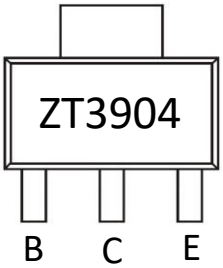
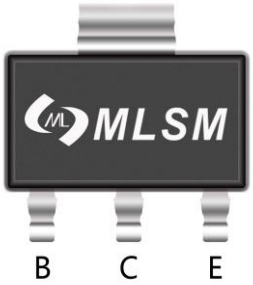
## Features

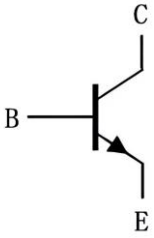
- Low Voltage and Low Current
- Complementary to PZT3906
- General Purpose Amplifier and Switch Application




Marking and pin assignment




SOT-223 top view




Schematic diagram

Pb-Free RoHS Halogen-Free

### Maximum Ratings(Ta=25℃ unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 60 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 40 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 6 | V |
| $I_C$ | Collector Current -Continuous | 200 | mA |
| $P_C$ | Collector Power Dissipation | 1 | W |
| $R_{\Theta JA}$ | Thermal Resistance From Junction To Ambient | 125 | °C/W |
| $T_J, T_{stg}$ | Operation Junction and Storage Temperature Range | -55~+150 | °C |

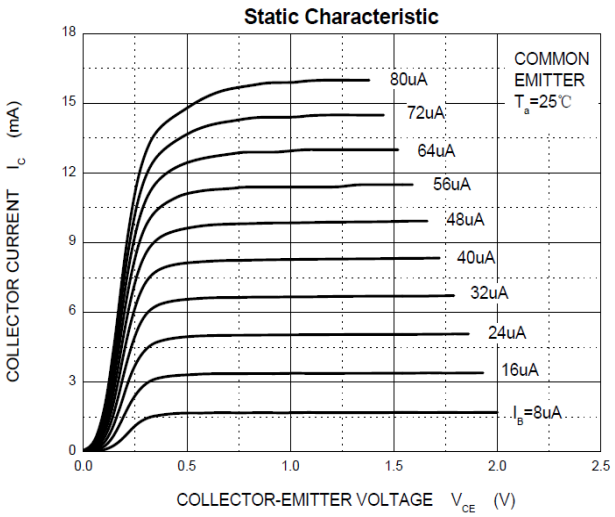
### Ordering Information (Example)

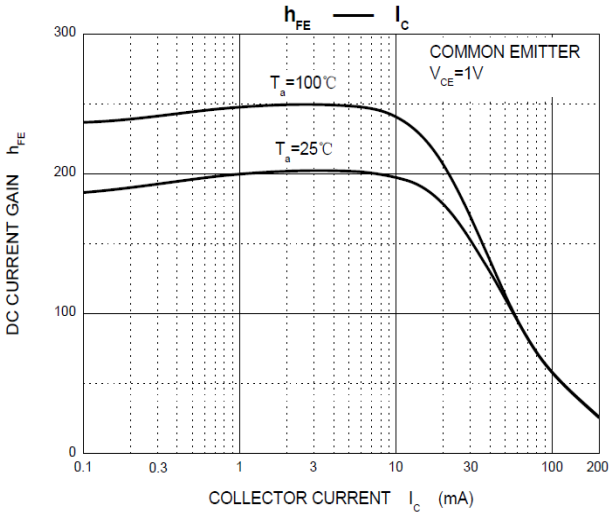
| Type | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|---|---|---|---|---|---|
| PZT3904 | ZT3904 | 2,500 | 5,000 | 35,000 | 13"reel |

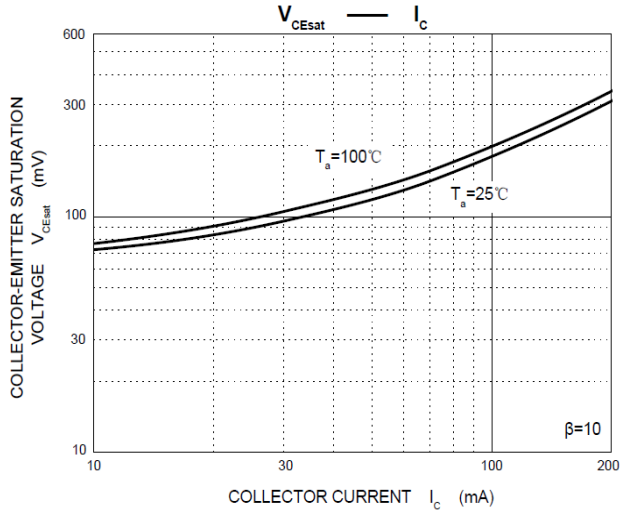
## Electrical Characteristics (TJ=25℃ unless otherwise noted)

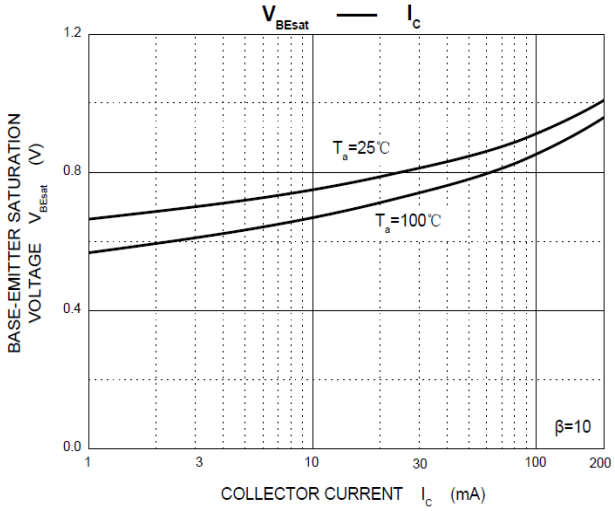
| Symbol | Parameter | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{(BR)CBO}$ | Collector-base breakdown voltage | $I_C$=0.01mA, $I_E$=0 | 60 | -- | -- | V |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | $I_C$=1mA, $I_B$=0 | 40 | -- | -- | V |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage | $I_E$=0.01mA, $I_C$=0 | 6 | -- | -- | V |
| $I_{CBO}$ | Collector cut-off current | $V_{CB}$=30V , $I_E$=0 | -- | -- | 50 | nA |
| $I_{CEX}$ | Collector cut-off current | $V_{CE}$=30V, $V_{EB}$=3V | -- | -- | 50 | nA |
| $I_{EBO}$ | Emitter cut-off current | $V_{CB}$=5V , $I_C$=0 | -- | -- | 50 | nA |
| $h_{FE1}$ | DC current gain | $V_{CE}$=1V, $I_C$= 0.1mA | 40 | -- | -- | -- |
| $h_{FE2}$ | | $V_{CE}$=1V, $I_C$= 1mA | 70 | -- | -- | |
| $h_{FE3}$ | | $V_{CE}$=1V, $I_C$= 10mA | 100 | -- | 300 | |
| $h_{FE4}$ | | $V_{CE}$=1V, $I_C$= 50mA | 60 | -- | -- | |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage | $I_C$=10mA, $I_B$= 1mA | -- | -- | 0.2 | V |
| | | $I_C$=50mA, $I_B$= 5mA | -- | -- | 0.3 | V |
| $V_{BE(sat)}$ | Base-emitter saturation voltage | $I_C$=10mA, $I_B$= 1mA | 0.65 | -- | 0.85 | V |
| | | $I_C$=50mA, $I_B$=5mA | -- | -- | 0.95 | V |
| $t_d$ | Delay time | $V_{CC}$=3V, $V_{BE(off)}$=0.5V $I_C$=10mA, $I_{B1}$= -$I_{B2}$=1mA | -- | -- | 35 | ns |
| $t_r$ | Rise time | | -- | -- | 35 | |
| $t_S$ | Storage time | $V_{CC}$=3V, $I_C$=10mA, $I_{B1}$=-$I_{B2}$=1mA | -- | -- | 200 | ns |
| $t_f$ | Fall time | | -- | -- | 50 | |
| $f_T$ | Transition frequency | $V_{CE}$=20V, $I_C$=10mA,f=100MHz | 300 | -- | -- | MHz |
| $C_{ob}$ | Collector output capacitance | $V_{CB}$=5V, $I_E$= 0,f=1MHz | -- | -- | 4 | pF |

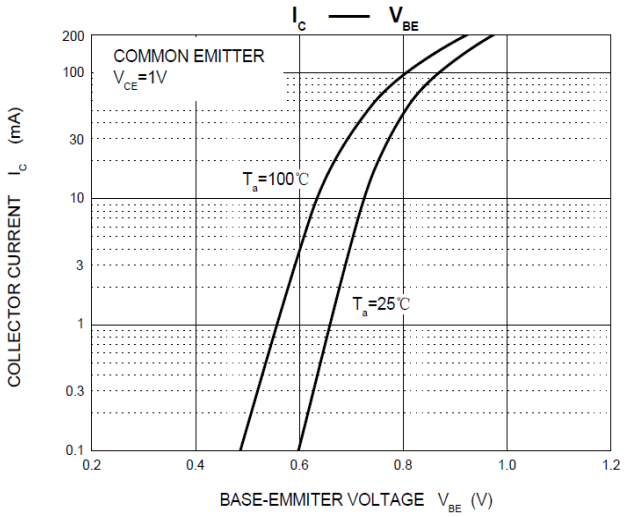
## Typical Characteristics

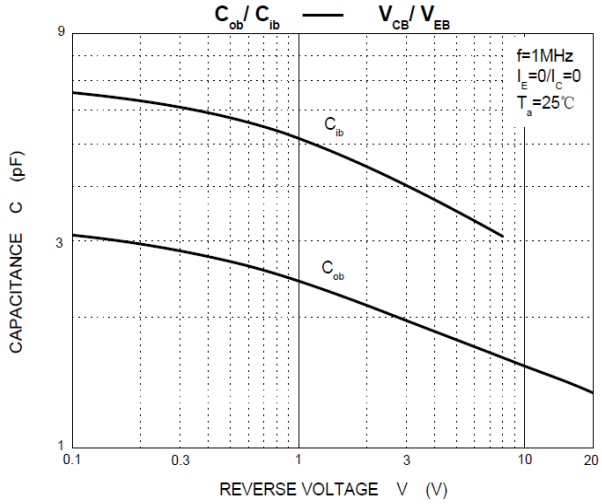


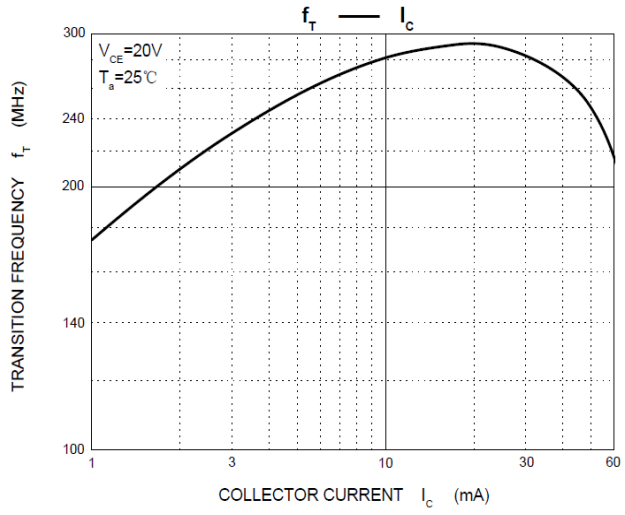



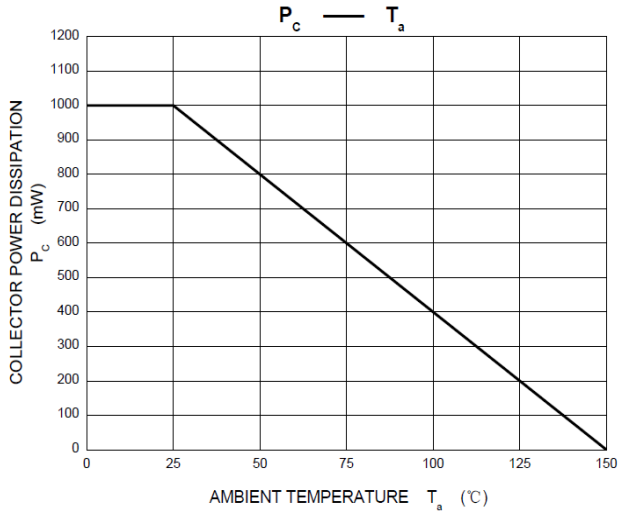


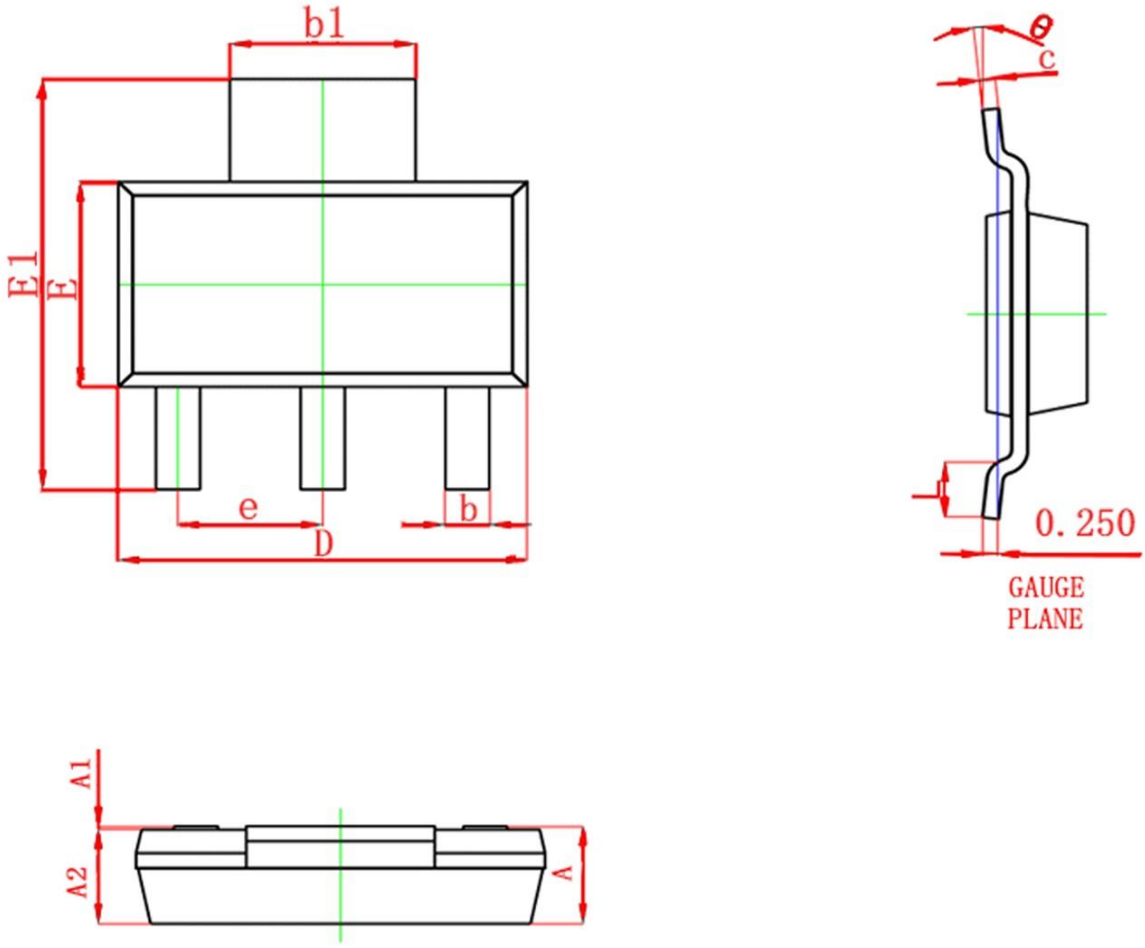



## SOT-223 Package information




| Symbol | Dimensions in Millimeters(mm) | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | -- | 1.800 | -- | 0.071 |
| A1 | 0.020 | 0.100 | 0.001 | 0.004 |
| A2 | 1.500 | 1.700 | 0.059 | 0.067 |
| b | 0.660 | 0.840 | 0.026 | 0.033 |
| b1 | 2.900 | 3.100 | 0.114 | 0.122 |
| c | 0.230 | 0.350 | 0.009 | 0.014 |
| D | 6.300 | 6.700 | 0.248 | 0.264 |
| E | 3.300 | 3.700 | 0.130 | 0.146 |
| E1 | 6.700 | 7.300 | 0.264 | 0.287 |
| e | 2.300(BSC) | | 0.091(BSC) | |
| L | 0.750 | -- | 0.030 | -- |
| θ | 0° | 10° | 0° | 10° |