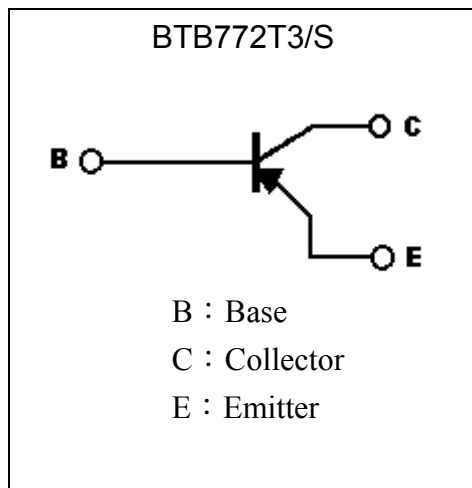
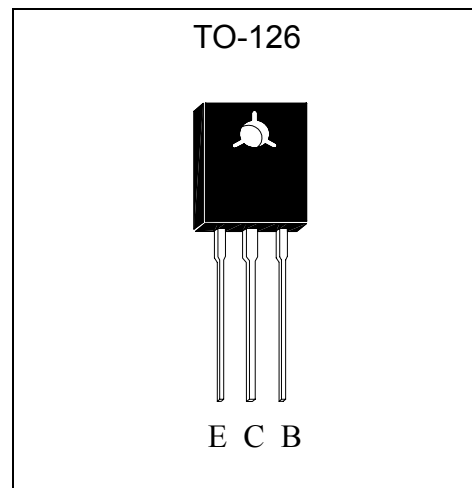


**Low Vcesat PNP Epitaxial Planar Transistor**

# BTB772T3/S

**Features**

- Low  $V_{CE(sat)}$ , typically -0.3V at  $I_C / I_B = -2A / -0.2A$
- Excellent current gain characteristics
- Complementary to BTD882T3/S
- Pb-free package is available

**Equivalent Circuit**

**Outline**

**Absolute Maximum Ratings** ( $T_a=25^\circ\text{C}$ )

| Parameter                 | Symbol                      | Limit    | Unit             |
|---------------------------|-----------------------------|----------|------------------|
| Collector-Base Voltage    | $V_{CBO}$                   | -40      | V                |
| Collector-Emitter Voltage | $V_{CEO}$                   | -30      | V                |
| Emitter-Base Voltage      | $V_{EBO}$                   | -5       | V                |
| Collector Current         | $I_C(\text{DC})$            | -3       | A                |
|                           | $I_C(\text{pulse})$         | -7 *1    | A                |
| Power Dissipation         | $P_d(T_a=25^\circ\text{C})$ | 1        | W                |
|                           | $P_d(T_c=25^\circ\text{C})$ | 10       |                  |
| Junction Temperature      | $T_j$                       | 150      | $^\circ\text{C}$ |
| Storage Temperature       | $T_{stg}$                   | -55~+150 | $^\circ\text{C}$ |

Note : \*1. Single Pulse  $P_w \leq 350\mu\text{s}$ , Duty  $\leq 2\%$ .



**Characteristics (Ta=25°C)**

| Symbol                | Min. | Typ. | Max. | Unit | Test Conditions                                       |
|-----------------------|------|------|------|------|---|
| BV <sub>CBO</sub>     | -40  | -    | -    | V    | I <sub>C</sub> =-50μA, I <sub>E</sub> =0              |
| BV <sub>CEO</sub>     | -30  | -    | -    | V    | I <sub>C</sub> =-1mA, I <sub>B</sub> =0               |
| BV <sub>EBO</sub>     | -5   | -    | -    | V    | I <sub>E</sub> =-50μA, I <sub>C</sub> =0              |
| I <sub>CBO</sub>      | -    | -    | -1   | μA   | V <sub>CB</sub> =-30V, I <sub>E</sub> =0              |
| I <sub>EBO</sub>      | -    | -    | -1   | μA   | V <sub>EB</sub> =-3V, I <sub>C</sub> =0               |
| *V <sub>CE(sat)</sub> | -    | -0.3 | -0.5 | V    | I <sub>C</sub> =-2A, I <sub>B</sub> =-0.2A            |
| *V <sub>BE(sat)</sub> | -    | -1   | -2   | V    | I <sub>C</sub> =-2A, I <sub>B</sub> =-0.2A            |
| *h <sub>FE1</sub>     | 52   | -    | -    | -    | V <sub>CE</sub> =-2V, I <sub>C</sub> =-20mA           |
| *h <sub>FE2</sub>     | 100  | -    | 500  | -    | V <sub>CE</sub> =-2V, I <sub>C</sub> =-1A             |
| f <sub>T</sub>        | -    | 80   | -    | MHz  | V <sub>CE</sub> =-5V, I <sub>C</sub> =-0.1A, f=100MHz |
| Cob                   | -    | 55   | -    | pF   | V <sub>CB</sub> =-10V, f=1MHz                         |

\*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

**Classification Of hFE 2**

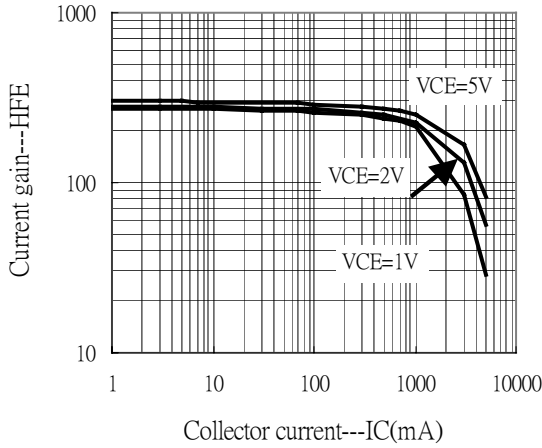
| Rank  | Q       | P       | E       |
|-------|---------|---------|---------|
| Range | 100~200 | 160~320 | 250~500 |

**Ordering Information**

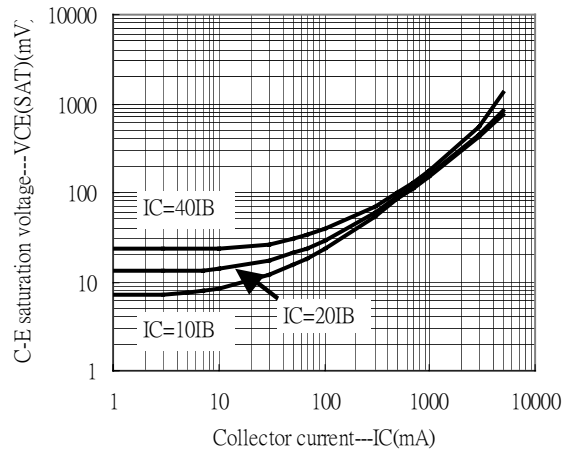
| Device    | Package             | Shipping      |
|-----------|---------------------|---------------|
| BTB772T3  | TO-126              | 500 pcs / bag |
| BTB772T3S | TO-126<br>(Pb-free) | 500 pcs / bag |

**Characteristic Curves**

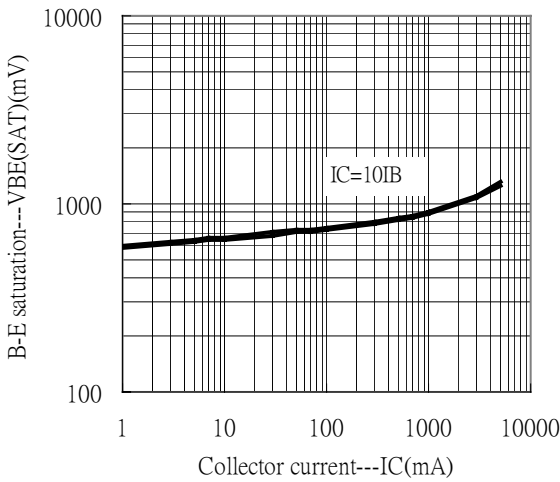
Current gain vs Collector current



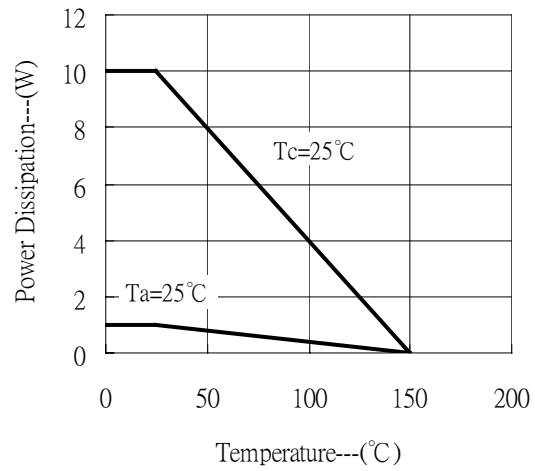
C-E saturation voltage vs Collector current



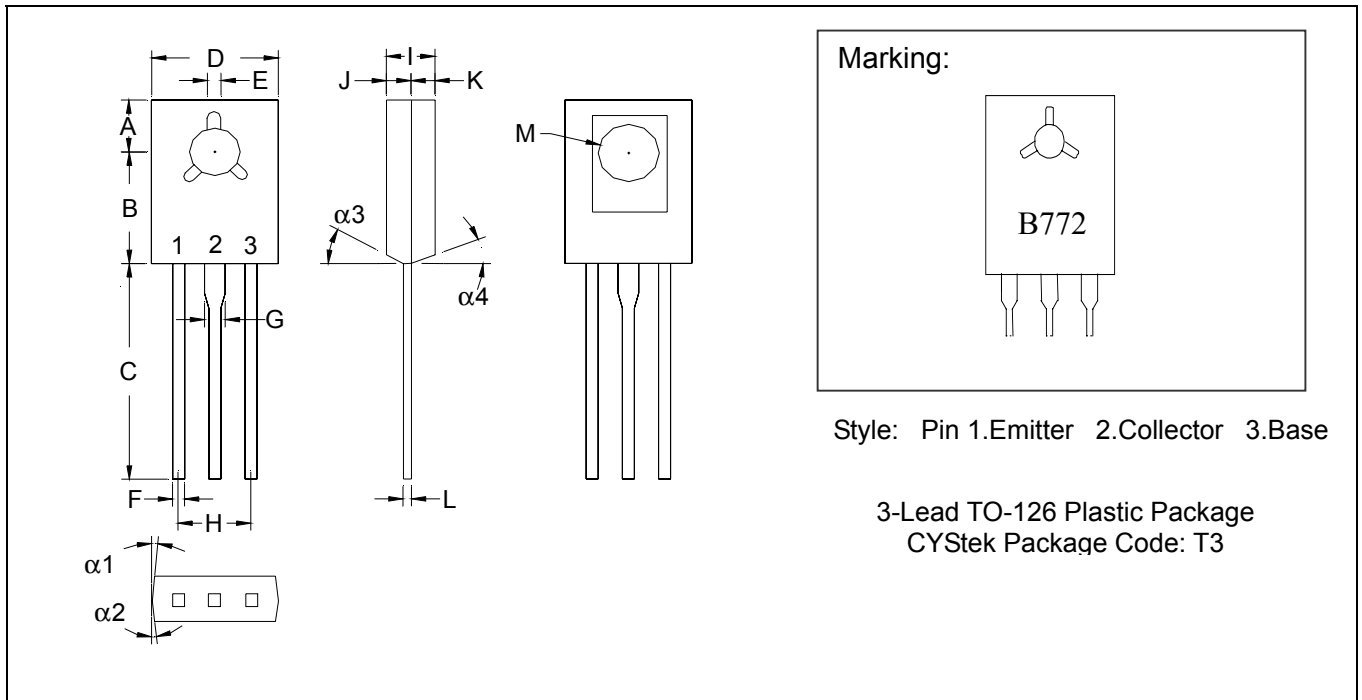
B-E saturation voltage vs Collector current



Power derating curves



**TO-126 Dimension**



\*: Typical

| DIM        | Inches |        | Millimeters |       | DIM | Inches |         | Millimeters |       |
|------------|--------|--------|-------------|-------|-----|--------|---------|-------------|-------|
|            | Min.   | Max.   | Min.        | Max.  |     | Min.   | Max.    | Min.        | Max.  |
| $\alpha 1$ | -      | *3°    | -           | *3°   | F   | 0.0280 | 0.0319  | 0.71        | 0.81  |
| $\alpha 2$ | -      | *3°    | -           | *3°   | G   | 0.0480 | 0.0520  | 1.22        | 1.32  |
| $\alpha 3$ | -      | *3°    | -           | *3°   | H   | 0.1709 | 0.1890  | 4.34        | 4.80  |
| $\alpha 4$ | -      | *3°    | -           | *3°   | I   | 0.0950 | 0.1050  | 2.41        | 2.66  |
| A          | 0.1500 | 0.1539 | 3.81        | 3.91  | J   | 0.0450 | 0.0550  | 1.14        | 1.39  |
| B          | 0.2752 | 0.2791 | 6.99        | 7.09  | K   | 0.0450 | 0.0550  | 1.14        | 1.39  |
| C          | 0.5315 | 0.6102 | 13.50       | 15.50 | L   | -      | *0.0217 | -           | *0.55 |
| D          | 0.2854 | 0.3039 | 7.52        | 7.72  | M   | 0.1378 | 0.1520  | 3.50        | 3.86  |
| E          | 0.0374 | 0.0413 | 0.95        | 1.05  |     |        |         |             |       |

Notes: 1.Controlling dimension: millimeters.  
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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