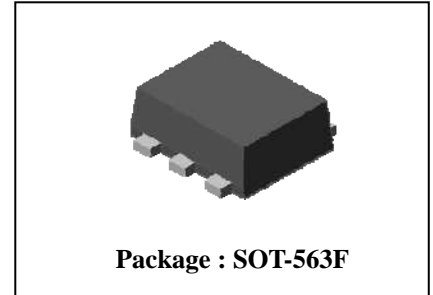


Description

- 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

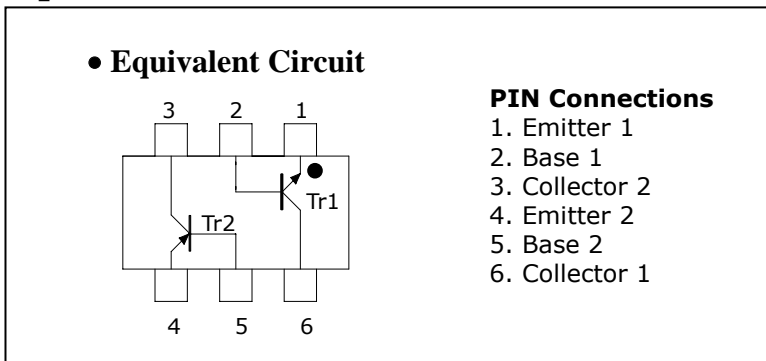


Ordering Information

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}	$I_C=1\text{mA}, I_B=0$	12	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=15\text{V}, I_E=0$	-	-	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}^*	$V_{CE}=2\text{V}, I_C=10\text{mA}$	200	-	450	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$	-	-	0.2	V
	$V_{CE(sat)}^*$	$I_C=300\text{mA}, I_B=30\text{mA}$	-	-	0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$	-	-	1.2	V
	$V_{BE(sat)}^*$	$I_C=300\text{mA}, I_B=30\text{mA}$	-	-	1.7	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}$	-	300	-	MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	3	-	pF

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

Electrical Characteristics [Tr2]

(Ta=25°C)

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

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

Electrical Characteristic Curves

[Tr1]

Fig. 1 $I_C - V_{CE}$

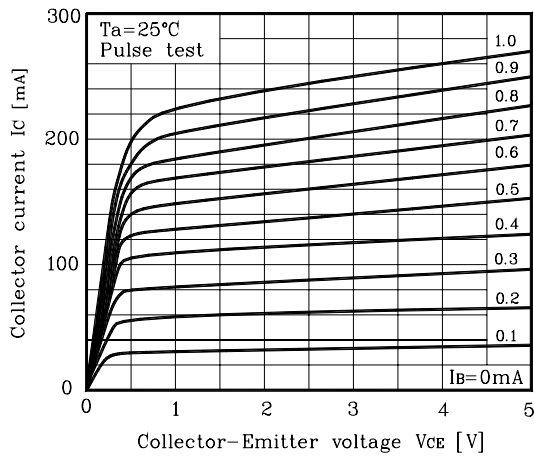


Fig. 2 $I_C - V_{BE}$

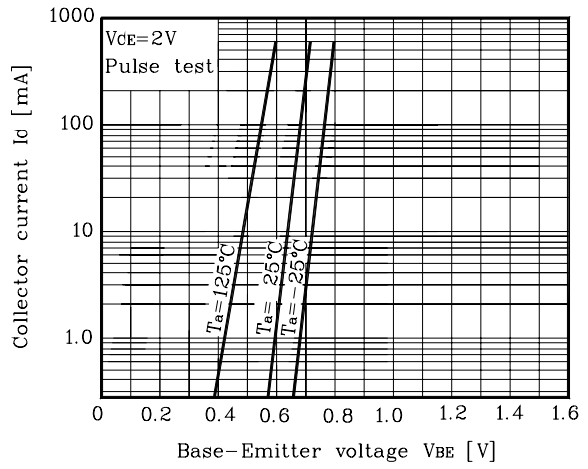


Fig. 3 $h_{FE} - I_C$

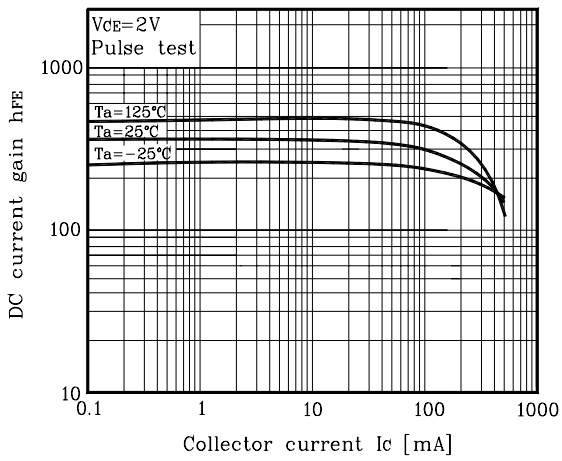
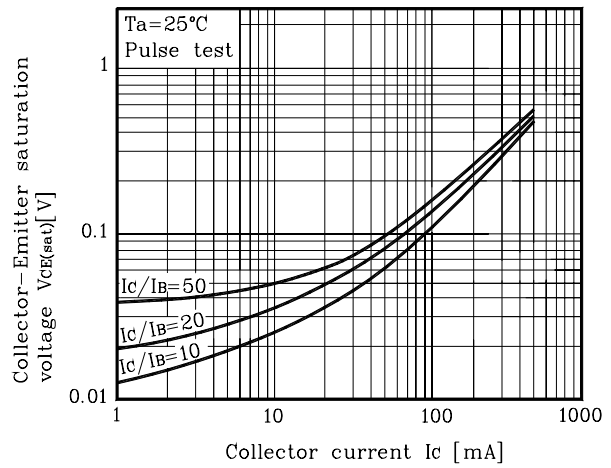


Fig. 4 $V_{CE(sat)} - I_C$



Electrical Characteristic Curves

[Tr2]

Fig. 1 $I_C - V_{CE}$

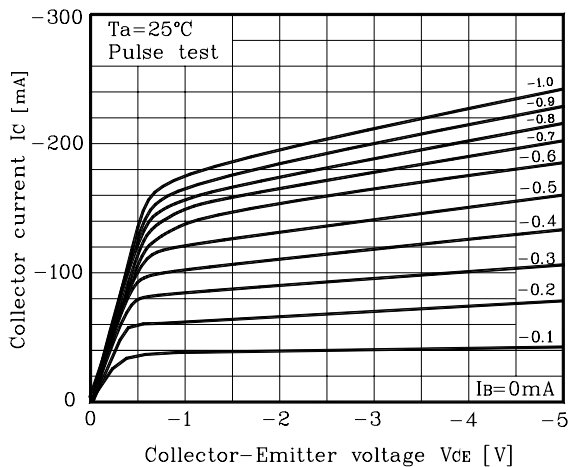


Fig. 2 $I_C - V_{BE}$

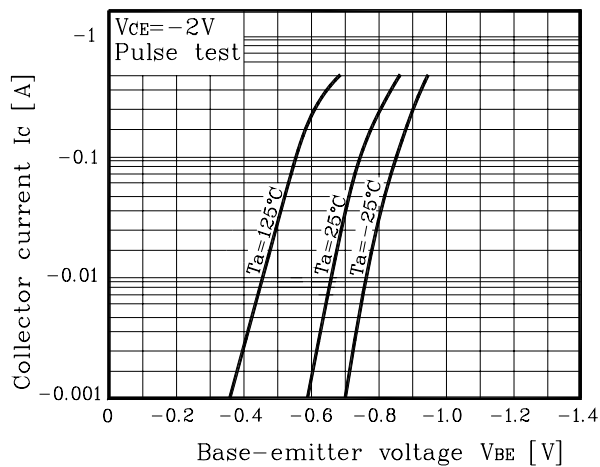


Fig. 3 $h_{FE} - I_C$

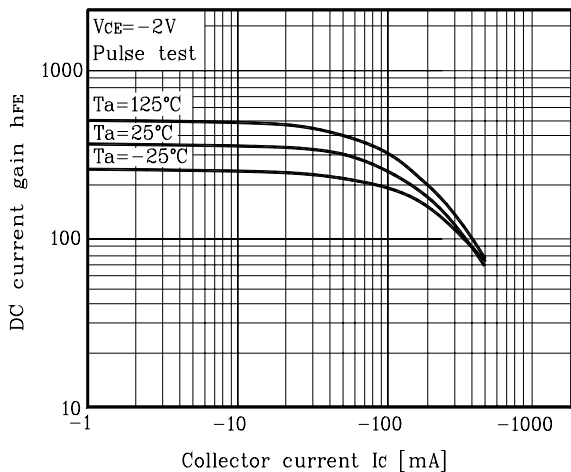
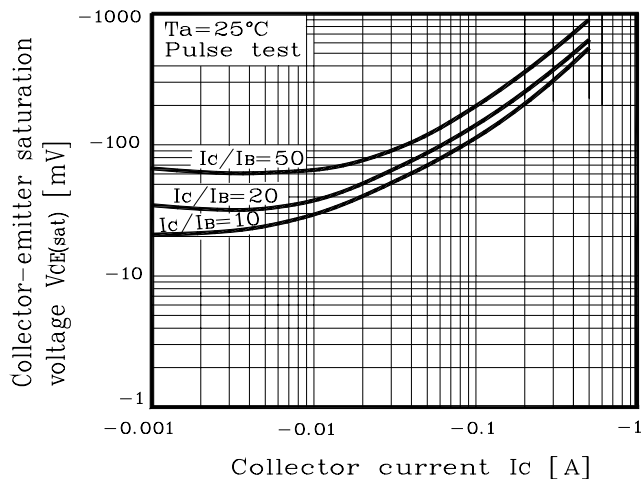
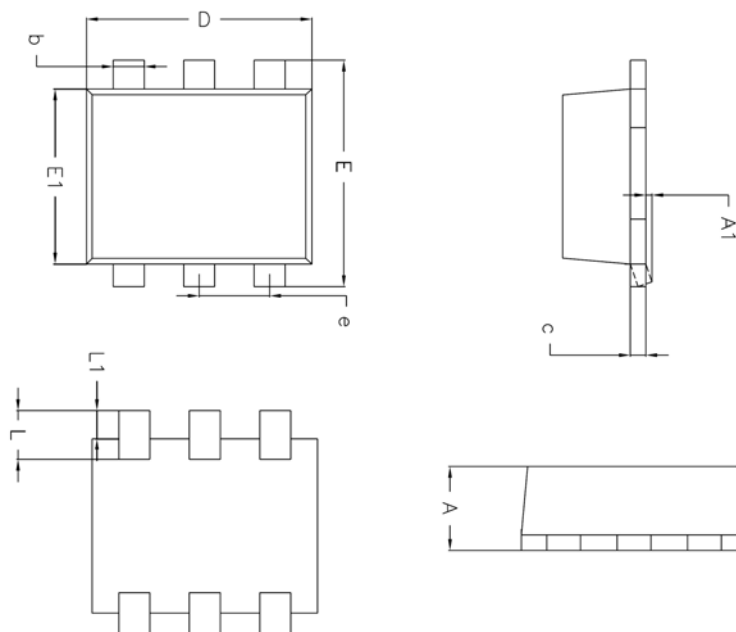


Fig. 4 $V_{CE(sat)} - I_C$

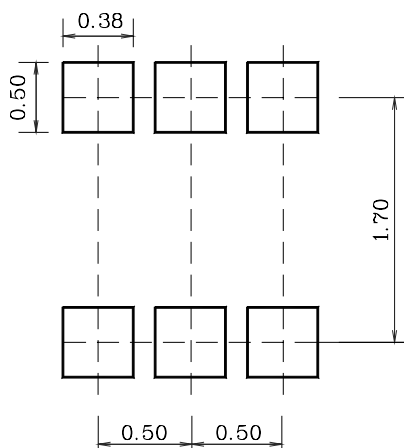


Outline Dimension



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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