



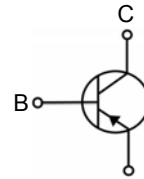
## Features

- General Purpose Amplifier Applications

## Package Marking and Ordering Information

| Product ID | Pack   | Marking | Qty(PCS) |
|------------|--------|---------|----------|
| PMBTA56    | SOT-23 | 2GM     | 3000     |

1. BASE
2. EMITTER
3. COLLECTOR



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

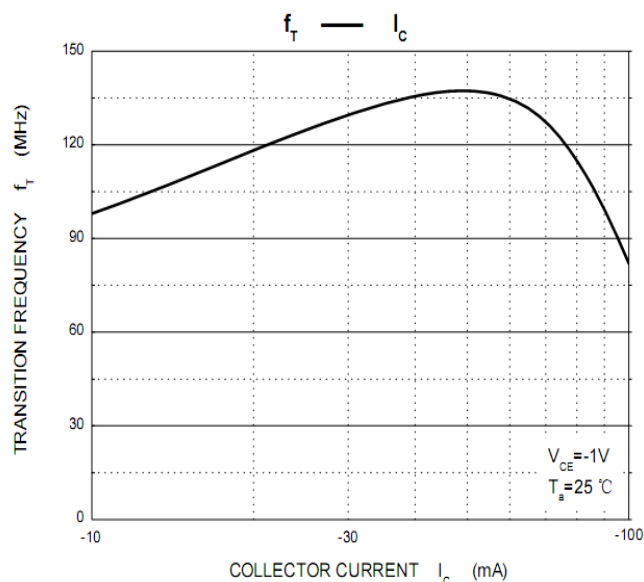
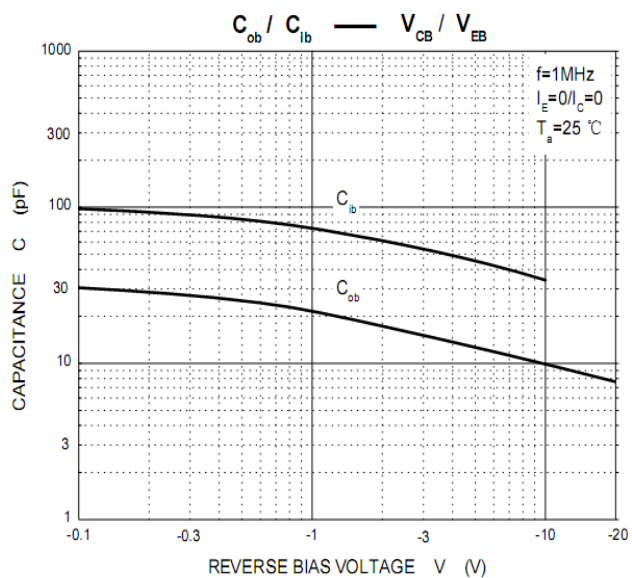
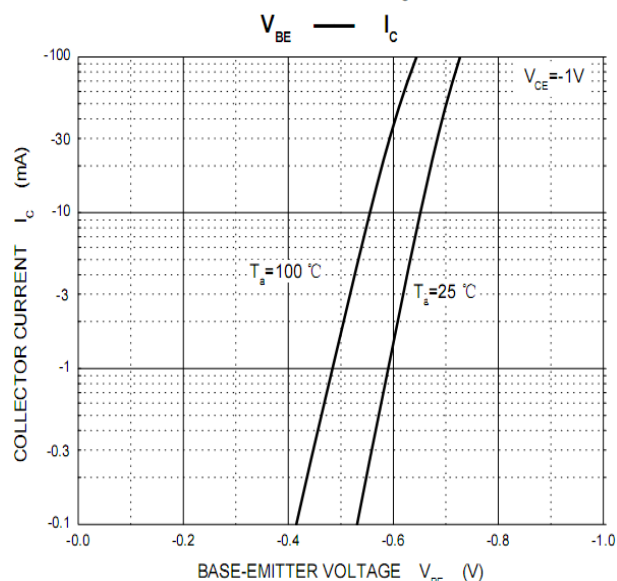
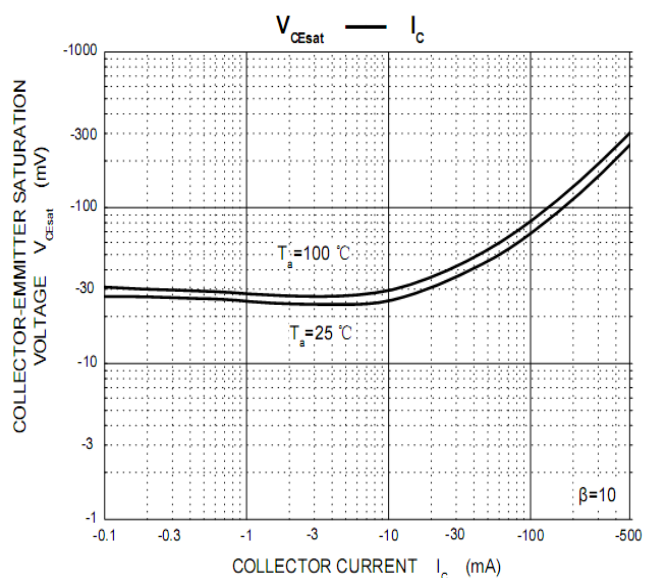
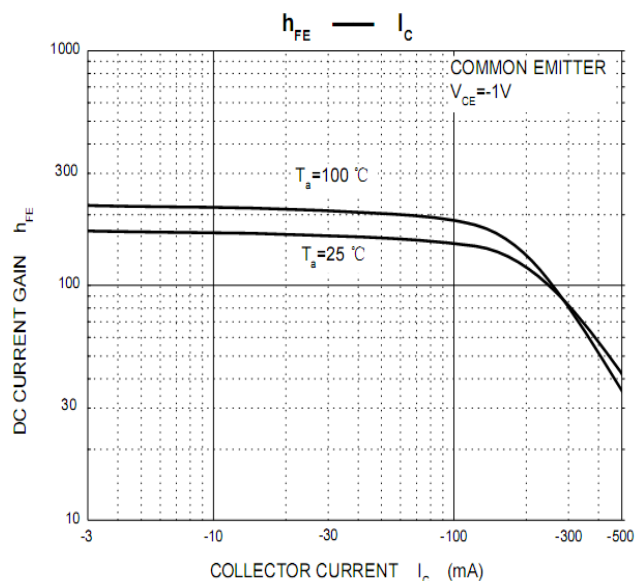
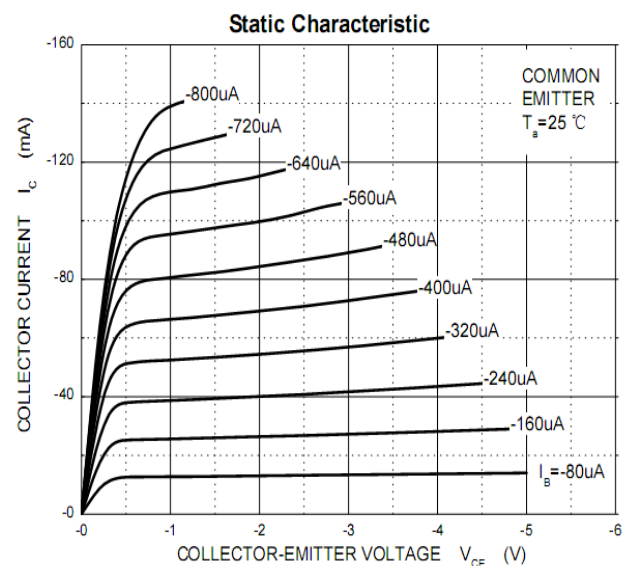
| Symbol          | Parameter                                        | Value    | Unit |
|-----------------|--------------------------------------------------|----------|------|
| $V_{CBO}$       | Collector-Base Voltage                           | -80      | V    |
| $V_{CEO}$       | Collector-Emitter Voltage                        | -80      | V    |
| $V_{EBO}$       | Emitter-Base Voltage                             | -4       | V    |
| $I_C$           | Collector Current                                | -500     | mA   |
| $P_C$           | Collector Power Dissipation                      | 225      | mW   |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 555      | °C/W |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 | °C   |

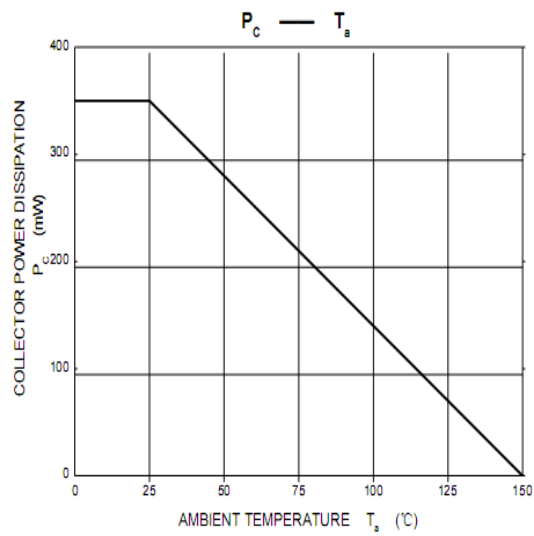
## Electrical Characteristics (Ta=25°C unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                    | Min | Typ | Max   | Unit    |
|--------------------------------------|---------------|------------------------------------|-----|-----|-------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=-100\mu A, I_E=0$             | -80 |     |       | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=-1mA, I_B=0$                  | -80 |     |       | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=-100\mu A, I_C=0$             | -4  |     |       | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=-80V, I_E=0$               |     |     | -0.1  | $\mu A$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CE}=-60V, I_B=0$               |     |     | -1    | $\mu A$ |
| Emitter-base breakdown voltage       | $I_{EBO}$     | $V_{EB}=-4V, I_C=0$                |     |     | -0.1  | $\mu A$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=-1V, I_C=-10mA$            | 100 |     | 400   |         |
|                                      | $h_{FE(2)}$   | $V_{CE}=-1V, I_C=-100mA$           | 100 |     |       |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-100mA, I_B=-10mA$            |     |     | -0.25 | V       |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE}=-1V, I_C=-100mA$           |     |     | -1.2  | V       |
| Transition frequency                 | $f_T$         | $V_{CE}=-1V, I_C=-100mA, f=100MHz$ | 50  |     |       | MHz     |

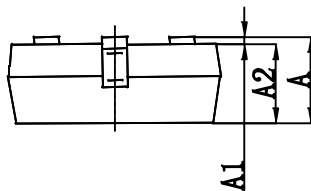
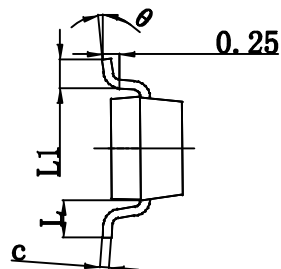
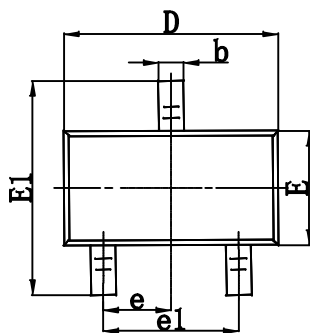


## Typical Characteristics





### 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°    |



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