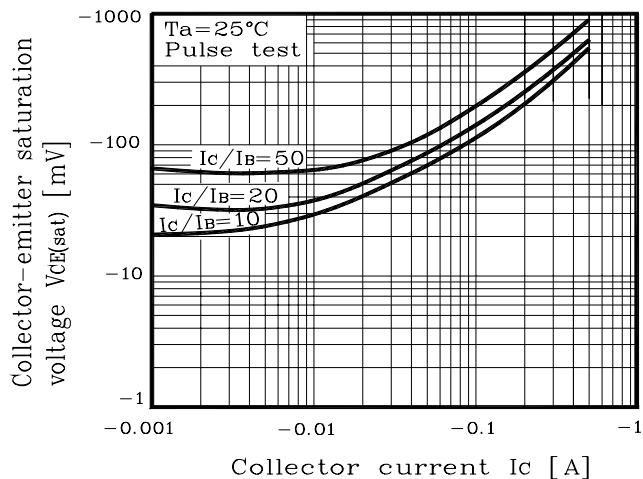
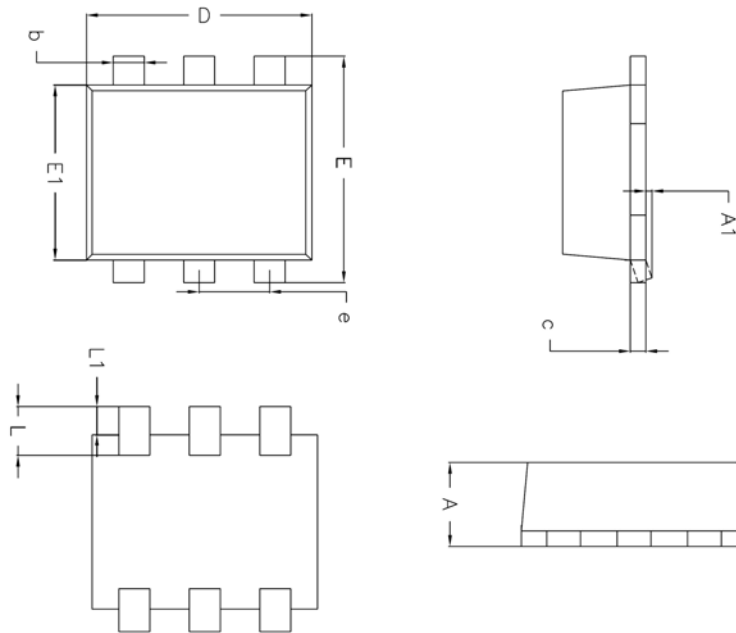


Fig. 4  $V_{CE(sat)}$  -  $I_C$

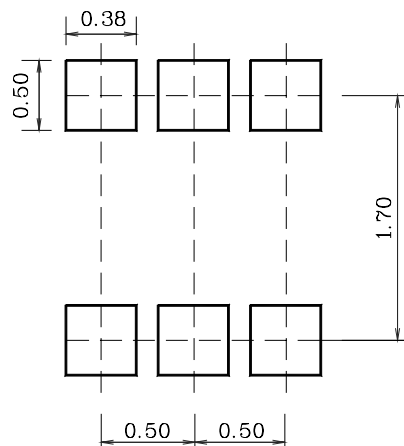


## Outline Dimension



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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