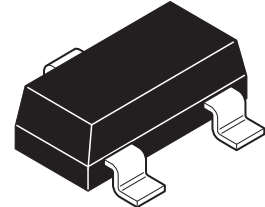


FM596

SOT 23 PNP silicon planar high voltage transistor

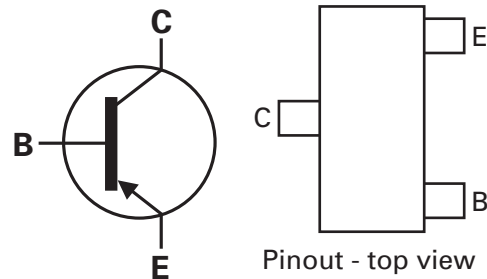
Ordering information

| Device | Reel size (inches) | Tape width (mm) | Quantity per reel |
|---------|--------------------|-----------------|-------------------|
| FM596TA | 7 | 8 | 3,000 |



Device marking

596



Absolute maximum ratings

| Parameter | Symbol | Value | Unit |
|--|----------------|-------------|-------------|
| Collector-base voltage | V_{CBO} | -220 | V |
| Collector-emitter voltage | V_{CEO} | -200 | V |
| Emitter-base voltage | V_{EBO} | -5 | V |
| Peak pulse current | I_{CM} | -1 | A |
| Continuous collector current | I_C | -0.3 | A |
| Base current | I_B | -200 | mA |
| Power dissipation at $T_{amb}=25^{\circ}C$ | P_{tot} | 500 | mW |
| Operating and storage temperature range | $T_J; T_{stg}$ | -55 to +150 | $^{\circ}C$ |

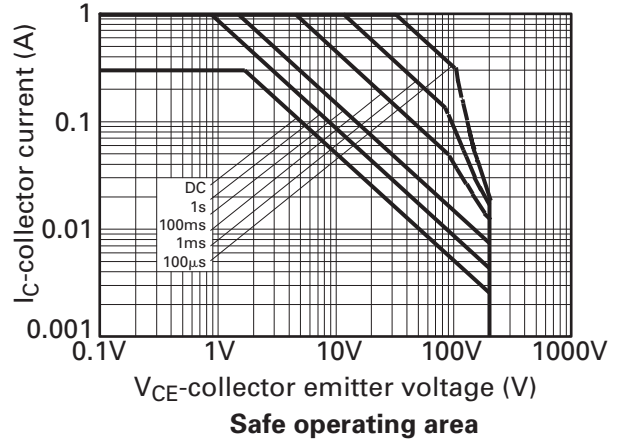
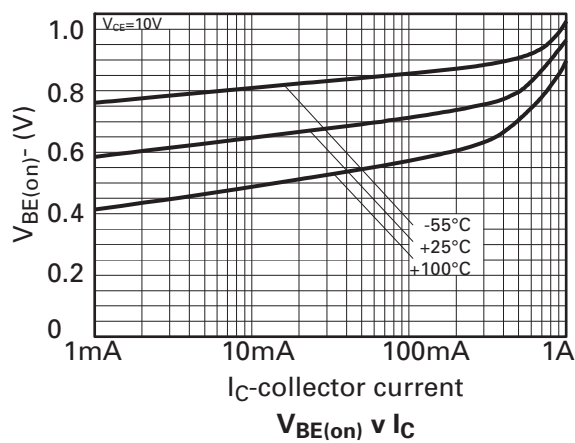
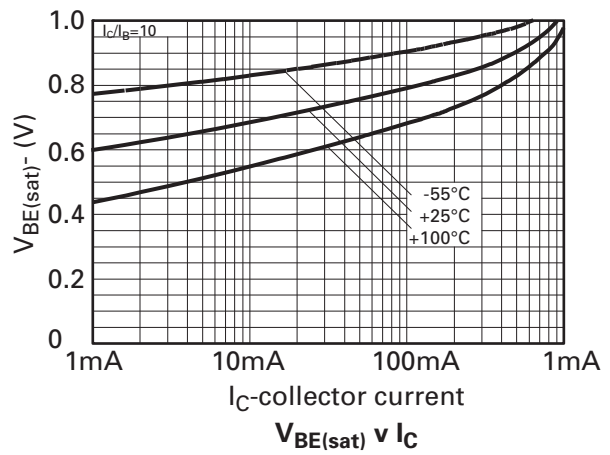
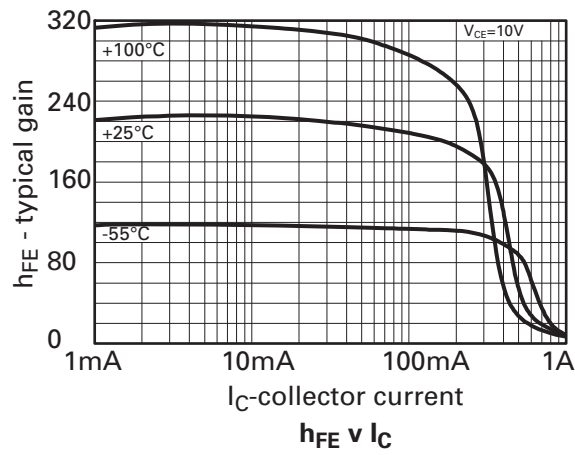
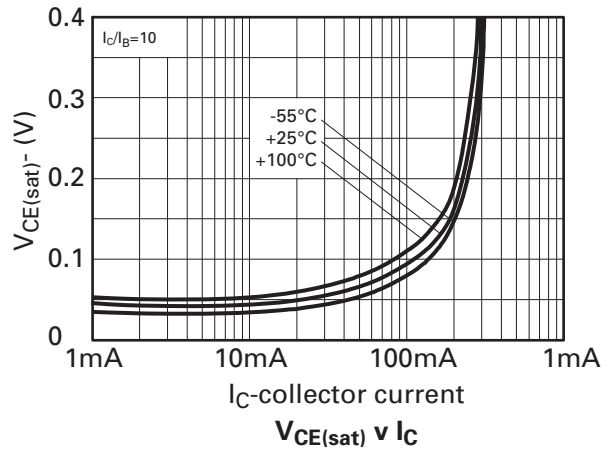
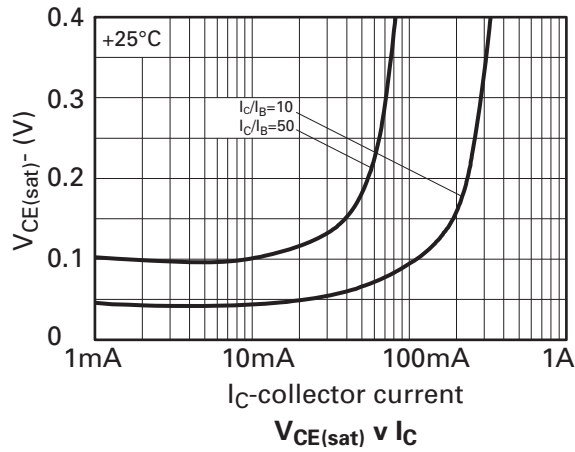
Electrical characteristics ($T_{amb} = 25^{\circ}\text{C}$)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---------------------------------------|----------------------|------------------------|-----------------------|---------------|--------|--|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | -220 | | | V | $I_C = -100\mu\text{A}$ |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | -200 | | | V | $I_C = -10\text{mA}^{(*)}$ |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | -5 | | | V | $I_E = -100\mu\text{A}$ |
| Collector cut-off current | I_{CBO} | | | -100 | nA | $V_{CB} = -200\text{V}$ |
| Emitter cut-off current | I_{EBO} | | | -100 | nA | $V_{EB} = -4\text{V}$ |
| Collector-emitter cut-off current | I_{CES} | | | -100 | nA | $V_{CES} = -200\text{V}$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | | | -0.2 -0.35 | V V | $I_C = -100\text{mA}$, $I_B = -10\text{mA}$, $I_B = -250\text{mA}$, $I_B = -25\text{mA}^{(*)}$ |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | | | -1.0 | V | $I_C = -250\text{mA}$, $I_B = -25\text{mA}^{(*)}$ |
| Base-emitter turn-on voltage | $V_{BE(on)}$ | | | -0.9 | V | $I_C = -250\text{mA}$, $V_{CE} = -10\text{V}^{(*)}$ |
| Static forward current transfer ratio | h_{FE} | 100 100 85 35 | | 300 | | $I_C = -1\text{mA}$, $V_{CE} = -10\text{V}$ $I_C = -100\text{mA}$, $V_{CE} = -10\text{V}^{(*)}$ $I_C = -250\text{mA}$, $V_{CE} = -10\text{V}^{(*)}$ $I_C = -400\text{mA}$, $V_{CE} = -10\text{V}^{(*)}$ |
| Transition frequency | f_T | 150 | | | MHz | $I_C = -50\text{mA}$, $V_{CE} = -10\text{V}$, $f = 100\text{MHz}$ |
| Output capacitance | C_{obo} | | | 10 | pF | $V_{CB} = -10\text{V}$, $f = 1\text{MHz}$ |
| Switching times | td tr ts tf | | 22 19 472 70 | | ns | $I_C = -200\text{mA}$, $V_{CC} = -80\text{V}$ $I_{b1} = I_{b2} = -20\text{mA}$ |
| Switching times | td tr ts tf | | 44 31 665 76 | | ns | $I_C = -100\text{mA}$, $V_{CC} = -80\text{V}$ $I_{b1} = I_{b2} = -10\text{mA}$ |

NOTES:

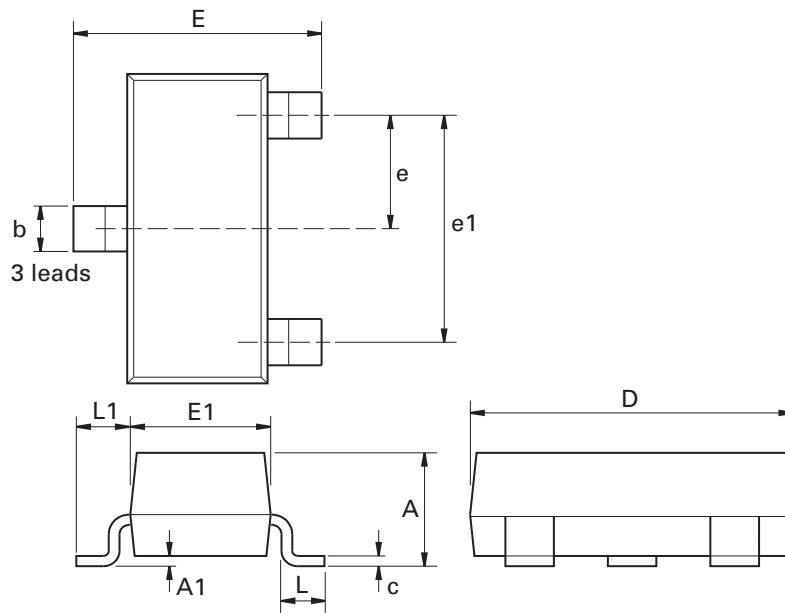
(*) Measured under pulsed conditions. Pulse width = 300 μs . Duty cycle $\leq 2\%$.

Typical characteristics



FMMT596

Package outline - SOT23



| Dim. | Millimeters | | Inches | | Dim. | Millimeters | | Inches | |
|------|-------------|------|-----------|-------|------|-------------|------|-----------|--------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | - | 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 |
| c | 0.085 | 0.20 | 0.003 | 0.008 | L | 0.25 | 0.60 | 0.0098 | 0.0236 |
| D | 2.80 | 3.04 | 0.110 | 0.120 | L1 | 0.45 | 0.62 | 0.018 | 0.024 |
| e | 0.95 NOM | | 0.037 NOM | | - | - | - | - | - |

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

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or

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| | |
|-----------------------------------|--|
| "Preview" | Future device intended for production at some point. Samples may be available |
| "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:

| | |
|-----------------------|---|
| "Draft version" | This term denotes a very early datasheet version and contains highly provisional information, which may change in any manner without notice. |
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