FAIRCHILD SEMICONDUCTOR®

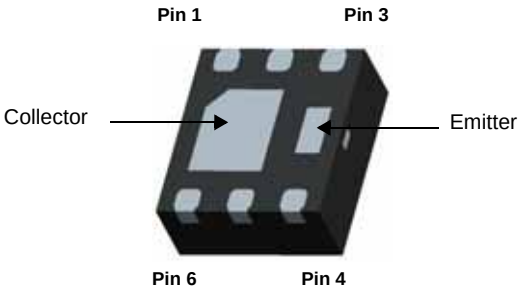
June 2006

# FJMA790
# PNP Epitaxial Silicon Transistor

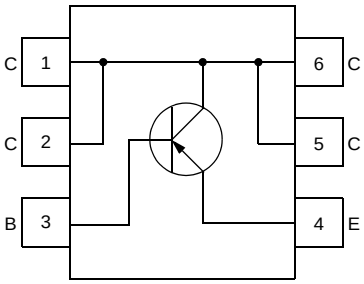
## High current surface mount PNP silicon switching transistor for load management in portable applications

- High Collector current
- Low Collector-Emitter Saturation Voltage
- RoHS Compliant

RoHS Compliant




MicroFET2X2




## Absolute Maximum Ratings $T_a$ = 25°C unless otherwise noted

| Symbol | Parameter | | Value | Units |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | | -50 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | | -35 | V |
| $V_{EBO}$ | Emitter-Base Voltage | | -5 | V |
| $I_C$ | Collector Current (DC) | | -2 | A |
| $P_D$ | Power Dissipation | Note1)<br>Note2) | 1.56<br>0.8 | W<br>W |
| $T_J$ | Junction Temperature | | 150 | °C |
| $T_{STG}$ | Storage Temperature | | -55 ~ 150 | °C |

## Thermal Characteristics $T_a$=25°C unless otherwise noted

| Symbol | Parameter | | Max. | Units |
|---|---|---|---|---|
| $R\Theta_{JA}$ | Thermal Resistance, Junction to Ambient | Note1)<br>Note2) | 80<br>154 | °C/W<br>°C/W |

**Note1)**: The device mounted on a 1inch$^2$ pad of 2 oz copper pad on a 1.5 × 1.5 in. board of FR-4 material.

**Note2)**: The device mounted on a minimum pad of 2 oz copper pad on a 1.5 × 1.5 in. board of FR-4 material

## Electrical Characteristics

$T_a$ = 25°C unless otherwise noted

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| $BV_{CBO}$ | Collector-Base Breakdown Voltage | $I_C$ = -100μA, $I_E$ = 0 | -50 | | | V |
| $BV_{CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$ = -10mA, $I_B$ = 0 | -35 | | | V |
| $BV_{EBO}$ | Emitter-Base Breakdown Voltage | $I_C$ = -100μA, $I_C$ = 0 | -5 | | | V |
| $I_{CBO}$ | Collector Cut-off Current | $V_{CB}$ = -35V, $I_C$ = 0 | | | -0.1 | μA |
| $I_{EBO}$ | Emitter Cut-off Current | $V_{EB}$ = -4V, $I_C$ = 0 | | | -0.1 | μA |
| $h_{FE}$ | DC Current Gain | $V_{CE}$ = -1.5V, $I_C$ = -1A<br>$V_{CE}$ = -1.5V, $I_C$ = -1.5A<br>$V_{CE}$ = -3V, $I_C$ = -2A<br>$V_{CE}$ = -2V, $I_C$ = -500mA | 100<br>100<br>100<br>100 | | 400 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$ = -500mA, $I_B$ = -5mA<br>$I_C$ = -1A, $I_B$ = -10mA<br>$I_C$ = -2A, $I_B$ = -50mA | | | -250<br>-350<br>-450 | mV<br>mV<br>mV |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C$ = -1A, $I_B$ = -10mA | | | -0.9 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $V_{CE}$ = -2V, $I_C$ = -1A | | | -0.9 | V |

## Package Marking and Ordering Information

| Device Marking | Device | Package | Reel Size | Tape Width | Quantity |
|---|---|---|---|---|---|
| 790 | FJMA790 | MLP 2×2 Single | 7” | 8mm | 3,000 units |

## Typical Characteristics

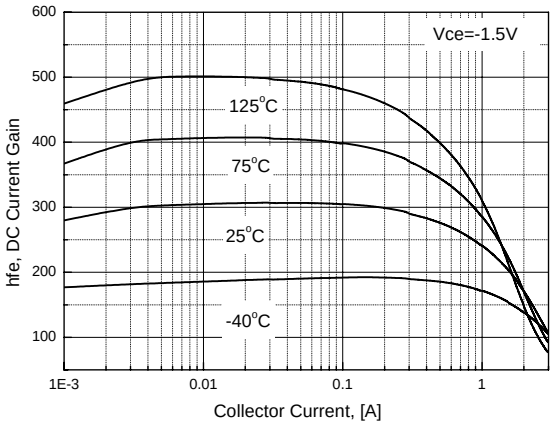



**Figure 1. DC Current Gain, Vce=1.5V**

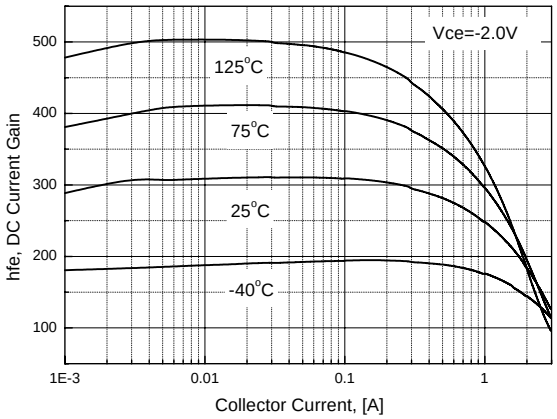



**Figure 2. DC Current Gain, Vce=2V**

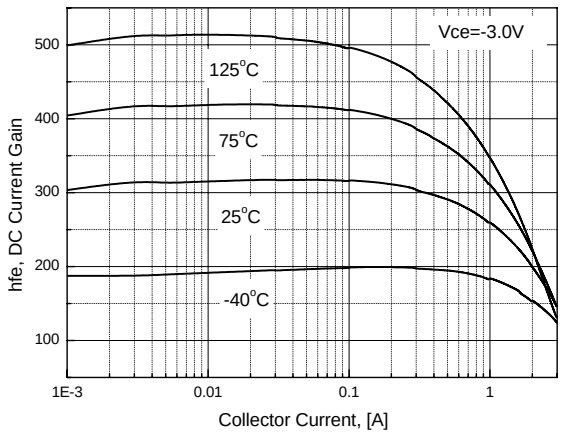



**Figure 3. DC Current Gain,Vce=3V**

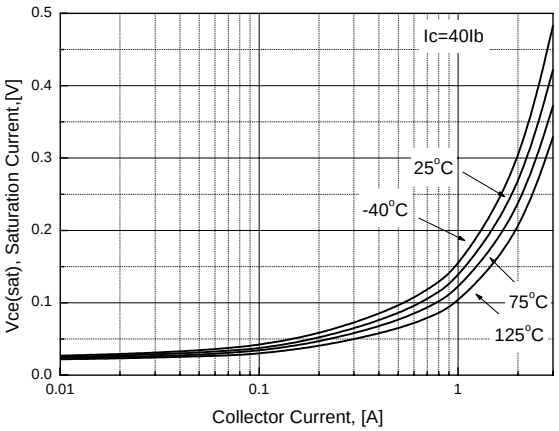



**Figure 4. Collector-Emitter Satuation Voltage(1)**

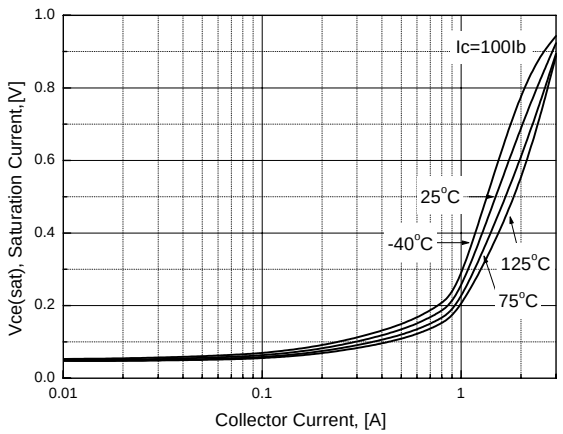



**Figure 5. Collector-Emitter Satuation Voltage(2)**

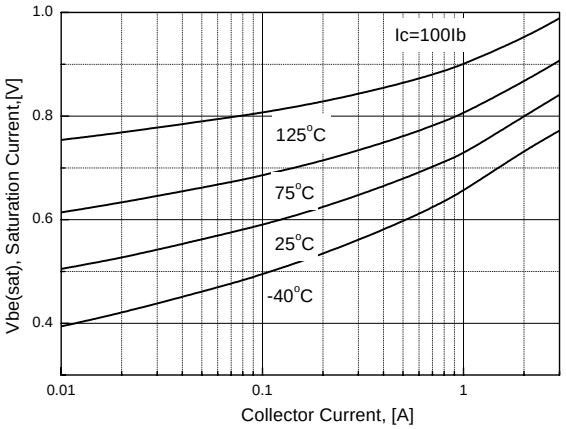



**Figure 6. Base-Emitter Saturation Voltage**

## Typical Performance Characteristics (Continued)

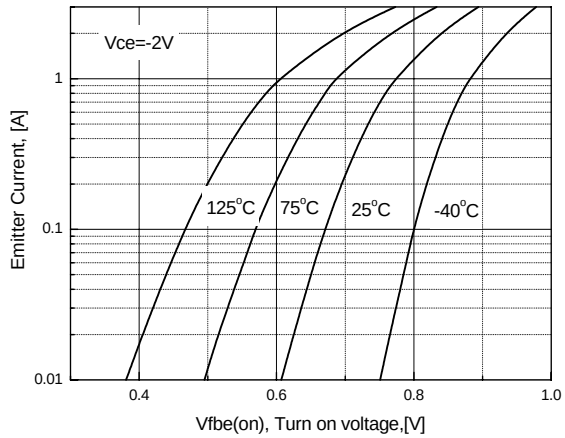



**Figure 7. Base- Emitter Turn On Voltage**

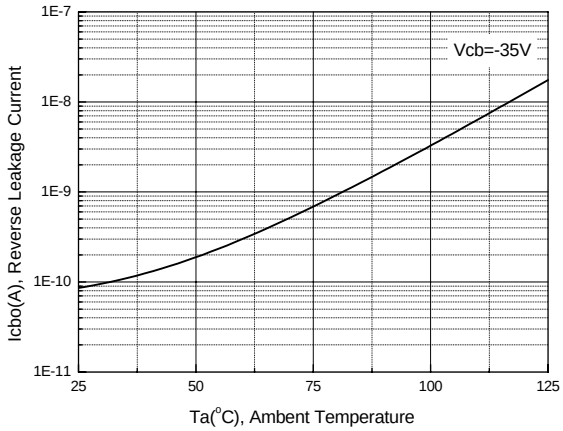



**Figure 8. Collector-Base Leakage Current**

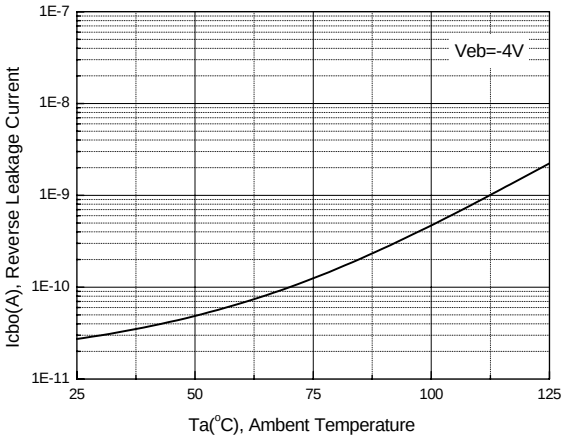



**Figure 9. Base-Emitter Leakage Current**

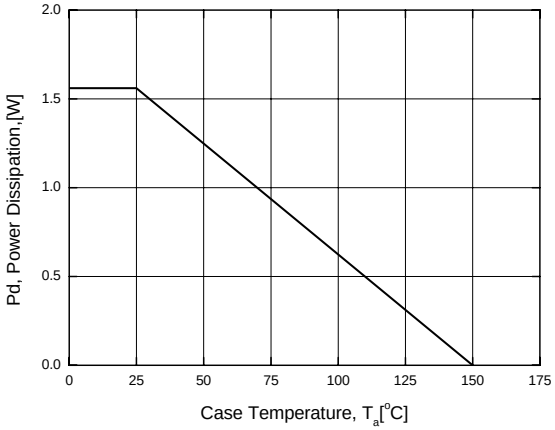



**Figure 10. Power Derating**

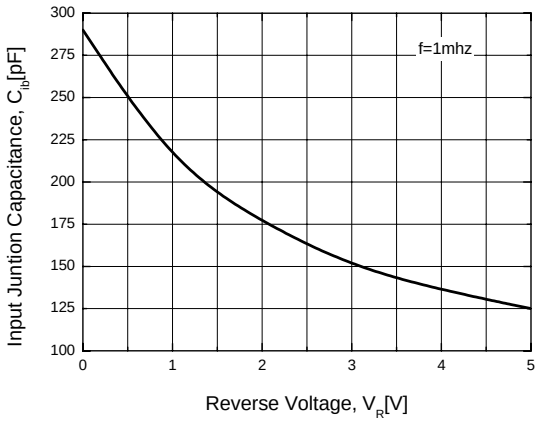



**Figure 11. Input Capacitance**

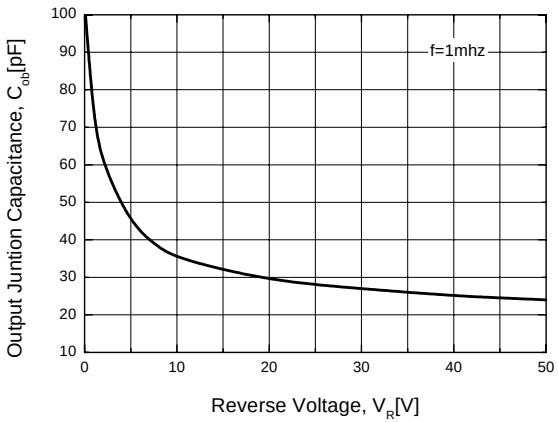
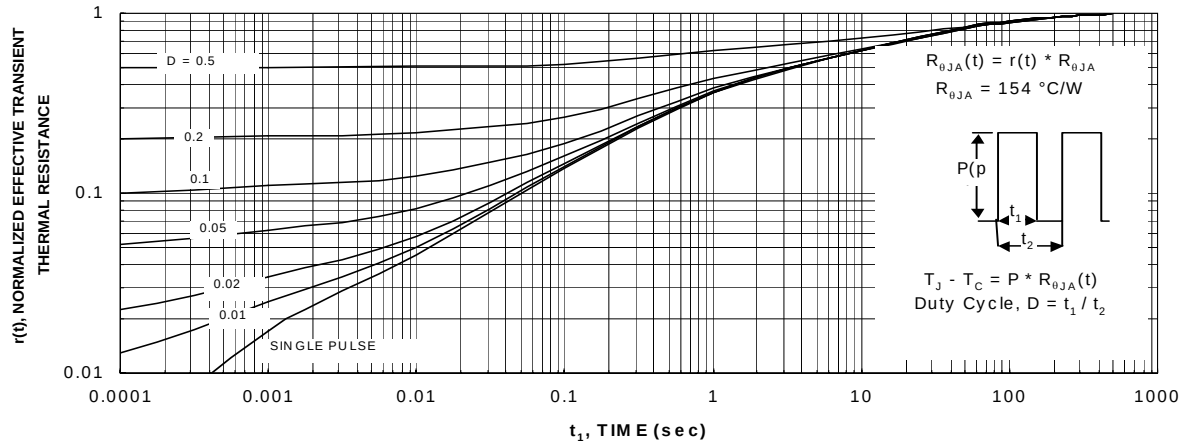



**Figure 12. Output Capacitance**

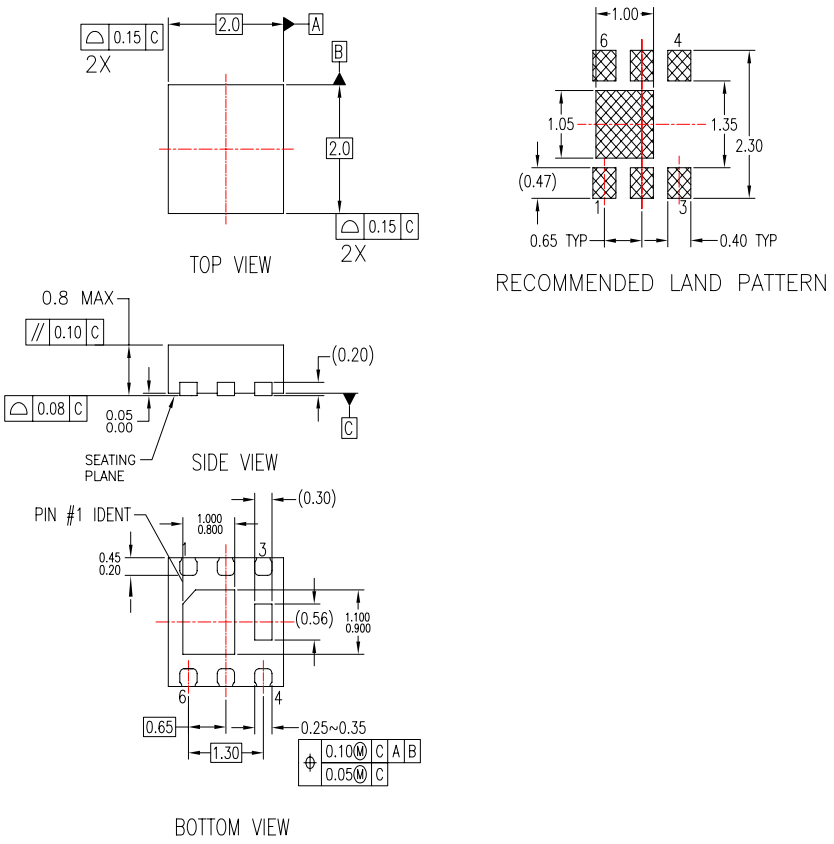
## Typical Performance Characteristics (Continued)

**Figure 12. Transient Thermal Response**



## Mechanical Dimensions

# MicroFET2X2




NOTES:

A. NOT FULLY CONFORM TO JEDEC REGISTRATION MO-229 DATED AUG/2003
B. DIMENSIONS ARE IN MILLIMETERS.
C. DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994

MLP06LrevA

Dimensions in Milimeters

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