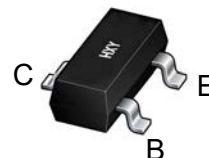




## Features

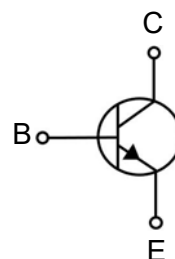
- Low  $V_{CE(sat)}$
- $h_{FE}$  characterised up to 1A for high current hold up
- For general amplification



**SOT-23**

## Package Marking and Ordering Information

| Product ID | Pack   | Marking | Qty(PCS) |
|------------|--------|---------|----------|
| FMMT495TA  | SOT-23 | 495     | 3000     |



## Maximum Ratings (Ta=25°C unless otherwise noted)

| Parameter                                   | Symbol          | Limit    | Unit |
|---------------------------------------------|-----------------|----------|------|
| Collector-Base Voltage                      | $V_{CBO}$       | 170      | V    |
| Collector-Emitter Voltage                   | $V_{CEO}$       | 150      | V    |
| Emitter-Base Voltage                        | $V_{EBO}$       | 5        | V    |
| Collector Current                           | $I_C$           | 1        | A    |
| Collector Power Dissipation                 | $P_C$           | 250      | mW   |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | 500      | °C/W |
| Junction Temperature                        | $T_j$           | 150      | °C   |
| Storage Temperature                         | $T_{stg}$       | -55~+150 | °C   |

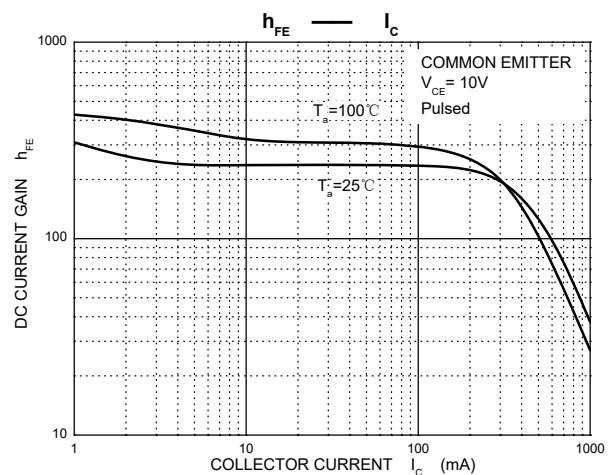
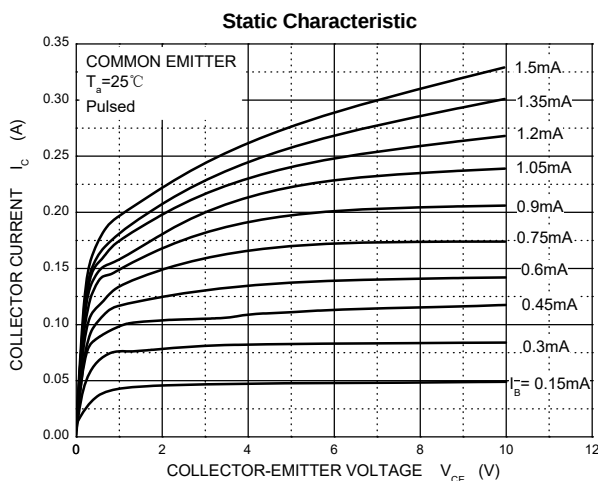


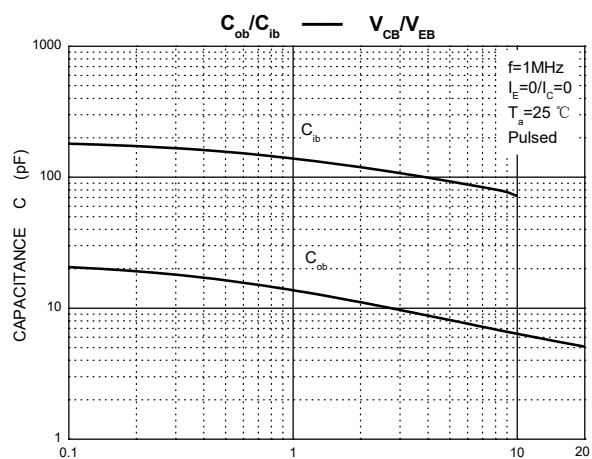
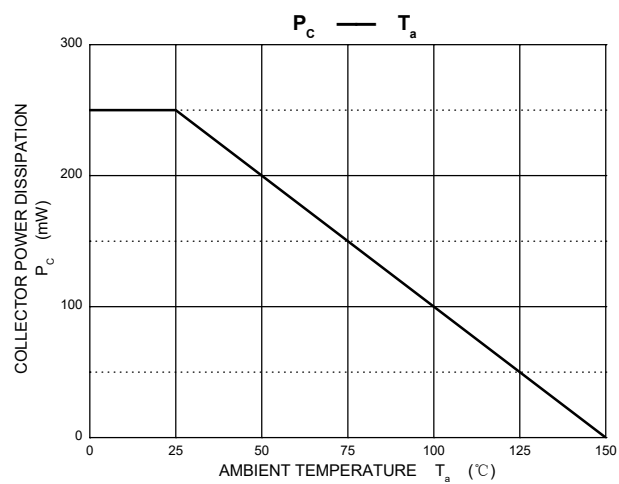
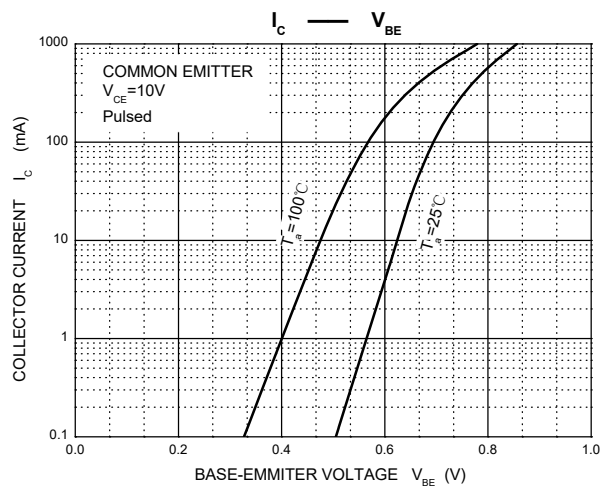
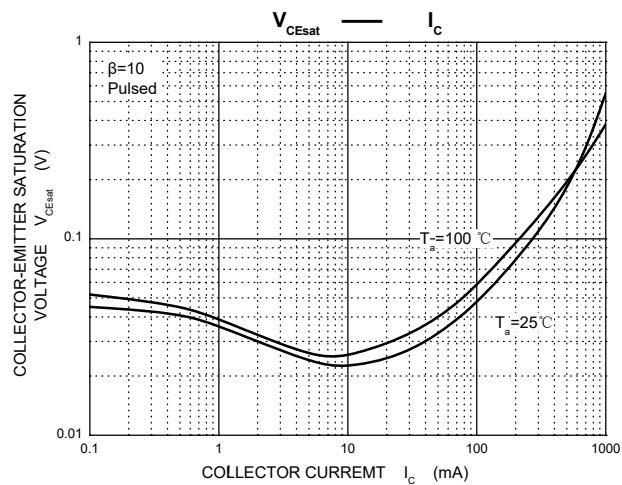
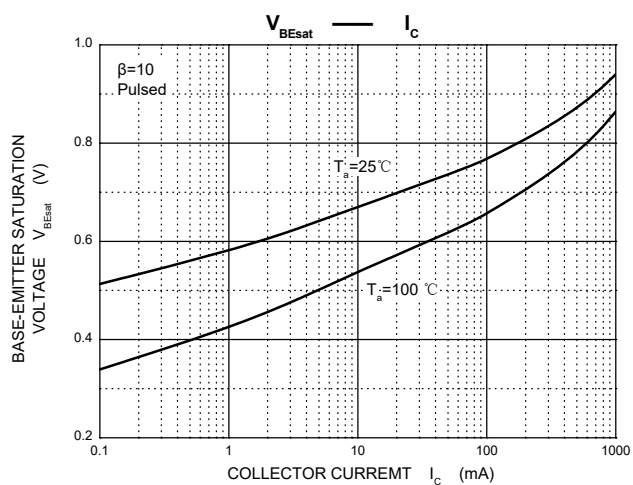
### Electrical Characteristics (Ta=25°C unless otherwise specified)

| Parameter                            | Symbol             | Test conditions                  | Min | Max | Unit    |
|--------------------------------------|--------------------|----------------------------------|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$      | $I_C=100\mu A, I_E=0$            | 170 |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}^*$    | $I_C=10mA, I_B=0$                | 150 |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$      | $I_E=100\mu A, I_C=0$            | 5   |     | V       |
| Collector cut-off current            | $I_{CBO}$          | $V_{CB}=150V, I_E=0$             |     | 0.1 | $\mu A$ |
| Collector cut-off current            | $I_{CES}$          | $V_{CE}=150V, V_{BE}=0$          |     | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$          | $V_{EB}=4V, I_C=0$               |     | 0.1 | $\mu A$ |
| DC current gain                      | $h_{FE(1)}^*$      | $V_{CE}=10V, I_C=1mA$            | 100 |     |         |
|                                      | $h_{FE(2)}^*$      | $V_{CE}=10V, I_C=250mA$          | 100 | 300 |         |
|                                      | $h_{FE(3)}^*$      | $V_{CE}=10V, I_C=500mA$          | 50  |     |         |
|                                      | $h_{FE(4)}^*$      | $V_{CE}=10V, I_C=1A$             | 10  |     |         |
| Collector-emitter saturation voltage | $V_{CE(sat)(1)}^*$ | $I_C=250mA, I_B=25mA$            |     | 0.2 | V       |
|                                      | $V_{CE(sat)(2)}^*$ | $I_C=500mA, I_B=50mA$            |     | 0.3 | V       |
| Base-emitter turn-on voltage         | $V_{BE(on)}^*$     | $V_{CE}=10V, I_C=500mA$          |     | 1   | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)}^*$    | $I_C=500mA, I_B=50mA$            |     | 1   | V       |
| Transition frequency                 | $f_T$              | $V_{CE}=10V, I_C=50mA, f=100MHz$ | 100 |     | MHz     |
| Collector output capacitance         | $C_{ob}$           | $V_{CB}=10V, I_E=0, f=1MHz$      |     | 10  | pF      |

\*Pulse test: pulse width  $\leq 300\mu s$ , duty cycles  $\leq 2.0\%$ .

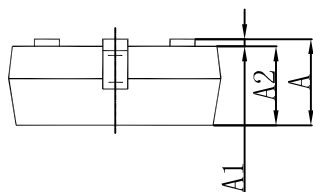
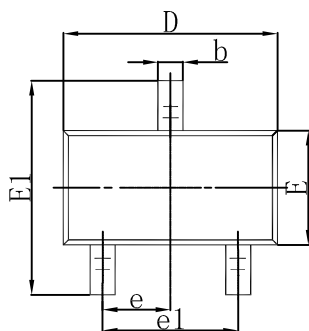
### Typical Characteristics







## SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-23 Suggested Pad Layout



Note:  
1. Controlling dimension: in millimeters.  
2. General tolerance:  $\pm 0.05\text{mm}$ .  
3. The pad layout is for reference purposes only.



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