

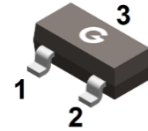
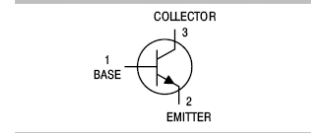
### Features

- High voltage
- Ideal for medium power amplification and switching
- RoHS compliant with Halogen-free

HF

### Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23

### Ordering Information

| Part Number | Package | Shipping Quantity      | Marking Code |
|-------------|---------|------------------------|--------------|
| FMMT497     | SOT-23  | 3000 pcs / Tape & Reel | 497          |

### Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                           | Symbol    | Value | Unit |
|-------------------------------------|-----------|-------|------|
| Collector-Base Breakdown Voltage    | $V_{CBO}$ | 300   | V    |
| Collector-Emitter Breakdown Voltage | $V_{CEO}$ | 300   | V    |
| Emitter-Base Breakdown Voltage      | $V_{EBO}$ | 5     | V    |
| Continuous Collector Current        | $I_C$     | 0.5   | A    |
| Peak Collector Current              | $I_{CM}$  | 1     | A    |

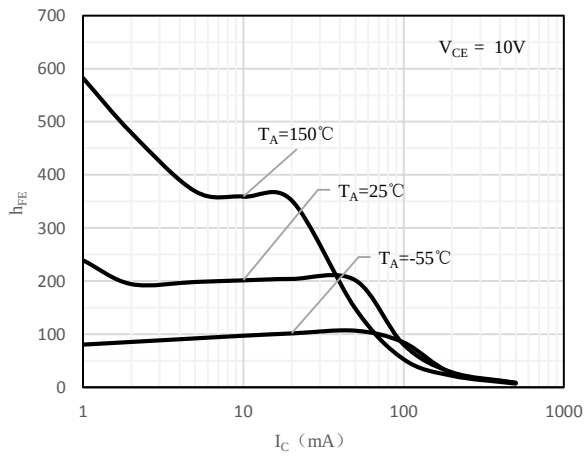
### Thermal Characteristics

| Parameter                                     | Symbol          | Value      | Unit               |
|-----------------------------------------------|-----------------|------------|--------------------|
| Power Dissipation( $T_A = 25^\circ\text{C}$ ) | $P_D$           | 0.5        | W                  |
| Thermal Resistance Junction-to-Air            | $R_{\theta JA}$ | 250        | $^\circ\text{C/W}$ |
| Junction Temperature Range                    | $T_J$           | -55 ~ +150 | $^\circ\text{C}$   |
| Storage Temperature Range                     | $T_{STG}$       | -55 ~ +150 | $^\circ\text{C}$   |

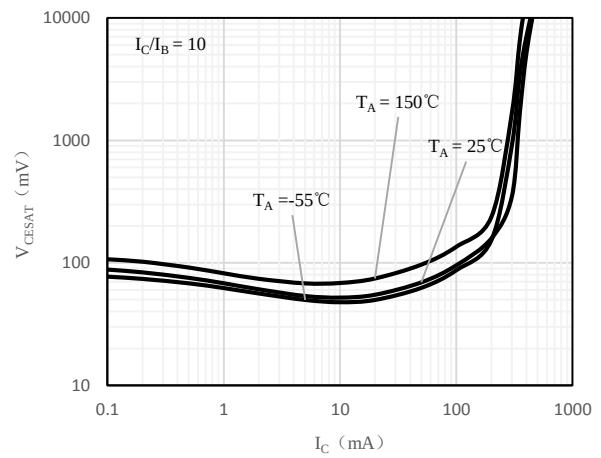
### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test Condition                                                  | Min. | Typ. | Max. | Unit          |
|--------------------------------------|---------------|-----------------------------------------------------------------|------|------|------|---------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C = 100\mu\text{A}, I_E = 0$                                 | 300  | -    | -    | V             |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C = 0.1\text{mA}, I_B = 0$                                   | 300  | -    | -    | V             |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E = 100\mu\text{A}, I_C = 0$                                 | 5    | -    | -    | V             |
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB} = 200\text{V}, I_E = 0$                                 | -    | -    | 0.1  | $\mu\text{A}$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB} = 6\text{V}, I_C = 0$                                   | -    | -    | 0.1  | $\mu\text{A}$ |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = 10\text{V}, I_C = 1\text{mA}$                         | 100  | -    | -    | -             |
|                                      |               | $V_{CE} = 10\text{V}, I_C = 100\text{mA}$                       | 70   | -    | 300  | -             |
|                                      |               | $V_{CE} = 10\text{V}, I_C = 250\text{mA}$                       | 15   | -    | -    | -             |
| Collector-emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 100\text{mA}, I_B = 10\text{mA}$                         | -    | -    | 0.2  | V             |
|                                      |               | $I_C = 250\text{mA}, I_B = 25\text{mA}$                         | -    | -    | 0.3  | V             |
| Base-emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 250\text{mA}, I_B = 25\text{mA}$                         | -    | -    | 1.0  | V             |
| Transition Frequency                 | $f_T$         | $I_C = 50\text{mA}, V_{CE} = 10\text{V}$<br>$f = 100\text{MHz}$ | 75   | -    | -    | MHz           |
| Output Capacitance                   | $C_{ob}$      | $V_{CB} = 10\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$         | -    | -    | 5    | pF            |

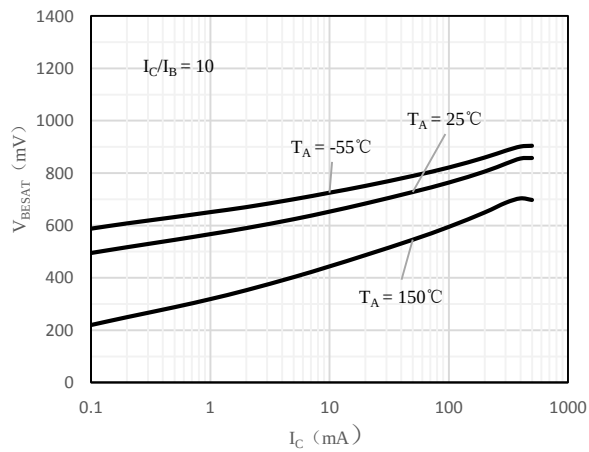
**Ratings and Characteristics Curves** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)



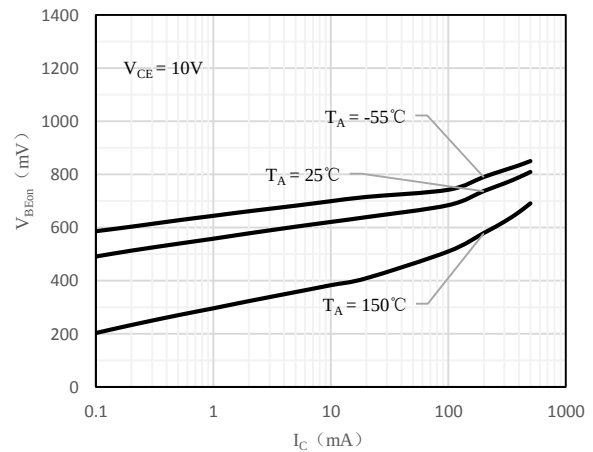
**Fig 1  $h_{FE}$  vs.  $I_C$**



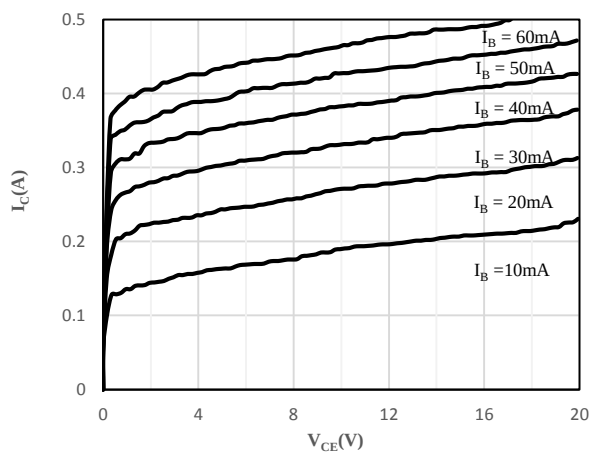
**Fig 2  $V_{CE(sat)}$  vs.  $I_C$**



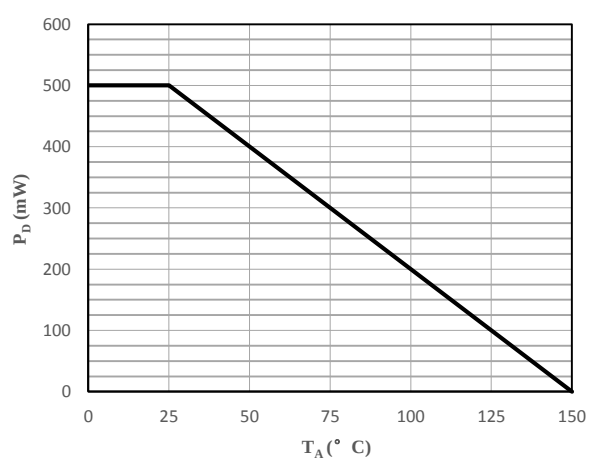
**Fig 3  $V_{BE(sat)}$  vs.  $I_C$**



**Fig 4  $V_{BE(on)}$  vs.  $I_C$**



**Fig 5  $I_C$  vs.  $V_{CE}$**



**Fig 6  $P_D$  vs.  $T_A$**

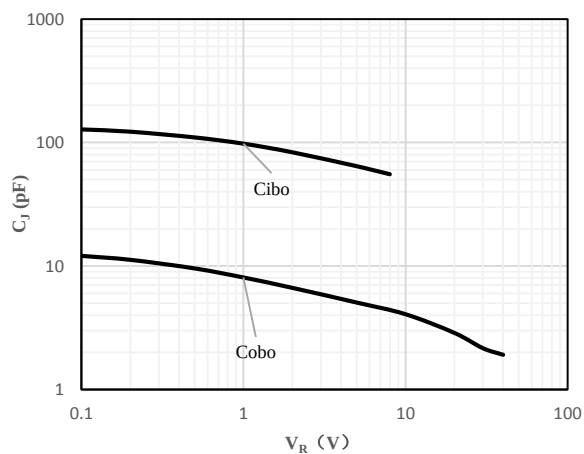
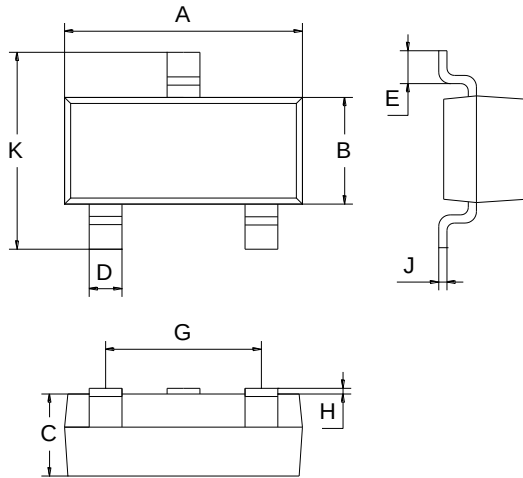


Fig 7  $C_J$  vs.  $V_R$

**Package Outline Dimensions** (Unit: mm)



| SOT-23    |      |      |
|-----------|------|------|
| Dimension | Min. | Max. |
| A         | 2.70 | 3.10 |
| B         | 1.10 | 1.50 |
| C         | 0.90 | 1.10 |
| D         | 0.30 | 0.50 |
| E         | 0.35 | 0.48 |
| G         | 1.80 | 2.00 |
| H         | 0.02 | 0.10 |
| J         | 0.05 | 0.15 |
| K         | 2.20 | 2.60 |

**Package Outline Dimensions** (Unit: mm)

**SOT-23**

