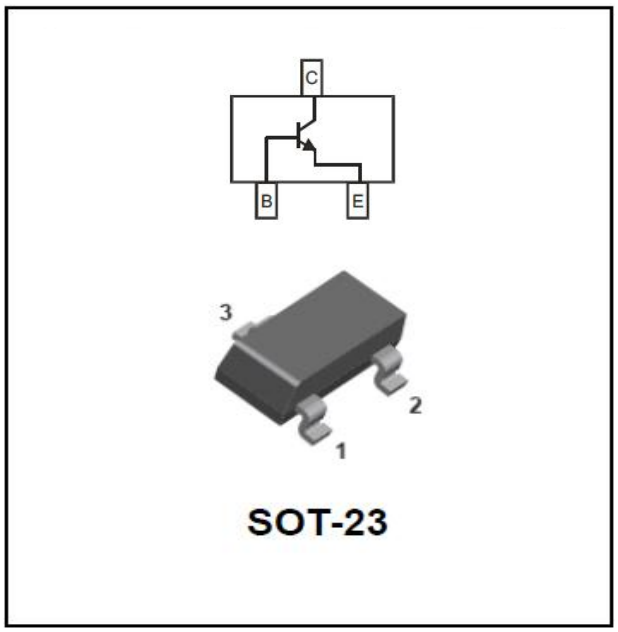
# NPN General Purpose Amplifier




## Features

- ●Epoxy meets UL-94 V-0 flammability rating
- ●Halogen free available upon request by adding suffix "HF"
- ●Moisure Sensitivity Level 1
- ●Marking: G1

## ■Maximum Rantings (Ta=25℃)

| Item | Symbol | Unit | Conditions | Value |
|---|---|---|---|---|
| Collector-Emitter Voltage* | $V_{CEO}$ | V | $I_C$=1.0mAdc, $I_B$=0 | 160 |
| Collector-Base Voltage | $V_{CBO}$ | V | $I_C$=100uAdc, $I_E$=0 | 180 |
| Emitter-Base Voltage | $V_{EBO}$ | V | $I_E$=10uAdc, $I_C$=0 | 6.0 |
| Collector Current | $I_C$ | mA | | 600 |
| Collector Power Dissipation | $P_C$ | mW | | 300 |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | ℃/W | | 417 |
| Operation Junction Temperature | $T_j$ | ℃ | | -55 to +150 |
| Storage Temperature | $T_{stg}$ | ℃ | | -55 to +150 |

## ■Ordering Information (Example)

| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| MMBT5551 | F2 | Approximate 0.008 | 3000 | 30000 | 120000 | 7" reel |

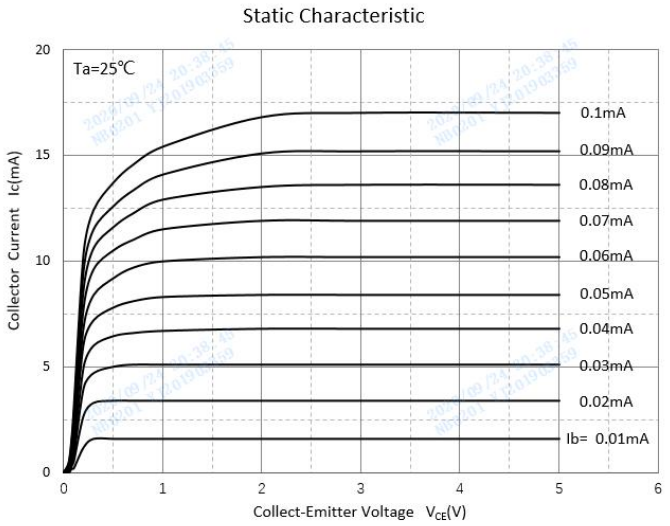
## ■Electrical Characteristics（$T_a$=25℃）

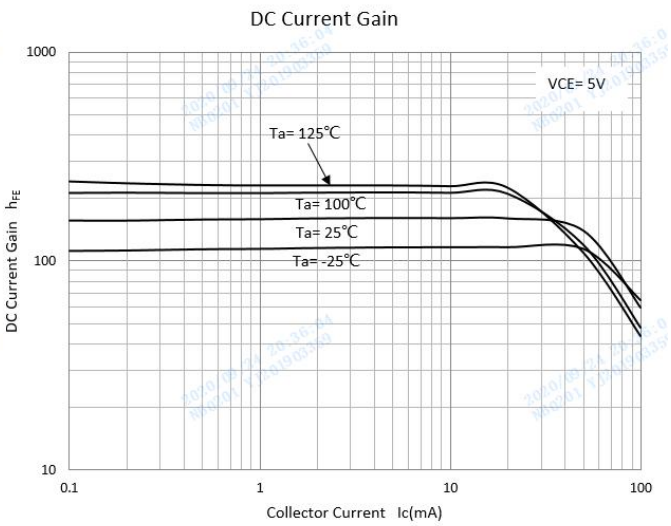
| Item | Symbol | Unit | Conditions | Min | Max |
|---|---|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEO}$ | V | $I_C$=1.0mAdc, $I_B$=0 | 160 | |
| Collector-Base Voltage | $V_{CBO}$ | V | $I_C$=100uAdc, $I_E$=0 | 180 | |
| Emitter-Base Voltage | $V_{EBO}$ | V | $I_E$=10uAdc, $I_C$=0 | 6.0 | |
| Collector-base Cut-off Current | $I_{CBO}$ | nA | $V_{CB}$=120Vdc | | 50 |
| Emitter-base Cut-off Current | $I_{EB0}$ | nA | $V_{EB}$=4.0Vdc | | 50 |
| DC Current Gain | $h_{FE}$ | | $I_C$=1.0mA $V_{CE}$=5.0Vdc | 80 | |
| | | | $I_C$=10mA $V_{CE}$=5.0Vdc | 100 | 300 |
| | | | $I_C$=50mA $V_{CE}$=5.0Vdc | 50 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$1 | V | $I_C$=10mA $I_B$=1.0mA | | 0.15 |
| | $V_{CE(sat)}$2 | V | $I_C$=50mA $I_B$=5.0mA | | 0.2 |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$1 | V | $I_C$=10mA $I_B$=1.0mA | | 1 |
| | $V_{BE(sat)}$2 | V | $I_C$=50mA $I_B$=5.0mA | | 1 |

## ■Small-signal Characteristics（Ta=25℃）

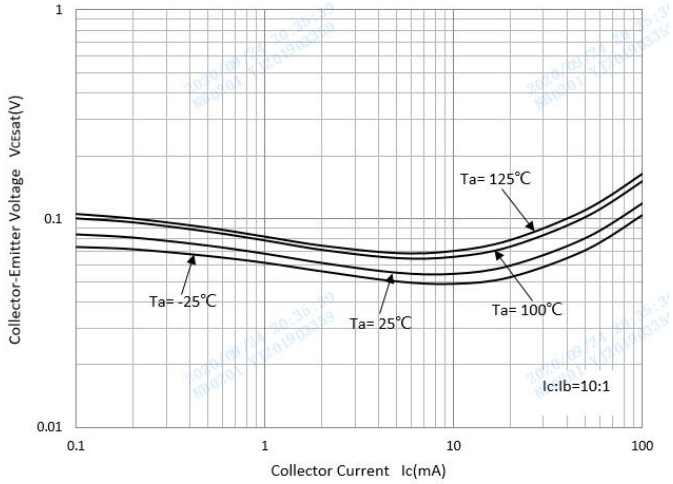
| Item | Symbol | Unit | Conditions | Min | Max |
|---|---|---|---|---|---|
| Transition frequency | $f_T$ | MHz | $I_C$=10mAdc, $V_{CE}$=5.0Vdc,f=30MHz | 100 | 300 |

## ■Characteristics(Typical)

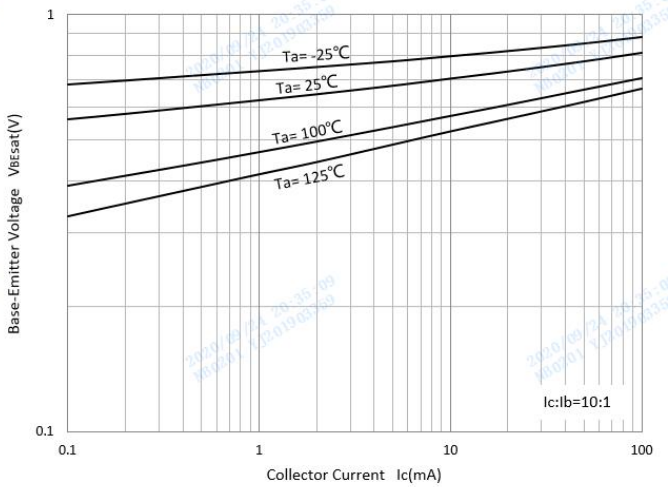


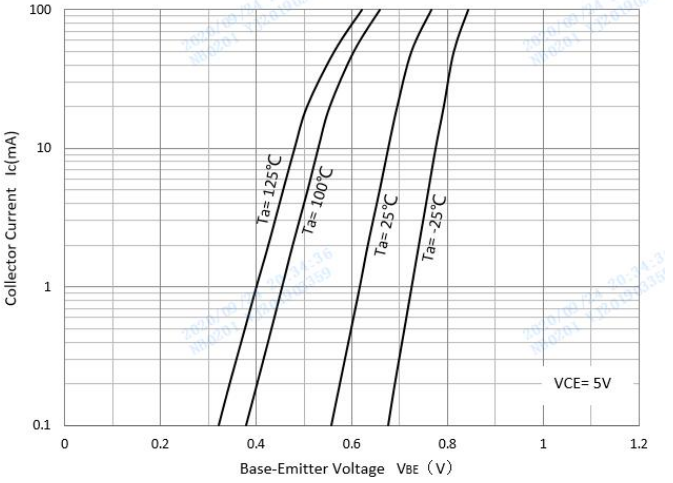
Collector-Emitter Saturation Voltage



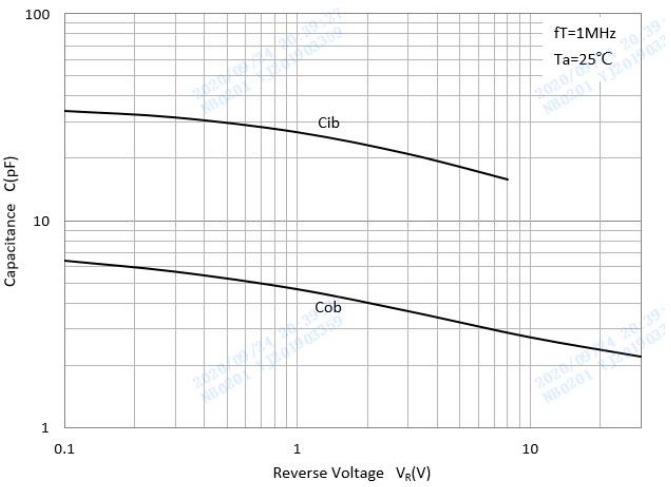

Base-Emitter Saturation Voltage



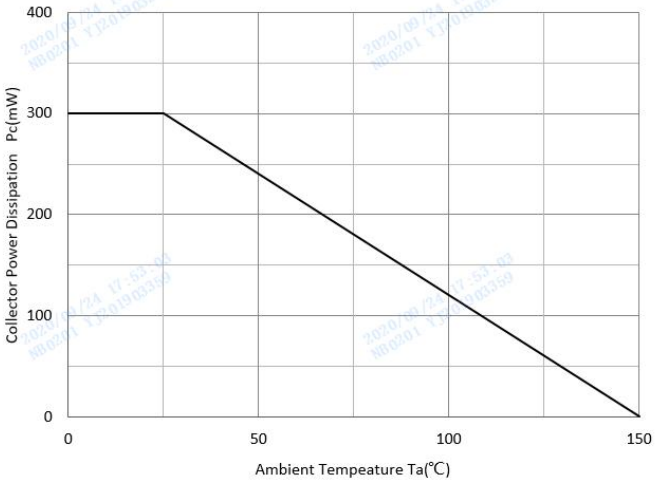

Base-Emitter On Voltage



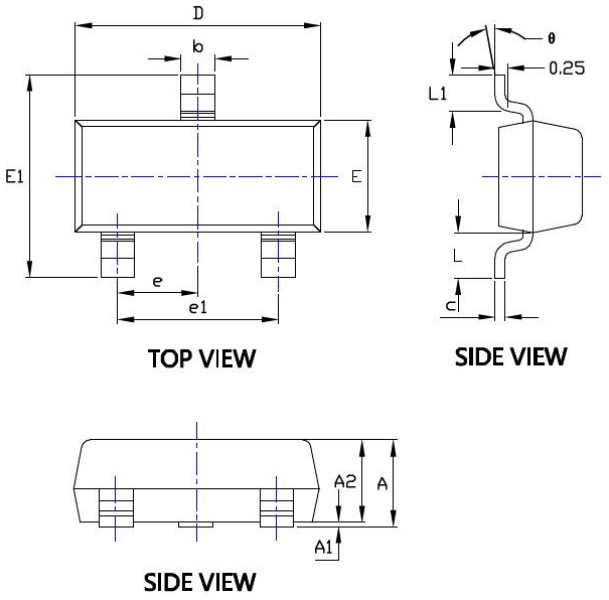

Cob/Cib-$V_{CB}$/$V_{EB}$




Collector Power Derating Curve



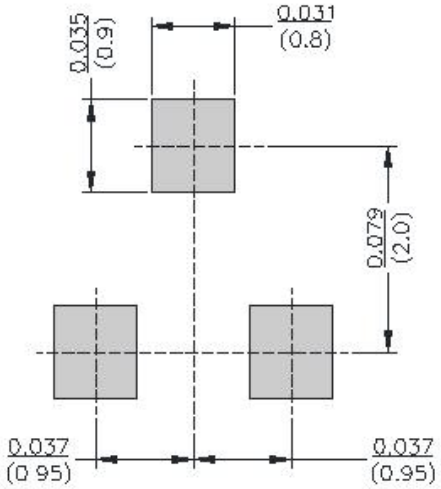
## ■SOT-23 Package Outline Dimensions




| SYMBOL | DIMENSIONS | | | |
|---|---|---|---|---|
| | INCHES | | Millimeter | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.035 | 0.045 | 0.900 | 1.150 |
| A1 | 0.000 | 0.004 | 0.000 | 0.100 |
| A2 | 0.035 | 0.041 | 0.900 | 1.050 |
| b | 0.012 | 0.020 | 0.300 | 0.500 |
| c | 0.004 | 0.008 | 0.100 | 0.200 |
| D | 0.110 | 0.118 | 2.800 | 3.000 |
| E | 0.047 | 0.055 | 1.200 | 1.400 |
| E1 | 0.089 | 0.100 | 2.250 | 2.550 |
| e | 0.037TYP | | 0.950TYP | |
| e1 | 0.071 | 0.079 | 1.800 | 2.000 |
| L | 0.022REF | | 0.550REF | |
| L1 | 0.012 | 0.020 | 0.300 | 0.500 |
| θ | 0° | 8° | 0° | 8° |

Note:
1. All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位，除非另有说明]
2. General tolerances: ±0.10mm unless otherwise specified.
[通用公差为±0.10mm，除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4.All dimensions shown are exclusive of burrs and gate residues. Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
5.Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
6.Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E是塑封体的外部极限尺寸，不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺，但是包含了包封错位的最大尺寸]
7.Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面，共面性最大为0.1mm]

## ■SOT-23 Soldering Footprint



## Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.