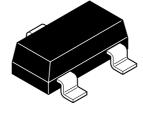
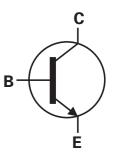
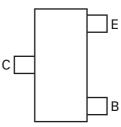


# FMMT497 SOT23 NPN silicon planar high voltage high performance transistor

Complementary part number - FMMT597 Device marking - 497







Pinout - top view

### Absolute maximum ratings

| Parameter                                   | Symbol                           | Value       | Unit |
|---|----------------------------------|-------------|------|
| Collector-base voltage                      | V <sub>CBO</sub>                 | 300         | V    |
| Collector-emitter voltage                   | V <sub>CEO</sub>                 | 300         | V    |
| Emitter-base voltage                        | V <sub>EBO</sub>                 | 5           | V    |
| Continuous collector current                | ۱ <sub>C</sub>                   | 500         | mA   |
| Peak pulse current                          | I <sub>СМ</sub>                  | 1           | А    |
| Base current                                | Ι <sub>Β</sub>                   | 200         | mA   |
| Power dissipation at T <sub>amb</sub> =25°C | P <sub>tot</sub>                 | 500         | mW   |
| Operating and storage temperature range     | T <sub>j</sub> :T <sub>stg</sub> | -55 to +150 | °C   |

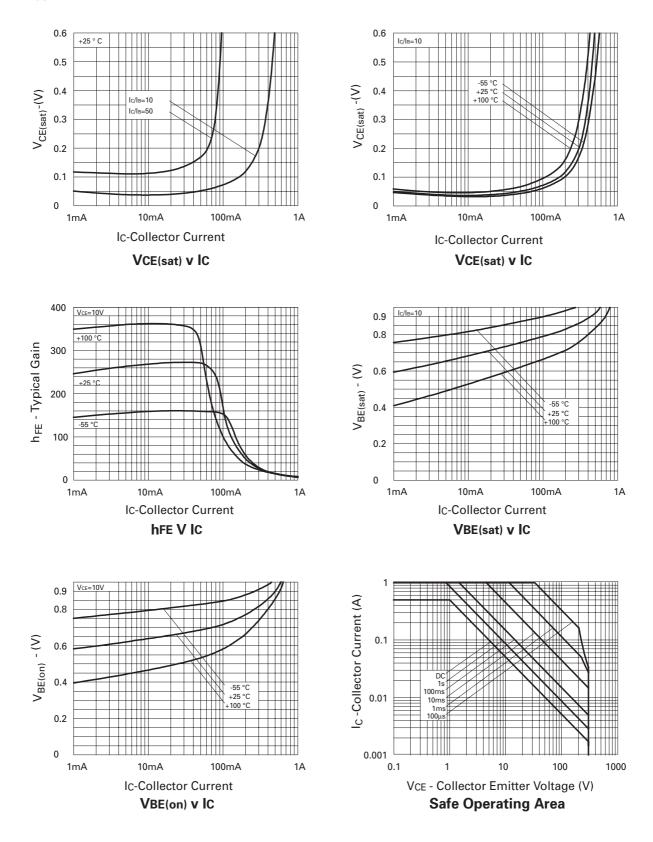
| Parameter                              | Symbol                | Min.            | Тур. | Max        | Unit   | Conditions  |
|--|-----------------------|-----------------|------|------------|--------|---|
| Collector-base<br>breakdown voltage    | V <sub>(BR)CBO</sub>  | 300             |      |            | V      | I <sub>C</sub> = 100μA  |
| Collector-emitter<br>breakdown voltage | V <sub>CEO(sus)</sub> | 300             |      |            | V      | I <sub>C</sub> = 10mA <sup>(*)</sup>  |
| Emitter-base<br>breakdown voltage      | V <sub>(BR)EBO</sub>  | 5               |      |            | V      | I <sub>E</sub> = 100μA  |
| Collector cut-off current              | I <sub>CBO</sub>      |                 |      | 100        | nA     | V <sub>CB</sub> = 250V  |
| Collector cut-off current              | I <sub>CES</sub>      |                 |      | 100        | nA     | V <sub>CES</sub> = 250V   |
| Emitter cut-off current                | I <sub>EBO</sub>      |                 |      | 100        | nA     | V <sub>EB</sub> = 4V  |
| Collector-emitter saturation voltage   | V <sub>CE(sat)</sub>  |                 |      | 0.2<br>0.3 | V<br>V | I <sub>C</sub> = 100mA, I <sub>B</sub> = 10mA<br>I <sub>C</sub> = 250mA, I <sub>B</sub> = 25mA            |
| Base-emitter<br>saturation voltage     | V <sub>BE(sat)</sub>  |                 |      | 1.0        | V      | I <sub>C</sub> = 250mA, I <sub>B</sub> = 25mA   |
| Base-emitter<br>turn on voltage        | V <sub>BE(on)</sub>   |                 |      | 1.0        | V      | I <sub>C</sub> = 250mA, V <sub>CE</sub> = 10V   |
| Static forward current transfer ratio  | h <sub>FE</sub>       | 100<br>80<br>20 |      | 300        |        | $I_{C} = 1mA, V_{CE} = 10V$<br>$I_{C} = 100mA, V_{CE} = 10V^{(*)}$<br>$I_{C} = 250mA, V_{CE} = 10V^{(*)}$ |
| Transition frequency                   | f <sub>T</sub>        | 75              |      |            | MHz    | I <sub>C</sub> = 50mA, V <sub>CE</sub> = 10V<br>f = 100MHz  |
| output capacitance                     | C <sub>obo</sub>      |                 |      | 5          | pF     | V <sub>CB</sub> = 10V, f = 1MHz   |
| Switching performance                  | td                    |                 | 53   |            | ns     | V <sub>CC</sub> = 100V, I <sub>C</sub> = 100mA,   |
|  | tr                    |                 | 126  |            | ns     | lb1 = -lb2 = 10mA   |
|  | ts                    |                 | 2.58 |            | μs     |   |
|  | tf                    |                 | 228  |            | ns     |   |

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

NOTES:

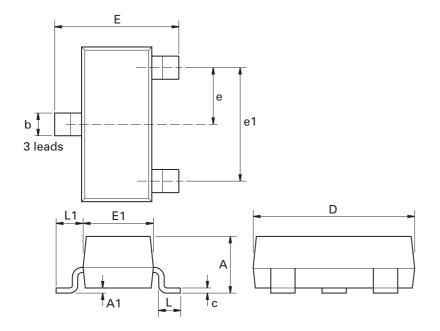
(\*) Measured under pulsed conditions. Pulse width = 300 $\mu$ s. Duty cycle  $\leq$ 2%.

### **Typical characteristics**



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## Package outline - SOT23



| Dim. | Millin | neters | Inc    | hes   | Dim. | Dim. Millimeters |      | Inches |       |
|------|--------|--------|--------|-------|------|------------------|------|--------|-------|
|      | Min.   | Max.   | Min.   | Max.  |      | Min.             | Max. | Max.   | Max.  |
| А    | -      | 1.12   | -      | 0.044 | e1   | 1.90             | NOM  | 0.075  | NOM   |
| A1   | 0.01   | 0.10   | 0.0004 | 0.004 | E    | 2.10             | 2.64 | 0.083  | 0.104 |
| b    | 0.30   | 0.50   | 0.012  | 0.020 | E1   | 1.20             | 1.40 | 0.047  | 0.055 |
| С    | 0.085  | 0.120  | 0.003  | 0.008 | L    | 0.25             | 0.62 | 0.018  | 0.024 |
| D    | 2.80   | 3.04   | 0.110  | 0.120 | L1   | 0.45             | 0.62 | 0.018  | 0.024 |
| е    | 0.95   | NOM    | 0.0375 | 5 NOM | -    | -                | -    | -      | -     |

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

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| Datasheet status key:             |   |
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Issue 4 - November 2006

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