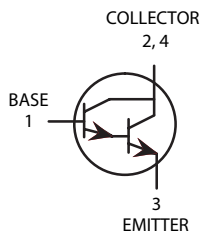
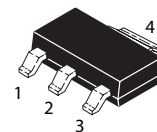


Darlington NPN Silicon Planar Epitaxial Transistor

(Pb) Lead(Pb)-Free



1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR



SOT-223

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| Rating | Symbol | Value | Unit |
|---|--------------------|-------------|------|
| Collector-Emitter Voltage | V _{CEO} | 30 | V |
| Collector-Base Voltage | V _{CBO} | 30 | V |
| Emitter-Base Voltage | V _{EBO} | 10 | V |
| Collector Current (DC) | I _{C(DC)} | 300 | mA |
| Total Device Dissipation T _A =25°C | P _D | 2 | W |
| Junction Temperature | T _j | 150 | °C |
| Storage, Temperature | T _{stg} | -55 to +150 | °C |

Device Marking

PZTA14=A14

ELECTRICAL CHARACTERISTICS

| Characteristics | Symbol | Min | Max | Unit |
|--|----------------------|-----|-----|------|
| Collector-Emitter Breakdown Voltage (I _C = 1mA , I _B =0) | V _{(BR)CEO} | 30 | - | V |
| Collector-Base Breakdown Voltage (I _C =100μA , I _E =0) | V _{(BR)CBO} | 30 | - | V |
| Emitter-Base Breakdown Voltage (I _E = 10 μA , I _C =0) | V _{(BR)EBO} | 10 | - | V |
| Collector-Base Cutoff Current (V _{CB} = 30V) | I _{CBO} | - | 100 | nA |
| Emitter-Base Cutoff Current (V _{EB} = 10Vdc , I _C =0) | I _{EBO} | - | 100 | nA |

NOTE: 1.Device mounted on an epoxy printed circuit board 1.575 inches×1.575 inches×0.059 inches; mounting pad for the collector lead min. 0.93 inches²

ELECTRICAL CHARACTERISTICS— Continued ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
|----------------|--------|-----|-----|-----|------|

DC CHARACTERISTICS

| | | | | | |
|--|------------------------|------------|--------|--------|---|
| DC Current Gain ($I_C = 10\text{ mA}, V_{CE} = 5\text{ V}$) ($I_C = 100\text{ mA}, V_{CE} = 5\text{ V}$) | h_{FE1} h_{FE2} | 10K 20K | - - | - - | - |
| Collector-Emitter Saturation Voltage ($I_C = 100\text{ mA}, I_B = 0.1\text{ mA}$) | $V_{CE(sat)}$ | - | - | 1.5 | V |
| Base-Emitter Saturation Voltage ($I_C = 100\text{ mA}, V_{CE} = 5\text{ V}$) | $V_{BE(on)}$ | - | - | 2 | V |

DYNAMIC CHARACTERISTICS

| | | | | | |
|---|-------|-----|---|---|-----|
| Current-Gain-Bandwidth Product ($I_C = 10\text{ mA}, V_{CE} = 5\text{ V}, f = 100\text{ MHz}$) | f_T | 125 | - | - | MHz |
|---|-------|-----|---|---|-----|

Characieristics Curve

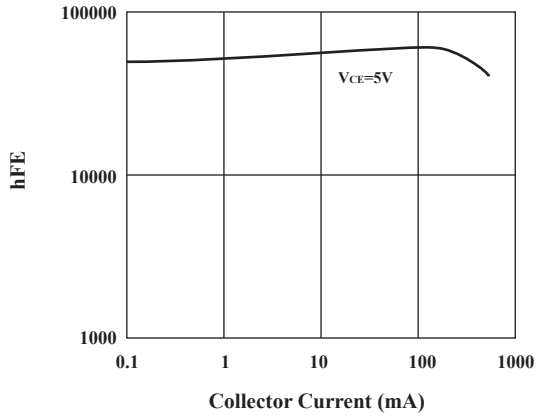


Fig.1 Current Gain & Collector Current

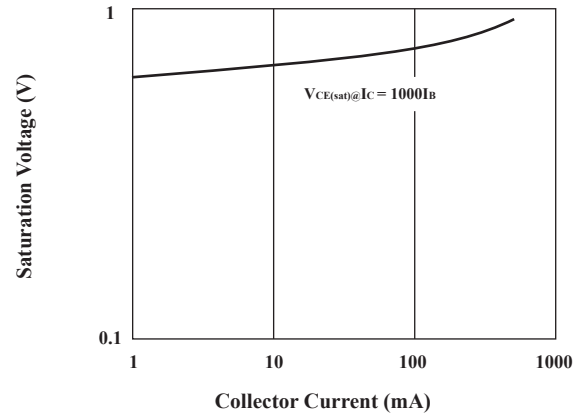


Fig.2 Saturation Voltage & Collector Current

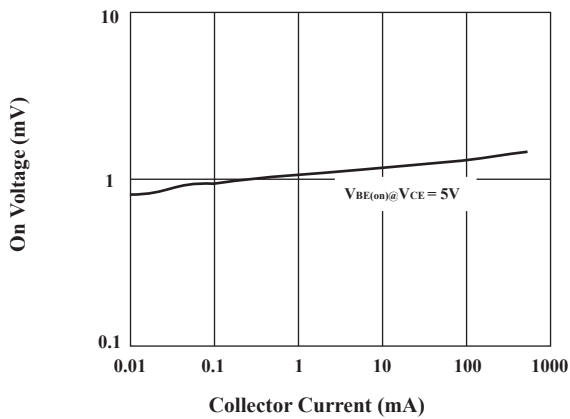


Fig.3 On Voltage & Collector Current

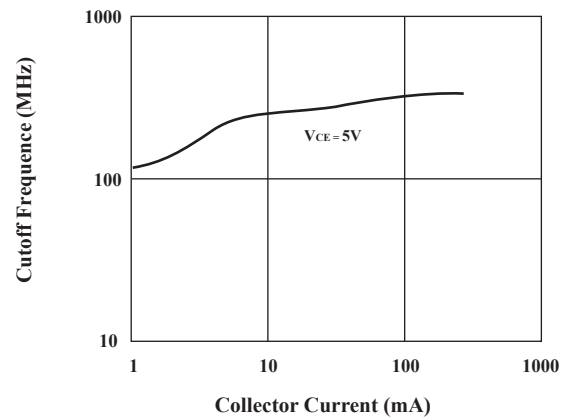


Fig.4 Cutoff Frequency & Collector Current

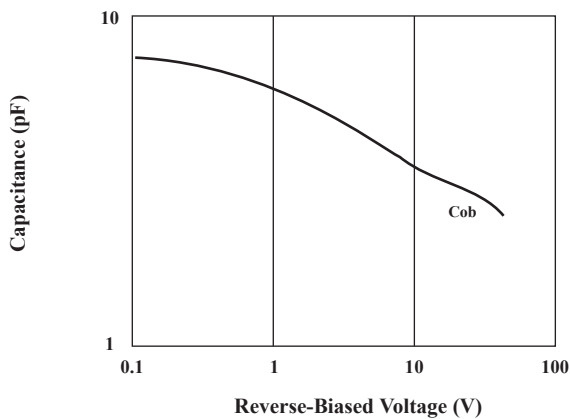


Fig.5 Capacitance & Reverse-Biased Voltage

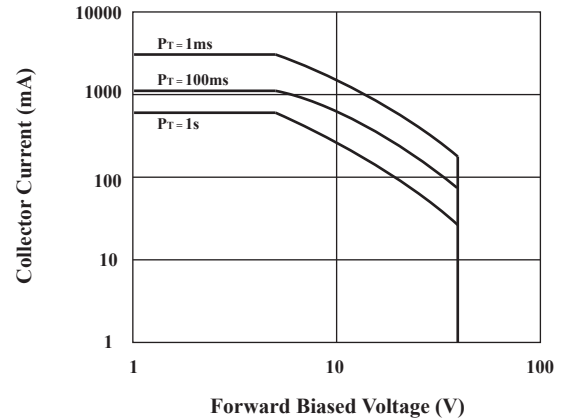
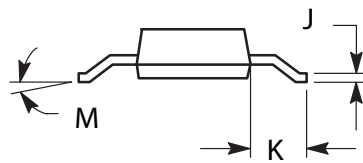
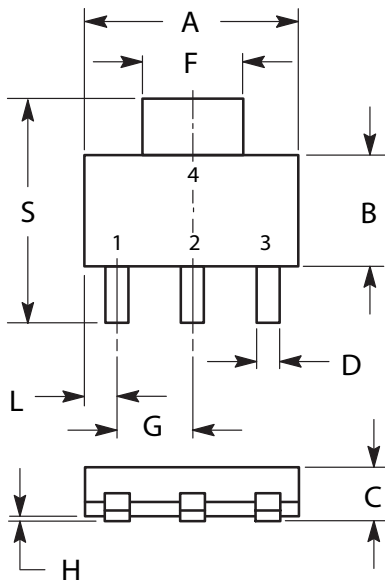


Fig.6 Safe Operating Area

SOT-223 Outline Dimensions

unit:mm



| DIM | MILLIMETERS | |
|-----|-------------|-------|
| | MIN | MAX |
| A | 6.30 | 6.70 |
| B | 3.30 | 3.70 |
| C | 1.50 | 1.75 |
| D | 0.60 | 0.89 |
| F | 2.90 | 3.20 |
| G | 2.20 | 2.40 |
| H | 0.020 | 0.100 |
| J | 0.24 | 0.35 |
| K | 1.50 | 2.00 |
| L | 0.85 | 1.05 |
| M | 0° | 10° |
| S | 6.70 | 7.30 |