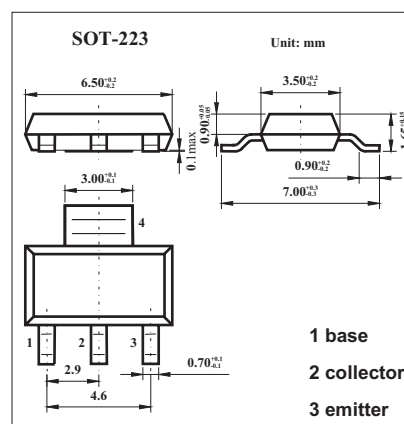


## NPN Silicon Planar Medium Power High Gain Transistor

### FZT1047A

#### ■ Features

- $V_{CEO} = 10V$ .
- 5 Amp continuous current.
- 20 Amp pulse current.
- Low saturation voltage.
- High gain.
- Extremely low equivalent on-resistance;  $R_{CE(sat)} = 44m\Omega$  at 5A.



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

| Parameter                               | Symbol         | Rating      | Unit       |
|-----------------------------------------|----------------|-------------|------------|
| Collector-base voltage                  | $V_{CBO}$      | 35          | V          |
| Collector-emitter voltage               | $V_{CEO}$      | 10          | V          |
| Emitter-base voltage                    | $V_{EBO}$      | 5           | V          |
| Peak pulse current                      | $I_C$          | 5           | A          |
| Continuous collector current            | $I_{CM}$       | 20          | A          |
| Base current                            | $I_B$          | 500         | mA         |
| Power dissipation                       | $P_{tot}$      | 2.5         | W          |
| Operating and storage temperature range | $T_j, T_{stg}$ | -55 to +150 | $^\circ C$ |

**FZT1047A**

## ■ Electrical Characteristics Ta = 25°C

| Parameter                               | Symbol   | Testconditons                                                          | Min | Typ                    | Max                    | Unit |
|-----------------------------------------|----------|------------------------------------------------------------------------|-----|------------------------|------------------------|------|
| Collector-base breakdown voltage        | V(BR)CBO | IC=100μA                                                               | 35  | 65                     |                        | V    |
| Collector-emitter breakdown voltage *   | V(BR)CEO | IC=10mA                                                                | 10  | 16                     |                        | V    |
| Emitter-base breakdown voltage          | V(BR)EBO | IE=100μA                                                               | 5   | 8.9                    |                        | V    |
| Collector Cut-Off Current               | ICBO     | VCE=20V                                                                |     | 0.3                    | 10                     | nA   |
| Collector Emitter Cut-Off Current       | ICES     | VCE=20V                                                                |     | 0.3                    | 10                     | nA   |
| Emitter Cut-Off Current                 | IEBO     | VEB=4V                                                                 |     | 0.3                    | 10                     | nA   |
| Collector-emitter saturation voltage *  | VCE(sat) | IC=0.5A, IB=10mA<br>IC=1A, IB=10mA<br>IC=3A, IB=15mA<br>IC=5A, IB=25mA |     | 25<br>50<br>140<br>220 | 40<br>70<br>200<br>350 | mV   |
| Base-emitter saturation voltage *       | VBE(sat) | IC=5A, IB=250mA                                                        |     | 925                    | 1000                   | mV   |
| Base-emitter ON voltage *               | VBE(on)  | IC=5A, VCE=2V                                                          |     | 890                    | 975                    | mV   |
| Static Forward Current Transfer Ratio * | hFE      | IC=10mA, VCE=2V*                                                       | 280 | 430                    |                        |      |
|                                         |          | IC=0.5A, VCE=2V*                                                       | 290 | 440                    |                        |      |
|                                         |          | IC=1A, VCE=2V*                                                         | 300 | 450                    | 1200                   |      |
|                                         |          | IC=5A, VCE=2V*                                                         | 200 | 330                    |                        |      |
|                                         |          | IC=20A, VCE=2V*                                                        | 60  | 110                    |                        |      |
| Transitional frequency                  | fT       | IC=50mA, VCE=10V f=50MHz                                               |     | 150                    |                        | MHz  |
| Output capacitance                      | Cobo     | VCE=10V, f=1MHz                                                        |     | 85                     | 110                    | pF   |
| Turn-on time                            | t(on)    | IC=4A, VCC=10V                                                         |     | 130                    |                        | ns   |
| Turn-off time                           | t(off)   | IB1=IB2=40mA                                                           |     | 230                    |                        | ns   |

\* Pulse test: tp = 300 μs; d ≤ 0.02.