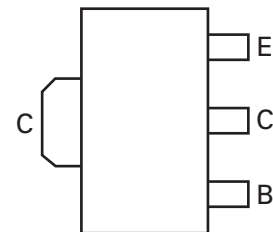
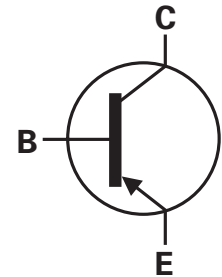
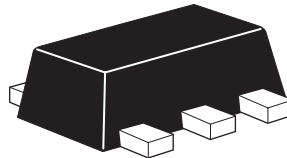


FCX593

SOT89 Silicon planar high voltage transistor

Complementary part number - FMMT493

Device marking - P93



Pinout - top view

Absolute maximum ratings

| Parameter | Symbol | Limit | Unit |
|---|----------------|-------------|------------------|
| Collector-base voltage | V_{CBO} | -120 | V |
| Collector-emitter voltage | V_{CEO} | -100 | V |
| Emitter-base voltage | V_{EBO} | -5 | V |
| Peak pulse current | I_{CM} | -2 | A |
| Continuous collector current | I_C | -1 | A |
| Base current | I_B | -200 | mA |
| 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 | $^\circ\text{C}$ |

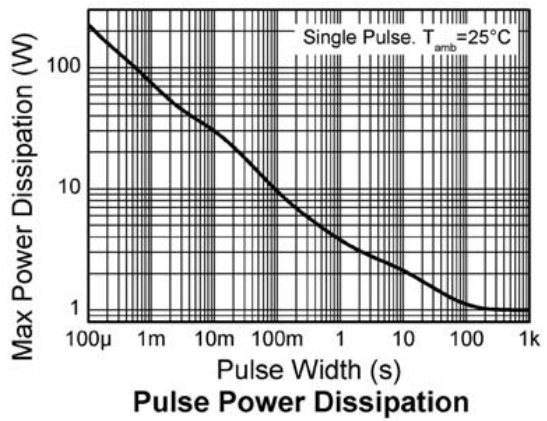
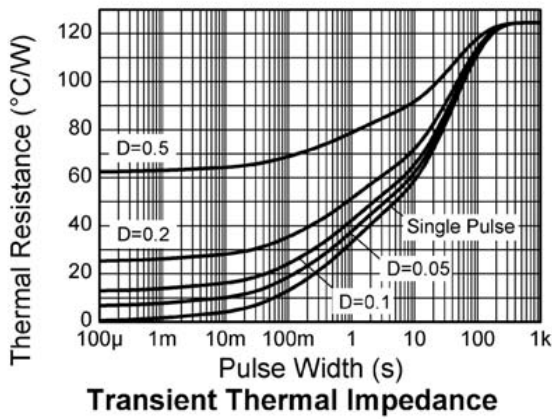
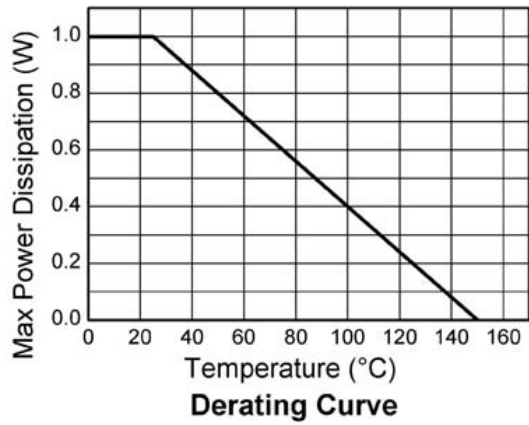
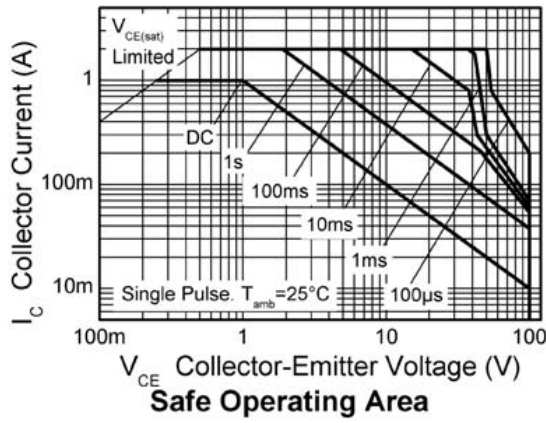
Electrical characteristics (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

| Parameter | Symbol | Min. | Max. | Unit | Conditions |
|---------------------------------------|---------------|------|------|------|---|
| Base breakdown voltages | $V_{(BR)CBO}$ | -120 | | V | $I_C = -100\mu\text{A}$ |
| | $V_{(BR)CEO}$ | -100 | | V | $I_C = -10\text{mA}^{(*)}$ |
| | $V_{(BR)EBO}$ | -5 | | V | $I_E = -100\mu\text{A}$ |
| Cut-off currents | I_{CBO} | | -100 | nA | $V_{CB} = -100\text{V}$ |
| | I_{EBO} | | -100 | nA | $V_{EB} = -4\text{V}$ |
| | I_{CES} | | -100 | nA | $V_{CES} = -100\text{V}$ |
| Saturation voltages | $V_{CE(sat)}$ | | -0.2 | V | $I_C = -250\text{mA}, I_B = -25\text{mA}^{(*)}$ |
| | | | -0.3 | V | $I_C = -250\text{mA}, I_B = -25\text{mA}^{(*)}$ |
| | $V_{BE(sat)}$ | | -1.1 | V | $I_C = -500\text{mA}, I_B = -50\text{mA}^{(*)}$ |
| Base-emitter turn-on voltage | $V_{BE(on)}$ | | -1 | V | $I_C = -1\text{mA}, I_B = -5\text{V}^{(*)}$ |
| Static forward current transfer ratio | h_{FE} | 100 | 300 | | $I_C = -1\text{mA}, V_{CE} = -5\text{V}$ |
| | | 100 | | | $I_C = -250\text{mA}, V_{CE} = -5\text{V}^{(*)}$ |
| | | 100 | | | $I_C = -500\text{mA}, V_{CE} = -5\text{V}^{(*)}$ |
| | | 50 | | | $I_C = -1\text{A}, V_{CE} = -5\text{V}^{(*)}$ |
| Transition frequency | f_T | 50 | | MHz | $I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $f = 100\text{MHz}$ |
| Output capacitance | C_{OBO} | | 5 | pF | $V_{CB} = -10\text{V}, f = 1\text{MHz}$ |

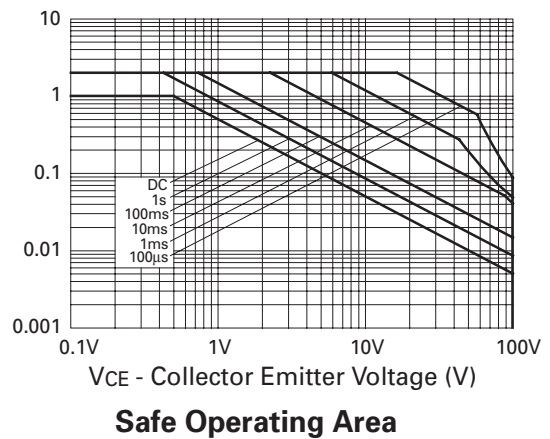
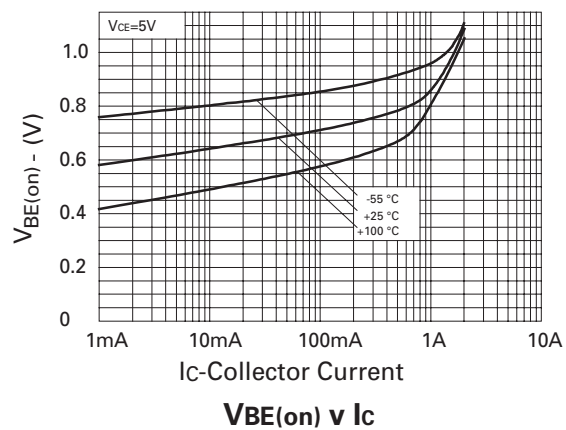
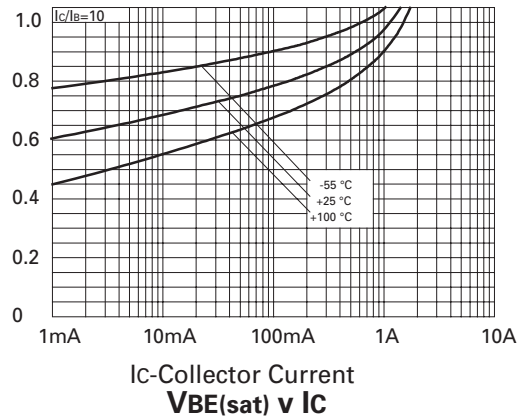
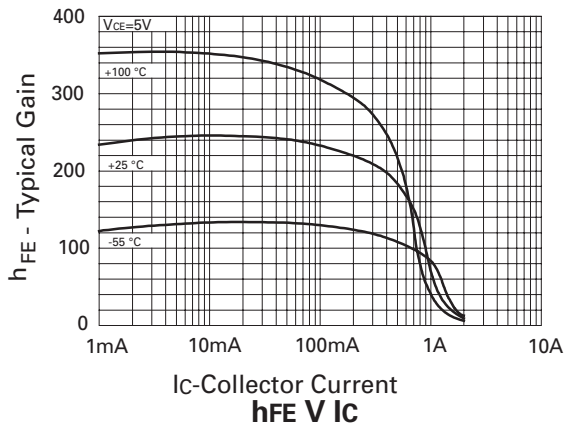
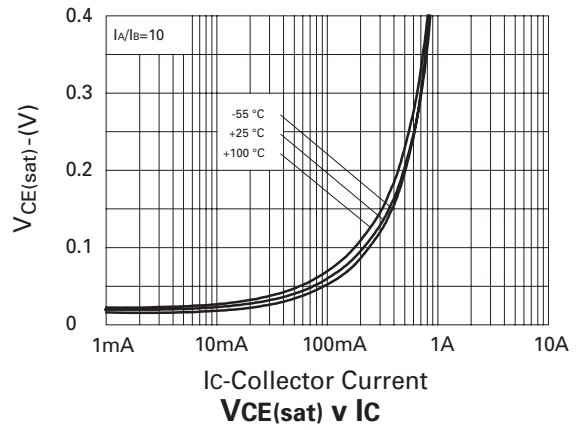
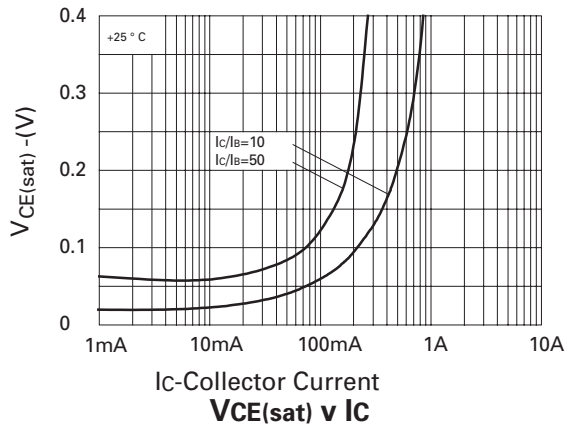
NOTES:

(*) Measured under pulsed conditions. Pulse width = $300\mu\text{s}$. Duty cycle $\leq 2\%$.

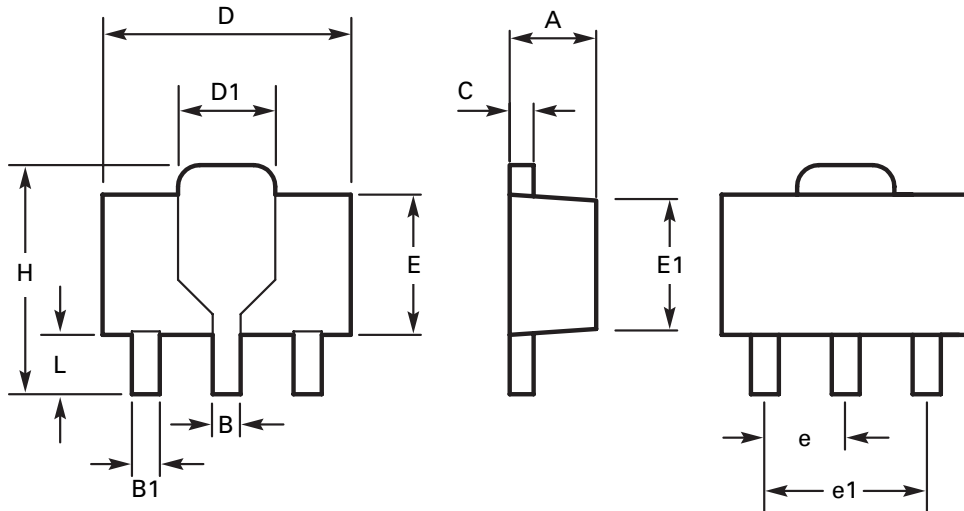
Thermal characteristics



Typical characteristics



Package outline - SOT89



| DIM | Millimeters | | Inches | | DIM | Millimeters | | Inches | |
|-----|-------------|------|--------|-------|-----|-------------|------|-----------|-------|
| | Min | Max | Min | Max | | Min | Max | Min | Max |
| A | 1.40 | 1.60 | 0.550 | 0.630 | E | 2.29 | 2.60 | 0.090 | 0.102 |
| B | 0.44 | 0.56 | 0.017 | 0.022 | E1 | 2.13 | 2.29 | 0.084 | 0.090 |
| B1 | 0.36 | 0.48 | 0.014 | 0.019 | e | 1.50 BSC | | 0.059 BSC | |
| C | 0.35 | 0.44 | 0.014 | 0.017 | e1 | 3.00 BSC | | 0.118 BSC | |
| D | 4.40 | 4.60 | 0.173 | 0.181 | H | 3.94 | 4.25 | 0.155 | 0.167 |
| D1 | 1.52 | 1.83 | 0.064 | 0.072 | L | 0.89 | 1.20 | 0.035 | 0.047 |

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

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or

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| | |
|-----------------------------------|--|
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| "Active" | Product status recommended for new designs |
| "Last time buy (LTB)" | Device will be discontinued and last time buy period and delivery is in effect |
| "Not recommended for new designs" | Device is still in production to support existing designs and production |
| "Obsolete" | Production has been discontinued |

Datasheet status key:

| | |
|-----------------------|---|
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