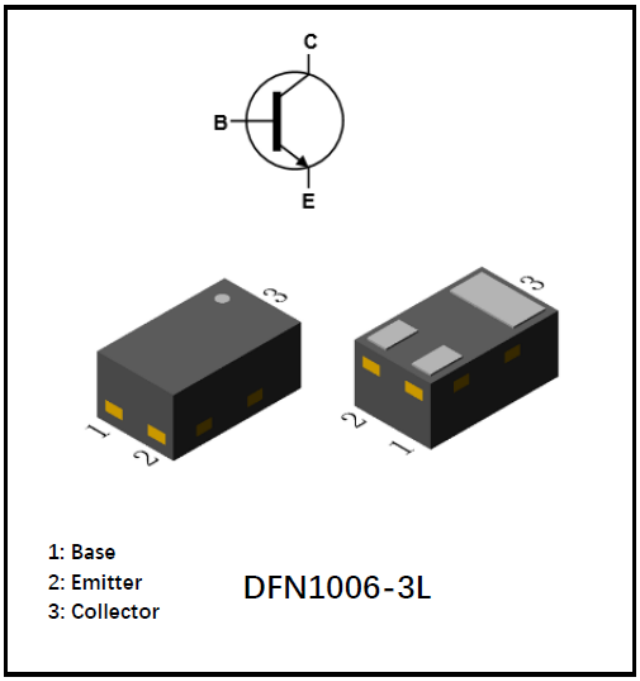
# NPN General Purpose Amplifier




## Features

- Lead Free Finish/RoHS Compliant
- Small package saves board space
- Moisture Sensitivity Level 3

## Mechanical Data

- **Package**: DFN1006-3L
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking**: 1AM

## ■Maximum Ratings (Ta=25℃ Unless otherwise specified)

| Item | Symbol | Unit | Value |
|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEO}$ | V | 40 |
| Collector-Base Voltage | $V_{CBO}$ | V | 60 |
| Emitter-Base Voltage | $V_{EBO}$ | V | 6.0 |
| Collector Current | $I_C$ | mA | 200 |
| Collector Power Dissipation | $P_C$ | mW | 100 |
| Operation Junction Temperature | $T_J$ | ℃ | -55 to +150 |
| Storage Temperature | $T_{STG}$ | ℃ | -55 to +150 |

## ■Ordering Information (Example)

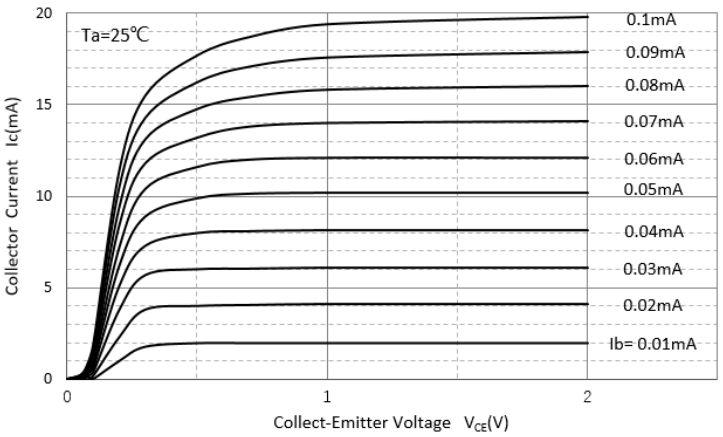
| PREFERED P/N | UNIT WEIGHT(mg) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|
| MMBT3904L3 | Approximate 0.89 | 10K | 100K | 400K | Tape & Reel |

## ■Electrical Characteristics（$T_a$=25℃ Unless otherwise specified）

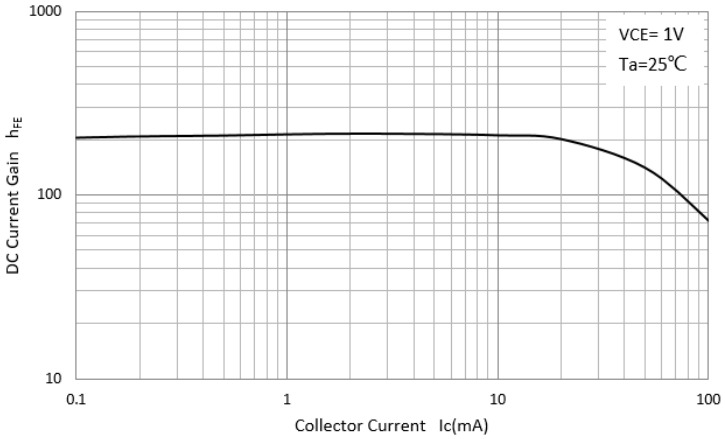
| Item | Symbol | Unit | Conditions | Min | Max |
|---|---|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEO}$ | V | $I_C$=1.0mAdc, $I_B$=0 | 40 | - |
| Collector-Base Voltage | $V_{CBO}$ | V | $I_C$=10uAdc, $I_E$=0 | 60 | - |
| Emitter-Base Voltage | $V_{EBO}$ | V | $I_E$=10uAdc, $I_C$=0 | 6.0 | - |
| Collector-base Cut-off Current | $I_{CBO}$ | nAdc | $V_{CB}$=30Vdc | - | 50 |
| Emitter-Base Cut-off Current | $I_{EBO}$ | nAdc | $V_{EB}$=5Vdc | - | 50 |
| DC Current Gain | $h_{FE}$ | | $I_C$=0.1mAdc, $V_{CE}$=1.0Vdc | 40 | - |
| | | | $I_C$=1.0mAdc, $V_{CE}$=1.0Vdc | 70 | - |
| | | | $I_C$=10mAdc, $V_{CE}$=1.0Vdc | 100 | 300 |
| | | | $I_C$=50mAdc, $V_{CE}$=1.0Vdc | 60 | - |
| | | | $I_C$=100mAdc, $V_{CE}$=1.0Vdc | 30 | - |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | Vdc | $I_C$=10mAdc, $I_B$=1.0mAdc | - | 0.2 |
| | | | $I_C$=50mAdc, $I_B$=5.0mAdc | - | 0.3 |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | Vdc | $I_C$=10mAdc, $I_B$=1.0mAdc | 0.65 | 0.85 |
| | | | $I_C$=50mAdc, $I_B$=5.0mAdc | - | 0.95 |
| Collector-base Output Capacitance | Cobo | pF | $V_{CB}$=5.0Vdc, f=1.0MHz, $I_E$=0 | - | 4 |
| Transition frequency | $f_T$ | MHz | $I_C$=10mAdc, $V_{CE}$=20Vdc, f=100MHz | 300 | - |
| Delay Time | td | ns | $V_{CC}$=3.0Vdc,$V_{BE}$=0.5Vdc, $I_C$=10mAdc, $I_{B1}$=1.0mAdc | - | 35 |
| Rise Time | tr | ns | | - | 35 |
| Storage Time | ts | ns | $V_{CC}$=3.0Vdc,$I_C$=10mAdc, $I_{B1}$=$I_{B2}$=1.0mAdc | - | 200 |
| Fall Time | tf | ns | | - | 50 |

## ■ **Characteristics** (Typical)

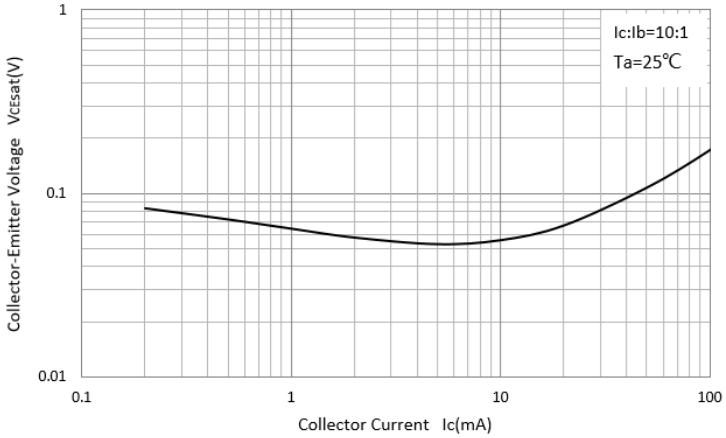
Static Characteristic



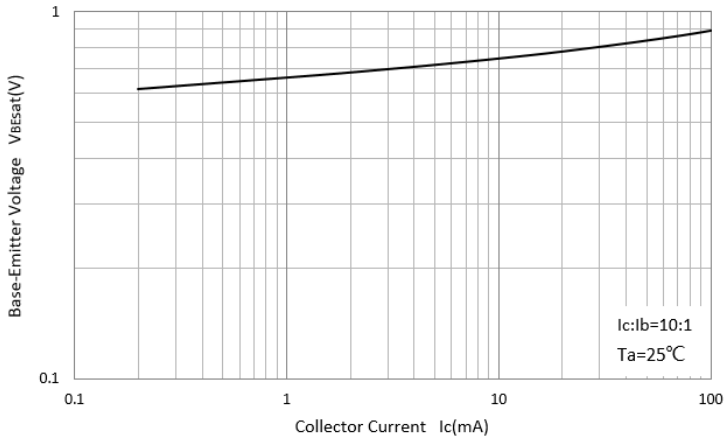

DC Current Gain



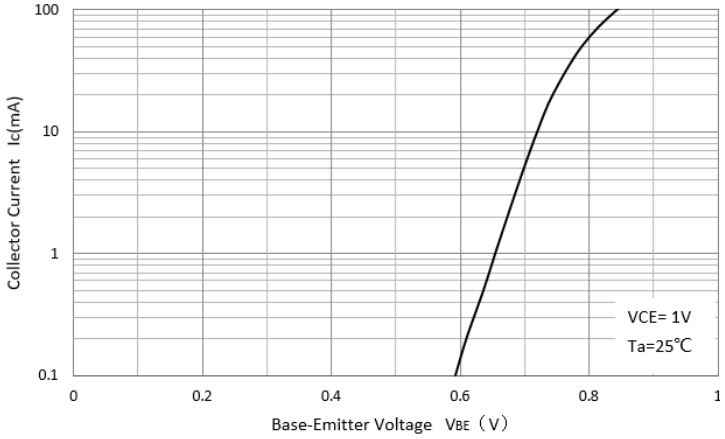

Collector-Emitter Saturation Voltage



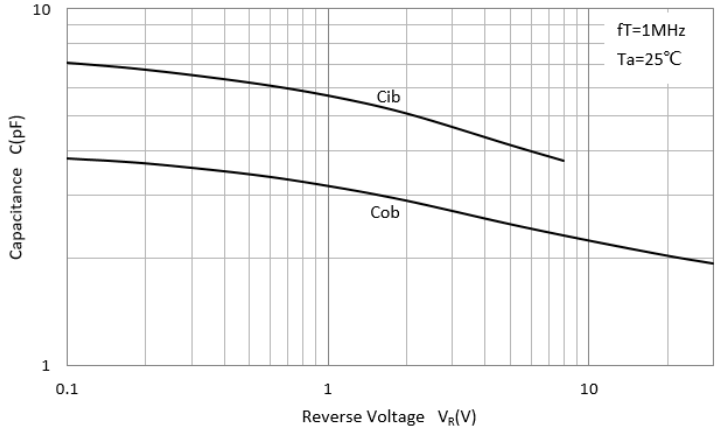

Base-Emitter Saturation Voltage



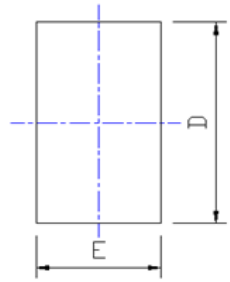

Base-Emitter On Voltage



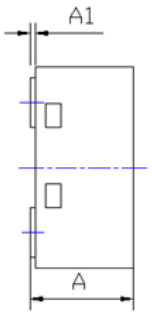

Cob/Cib-$V_{CB}$/$V_{EB}$



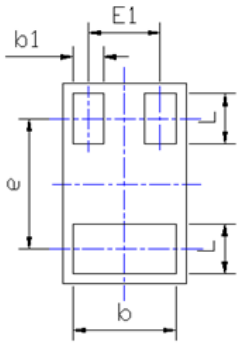
## ■Outline Dimensions




TOP VIEW



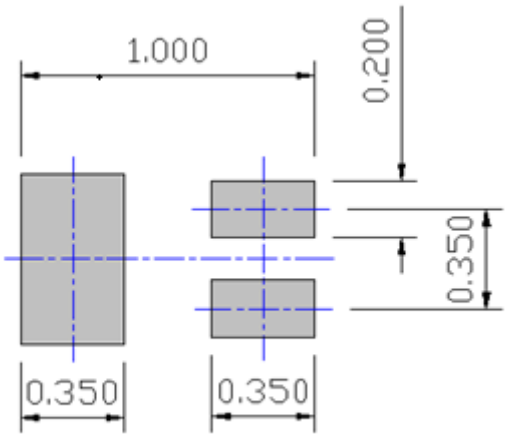

SIDE VIEW




BOTTOM VIEW

| DIMENSIONS | | | |
|---|---|---|---|
| SYMBOL | Millimeter | | |
| | MIN. | NOM. | MAX. |
| A | 0.42 | --- | 0.55 |
| A1 | 0.025REF | | |
| b | 0.45 | 0.50 | 0.55 |
| b1 | 0.10 | 0.15 | 0.20 |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| E1 | 0.35BSC | | |
| e | 0.65BSC | | |
| L | 0.20 | 0.25 | 0.30 |

## ■ Soldering Footprint




UNIT: mm

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