



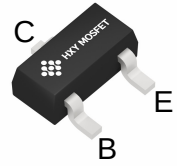
## Features

- Collector Current:  $I_C=0.6A$
- Power Dissipation of 300mw

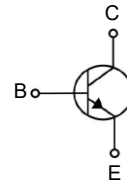
## Package Marking and Ordering Information

| Product ID   | Pack   | Marking | Qty(PCS) |
|--------------|--------|---------|----------|
| PMBT5551,215 | SOT-23 | G1      | 3000     |

1. BASE
2. EMITTER
3. COLLECTOR



SOT-23



## Maximum Ratings (Ta=25°C unless otherwise noted)

| Parameter                                   | Symbol          | Limit    | Unit |
|---------------------------------------------|-----------------|----------|------|
| Collector-Base Voltage                      | $V_{CBO}$       | 180      | V    |
| Collector-Emitter Voltage                   | $V_{CEO}$       | 160      | V    |
| Emitter-Base Voltage                        | $V_{EBO}$       | 6        | V    |
| Collector Current                           | $I_C$           | 600      | mA   |
| Collector Power Dissipation                 | $P_C$           | 300      | mW   |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | 416      | °C/W |
| Junction Temperature                        | $T_J$           | 150      | °C   |
| Storage Temperature                         | $T_{stg}$       | -55~+150 | °C   |

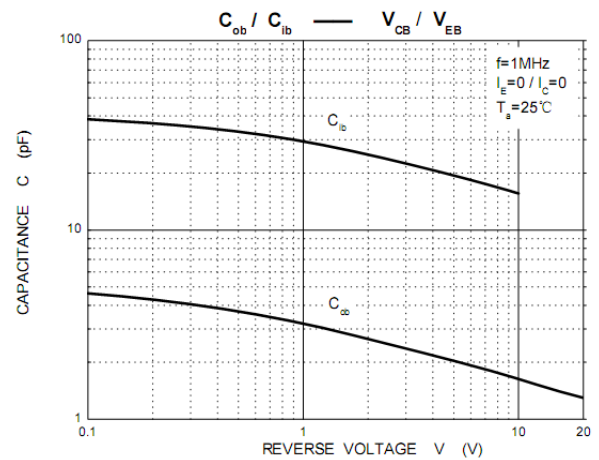
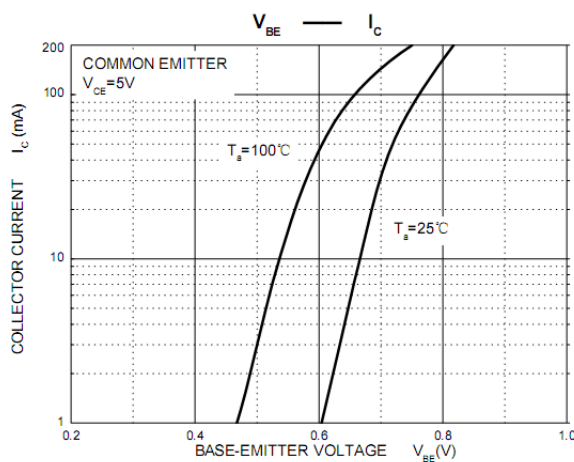
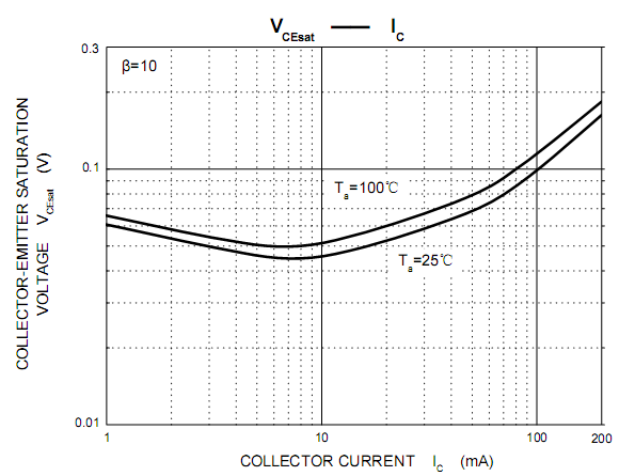
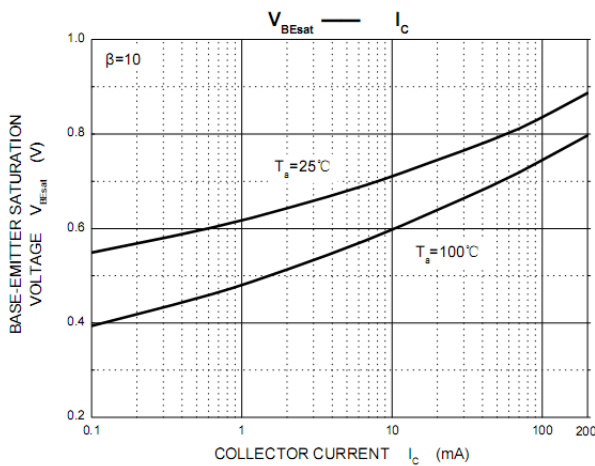
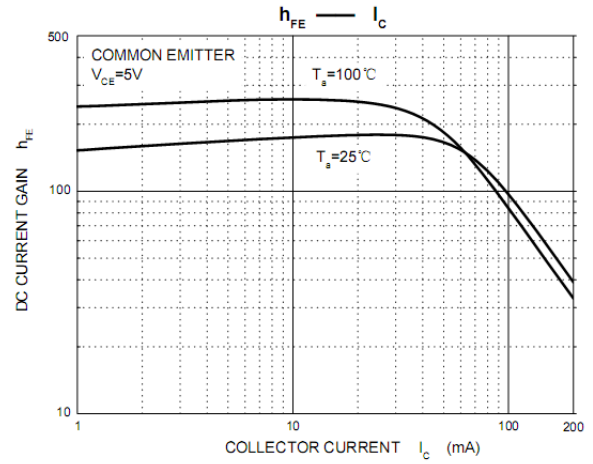
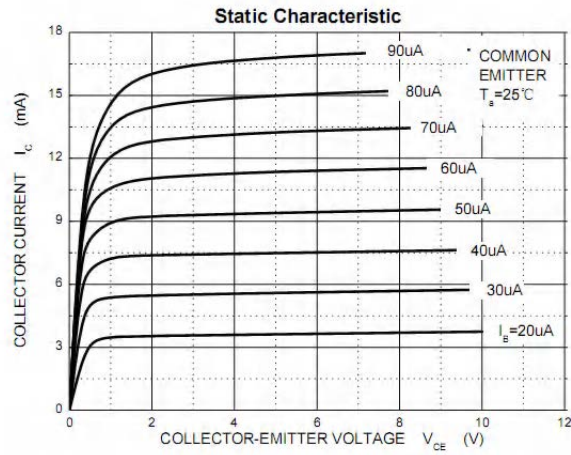
## Electrical Characteristics(Ta=25°C unless otherwise specified)

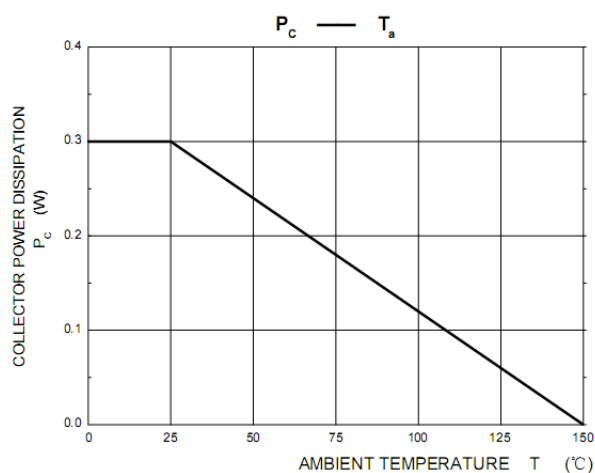
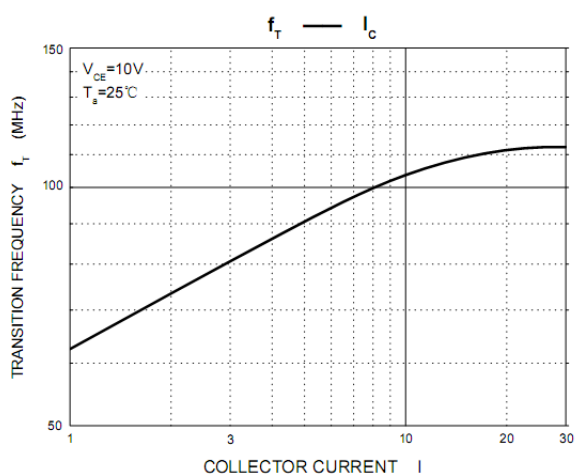
| Parameter                            | Symbol           | Test conditions                  | Min | Typ | Max  | Unit |
|--------------------------------------|------------------|----------------------------------|-----|-----|------|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$    | $I_C=100\mu A, I_E=0$            | 180 |     |      | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}^*$  | $I_C=1mA, I_B=0$                 | 160 |     |      | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$    | $I_E=10\mu A, I_C=0$             | 6   |     |      | V    |
| Collector cut-off current            | $I_{CBO}$        | $V_{CB}=120V, I_E=0$             |     |     | 50   | nA   |
| Emitter cut-off current              | $I_{EBO}$        | $V_{EB}=4V, I_C=0$               |     |     | 50   | nA   |
| DC current gain                      | $h_{FE(1)}^*$    | $V_{CE}=5V, I_C=1mA$             | 80  |     |      |      |
|                                      | $h_{FE(2)}^*$    | $V_{CE}=5V, I_C=10mA$            | 100 |     | 300  |      |
|                                      | $h_{FE(3)}^*$    | $V_{CE}=5V, I_C=50mA$            | 50  |     |      |      |
| Collector-emitter saturation voltage | $V_{CE(sat)1}^*$ | $I_C=10mA, I_B=1mA$              |     |     | 0.15 | V    |
|                                      | $V_{CE(sat)2}^*$ | $I_C=50mA, I_B=5mA$              |     |     | 0.2  | V    |
| Base-emitter saturation voltage      | $V_{BE(sat)1}^*$ | $I_C=10mA, I_B=1mA$              |     |     | 1    | V    |
|                                      | $V_{BE(sat)2}^*$ | $I_C=50mA, I_B=5mA$              |     |     | 1    | V    |
| Transition frequency                 | $f_T$            | $V_{CE}=10V, I_C=10mA, f=100MHz$ | 100 |     | 300  | MHz  |
| Collector output capacitance         | $C_{ob}$         | $V_{CB}=10V, I_E=0, f=1MHz$      |     |     | 6    | pF   |

\*Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2.0\%$ .



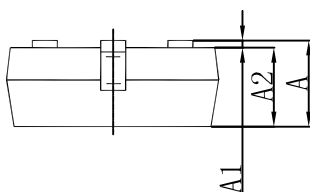
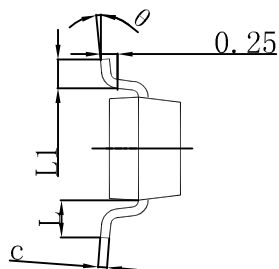
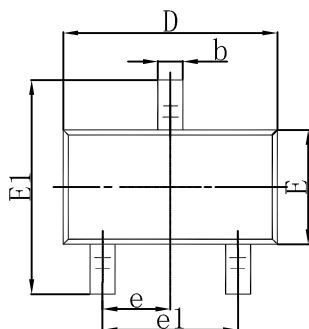
## Typical Characteristics





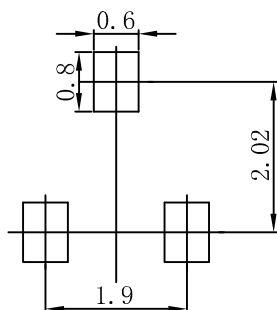


## SOT-23 Package Outline Dimensions



| Symbol   | Dimensions In Millimeters |       | Dimensions In Inches |       |
|----------|---------------------------|-------|----------------------|-------|
|          | Min                       | Max   | Min                  | Max   |
| A        | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1       | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2       | 0.900                     | 1.050 | 0.035                | 0.041 |
| b        | 0.300                     | 0.500 | 0.012                | 0.020 |
| c        | 0.080                     | 0.150 | 0.003                | 0.006 |
| D        | 2.800                     | 3.000 | 0.110                | 0.118 |
| E        | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1       | 2.250                     | 2.550 | 0.089                | 0.100 |
| e        | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1       | 1.800                     | 2.000 | 0.071                | 0.079 |
| L        | 0.550 REF                 |       | 0.022 REF            |       |
| L1       | 0.300                     | 0.500 | 0.012                | 0.020 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |

## SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.



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