

# STD03P

March, 2006

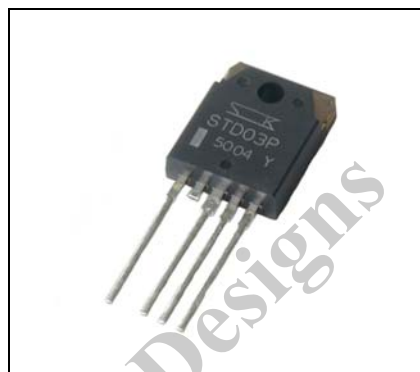
## ■Features

- High collector power dissipation:  $P_c=160\text{W}$  (with TO-3P)
- Low internal impedance by means of thinner die structure
- Built-in temperature compensation diode
- Complementary to STD03N

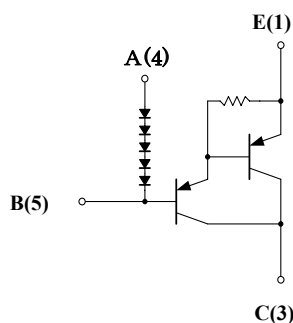
## ■Applications

- Audio output

## ■Package ---MT-105 (TO3P 5-pin)



## ■Equivalent circuit



## Absolute maximum ratings

(Ta= 25°C)

| Parameter                   | Symbol | Rating         | Unit |
|-----------------------------|--------|----------------|------|
| Collector-Base Voltage      | VCBO   | -160           | V    |
| Collector-Emitter Voltage   | VCEO   | -160           | V    |
| Emitter-Base Voltage        | VEBO   | -5             | V    |
| Collector Current           | IC     | -15            | A    |
| Base Current                | IB     | -1             | A    |
| Collector Power Dissipation | PC     | 160 (Tc= 25°C) | W    |
| Diode Forward Current       | Di VF  | 10             | mA   |
| Junction Temperature        | Tj     | 150            | °C   |
| Storage Temperature         | Tstg   | -55 to 150     | °C   |

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Electrical characteristics

(Ta= 25°C)

| Parameter                            | Symbol   | Test Conditions    | Limits |      |       | Unit |
|--------------------------------------|----------|--------------------|--------|------|-------|------|
|                                      |          |                    | MIN.   | TYP. | MAX.  |      |
| Collector Cut-off Current            | ICBO     | VCB=-160V          |        |      | -100  | μA   |
| Emitter Cut-off Current              | IEBO     | VEB=-5V            |        |      | -100  | μA   |
| Collector-Emitter Voltage            | VCEO     | IC=-30mA           | -160   |      |       | V    |
| DC Current Transfer Ratio            | hFE *    | VCE=-4V, IC=-10A   | 5000   |      | 20000 |      |
| Collector-Emitter saturation Voltage | VCE(sat) | IC=-10A, IB=-10mA  |        |      | -2.0  | V    |
| Base-Emitter saturation Voltage      | VBE(sat) | IC=-10A, IB=-10mA  |        |      | -2.5  | V    |
| Base-Emitter Voltage                 | VBE      | VCE=-20V, IC=-40mA |        | 1200 |       | mV   |
| Diode Forward Voltage                | Di VF    | IF=2.5mA           |        | 1540 |       | mV   |

\* hFE rank: 5000 to 12000(O), 8000 to 20000(Y)

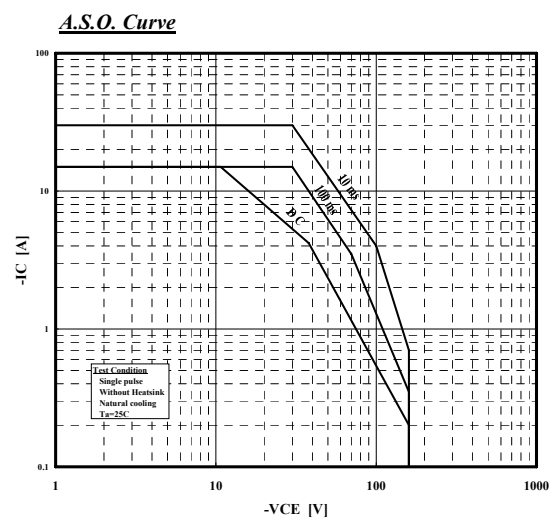
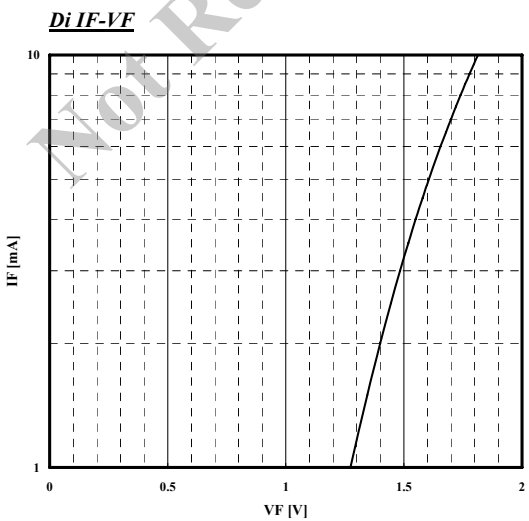
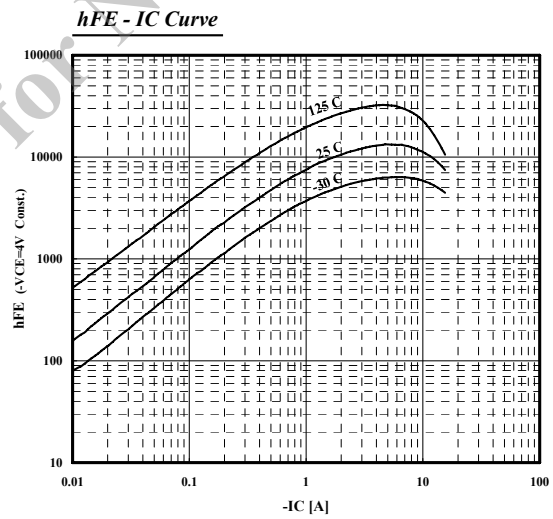
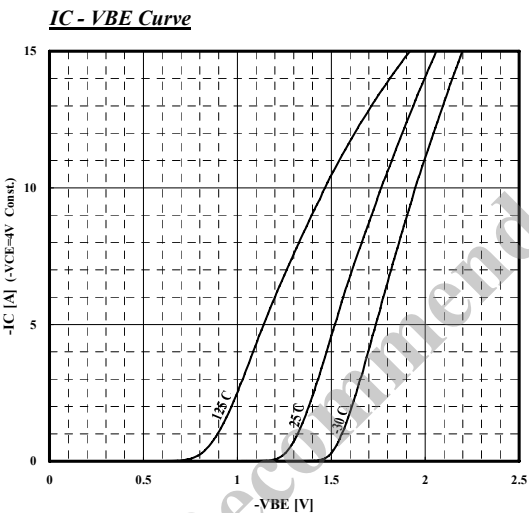
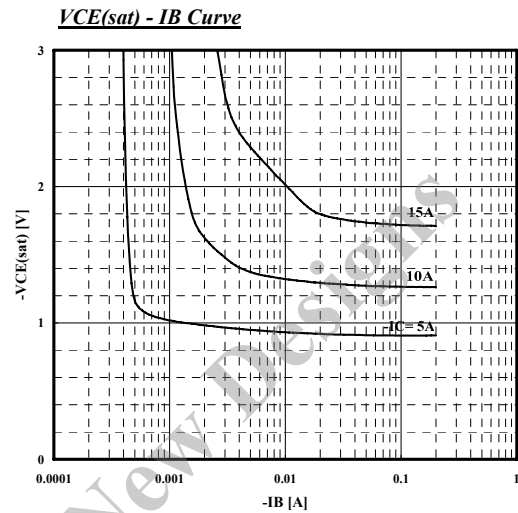
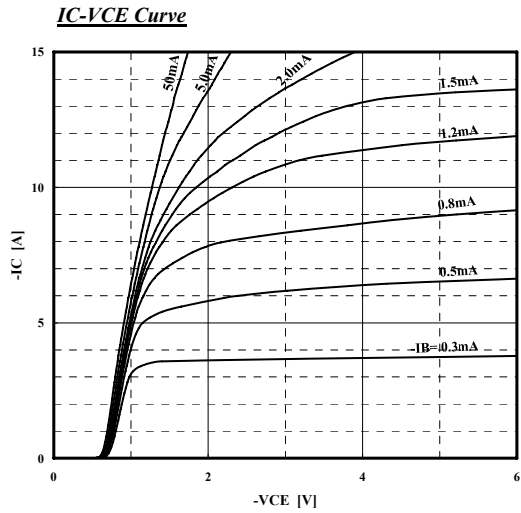
- ◆ When the transistors are used in pairs, the following conditions must to be satisfied: Total VF of Di ≤ Total VBE of the transistors.

(The above measurement conditions shall be applied and  $\Delta V=0$  to 500mV.)

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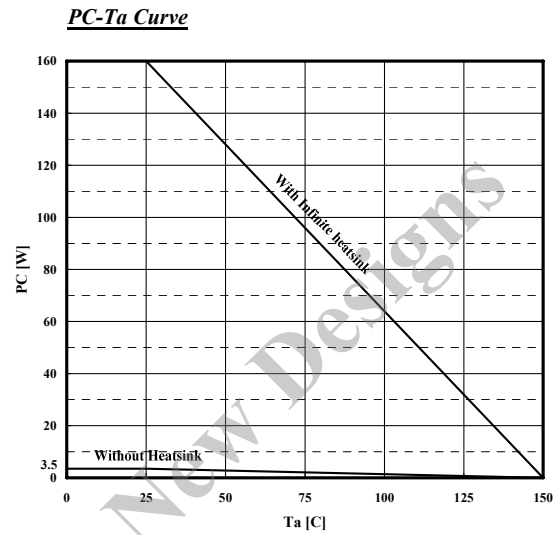
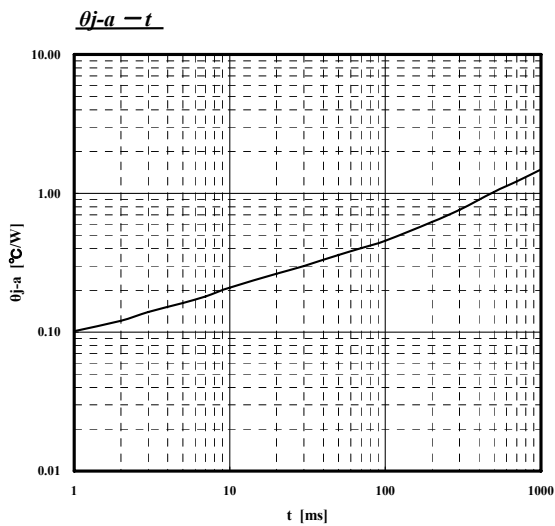
## Typical Performance Characteristics (Tc=25°C)



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## Typical Performance Characteristics (Tc=25°C)



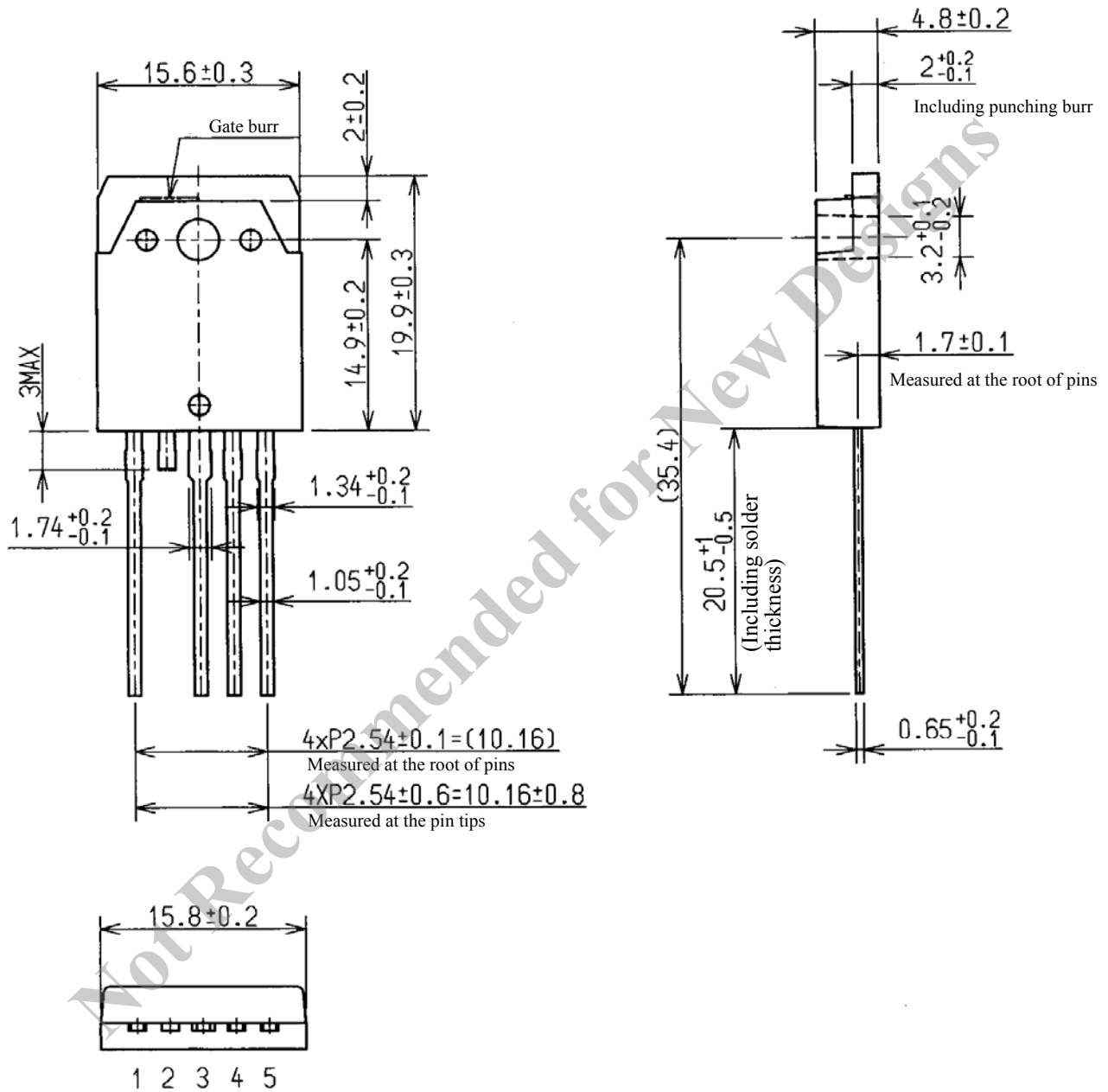
Not Recommended for New Designs

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## External Dimensions

MT-105 (TO3P 5pin)



Mass: Approx. 6.0g

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