

# SOT89 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

## FCX491

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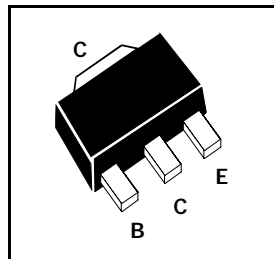


### FEATURES

- \* 60 Volt  $V_{CE0}$
- \* 1 Amp continuous current
- \*  $P_{tot} = 1$  Watt

COMPLEMENTARY TYPE – FCX591

PARTMARKING DETAIL – N1



### ABSOLUTE MAXIMUM RATINGS.

| PARAMETER                                       | SYMBOL         | VALUE       | UNIT             |
|---|----------------|-------------|------------------|
| Collector-Base Voltage                          | $V_{CBO}$      | 80          | V                |
| Collector-Emitter Voltage                       | $V_{CEO}$      | 60          | V                |
| Emitter-Base Voltage                            | $V_{EBO}$      | 5           | V                |
| Continuous Collector Current                    | $I_C$          | 1           | A                |
| Peak Pulse Current                              | $I_{CM}$       | 2           | A                |
| Power Dissipation at $T_{amb}=25^\circ\text{C}$ | $P_{tot}$      | 1           | W                |
| Operating and Storage Temperature Range         | $T_j; T_{stg}$ | -65 to +150 | $^\circ\text{C}$ |

### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ ).

| PARAMETER                             | SYMBOL         | MIN. | MAX. | UNIT | CONDITIONS.  |
|---------------------------------------|----------------|------|------|------|--|
| Breakdown Voltages                    | $V_{(BR)CBO}$  | 80   |      | V    | $I_C=100\mu\text{A}$   |
|                                       | $V_{CEO(sus)}$ | 60   |      | V    | $I_C=10\text{mA}^*$  |
|                                       | $V_{(BR)EBO}$  | 5    |      | V    | $I_E=100\mu\text{A}$   |
| Collector Cut-Off Currents            | $I_{CBO}$      |      | 100  | nA   | $V_{CB}=60\text{V}$ ,  |
|                                       | $I_{CES}$      |      | 100  | nA   | $V_{CE}=60\text{V}$  |
| Emitter Cut-Off Current               | $I_{EBO}$      |      | 100  | nA   | $V_{EB}=4\text{V}$   |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$  |      | 0.25 | V    | $I_C=500\text{mA}$ , $I_B=50\text{mA}^*$                     |
|                                       |                |      | 0.50 | V    | $I_C=1\text{A}$ , $I_B=100\text{mA}^*$                       |
| Base-Emitter Saturation Voltage       | $V_{BE(sat)}$  |      | 1.1  | V    | $I_C=1\text{A}$ , $I_B=100\text{mA}^*$                       |
| Base-Emitter Turn On Voltage          | $V_{BE(on)}$   |      | 1.0  | V    | $I_C=1\text{A}$ , $V_{CE}=5\text{V}^*$                       |
| Static Forward Current Transfer Ratio | $h_{FE}$       | 100  | 300  |      | $I_C=1\text{mA}$ , $V_{CE}=5\text{V}$                        |
|                                       |                | 100  |      |      | $I_C=500\text{mA}$ , $V_{CE}=5\text{V}^*$                    |
|                                       |                | 80   |      |      | $I_C=1\text{A}$ , $V_{CE}=5\text{V}^*$                       |
|                                       |                | 30   |      |      | $I_C=2\text{A}$ , $V_{CE}=5\text{V}^*$                       |
| Transition Frequency                  | $f_T$          | 150  |      | MHz  | $I_C=50\text{mA}$ , $V_{CE}=10\text{V}$<br>$f=100\text{MHz}$ |
| Collector-Base Breakdown Voltage      | $C_{obo}$      |      | 10   | pF   | $V_{CB}=10\text{V}$ , $f=1\text{MHz}$                        |

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$   
For typical Characteristics graphs see FMMT491 datasheet