

## NPN General Purpose Transistor

## MMST5551

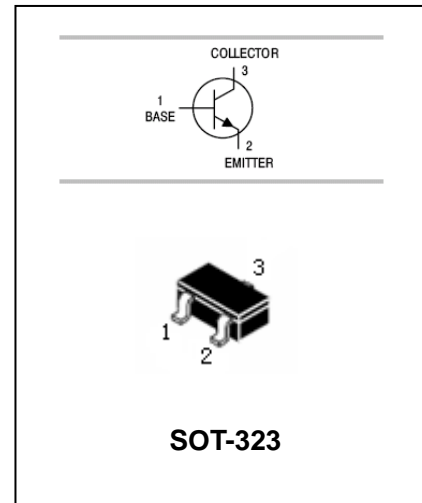
### FEATURES

- Epitaxial planar die construction.
- Complementary PNP type available (MMST5401).
- Also available in lead free version.



### APPLICATIONS

- Ideal for medium power amplification and switching.



### ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| MMST5551 | K4N     | SOT-323      |

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

| Symbol                            | Parameter                              | Value       | UNIT |
|-----------------------------------|--|-------------|------|
| V <sub>CBO</sub>                  | collector-base voltage                 | 180         | V    |
| V <sub>CEO</sub>                  | collector-emitter voltage              | 160         | V    |
| V <sub>EBO</sub>                  | emitter-base voltage                   | 6           | V    |
| I <sub>C</sub>                    | collector current (DC)                 | 0.6         | A    |
| P <sub>C</sub>                    | Collector dissipation                  | 0.3         | W    |
| R <sub>θJA</sub>                  | Thermal resistance junction to ambient | 625         | °C/W |
| T <sub>j</sub> , T <sub>stg</sub> | junction and storage temperature       | -55 to +150 | °C   |



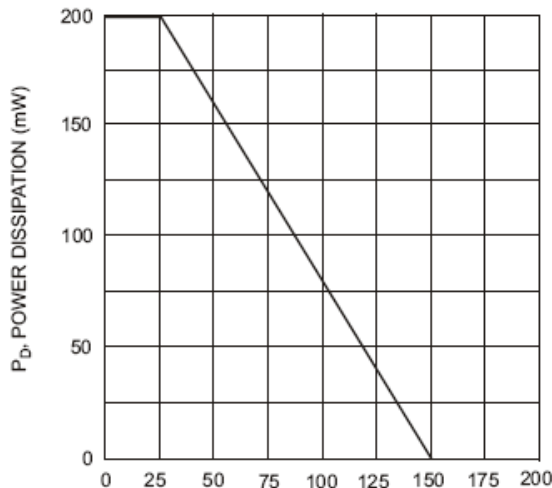
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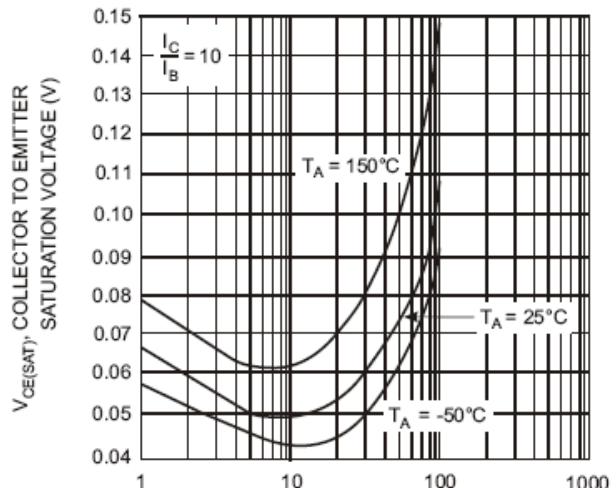
**ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

| Symbol        | Parameter                            | Test conditions   | MIN.           | MAX.          | UNIT |
|---------------|--------------------------------------|---|----------------|---------------|------|
| $V_{(BR)CBO}$ | Collector-base breakdown voltage     | $I_C=100\mu A, I_E=0$   | 180            |               |      |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=0.1mA, I_B=0$  | 160            |               |      |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage       | $I_E=10\mu A, I_C=0$  | 6              |               |      |
| $I_{CBO}$     | collector cut-off current            | $I_E = 0; V_{CB} = 120V$  | -              | 50            | nA   |
| $I_{EBO}$     | emitter cut-off current              | $I_C = 0; V_{EB} = 4V$  | -              | 50            | nA   |
| $h_{FE}$      | DC current gain                      | $V_{CE} = 5V; I_C = 1mA$<br>$V_{CE} = 5V; I_C = 10mA$<br>$V_{CE} = 5V; I_C = 50 mA$ | 80<br>80<br>30 | -<br>250<br>- |      |
| $V_{CE(sat)}$ | collector-emitter saturation voltage | $I_C = 50 mA; I_B = 5 mA$<br>$I_C = 10 mA; I_B = 1 mA$                              | -              | 0.2<br>0.15   | V    |
| $V_{BE(sat)}$ | base-emitter saturation voltage      | $I_C = 50 mA; I_B = 5 mA$<br>$I_C = 10 mA; I_B = 1 mA$                              | -              | 1<br>1        | V    |
| $f_T$         | transition frequency                 | $I_C = 10mA; V_{CE} = 10V;$<br>$f = 100MHz$   | 80             | -             | MHz  |

**TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**



T<sub>A</sub>, AMBIENT TEMPERATURE (°C)  
Fig. 1, Max Power Dissipation vs Ambient Temperature



I<sub>C</sub>, COLLECTOR CURRENT (mA)  
Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current



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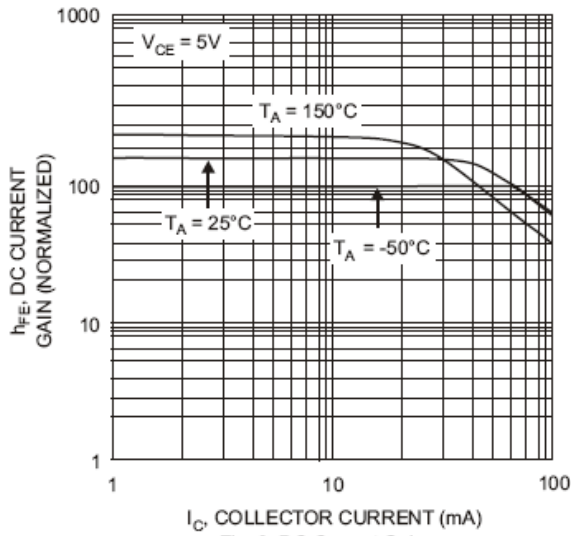


Fig. 3, DC Current Gain vs Collector Current

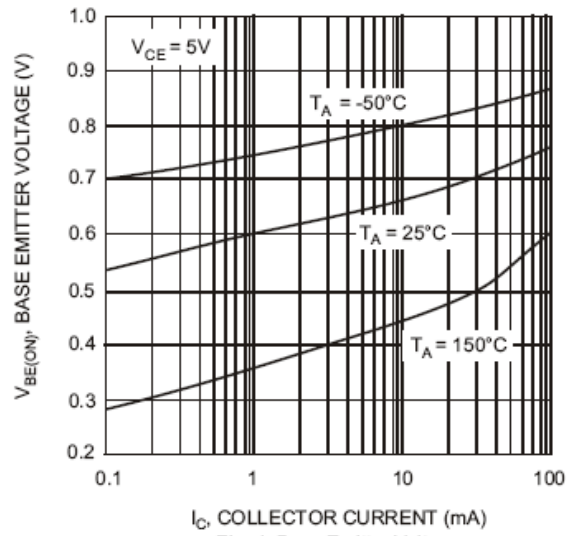


Fig. 4, Base Emitter Voltage vs. Collector Current

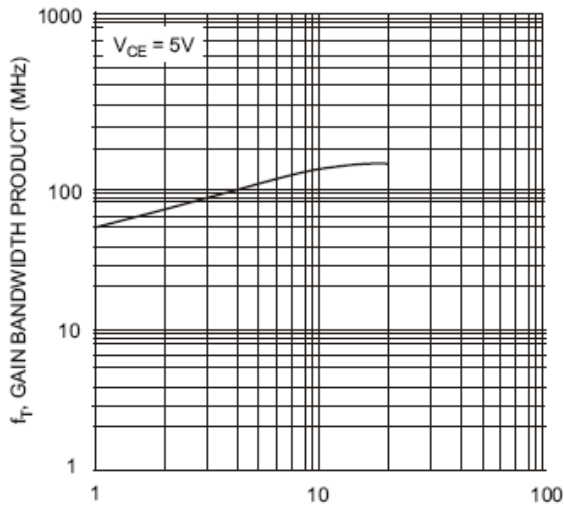


Fig. 5, Gain Bandwidth Product vs. Collector Current



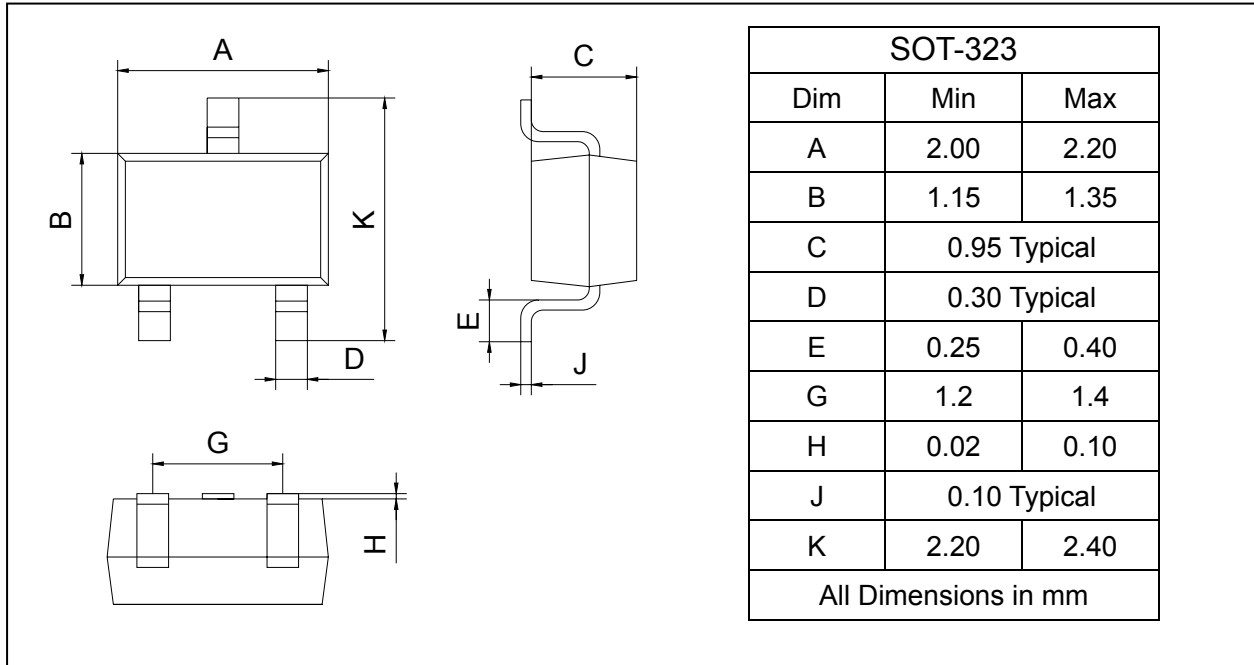
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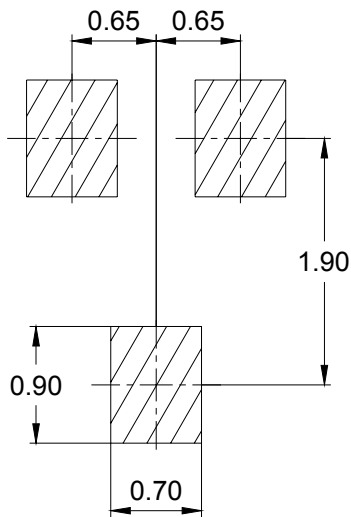
**PACKAGE OUTLINE**

Plastic surface mounted package

SOT-323



**SOLDERING FOOTPRINT**



**PACKAGE INFORMATION**

| Device   | Package | Shipping       |
|----------|---------|----------------|
| MMST5551 | SOT-323 | 3000/Tape&Reel |