

Description

- Complex type bipolar transistor

Feature

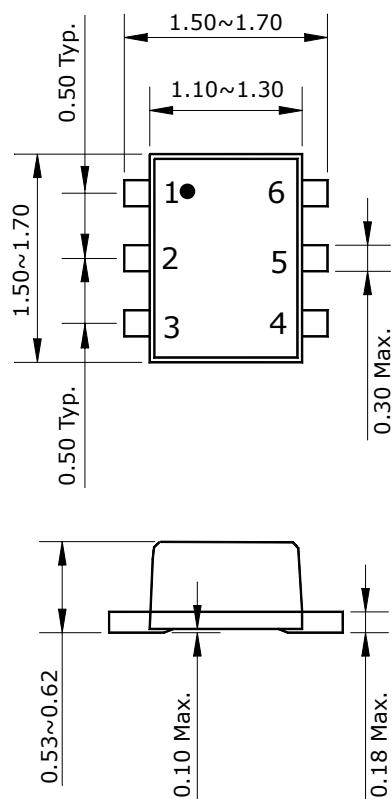
- Very small package save PCB area
- Reduce quantity of parts and mounting cost
- Both DN030 chip and DP030 chip in SOT-563F package

Ordering Information

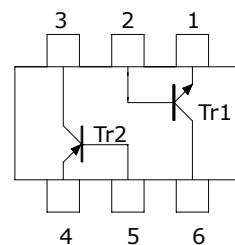
| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| SUT575EF | NX | SOT-563F |

Outline Dimensions

unit : mm



• Equivalent Circuit



PIN Connections

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

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 | μA |
| Emitter cut-off current | I _{EBO} | V _{EB} =5V, I _C =0 | - | - | 0.1 | μA |
| 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≤300μs, Duty cycle≤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 | μA |
| Emitter cut-off current | I _{EBO} | V _{EB} =-5V, I _C =0 | - | - | -0.1 | μA |
| 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≤300μs, Duty cycle≤2%

Electrical Characteristic Curves

[Tr1]

Fig. 1 I_C - V_{CE}

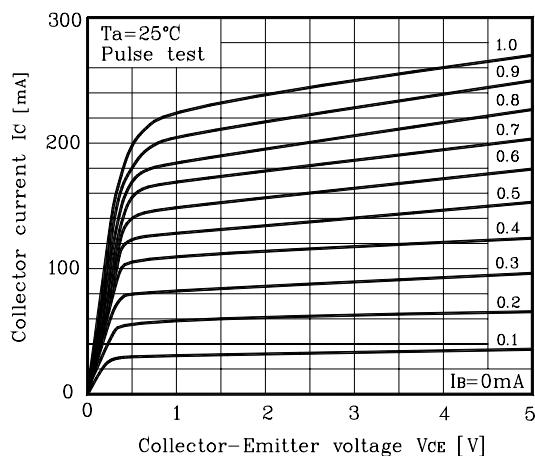


Fig. 2 I_C - V_{BE}

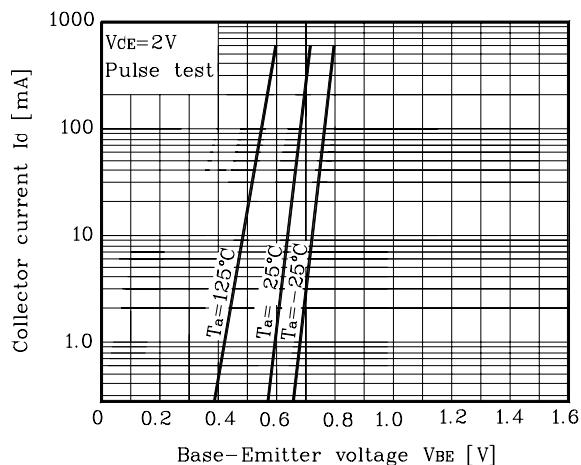


Fig. 3 h_{FE} - I_C

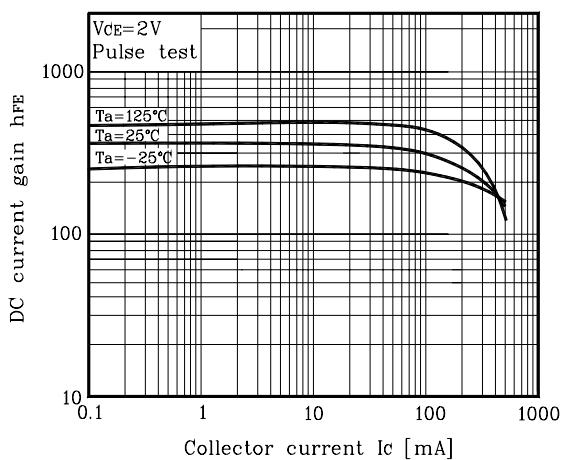
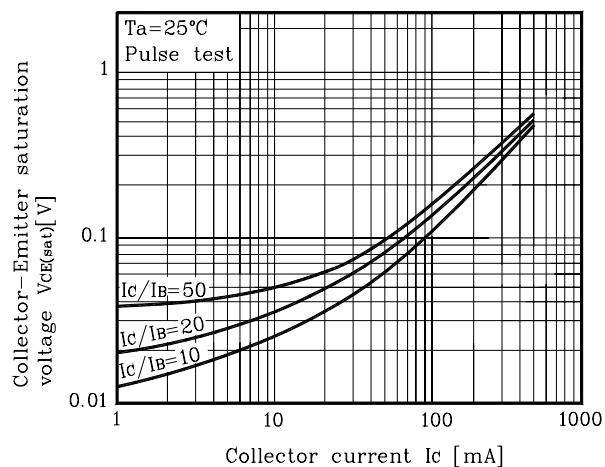
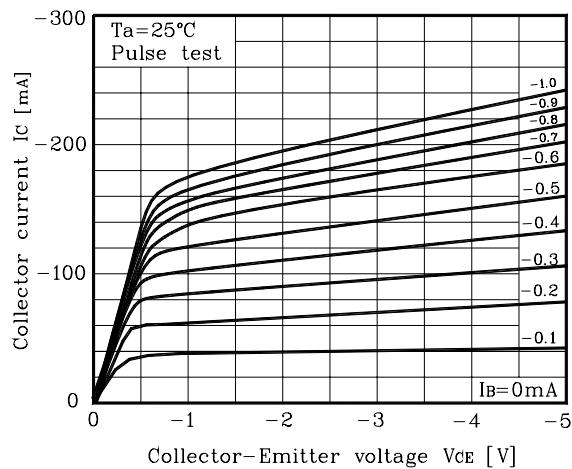
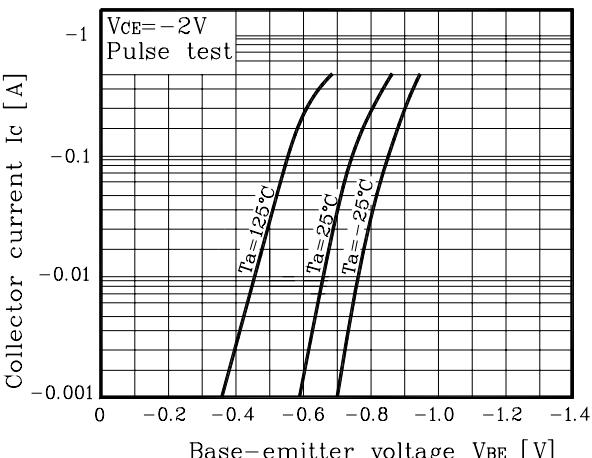
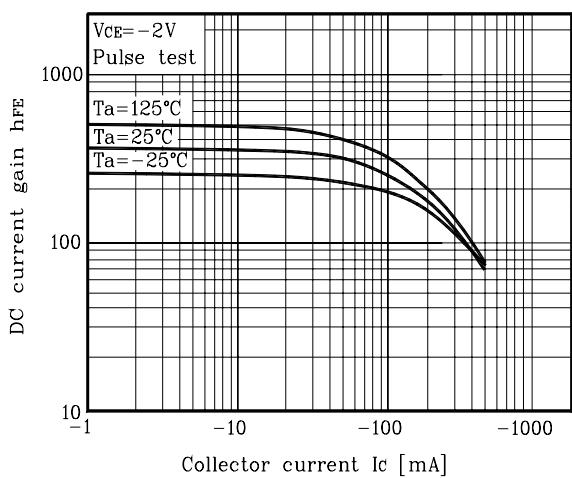
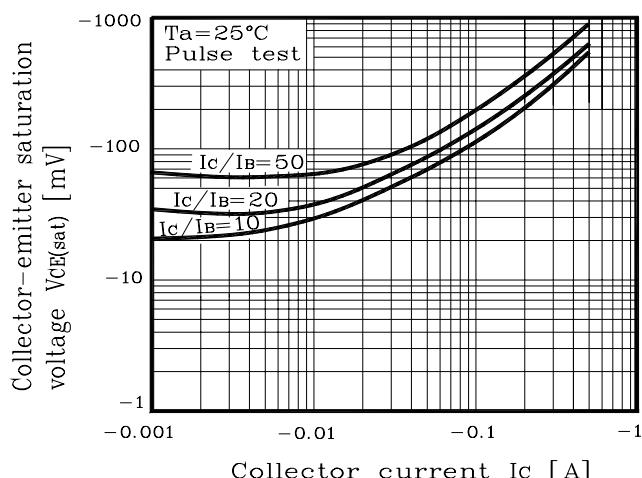


Fig. 4 $V_{CE(sat)}$ - I_C



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** 

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