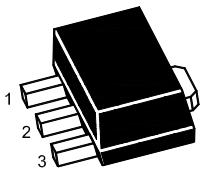
迈拓电子
MAITUO ELECTRONIC

# FCX491A Planar Medium Power Transistor




1.Base 2.Collector 3.Emitter

SOT-89-3L

**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | 40 | V |
| Collector Emitter Voltage | $V_{CEO}$ | 40 | V |
| Emitter Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current | $I_C$ | 1 | A |
| Peak Collector Current | $I_{CM}$ | 2 | A |
| Collector Power Dissipation | $P_{tot}$ | 1 | W |
| Operating and Storage Temperature Range | $T_j$, $T_{stg}$ | - 65 to + 150 | °C |

**Characteristics at $T_a$ = 25 °C**

| Parameter | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| DC Current Gain<br>at $V_{CE}$ = 5 V, $I_C$ = 1 mA<br>at $V_{CE}$ = 5 V, $I_C$ = 500 mA<br>at $V_{CE}$ = 5 V, $I_C$ = 1 A<br>at $V_{CE}$ = 5 V, $I_C$ = 2 A | <br>$h_{FE}$<br>$h_{FE}$<br>$h_{FE}$<br>$h_{FE}$ | <br>300<br>300<br>200<br>35 | <br>-<br>900<br>-<br>- | <br>-<br>-<br>-<br>- |
| Collector Base Cutoff Current<br>at $V_{CB}$ = 30 V | $I_{CBO}$ | - | 100 | nA |
| Collector Emitter Cutoff Current<br>at $V_{CE}$ = 30 V | $I_{CES}$ | - | 100 | nA |
| Emitter Base Cutoff Current<br>at $V_{EB}$ = 4 V | $I_{EBO}$ | - | 100 | nA |
| Collector Base Breakdown Voltage<br>at $I_C$ = 100 µA | $V_{(BR)CBO}$ | 40 | - | V |
| Collector Emitter Breakdown Voltage<br>at $I_C$ = 10 mA | $V_{(BR)CEO}$ | 40 | - | V |
| Emitter Base Breakdown Voltage<br>at $I_E$ = 100 µA | $V_{(BR)EBO}$ | 5 | - | V |
| Collector Emitter Saturation Voltage<br>at $I_C$ =500 mA, $I_B$ = 50 mA<br>at $I_C$ =1 A, $I_B$ = 100 mA | $V_{CE(sat)}$ | -<br>- | 0.3<br>0.5 | V |
| Base Emitter Saturation Voltage<br>at $I_C$ =1 A, $I_B$ = 100 mA | $V_{BE(sat)}$ | - | 1.1 | V |
| Base Emitter on Voltage<br>at $V_{CE}$ = 5 V, $I_C$ = 1 A | $V_{BE(on)}$ | - | 1 | V |
| Transition Frequency<br>at $V_{CE}$ = 10 V, $I_C$ = 50 mA, f = 100 MHz | $f_T$ | 150 | - | MHz |
| Collector Base Capacitance<br>at $V_{CB}$ = 10 V, f = 1 MHz | $C_{ob}$ | - | 10 | pF |

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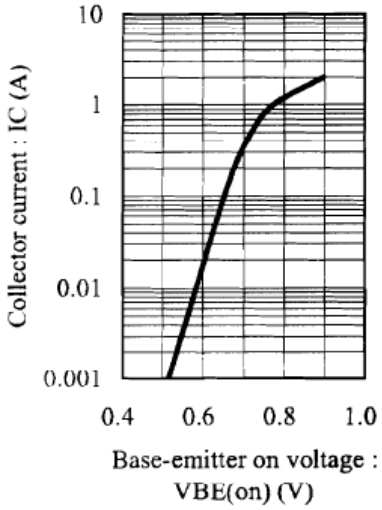
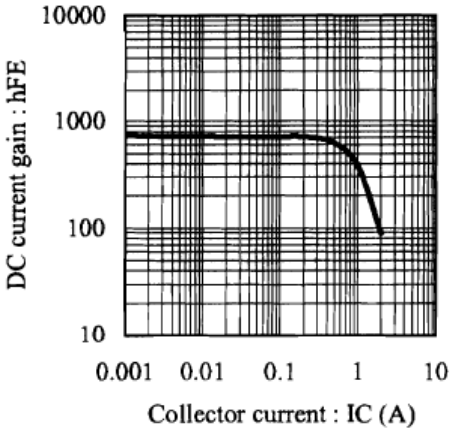
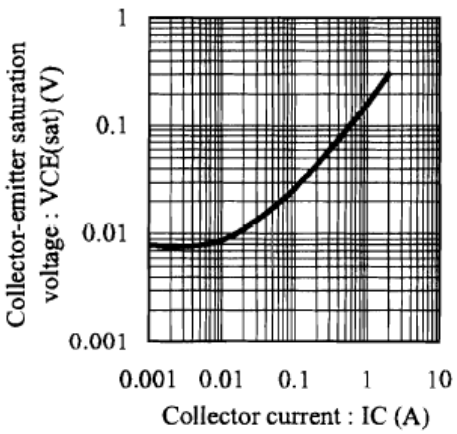
IC - VBE(on)
at VCE= 5V, Ta= 25C



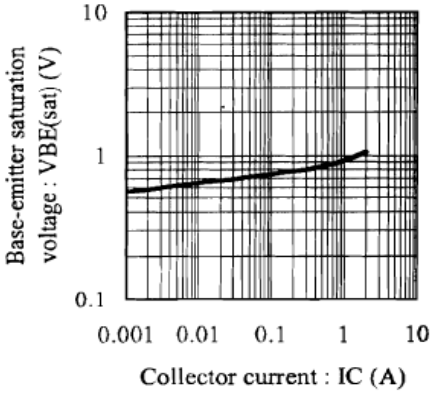

hFE - IC
at VCE= 5V, Ta= 25C



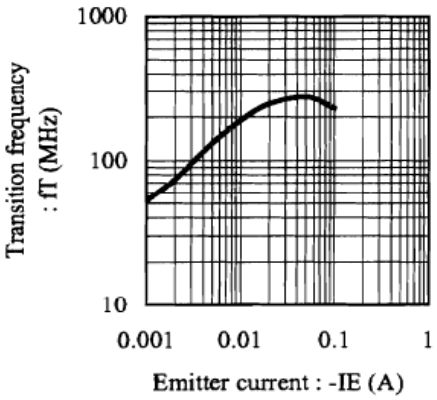

VCE(sat) - IC
at IC/IB= 10, Ta= 25C



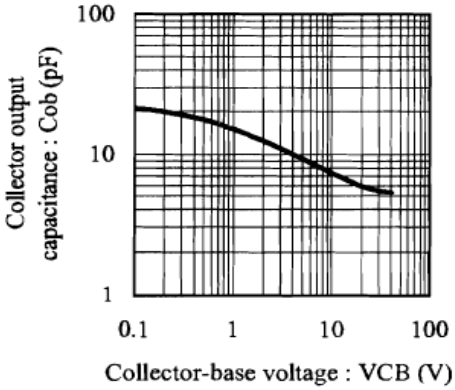

VBE(sat) - IC
at IC/IB= 10, Ta= 25C




fT - IE
at VCE= 10V, Ta= 25C




Cob - VCB
at f= 1MHz, Ta= 25C



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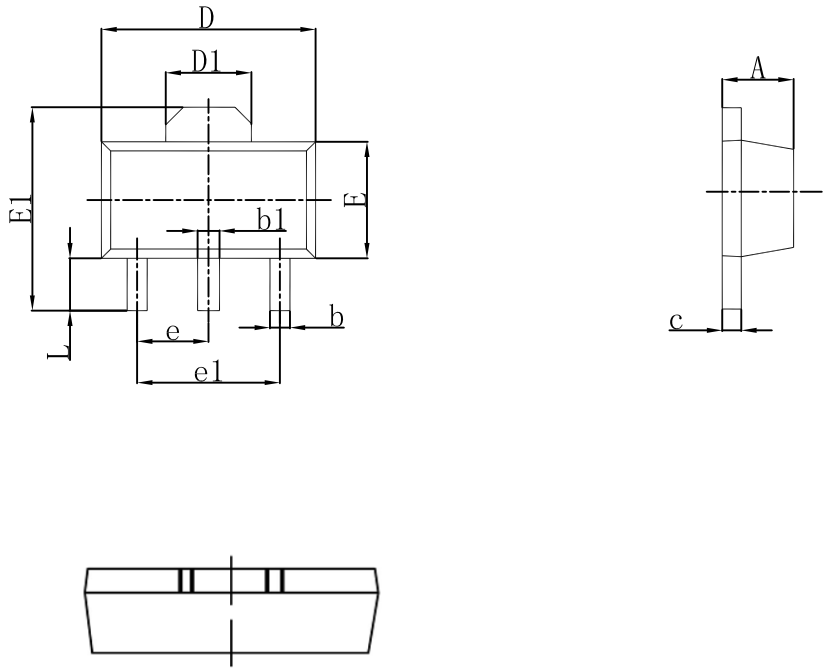
## SOT-89-3L Outlines Dimensions




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 1.400 | 1.600 | 0.055 | 0.063 |
| b | 0.320 | 0.520 | 0.013 | 0.020 |
| b1 | 0.400 | 0.580 | 0.016 | 0.023 |
| c | 0.350 | 0.440 | 0.014 | 0.017 |
| D | 4.400 | 4.600 | 0.173 | 0.181 |
| D1 | 1.550 REF. | | 0.061 REF. | |
| E | 2.300 | 2.600 | 0.091 | 0.102 |
| E1 | 3.940 | 4.250 | 0.155 | 0.167 |
| e | 1.500 TYP. | | 0.060 TYP. | |
| e1 | 3.000 TYP. | | 0.118 TYP. | |
| L | 0.900 | 1.200 | 0.035 | 0.047 |