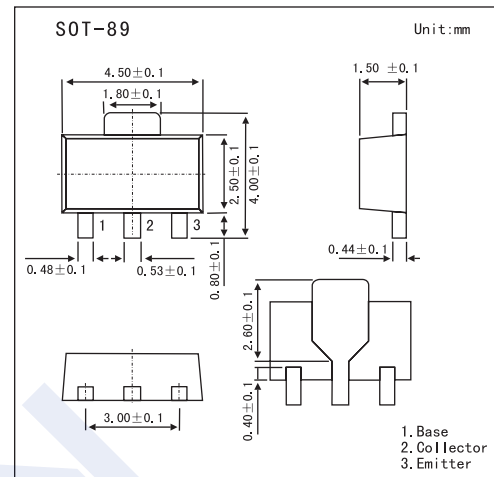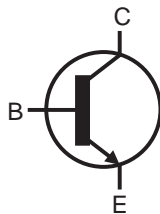# NPN Silicon Planar Medium Power Transistor

# FCX493

■ Features

● $B_{VCEO} > 100V$

● $I_C$ = 1A high Continuous Current

● Low saturation voltage $V_{CE(sat)} < 300mV$ @ 250mA



■ Absolute Maximum Ratings Ta = 25℃

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 120 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 100 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Continuous Collector Current | $I_C$ | 1 | A |
| Peak Pulse Current | $I_{CM}$ | 2 | A |
| Base Current | $I_B$ | 200 | mA |
| Power Dissipation at $T_{amb}$=25℃ | $P_{tot}$ | 1 | W |
| Operating and Storage Temperature Range | $T_j:T_{stg}$ | -65 to 150 | ℃ |

## NPN Silicon Planar Medium Power Transistor

## FCX493

■ Electrical Characteristics Ta = 25℃

| Parameter | Symbol | Testconditons | Min | Max | Unit |
|---|---|---|---|---|---|
| Breakdown Voltages | $V_{(BR)CBO}$ | Ic=100ì A | 120 | | V |
| Breakdown Voltages | $V_{CEO(sus)}$ | Ic=10mA* | 100 | | V |
| Breakdown Voltages | $V_{(BR)EBO}$ | IE=100ì A | 5 | | V |
| Collector Cut-Off Currents | $I_{CBO}$ | $V_{CB}$=100V | | 100 | nA |
| | $I_{CES}$ | $V_{CES}$=100V | | 100 | nA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=4V | | 100 | nA |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | Ic=500mA, IB=50mA | | 0.3 | V |
| | | Ic=1A, IB=100mA | | 0.6 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | Ic=1A, IB=100mA | | 1.15 | V |
| Base-Emitter Turn On Voltage | $V_{BE(on)}$ | Ic=1A, $V_{CE}$=10V | | 1.0 | V |
| Static Forward Current Transfer Ratio | $h_{FE}$ | Ic=1mA, $V_{CE}$=10V* | 100 | | |
| | | Ic=250mA, $V_{CE}$=10V* | 100 | 300 | |
| | | Ic=500mA, $V_{CE}$=10V* | 60 | | |
| | | Ic=1A, $V_{CE}$=10V* | 20 | | |
| Transition Frequency | $f_T$ | Ic=50mA, $V_{CE}$=10V,f=100MHz | 150 | | MHz |
| Collector-Base Breakdown Voltage | $C_{obo}$ | $V_{CB}$=10V, f=1MHz | | 10 | pF |

* Measured under pulsed conditions. Pulse width=300ìs. Duty cycle ≤ 2%

■ Marking

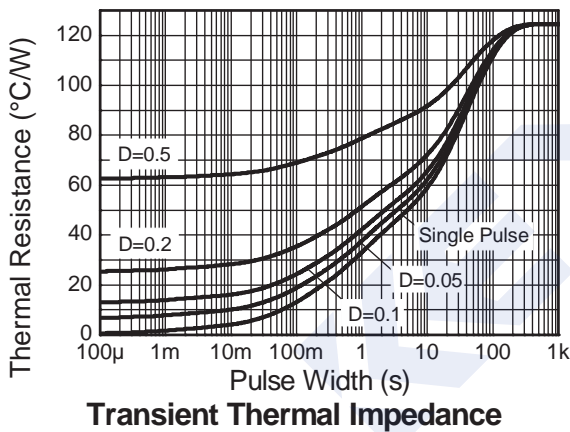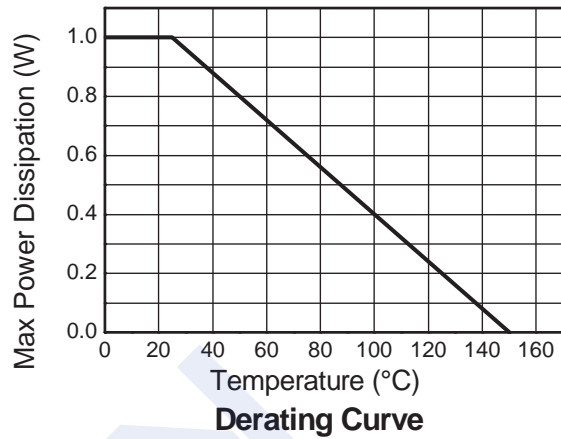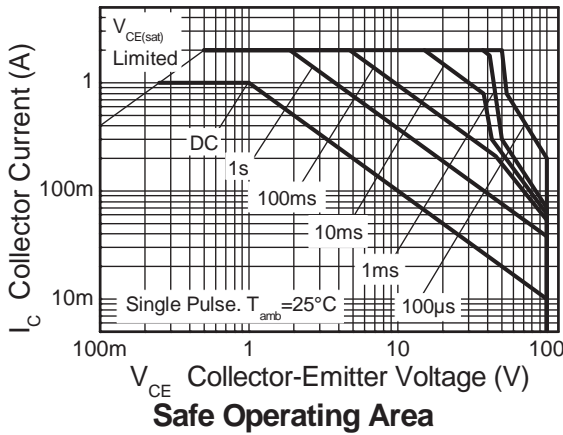| Marking | N93 |
|---|---|

# NPN Silicon Planar Medium Power Transistor

## FCX493

■ Thermal Characteristics and Derating Information

**Safe Operating Area**

**Derating Curve**

**Transient Thermal Impedance**

**Pulse Power Dissipation**
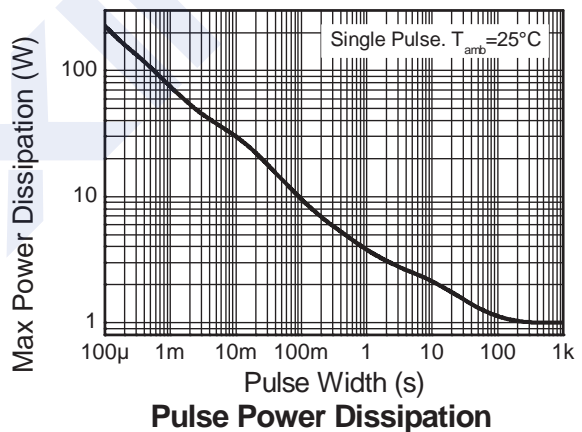
# NPN Silicon Planar Medium Power Transistor

## FCX493

■ Electrical Characteristics (@T$_A$ = +25°C, unless otherwise specified.)



VCE(sat) v IC



VCE(sat) v IC



hFE V IC



VBE(sat) v IC



VBE(on) v IC