

◆Si APN

◆RoHS COMPLIANT

## 1. APPLICATION

Charger and Switch-mode power supplies

## 2. FEATURES

- High voltage capability
- Intergrated antiparallel collector-emitter diode
- Features of good high temperature
- High switching speed

## 3. PACKAGE

TO-126D

## 4. Electrical Characteristics

### 4.1 Absolute Maximum Ratings

$T_{amb} = 25^{\circ}\text{C}$  unless specified

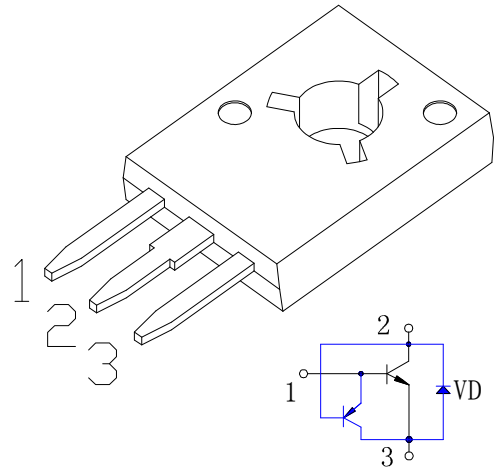
| PARAMETER                 |                          | SYMBOL    | VALUE   | UNIT               |
|---------------------------|--------------------------|-----------|---------|--------------------|
| Collector-Base Voltage    |                          | $V_{CBO}$ | 800     | V                  |
| Collector-Emittor Voltage |                          | $V_{CEO}$ | 500     | V                  |
| Emittor- Base Voltage     |                          | $V_{EBO}$ | 9       | V                  |
| Collector Current         |                          | $I_C$     | 1.6     | A                  |
| Power Dissipation         | $T_a=25^{\circ}\text{C}$ | $P_{tot}$ | 1.25    | W                  |
|                           | $T_c=25^{\circ}\text{C}$ |           | 15      |                    |
| Junction Temperature      |                          | $T_j$     | 150     | $^{\circ}\text{C}$ |
| Storage Temperature       |                          | $T_{stg}$ | -55~150 | $^{\circ}\text{C}$ |

### 4.2 Electrical Parameter

$T_{amb} = 25^{\circ}\text{C}$  unless specified

| PARAMETER                            | SYMBOL                | TEST CONDITION                                      | VALUE |     |     | UNIT          |
|--------------------------------------|-----------------------|---|-------|-----|-----|---------------|
|                                      |                       |   | MIN   | TYP | MAX |               |
| Collector-Base Voltage               | $BV_{CBO}$            | $I_C=1\text{mA}, I_E=0$                             | 800   |     |     | V             |
| Collector-Emittor Voltage            | $BV_{CEO}$            | $I_C=1\text{mA}, I_B=0$                             | 500   |     |     | V             |
| Emittor-Base Voltage                 | $BV_{EBO}$            | $I_E=1\text{mA}, I_C=0$                             | 9     |     |     | V             |
| Collector-Base Cutoff Current        | $I_{CBO}$             | $V_{CB}=800\text{V}, I_E=0$                         |       |     | 10  | $\mu\text{A}$ |
| Collector-Emittor Cutoff Current     | $I_{CEO}$             | $V_{CE}=500\text{V}, I_B=0$                         |       |     | 20  | $\mu\text{A}$ |
| Emittor-Base Cutoff Current          | $I_{EBO}$             | $V_{EB}=9\text{V}, I_C=0$                           |       |     | 10  | $\mu\text{A}$ |
| DC Current Gain                      | $h_{FE}^*$            | $V_{CE}=5\text{V}, I_C=1\text{mA}$                  | 8     |     |     |               |
|                                      |                       | $V_{CE}=5\text{V}, I_C=200\text{mA}$                | 15    | 40  |     |               |
| Collector-Emittor Saturation Voltage | $V_{CE\text{ sat}}^*$ | $I_C=1\text{A}, I_B=0.5\text{A}$                    |       |     | 0.6 | V             |
| Base-Emittor Saturation Voltage      | $V_{BE\text{ sat}}^*$ | $I_C=1\text{A}, I_B=0.5\text{A}$                    |       |     | 1.2 | V             |
| Rising Time                          | $t_r$                 | $I_C=250\text{mA} \quad (UI9600)$                   |       |     | 1.0 | $\mu\text{s}$ |
| Falling Time                         | $t_f$                 |   |       |     | 0.8 | $\mu\text{s}$ |
| Storage Time                         | $t_s$                 |   | 1.5   |     | 3.5 | $\mu\text{s}$ |
| Typical Frequency                    | $f_T$                 | $V_{CE}=20\text{V}, I_C=20\text{mA}, f=1\text{MHz}$ | 5     |     |     | MHz           |

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



1 Base(B) 2 Collector(C) 3 Emitter(E)

## 5. Characteristic Curve

Fig1 SOA (DC)

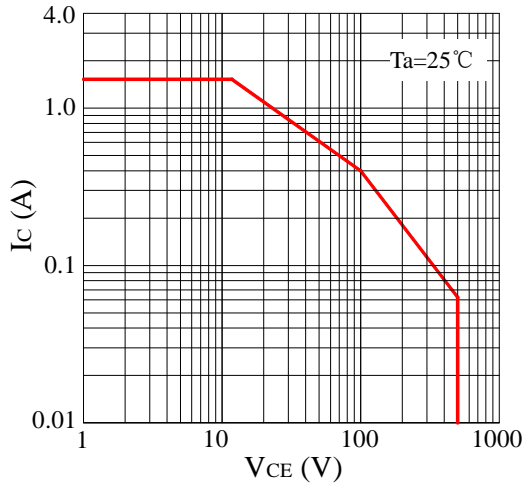


Fig2 Ptot - T

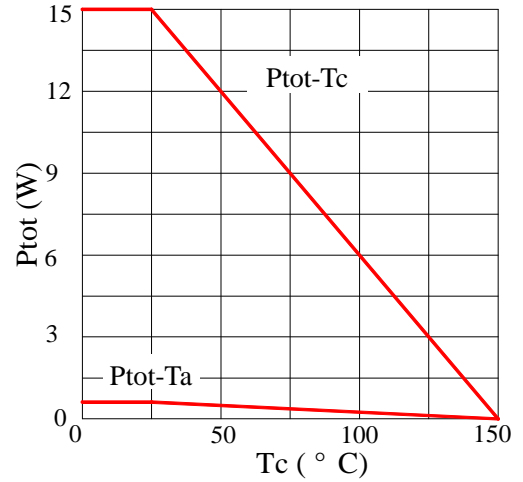


Fig3 Static Characteristic

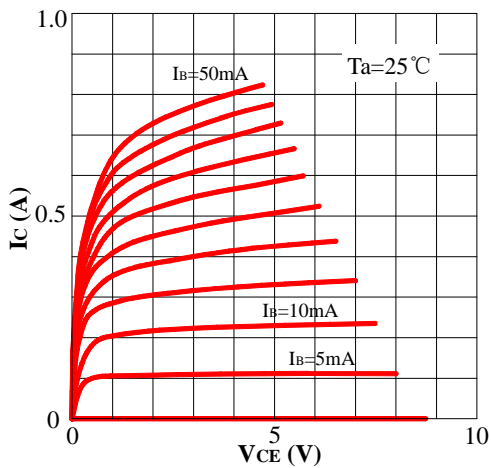


Fig4 hFE-Ic

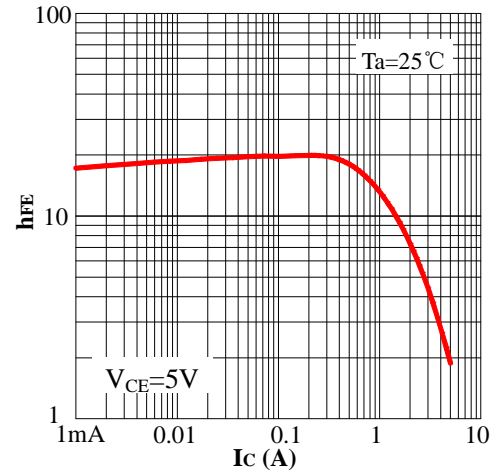


Fig5 VCESat-Ic

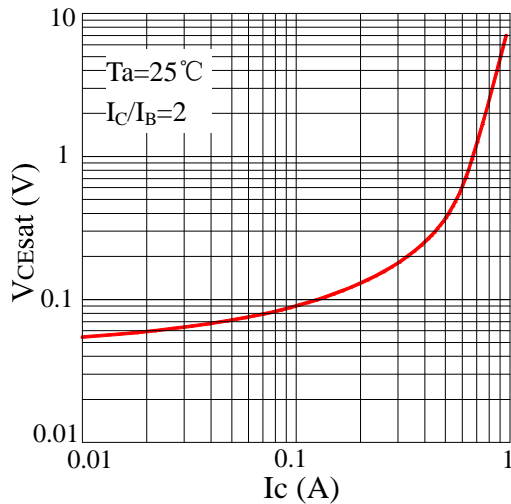
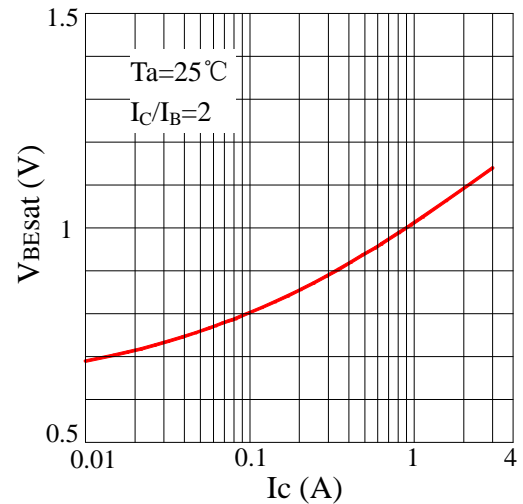


Fig6 VBESat-Ic



## 6. Package Dimentions(Unit: mm)

T0-126D

